

Blue Economy in the Mediterranean

Policy paper

The present policy paper sets forward a list of objectives and actions for promoting Blue Economy in the Mediterranean, based on the technical and policy results of the Blue Growth Community projects - iBlue, MAESTRALE, PELAGOS, PROteuS, 4Helix+, MISTRAL. Recommendations also include contributions from external key stakeholders collected during the "Transition towards blue and green economies in the Mediterranean" conference, held in Brussels 19-20 September 2019. Specific policy recommendations for the three focal sectors are developed, namely yachting, marine renewable energy and maritime surveillance. The paper aims to integrated the recommendations on the Community on the basis of technical results, and to disseminate to strengthen knowledge-based policy-making to key external targets, among which the European Institutions, international and intergovernmental organizations, and multilevel territorial and sectoral actors.

What is Blue economy ?

Blue Economy can be defined as the set of human activities depending on the sea and/or underpinned by land-sea interactions in the context of sustainable development.¹

Blue Economy sectors include:²

- **marine-based activities**, including those undertaken in the ocean, sea and coastal areas, such as capture fisheries and aquaculture, offshore oil and gas, offshore wind energy, ocean energy, desalination, shipping and marine transport, and marine and costal tourism; and
- **marine-related activities** which use products and/or produce products and services for the ocean and marine-based activities; for example, seafood processing, marine biotechnology, shipbuilding and repair, port activities, communication, equipment, maritime insurance and maritime surveillance.



Key integrated policy recommendations

- Promote a new paradigm for **Blue Economy based on SUSTAINABILITY**, developing a long-term vision and strategy and delivering concrete solutions to overcome environmental impacts
- Exploit **SYNERGIES** amongst Blue Economy sectors and promote establishment of permanent **CLUSTERS** as strategic assets for sustainable Blue Growth
- **Strengthen and enhance COOPERATION** among all Mediterranean countries (EU and non-EU) ensuring data sharing, knowledge exchange, technology transfer, industrial cooperation, mobility of experts and professionals, with a shared environmental sustainability responsibility
- Achieve **HARMONIZATION of national legislations, rules and procedures** to ensure exchanges of data and technology and easier mobility of people and products
- **Ensure RATIONAL use of FUNDS and DURABLE FINANCIAL INSTRUMENTS** to support all stages of Blue Economy development - from R&D to market - preventing loss of accumulated knowledge and prioritizing environmentally sustainable solutions
- **Accelerate COASTAL AND MARITIME PLANNING** (ICZM AND MSP) and use them as a tools to promote sustainable Blue Economy, overcoming barriers and conflicts among the sectors and exploiting potentials
- **Invest in EDUCATION AND AWARENESS-RAISING**, creating opportunities to develop new Blue Skills at all educational levels, and bridge the gaps between sectors' demands and labor skills.



Blue Economy in the Mediterranean

The Mediterranean countries have engaged in making the best use of Blue Economy - to promote growth, jobs and investments, while reducing poverty, safeguarding healthy and clean seas, and developing a clear vision for the sustainable and integrated development of marine and maritime sectors.³ Blue Economy includes traditional, well-established sectors such as coastal and maritime tourism, maritime transport, fisheries, as well as emerging sectors like renewable energy, blue-biotechnologies and sea-bed mining. Yet Blue Economy also includes those parts of the public sector with direct coastal and ocean responsibilities, such as national defense, the coast guard, marine environmental protection, as well as marine education and research.²

Ocean-related activities in the Mediterranean Sea generate an annual economic value of about €405.8 billion which represents the fifth largest economy when compared with the Gross Domestic Products (GDPs) of the countries in the region⁴. Maritime activities in the Mediterranean account for 20% of the world's annual Global Marine Product (GMP)* in an area which makes up only 1% of the world's oceans.³ The contribution of Blue Economy sectors to national GDPs exceeds the EU average of 1.3% for the majority of Mediterranean EU countries (six out of eight, see Figure 1). Moreover, at EU level, Mediterranean countries rank at the top 5 of largest percentages.²

