

NON PAPER based on the CONTEXT ANALYSIS

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BUILDING A MARITIME STRATEGY FOR THE WESTERN MEDITERRANEAN

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1. INTRODUCTION

The Mediterranean Sea is a geopolitical centre lying at the interface of three continents, Asia, Africa and Europe. It has been long a hub for trade and culture exchange, and today it is a shared space for twenty-two neighboring countries, while it is transshipped and exploited by numerous third parties. Considered as a hotspot for marine biodiversity, the Mediterranean is also a disputed space, and a number of conflicts and tensions for the use of space and natural resources have lasted over time or emerge today. Following unprecedented uprisings, the “Arab Spring”, Northern African countries face today severe political challenges, incentivized by economic and social difficulties also shared by northern countries, hit by the 2009-financial crisis. There is therefore a need for cooperation for socioeconomic sustainable development, resource analysis and assessment, observation, monitoring and controls, as well as for the management of the goods and services provided by marine and coastal ecosystems.

The Mediterranean Sea is a huge resource and a precious asset, binding all countries in this region together, for centuries if not thousands of years already. In today's context, Blue Growth/Blue Economy is a powerful integration concept to harness the economic benefits from the oceans, seas and coasts in terms of sustainable economic development and employment. It can be used as a tool to bring a ‘renaissance’ to the region, building on its rich historical legacy but also based on lessons learnt from the recent past – including the economic and financial crisis which has hit the region hard. Inspired by recent milestones, such as the COP 21 - Paris Agreement closed in December 2015, the challenge is to find such sustainable pathways, which allow for long-term economic and employment growth, based on true value creation which benefits all.

1.1. Objective and scope

This paper aims to provide evidence and a basis for a true dialogue between partners, for the development of a possible Western Mediterranean Maritime Strategy which can bring hope and prosperity to this extra-ordinary sub-region of the Mediterranean basin.

In particular, the non-paper is to be regarded as a discussion document providing a context analysis to support the consultations and the development of the Strategy and its Action Plan and execute an Impact Assessment. Within the context of a possible Western Mediterranean Maritime strategy, the ambition is to find concrete areas of cooperation which help all countries and partners involved to move ahead. All too often, countries have been competing with each other – in areas of maritime transport, tourism, fisheries, or when attracting investment. There are however various areas where cooperation and coordination can bring important advantages to all, and where they can be a basis for innovation, creativity and original development initiatives that can be supported by public and private investment opportunities -- including those from European Funds, the International Finance Institutions and other donors.

1.2. Vision and principles - ASUR

The initial vision for the potential strategy is therefore to build on the Blue Growth concept – to bring sustainable maritime economic development to the sea-basin through an integrated approach. But the vision has to be shared with all Western Mediterranean countries in accordance with existing overlapping cooperation agreements (Barcelona Convention, UfM, 5+5, UMA). This vision is also to address the major environmental challenges of the sub-sea-basin, to transform existing economic activities into less polluting and resourceful activities, and to promote opportunities for green growth. Hence, the vision for the strategy is to merge *blue* and *green* into *azur*

development (*azul* in Spanish, *azur* in French, *azzurro* in Italian, *azraq* in Arabic) – a colour, which is so deeply characteristic of the sub-sea-basin already.

Safety and security are a prerequisite for such development – as well as for the continuation of the democratic, modernisation and peace process. Thus, the initial vision is also to have a safe (*sûre* (Fr), *seguro* (SP), *sicuro* (IT), *aamin* (AR) sea-basin.

Taken together, the initial vision is to build an *ASUR* sea-basin.

ASUR also stands for a number of principles which we wish to consider right from the start of this process:

A Attractive and authentic; we see a grand future for touristic and cultural as well as social experiences and exchanges which are based on the rich past and the specific characteristics and identity of the sub-region. This requires a long-term perspective for the region.

S Smart, sustainable and social. Smart refers to the need to build knowledge and capacities and deploy these to the future development of the region. Such developments follow the spirit of Smart specialisation – complementary developments, bringing innovation through existing activities. Sustainable implies the integration of economic, social and environmental aspects, again based on a long-term perspective. Social recognises the inclusive nature of such development, irrespective of gender, origin or any other basis for discrimination.