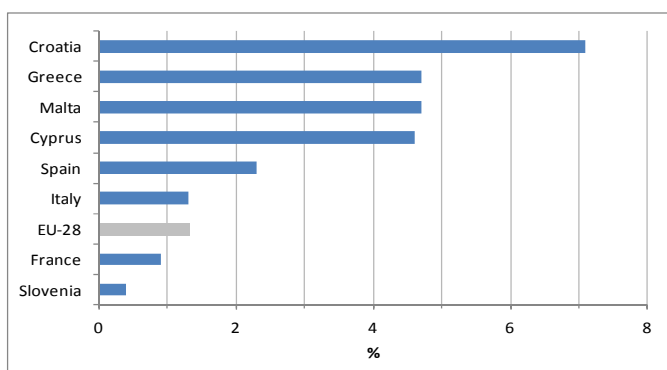
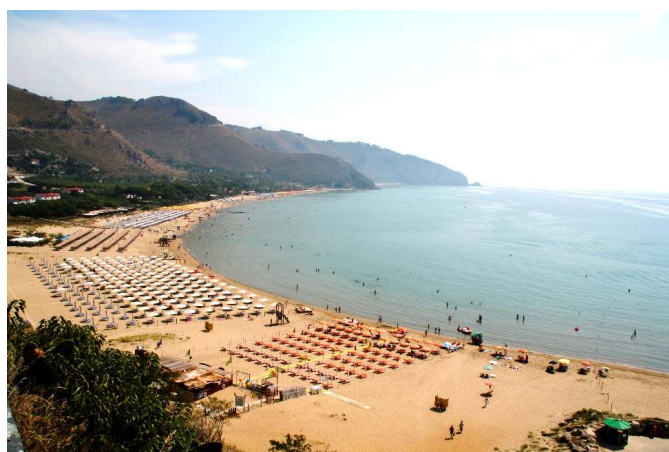


Figure 1 Contributions of the Blue Economy to national EU Med GDPs (2016). Source [2] modified.

Tourism represents by far the most important sector of Blue Economy (92% of GMP⁴; 70% of Gross Value Added⁵), accounting for about one-third of all global tourism, with several countries, such as Spain, Italy, Greece and Turkey, relying on this sector for a large part of their income. Fisheries and aquaculture account for roughly 2% of GMP, but their importance varies widely from country to country.⁴ Through Blue

Economy, the Mediterranean provides major opportunities for jobs across different sectors (more than 850,000 in 2014 in EU Med countries).⁶



Importantly, with its unique cultural heritage and natural patrimony (400 UNESCO sites), local biodiversity and geophysical characteristics, the Mediterranean also provides numerous intangible benefits such as coastal protection, climate regulation, recreational value and spiritual and cultural enrichment - though these factors cannot yet be effectively captured in classical economic analyses.⁴ However, despite significant progress in the field, maritime sectors in the Mediterranean have not realized their full potential as important engines for economic growth, job creation, innovation and sustainable and inclusive prosperity. The lack of legislative and administrative harmonization and poorly managed resources, represent major barriers in ensuring the longer-term viability of such economic activities.

To harness the economic opportunities provided by the Mediterranean Sea, there exists a need for novel management models which respect its ecosystems and are able to maintain and increase their value over time with direct benefits to local communities. To that end, the concept of the Blue Economy presents opportunities for economic diversification and growth, embedded in the fundamental principles of environmental sustainability.

* Global Marine Product (GMP) corresponds to the annual economic output of all sectors related to the sea

Main findings

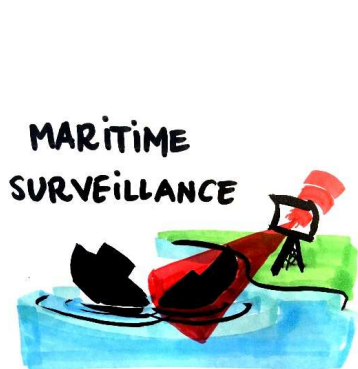
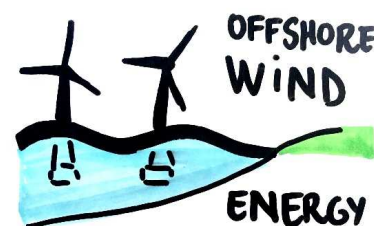


Yachting sector needs:

- innovative public policies strengthening the sector and enhancing its sustainability
- homogeneity of regulatory frameworks among European countries
- promotion of Business Model Innovation through uptake of new approaches and tools.

Marine Renewable Energy sector needs:

- mainstreaming into climate change mitigation policies
- acceleration of MSP and ICZM processes promoting holistic management of the ocean space
- establishment of a permanent Mediterranean Cluster sustaining macro-regional strategies and connecting MRE actors across the region.



Maritime Surveillance sector needs:

- efficient data exchange among sectors and countries
- opportunities for continuous financial support of all phases of product development
- promotion of the development, uptake and exchange of innovative technologies and tools enhancing SMEs capacity (e.g. AIS, ICTs)

50% of the global fleet of large yachts spends 8 months out of 12 in Med waters⁷

Yachting generates the highest revenue multiplier and employment rate of maritime clusters

France, Italy and Spain account for 80% of the total demand for yachting tourism in the Med

At EU level, the Med generates 50% of the sector economic output and employment¹¹

Yachting

As a specific type of leisure tourism, yachting exerts a positive economic impact on coastal regions, and provides a substantial contribution to the local economy. The increasing success of yachting tourism has resulted in a significant boom in its relevant business segments. Despite its promising characteristics the sector has recently faced a financial crisis and workforce shortages which require innovative policy.