U Unified; the strategy should be built on Partnership and the understanding that the West-Mediterranean sub-region as a whole constitutes more than its parts. This has also implications for the governance of the sub-region and its existing cooperation frameworks.

R Resilient and open to Renaissance. The Western Mediterranean people have in the past always coped with numerous economic, financial as well as institutional and political crises, and have demonstrated an ability to resist and bounce back. The strategy is also an opportunity to rethink the current socio-economic foundations of the region, learn from past experiences and contribute to a renaissance of the region.

The ASUR vision and principles will be applied to chapter 3 of this non-paper, after having provided an overview of the state-of-play and the challenges of the Western Mediterranean sea-basin.

1.3. Overall process and use of this non-paper

This document is a so-called ‘*non paper*’ or *discussion paper*. Its aim is to put forward a number of facts and ideas to help initiate a process towards the development of a Maritime Strategy for the Western Mediterranean.

More concretely, this non-paper aims to:

- set the scene (context, stakeholders: institutional, socio-economic; potential for blue economy);
- identify existing governance and existing cooperation agreements, which could support the development of a maritime strategy in the Western Mediterranean;

- based on this identification (issues/areas/stakeholders/ governance/agreements), inform preliminary discussions with countries and open consultations in focus groups to be held in the first half of March 2016 throughout the region (Barcelona, Marseille, Rome, Tunis).

A Maritime Strategy for the Western Mediterranean can only be viable if it comes out of exchange and dialogue with stakeholders in the region and in accordance and consistency with the existing political initiatives at the regional, sub-regional and national level.

In this way, selected thematic areas and hotspots will be thoroughly discussed in the above mentioned four collaborative labs. These focus groups will bring together relevant stakeholders from the different maritime sectors and countries in the Western Mediterranean region.

From all the above, the purpose of this document is to be a 'starting paper' that will facilitate exchanges and stimulate debate among countries and stakeholders.

2. OVERVIEW OF THE SEA-BASIN

The Mediterranean Sea is split into two well-defined basins, the Western and Eastern Mediterranean sub-regions. Following regional trends, populations of Western Mediterranean countries have experienced constant growth over the past fifty years. Urban population also experienced significant growth (48% of total population living in urban areas in 1960 versus circa 67% in 2010), while the majority of this urbanization took place along the coast. Therefore, the growth of coastal cities of southern countries recorded high rates, e.g. the population of Rabat grew 10 to 15 times its size, Casablanca and Algiers 5 to 10 times, and Tunis 3 to 5 times. Today, a number of Mediterranean “megapolis” lie in Western Mediterranean coasts (e.g. Rome, Barcelona, Marseille, Algiers...).

2.1. Institutional overview

The Mediterranean Sea is one of the most complex areas in the world. A bridge between three continents, this narrow area is surrounded by twenty-two countries with various levels of development, whose relationships have been shaped by several millennia of wars and alliances, conquests and retreats. This history results in a genuine mix of tensions and cooperation. The “Mare Nostrum” provides a strong common heritage for all surrounding countries, and provides an opportunity to work together on the long term, regardless of short-term tensions. Studying a potential maritime strategy at sub-sea basin level requires taking into account existing governance arrangements, as well as active cooperation frameworks. Indeed, there are several of such arrangements across the Mediterranean basin, and specifically the West Med, with different geographical political and thematic scopes.

From a maritime point of view, the Mediterranean is a “enclosed or semi-enclosed sea”, where according to the UNCLOS Convention (Art. 123) “States (...) should cooperate with each other in the exercise of their rights and in the performance of their duties under this Convention. To this end they shall *Endeavour, directly or through an appropriate regional organization: (a) to coordinate the management, conservation, exploration and exploitation of the living resources of the sea; (b) to coordinate the implementation of their rights and duties with respect to the protection and preservation of the marine environment(...); (d) to invite, as appropriate, other interested States or international organizations to cooperate with them in furtherance of the provisions of this article.*

This cooperation is supported by the **Barcelona Convention**¹, one of the oldest regional sea conventions adopted in 1975 under UNEP’s umbrella. With a primary scope on marine environment, this Convention is the first official integrated governance initiative in the Mediterranean. Cooperation on specific thematic issues (e.g. fisheries) was already in place, for example within the **General Fisheries Commission for the Mediterranean**, launched under FAO in 1949.