Regulatory framework

At **international** level:

- The International Convention for the Safety of Life at Sea (SOLAS)⁸ specifies minimum standards for the construction, equipment and operation of ships, compatible with their safety.
- The International Convention for Preventing Collisions at Sea (COLREGs)⁹ provides requirements for skippers.
- The International Convention for the Prevention of Pollution from Ships (MARPOL)¹⁰ also applies to recreational boats and prescribe the skippers not to discharge oil or drop garbage into the sea.

At **EU** level:

- The European Strategy for more Growth and Jobs in Coastal and Maritime Tourism¹¹ stresses the importance of a competitive, smart, safe and sustainable recreational craft sector in Europe.
- The Directive on recreational craft and personal watercraft¹² provides regulation for the sector.

At **national** level:

Each country has its own Flag State national requirements. The Flag State rules apply also to recreational craft present in coastal waters of that Flag State. Consequently, recreational craft skippers entering a territory of another Flag State have to follow the requirements of both their Flag State as well as the coastal state.

Port State regulation:

Each Member State's government, contracted to the international conventions, is obligated to regulate visiting vessels that are registered in foreign countries. This regulation is done by means of Port State inspectors. Controls cover pollution, navigation, ballast and anchoring/berthing requirements.



Strengths

- The Mediterranean Sea provides ideal conditions for yachting, being among the most popular destinations of the world
- High attractiveness of the sector characterized by well-known brands from Mediterranean countries and the EU at large (export being an important asset)
- Mediterranean yachting SMEs, overcame the economic crisis, by demonstrating their ability to renew their business models and services provided
- Opportunities for innovation of services, linked to digitalization: e.g. development of tools to facilitate navigation to novices; easy-to-navigate or autonomous vessels; boat sharing or offers for the boater via digital applications
- Cost reduction and improved environmental sustainability can be reached through energy savings and synergies with Blue Energy production

Weaknesses



- Lack of harmonization in regulations, standards for safety equipments and licensing procedures for skippers of recreational crafts between EU countries
- License acceptance and administrative difficulties: very slow process toward digitalization of paperwork and administrative procedures
- Lack of harmonized digitalization among marinas, regional port authorities and countries, resulting as well in a lack of adaptation towards new and younger clients
- Differences in VAT regimes and in some case unfavourable treatment of boats (higher VAT) and marinas leading to distorted market conditions on a European scale
- Low R&D investment capacity (SMEs = 95% of the sector) and limited access to financing
- Workforce and skills shortage (e.g. machine manufacturing and engineers)
- Seasonality of the services (spring and summer)
- Difficulty to recycle boats and their components
- Insufficient public awareness about the sector's strengths and potential contribution towards sustainable practices and overall blue growth

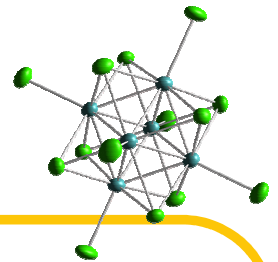
Tools



Yachting

Innovative Business Model

The iBlue project developed the **3 Pillar Business Model (3PBM)** to help SMEs to get additional perspectives on their business, deepen the understanding of business model mechanics and holistically manage their impact (reduce negative impact, leverage positive impact) and to improve the bottom line – overall economic performance and competitiveness.



Med Yachting network



Clusters are essential tools for strengthening the yachting sector. Their usefulness as boosters of opportunities is demonstrated at local, national and regional scales. The iBlue project launched the **Med Yachting Network**, an international network involving all the segments of the yachting sector. When fully operational, the Network will allow exchange of best practices, development of innovation patterns and identification of policies indicators providing a unique chance for region's yachting sector to expand its activity in the basin.



Role of policy

Policy holds a key role in strengthening the yachting sector in the Mediterranean and promoting its development, innovation and sustainability. At present, the regulatory environment represents a barrier: the Mediterranean EU Member States and the EU should work for an easy cross-border movement of boats, also possibly involving Third countries towards the harmonization of regulations and licensing requirements. Trade issues have also been recognized as threatening the sector at EU level (e.g. the current EU-US trade dispute): policy actions are needed to eliminate these issues.

Through the definition of higher environmental standards, policy can be a fundamental player in improving environmental sustainability of the sector. Finally, policy action is crucial for business model innovation, through support to cluster development, data collection and skilled workforce formation.

Recommendations

National and European authorities should engage with stakeholders in a bottom-up dynamics to co-develop a new governance approach to yachting in the Mediterranean region, through:

- harmonization of regulatory frameworks and licensing procedures among countries, related in particular to on-board staff employment, training regulations, skippers' licenses, health and safety at work, regulations on chemical hazards standards
- development of digital tools to ease and shorten administrative procedures.

National and European authorities could also **help enhancing environmental sustainability** of the sector, by promoting:

- circular economy and end-of-life recycling of boats
- renewable energy use in ports and research on clean propulsion boats
- best practices for preventing water pollution by yachts
- ICZM (e.g. by including plans for marinas development in ICZM context) and MSP (e.g. including zoning for yachting in marine plans, with particular attention to marine protected areas).

Authorities responsible for economic development, business support organizations, chambers of commerce could **help increase in competitiveness** of the sector by

- stimulating Business Model innovation
- promoting close-to-market innovation, including "smart marinas" (adopting innovative technologies, offering e-services and contributing to sea monitoring)
- providing funding and financial opportunities
- creating educational pathways for qualifications and professions in the recreational boating industry.

Public awareness should be raised on:

- how the sector can contribute to sustainable Blue Growth (economy and job creation)
- potentiality to increase environmental sustainability (e.g. renewable energies in marinas, reduction of waste and wastewaters discharge, recycling of boats, etc.).

Authorities responsible for regional cooperation in the Mediterranean can help strengthen cooperation and development:

- supporting the creation of a permanent yachting cluster of the Mediterranean
- taking stock and encouraging the transferability, dissemination, and integration of project results into the works of intergovernmental organizations (e.g. Union for the Mediterranean) or transnational projects (PANORAMED), and within the development of sea-basin and macro-regional strategies in the Mediterranean (WestMED, ADRION), towards a global and sustainable strategy for sustainable yachting in the whole basin.

Offshore Wind is considered as the most promising Marine Renewable Energy sector

Offshore Wind energy could increase in production to 12 GW by 2030 and close to 40 GW by 2050 for Mediterranean EU countries¹⁸

Low-carbon technologies associated with the marine energy sector can play a significant role in the fulfillment of the EU climate objectives

The highest wave energetic area is the extended area between Sardinia and Balearic Islands, with around 9.5 kW/m¹⁹

Marine renewable energy

"Marine" and "Ocean Energy" encompass the energy generated by offshore wind, waves, tidal power, thermal energy conversion and salinity gradient.¹³ This sector is also generally referred to as Marine Renewable Energy. The term "Blue Energy" has been used to extend these definitions to further include energy obtained from marine biomass.¹⁴

Although energy resources in the Mediterranean may be relatively fewer in comparison to "hotspots" such as in the North Sea and the Atlantic, there exist numerous locations in the basin with considerable potential. The Mediterranean's milder climatic conditions also enable the affordable testing of devices and stimulate the design of efficient technologies. As such, the Mediterranean has potential for both significant Marine Renewable Energy production and technological development.^{15,16,17}

Offshore wind is considered as the most promising Marine Renewable Energy sector. Offshore wind farms are not yet operational in the Mediterranean Sea, primarily due to the characteristic depths of the basin which do not allow fixed foundations in the near-shore environment, with floating wind turbines being better adapted to the specificities of the sea basin. The first near-shore Offshore wind plant is under construction in Taranto, Italy, while the first pilot floating farm is going to be installed in the Gulf of Lion, France.

Other promising Marine Renewable Energy sectors include wave and tidal energy, in sites of appropriate conditions, with prototypes and pre-commercial devices already being tested (e.g. Italy, Israel) and progressively entering the commercial phase. For tidal energy, suitable current speeds occur in few locations (straits of Messina and Dardanelles) but new sites may be proven suitable, as additional studies are conducted. Although the wave and tidal sectors do not currently possess the market demand for tailor-made solutions, the reduced impact of extreme events on devices can make their operational costs affordable.



Regulatory framework

The main regulatory framework for the promotion, development and operation of renewable energy, and as such Marine Renewable Energy, is provided by the Renewable Energy Directive and the EU's Emissions Trading Scheme (ETS). The original Renewable Energy Directive²⁰ has been amended several times and has now been recast.²¹

Since 2008, the Strategic Energy Technology (SET) Plan has been instrumental in accelerating the development and deployment of low-carbon energy, through enhancing uptake of new technology and project funding; bringing down prices; and coordinating research efforts.^{22,23}



Strengths

- Vital contribution towards reduction of greenhouse gas emissions and climate change mitigation
- Important contribution towards energy security and self-sufficiency, particularly for island and remote coastal communities
- Development of new inventions, products and high-quality jobs, especially in locations faced with financial crisis and high unemployment
- Enhances R&D and innovation, allowing the generation of export opportunities for both technology and expertise
- Provides invaluable opportunities for growth and development of skills and contributes towards the development of supply chains involving both innovative SMEs and larger companies.