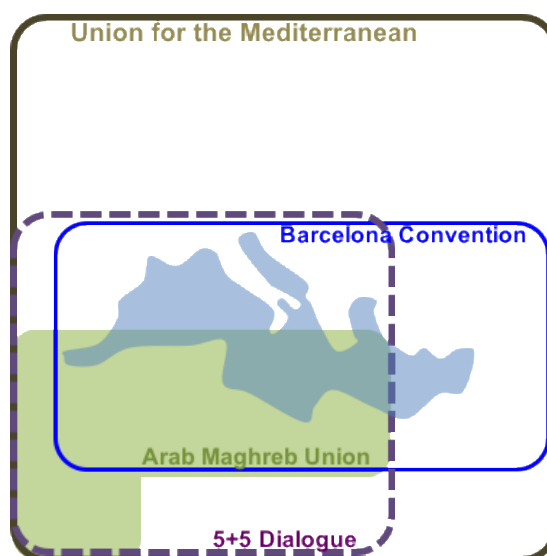
The implementation of decisions in these frameworks is influenced by the fact that only a few Economic Exclusive Area have been created, with no agreed delimitation leaving a large part of offshore areas beyond national jurisdiction.

The Mediterranean is both a bridge and a border between the European Union Member States, and the Northern-African countries. The sea-basin is therefore one of the major areas for the EU cooperation policy. The need for greater socio-economic cooperation has led to the creation of the **Euro-Mediterranean-Partnership** (1995), process that led to the launch of the **Union for the Mediterranean** in 2008.

¹http://ec.europa.eu/environment/marine/international-cooperation/regional-sea-conventions/barcelona-convention/index_en.htm

At the West Med “sub-basin” scale, the **5+5 Dialogue** has already been active since 1990 as a platform for cooperation between the five countries on the North of the West Mediterranean, on both sides of the Gibraltar Strait, and their counterparts in the South of the West Mediterranean (associated in the “**Arab Maghreb Union**”). Therefore, and with all the above, it can be claimed that there is a real tradition of cooperation on marine, maritime and related issues in the region, and several complementary regional and sub-regional initiatives could support a maritime strategy at sub-basin scale as an instrument for implementation of their own strategies. All of them have been studied according to the following aspects: members/stakeholders, scope, governance, maritime issues addressed and potential benefits of a maritime strategy for the institutions or organizations.

Figure 1: Main regional and sub-regional governance frameworks in the region



Bilateral² cooperation at national level is active on maritime issues in the sub-region between Spain, France and Italy and southern countries. Among the fields addressed through bilateral projects we can find, for instance, topics such as ports and maritime transport, ICZM, environmental management, research and education, fisheries and aquaculture.

Last but not least, the European Neighborhood Policy (ENP) and the European Territorial Cooperation Programmes within the European Structural and Investment Funds play a fundamental role in supporting cooperation channels and mechanisms across the sea-basin.

In particular, the European Territorial Cooperation Programme for the Mediterranean (The MED programme), together with its counterpart ENI-CBC MED have been actively supporting cooperation projects for a long period of time.

It is important to underline the fact that, within the MED Programme, its Priority Axis 4 is focusing on governance, trying to "support the process of strengthening and developing multilateral coordination frameworks in the Mediterranean for joint responses to common challenges", "opting for specific projects which can facilitate appropriate tools and mechanisms to ease the implementation of better governance and thematic integration in the Mediterranean". The two components of this process are thus:

² Country to Country cooperation, such as Italy-Tunisia or Spain-Morocco for instance

- a) to build a platform of national authorities, and
- b) to finance specific projects emanating from the work of the Working groups under this platform.

The current on-going process of identification of topics/strategic themes is relevant for the process towards a West-Med Strategy, and also for the possible funding of strategic projects under the strategy. Therefore, there is ample room for coordination/complementarities.