Weaknesses



- Infrastructural challenges e.g. offshore electricity grid development; inadequate access to suitable port facilities
- Economic constraints, mainly due to the relatively high Levelized Cost Of Energy (LCOE), absence of funds, lack of stability of subsidies and market volatility
- High technology costs. Most of the existing technologies still need to demonstrate their reliability in the marine environment. SMEs are often short of the necessary resources to deploy their prototypes
- Environmental impacts are not fully understood, while existing developments are few and operative for a short period of time, preventing the monitoring of environmental impacts and determining uncertainties about cumulative effects with other maritime users
- Diverse national policies and regulatory frameworks. Legal gaps and different competencies, at times also conflicting, among national and sub-national authorities
- Complex licensing and consenting procedures
- Potential conflicts between Marine Renewable Energy and other sectors (e.g. fisheries, Marine Protected Areas, etc.) due to MSP and ICZM lack of implementation
- Issues of public acceptance.

Tools



Marine Renewable Energy

Med cluster of MRE stakeholders

As a major objective of PELAGOS project²⁴, the Cluster seeks to advance the sector by fostering linkages among all key actors of the Marine Renewable Energy value chain, with emphasis on SMEs. The cluster delivers a mix of services by promoting novel technologies, bridging push and pull innovation activities and securing social acceptance that increase SMEs' innovation capacities, support R&I and foster collaborations among all the stakeholders of the Quadruple Helix Innovation Model (business-academia-industry-civil society).

Blue Energy Labs

Blue energy labs (BELs) have been set forward by the MAESTRALE project as stakeholder groups that include local enterprises, public authorities, knowledge institutions and citizens. The BELs can outlive the project to support future Marine Renewable Energy policies and plan concrete strategies for Blue Growth. In comparison to other structures, such as clusters, the sub-national/local level is considered the ideal level for the implementation of BELs.



Role of policy

Policy can have a **catalytic role in the further development of Marine Renewable Energy (MRE) in the Mediterranean**. The important environmental benefits of MRE need to be highlighted in emerging and future policy, especially with respect to climate change mitigation. The recent recast of the EU Renewable Energy Directive explicitly mentions the need to *"take into account the contribution of energy from renewable sources towards meeting environmental and climate change objectives"*.²⁰

Policy also has a **key role in the development of a fertile environment for Marine Renewable Energy investment**. The recent economic climate resulted in several governments scaling back financial support for Marine Renewable Energy, a condition that stalled the sector's further development and lengthened the time of major projects. It is thus crucial to ensure financial support for the sector at all stages of development.

Moreover, policy is recognized as a **key enabler for overcoming issues of Marine Renewable Energy social acceptance**, especially in the Mediterranean. Public support has been recognized as a crucial factor for Marine Renewable Energy development, as demonstrated by the examples of relevant projects being postponed due to public opposition. As such, policy should play an active role in supporting local involvements and set forward sound consultation procedures. Sub-national, regional and local administrations should be more actively engaged in the process and able to participate to final decision-making while evaluating true socio-economic impacts on local communities and the environment.

Recommendations

Marine Renewable Energy

National authorities responsible for Research/Development/Innovation should facilitate early-stage research and further developments of Marine Renewable Energy, for example through:

- encouraging cost-effective deployment of Marine Renewable Energies and strengthening natural laboratories for testing marine energy devices
- developing a dedicated R&I strategy for driving the industry towards full market maturity.

MSP & ICZM authorities should accelerate Marine Renewable Energy (MRE) development through MSP & ICZM implementation and enforcement:

- identifying potential areas for MRE development and regulating co-existence between Marine Renewable Energy and other economic sectors
- considering multi-use opportunities deriving from joint use of marine space by different Marine Renewable Energy typologies or coupled with other maritime activities (e.g. aquaculture, nature protection, tourism).

Authorities in charge of environmental policies should work hand-in-hand with Marine Renewable Energy actors (and *vice versa*) to ensure the uptake of true pre-impact assessments before the implementation of technologies, hence participating to including Marine Renewable Energy in climate mitigation policies in a sound way.

Funding and financial authorities should ensure support to all phases of Marine Renewable Energy development by providing stable mobilization/allocation of public funds/resources for all-stage research, optimizing the use of funds for the MRE sector and typology of enterprises, and concentrating rationalizing efforts on a limited number of promising technologies.

Authorities responsible for economic development could support the sector by:

- promoting the creation of Blue Energy Labs at national/sub-national scale
- coordinating the national and subnational regional/local schedules of deployment in the region, maximizing Med cooperation in the development of a European supply chain for the sector.

Authorities responsible for authorization procedures should:

- ensure coordination of all authorities and bodies representing diverse national, regional and local public interests (environment, landscape, cultural heritage, etc.)
- provide instruments to accommodate very different legal obligations arising from local, regional, national, EU and international policies
- implement a multidisciplinary effort in Marine Renewable Energy proposals public consultations to establish a conscious social acceptance of MRE.

Authorities responsible for regional cooperation should reinforce Euro-Mediterranean cooperation on blue economy by:

- promoting the establishment of a permanent Mediterranean Cluster of stakeholders (including both the north and the south shore of the Mediterranean)
- promoting the implementation of a regional platform to enhance knowledge exchange on energy efficiency and renewable energies
- taking stock and encouraging the transferability, dissemination, and integration of project results into the works of intergovernmental organizations (e.g. Union for the Mediterranean) or transnational projects (PANORAMED), and within the development of sea-basin and macro-regional strategies in the Mediterranean (WestMED, ADRION), towards a global and sustainable strategy for marine renewable energies in the basin.

Maritime surveillance is a *sine qua non* for prevention and response to security incidents

The Mediterranean concentrates 25% of global traffic and 30% of the world's oil traffic

Med Maritime Surveillance Cluster

Most of surveillance activities and threats are transnational in nature

Maritime Surveillance

The Mediterranean Sea constitutes a crossroad of continents and the main link among EU countries, Asia and the Middle East. Although representing only the 1% of the surface of the world's seas, the Mediterranean concentrates 25% of global traffic and 30% of the world's oil traffic. Given the importance of this traffic and the ecological vulnerability of this sea, the Mediterranean Sea has been classified as a special area by the MARPOL 73/78 international convention.

Maritime Surveillance aims at providing to the involved actors the necessary methods and systems to achieve effective data exchange concerning various maritime sectors and risks. MS activities are carried out mainly at a national level. These activities have both national and transnational nature and fall under the responsibility of many actors (both at regional, national and transnational levels). The surveillance activities include: Transport Safety; Maritime Traffic Support; Maritime Security, Border Control and Migration; Illegal Fishery Control; Preparedness and Response to Marine Pollution; Observing Systems for the Marine Environment.⁶

Regulatory framework

The European Union Maritime Security Strategy (EUMSS)²⁵ adopted in 2014, is the major framework providing the context and coherence for the EU's diverse and wide array of sector-specific maritime policies and strategies. The EUMSS strengthens the link between internal and external security and couples the overall European Security Strategy with the Integrated Maritime Policy (IMP) created in 2007^{26,27} to enhance the EU maritime economy by facilitating the cooperation of maritime players across sectors and borders.

The development of a Common Information Sharing Environment for the EU maritime domain (Maritime CISE) is one of the key strategic objectives of the Union under EUMSS. CISE is currently being developed jointly by the EU Commission and EU/EEA member states. It will integrate existing surveillance systems and networks and give all concerned authorities access to the information they need for their missions at sea.

Among the regional strategies, the RAMOGEPOL Plan is an instrument of scientific, technical, legal and administrative cooperation with which the French, Monegasque and Italian governments implement actions towards integrated coastal management, prevention, and the fight against polluting events.

Specific national strategies on the maritime surveillance also exist at country level.



Strengths

- Monitoring of maritime and coastal areas is essential nowadays as the sea represents a primary source of energy resources, raw materials and food
- Mediterranean maritime domain is large and characterized by high geopolitical complexity: setting up a maritime surveillance program is definitively a priority for Europe
- Various funds and funding schemes are available to support the sector
- Transport and Safety - Specific national policies and strategies have been put in place by governments following EU directives, and supporting infrastructures are now available
- Illegal Fishery Control - Traceability of fishery vessels (both small and large scale) is now possible using available technologies

Weaknesses



- Limited sharing of Information between sectors and countries; obstacles to Maritime Surveillance data exchange in the legal framework of the countries
- Insufficient cooperation between civilian authorities (coastguards) and military authorities (navies), for example to improve the use of military data and information for civil operation purposes
- Bureaucracy and delays in public procurements due to the public nature of the Maritime Surveillance sector
- Lack of funds for investments, high cost of vessel's operations, increased Information and Communications Technology cost
- Regarding maritime safety issues, there is a lack of connection and coherence between large systems (CISE) and local ones (ports). Approaches and needs can be different
- Fragmentation of the market of security and surveillance products because of sectoral, institutional and legal differences within and between EU Member States.
- Big challenge in cooperation since the Mediterranean Sea borders over 20 countries from Asia, Europe and Africa.

Tools



Maritime Surveillance

Med Maritime Surveillance Cluster

A tool established by the PROTEUS project to exploit the growth potential of the Maritime Surveillance industry and of the overall socio-economic development of MED area. The Cluster aims to foster innovation and R&D capacities, knowledge and technology transfer among the involved key Maritime Surveillance actors, focusing on maritime security and safety mechanisms in the Mediterranean area. The Cluster offers customized services in order to identify and exploit technologies related to Maritime Surveillance and will achieve transferability.²⁶

National Nodes

The Cluster is linked to Nodes for territorial cooperation, which are sub-national/national networks of actors involved in Maritime Surveillance and interested to exploit technological/business potential, to organize match-making events, identify investors and funding opportunities.