Other ENI and ETC Programmes that will have to be taken into consideration along the process include the following:

- IT/TN Italy-Tunisia
- IT/FR Italy - France 'Maritime'
- IT/FR Italy - France ALCOTRA
- ES/FR/AD Spain - France - Andorra
- ES/PT Spain - Portugal)
- IT/MT Italy – Malta
- South West Europe

A sub-basin strategy could give more coherence to actions which are today very scattered, and provide sustainability, which is currently often missing in projects operating under a strategic framework. In addition to this, it should provide more visibility to such bilateral actions, and help avoiding gaps and overlapping.

2.2. The Blue perspective: Socio-economic overview

Maritime economic activities in the West-Med: a GVA of 90 bn Euro and 2 million jobs

According to a socioeconomic assessment conducted in 2014³, five key economic sectors are seen to be the current maritime economic pillars in the Mediterranean region: fisheries, aquaculture, tourism and recreational activities, maritime transport and offshore exploitation of oil and gas. Taken together, these activities are estimated to annually generate in Mediterranean riparian countries close to 360 billion Euros in terms of production value, a GVA of 190 billion Euros and 4.2 million jobs (as for data ranging from 2008 to 2013). The assessment was carried out at regional and sub-regional levels. Among Mediterranean sub-regions, it was found that these five activities may generate in the Western Mediterranean the highest shares of both value and employment, close to 50% of Mediterranean numbers (Figure 2). Sub-regional results by economic sector also show that, in the Western Mediterranean, tourism and recreational activities, maritime transport and fisheries record the highest economic and social shares of the five human activities in the region (Figure 3).

³ Plan Bleu (2014) Economic and social analysis of the uses 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.

Figure 2: Contribution of fisheries, aquaculture, tourism and recreational activities, maritime transport and offshore exploitation of oil and gas to the national economies of the Mediterranean basin, at sub-regional levels.

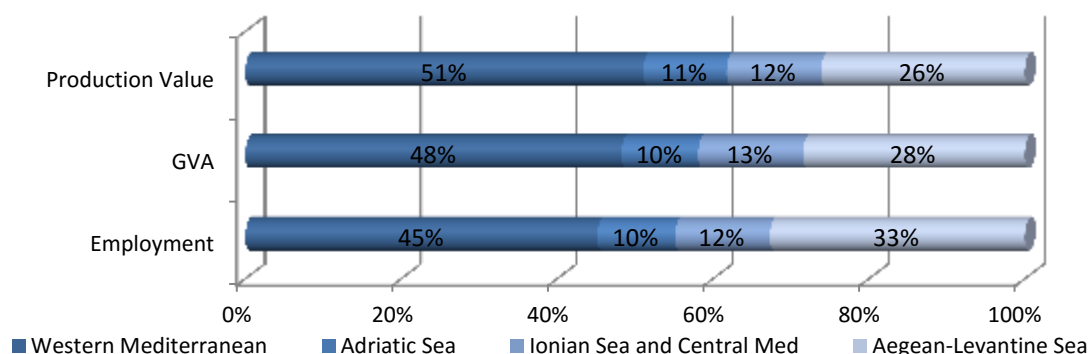
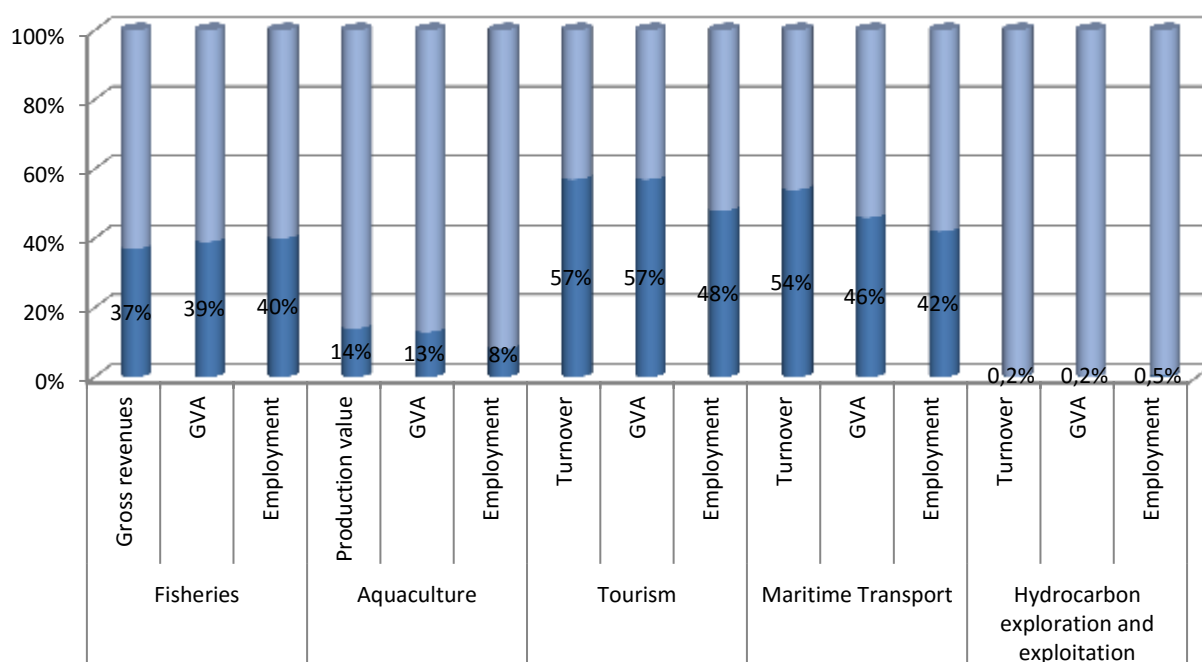