Role of policy

Policy can help unlocking the development potential of the Maritime Surveillance sector by providing suitable and harmonized legal frameworks for the use of confidential data (between different countries). In fact, the most relevant legal issues related to Maritime Surveillance regard the use of personal data and confidentiality. An unavoidable amount of maritime reporting and surveillance data is qualified, in national legal frameworks, as confidential. The legal mechanisms concerning data protection (criminal and non criminal) differ from State to State and this issue constitutes an obvious barrier to achieve the desired standardization and consolidation of sharing procedures, notwithstanding the existence of the Directive on personal data.²⁸

Policy could contribute addressing the following perspectives for Maritime Surveillance in the Med:

- Voluntary Member States maritime information sharing (based on the concept of Maritime CISE)
- Compulsory information sharing among EU Agencies and Member States authorities
- Sectorial maritime information sharing services promoted by the EU Agencies.

In the Mediterranean area, maritime safety can however not be properly tackled without a strong cooperation with external countries, especially those of the southern shore. Strengthening cooperation and mutual trust among EU and Mediterranean countries is a fundamental part. Policy should play in order to support development of the sector. Despite the existing legal constraints concerning data use and sharing, it is indeed possible to create an actual practice of exchanging information in a timely manner, so as to enable prevention and suppression of illicit activity. To do so, trust between partner agencies from different countries is mandatory,²⁹ A full-fledged Maritime Surveillance approach for the Mediterranean region must address a multilevel perspective, involving EU, multinational, regional, and local levels of intervention.³⁰

Recommendations

National authorities responsible for Research/Development/Innovation should support further developments of Maritime Surveillance and the harmonization of the experience among Mediterranean countries, through:

- stimulating the development of innovative ICTs related to e.g. artificial intelligence
- encouraging the transformation of available technologies into real sharing data systems
- likewise, evaluating the extent to which multilevel governance can play a role for the development of the sector by involving local and regional authorities in the management and decision-making processes regarding the development of Maritime Surveillance for the private sector and Mediterranean SMEs
- increasing the participation of all Mediterranean countries in EU research projects.

National authorities responsible for the sector should work to allow and favor data exchange by:

- harmonizing the different national legislative frameworks and relevant competent institutions for Maritime Surveillance, while envisaging an increased role of local and regional authorities in supporting these processes
- identifying the entities and agencies at national level with responsibilities of law enforcement in the maritime environment able to carry and promote the interstate exchange of information
- promoting the definition of a European framework dedicated to maritime information sharing, envisaging the possibility to exchange data with non-EU states and endeavoring the possibility of a mixed public-private agreement to handle the question of property on commercial data deriving from the private sector

Funding and financial authorities should ensure support to all phases of Maritime Surveillance development and particularly:

- help financial sustainability of Maritime Surveillance clusters ensuring trust, openness, stability, accountability and positive external impacts on the territories
- provide funds and resources for Maritime Surveillance (e.g. back loans, public grants, monetary funding schemes, venture capital, etc.).

National authorities responsible for economic development should help promoting the Maritime Surveillance sector by enhancing SMEs capacity. This could be done for example through:

- promoting the creation of Maritime Surveillance clusters
- developing international agreements offering opportunities for new trades
- stimulating technology transfer from research to industry
- favouring public-private partnerships thus including engagement of investors
- promoting training of operators with appropriate skills e.g. able to manage complex platform systems and deal with big data processing.

Project partners

- National Interuniversity Consortium for Marine Sciences (CoNISMa)
- Association of Mediterranean Chambers of Commerce and Industry (ASCAME)
- Intermediterranean Commission of the Conference of Peripheral Maritime Regions (CPMR)
- Plan Bleu
- National Technical University of Athens (NTUA)
- University of Montenegro - Institute for marine biology



References

- [1] Union of the Mediterranean 2015. Ministerial Conference on Blue Economy http://ufmsecretariat.org/wp-content/uploads/2015/11/2015-11-17-declaration-on-blue-economy_en.pdf
- [2] European Commission 2018. The 2018 Annual Economic Report on Blue Economy, Directorate-General for Maritime Affairs and Fisheries, DOI 10.2771/305342.
- [3] Union for the Mediterranean 2017. Greening the Blue Economy.
- [4] Randone M. et al. 2017. Reviving the Economy of the Mediterranean Sea: Actions for a Sustainable Future. WWF Mediterranean Marine Initiative Rome, Italy. 64 pp.
- [5] Plan Bleu 2014. Economic and social analysis of the use of the coastal and marine waters in the Mediterranean, characterization and impacts of the fisheries, aquaculture, tourism and recreational activities, maritime transport and offshore extraction of oil and gas sectors. Technical report. Plan Bleu, Valbonne.
- [6] EUNETMAR 2014. Support to the development of sea basin cooperation in the Mediterranean, the Adriatic and Ionian, and the Black Sea.
- [7] Pianté C. e Ody D. 2015. Blue Growth in the Mediterranean Sea: the Challenge of Good Environmental Status. MedTrends project. WWF-France. 192 pag.
- [8] International Convention for the Safety of Life at Sea (SOLAS) 1974.
- [9] International Convention for Preventing Collisions at Sea 1972.
- [10] International Convention for the Prevention of Pollution from Ships (MARPOL) 1973.
- [11] European Commission 2014. European Strategy for more Growth and Jobs in Coastal and Maritime Tourism.
- [12] Directive 2013/53/EU on recreational craft and personal watercraft 2013.
- [13] European Commission 2014. Communication from the European Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions Blue Energy. Action needed to deliver on the potential of ocean energy in European seas and oceans by 2020 and beyond. 11 pp.
- [14] Pisacane, G., Sannino, G., Carillo, A., Struglia, M.V., Bastianoni, S. 2018. Marine Energy Exploitation in the Mediterranean Region: Steps forward and challenges. Frontiers in Energy Research, 6 (109), 17 pp. doi: 10.3389/fenrg.2018.00109.
- [15] Fotiadou A., and Papagiannopoulos-Miaoulis I. 2019. Introduction of Blue Energy in the Mediterranean: The Conceptualization of the Sea as "Space" and Emerging Opportunities for Greece and Mediterranean Countries. Frontiers in Energy Research, 7 (59), 5 pp. doi: 10.3389/fenrg.2019.00059
- [16] Francocci F., Paifelman E., Ciappi E., Cedre A., Le Corff C., Ruel C., Efstratiou C., Chrysa E., Falini G., Giannakourou A., Solano-Lopez J.M., Stroglyoudi E., Raddadi N., Pistocchi R., Valentini S. and Barbanti A. 2019. MISTRAL Blue Growth Book. State of the art assessment and overview on the most relevant drivers and opportunities in the Mediterranean Blue Economy. MISTRAL project, Deliverable D3.1.2; DOI 10.5281/zenodo.3242281
- [17] Nikolaidis, G., Karaolia, A., Matsikaris, A., Nikolaidis, A., Nicolaidis M., Georgiou, G.C. 2019. Blue Energy Potential Analysis in the Mediterranean. Frontiers in Energy Research, 7 (62), 12 pp. doi: 10.3389/fenrg.2019.00062.
- [18] MEDBLUE, 2019.
- [19] Soukissian T H, Adamopoulos C, Prospathopoulos A, Karathanasi F, Stergiopoulou L 2019. Marine renewable energy clustering in the Mediterranean Sea: the case of PELAGOS project. Front. Energy Res. Vol. 7, Art. 16.
- [20] Directive 2009 /28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC.
- [21] Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources.
- [22] MAESTRALE 2018. Deliverable 3.3.2. Blue Energy Potential in the Mediterranean Area. 298 pp.
- [23] Soukissian, T.H., Denaxa, D., Karathanasi, F., Prospathopoulos, A., Sarantakos, K., Iona, A., Georgantas, K., Mavrakos, S. 2017. Marine Renewable Energy in the Mediterranean Sea: Status and Perspectives. Energies, 10, 1512; doi:10.3390/en10101512
- [24] [38][40] Ruel, C., LeCorff, C., Marin, P., Herrouin, G., Mazzariol, F., Bedin, D., Kokkali, A., Adamopoulos, C., Veldeki, G., Soukissian, T., Struglia, M.V., Carillo, A., Pisacane, G., Sannino, G., Mikulčić, H., Stančin, H., Duić, N., Ktoris, A., Petrakides, S., Neophytou, M., Maragkidou, S., Murcia, C., Sole, J., Damasiotis, M., Perakis, C. 2019. Blue Energy action plan in Mediterranean. PELAGOS project. 57 pp.
- [25] European Union Maritime Security Strategy, 11205/14, adopted by the General Affairs Council on 24 June 2014.
- [26] PROTEUS project 2017. Prerequisite for the operation of a MS cluster. Deliverable D3.2.3.
- [27] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - An Integrated Maritime Policy for the European Union (COM(2007) 574 final)
- [28] Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data
- [29] BluemassMed project 2012. Cross-Border and Cross-Sectoral Maritime Information Sharing for a better knowledge and control of activities at the sea. Final report.
- [30] PANORAMED project 2019. Deliverable 6.2.1. Gaps and Growth Opportunities Report - Maritime Surveillance



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