Figure 3: Economic and social assessment of five key relevant maritime sectors in the Western Mediterranean versus the Mediterranean Sea-basin



Maritime and coastal tourism: by far the highest numbers of visitors in the Mediterranean

Tourism is in the West-Med the number 1 activity in terms of turnover, GVA and employment. The Western Mediterranean is a traditional and consolidated tourist destination in the region, in particular its northern rim. It records the highest share of total tourist arrivals in the Mediterranean, with over 200 million national and international overnight stays in coastal areas in 2012 (60% of regional values). Coastal tourism generated a turnover close to 150 billion Euros and a GVA of 78 billion Euros, both accounting for almost 60% of regional figures. It provided 1.5 million direct jobs and over 4 million total (direct, indirect and induced) jobs (half Mediterranean numbers). It is worth noting that Spain and Italy are the countries concentrating by far the highest tourism turnover and GVA in the sub-region (75%) and, together with France, they account for 95% of the sub-regional figures.

Fisheries and aquaculture: not sufficient to feed all mouths in the sea-basin

Taken together, fisheries and aquaculture are the second most important activity in terms of GVA and employment. The Western Mediterranean catches represent circa 35% of total Mediterranean captures, and are mainly composed of small pelagic (sardine and anchovy make up close to half of total catches) and demersal species. The sub-basin shows the highest economic production values in the region: 1 200 million Euros (in terms of direct impacts) and 3 600 million Euros when considering the total global economic activity in sectors supported by fisheries, e.g. canning industries, manufacturing, financial services, etc. The sector's GVA has been estimated to be close to 850 million Euros, circa 40% of regional figures. 95 000 jobs are estimated to be provided by this sector, a significant figure also representing 40% of the total employment generated at the regional level. Nevertheless, the Western Mediterranean's is a net importer of fish: its trade balance showed a deficit of almost 2 billion Euros in 2009, corresponding to 0.5 million tons of net imported fish. It is also the sub-region that most exports. Countries contributing the most to trade deficit are Spain and France (together, 75% of fish imports in tonnage and value), yet they also represent 75% of exports. Morocco, in contrast, is the sole country showing a high fish surplus, although this figure corresponds to its Atlantic production.

The sub-region shows a rather discrete share regarding the regional aquaculture production, value and employment (10%, 13-14% and 8%, respectively). These modest results are explained by the high numbers of aquaculture production in the Aegean-Levantine basin, by reason of the high production in Greece and Turkey and particularly to the huge Egyptian production. In the Western Mediterranean, the highest numbers come from Italy, Spain and France, where the aquaculture industry is varied and well-developed. Main marine species produced in terms of volume are the blue mussel along with finfish (e.g. gilthead sea bream and European sea bass). Marine and brackish aquaculture generated in 2011 gross revenues of 350 million Euros and a GVA amounting to circa 250 million Euros. The direct contribution to employment reached 10 000 jobs.

On the other hand, the exploration of the sea and exploitation of its marine biological resources are slowly beginning to reach new horizons and a wide range of uses and applications. Far from completed, the emerging marine biotechnology sector has begun to exploit the large biodiversity offered by marine environments by identifying new chemical compounds, and today circa 20 000 marine-derived natural products have been identified (versus over 155 000 natural, terrestrial products). Such emerging compounds have a vast biotechnological potential in diverse fields of industrial application, i.e. fine chemistry, pharmaceutical and cosmetic industries; uses of biotechnologies and nanotechnologies for the maritime transport; medical applications, i.e. manufacture of anticancer drugs and as part of biosensor for immunoassays, vaccine development, biomedical activities, etc.; bioinformatics, gene and enzymes databases; or even offer opportunities for harvesting and for aquaculture alternatives (e.g. jellyfish commercialisation).

Maritime transport: most intense in the West-Med

Maritime transport activities are most intense in the Western Mediterranean. Goods transport (circa 700 million tons freight and 14 million TEU traffic) represent close to 40% of Mediterranean values. The sub-region accounts for almost 200 ports and terminals located along its coasts, which represent a third of total ports of the Mediterranean Sea. Most of the Mediterranean top ports in terms of port calls, container throughputs and freight transport are also located in this sub-region, mainly on its northern shores (e.g. Barcelona, Fos-Marseilles, Algeciras, Leghorn, Genoa, Strait of Gibraltar, Gioia Tauro, Augusta, Tangier, Valencia, Algiers, La Spezia...). Spain accounts for 38% of the freight transport in the sub-region, closely followed by Italy (28%) and Algeria (17%).

The Mediterranean Sea offers a route for exchange of manufactured products between Asia and Europe. Energy products account for 25% of the goods tonnage. Crude oil and LNG trades are concentrated around a relatively

small population of load and discharge ports and routes in the Western and Central Mediterranean basins. Crude oil shipments, from the Black Sea, Egyptian ports and the Persian Gulf to Mediterranean destinations and ports west of Gibraltar Strait dominate major traffic lanes. Regarding the LNG sector, North African exports to other Mediterranean destinations predominate. LPG trades are concentrated around a relatively small number of load and discharge ports but intra port activity is highly fragmented; the top 20 laden routes represent only 16% of LPG carried in the Mediterranean.

Italy represents 45% of total container traffic, closely followed by Spain (39%). In the southern rim, Algeria, Morocco and Tunisia together represent 5% of container throughput. 50 million passengers are registered to transit the sub-region, 30% of total regional flows. Italian ports record the highest passenger flows (65%). Maritime transport's revenues in the Western Mediterranean are estimated to be close to 40 billion Euros and to generate over 12 billion Euros GVA, a significant 50% of total regional numbers. The sector is estimated to provide annually over 270 000 direct jobs (as for data ranging from 2009 to 2011), a third of total jobs created by maritime transport activities in the Mediterranean Sea.

Offshore exploitation of oil and gas still minor activities

The Western Mediterranean shows a negligible share of the offshore hydrocarbon production sector in the Mediterranean. There is only a small offshore production zone in Spain, with a slowly decreasing production. Algeria is currently the largest producer in the Mediterranean for oil and gas (73 mega toes of oil and 73,4 mega toes of gas produced in 2012), yet its current production is located only onshore. Libya's offshore and onshore oil production the same year almost reached Algerian values (71.10 mega toes).

Today, offshore production is located in waters of Egypt, Libya, Tunisia and Italy, and to a lesser extent, in Israel, Croatia and Spain. Libya, Algeria and Egypt hold together more than 94% of the Mediterranean's proven oil reserves (Libya alone accounting for 69%) and over 92% of the total proven natural gas reserves (Algeria accounting for 50%, although it remains largely under-explored).

2.3. The green perspective: Environmental overview

Environmental state: acute and chronic impacts of human activity

Human activities taking place in the Western Mediterranean involve a number of environmental pressures causing high or very high impacts in marine and coastal ecosystems. Maritime but also land-based activities -including in particular the industrial sector- along with a progressively more urbanized coastline are at the origin of a wide spectrum of environmental pressures, ranging from air and water pollution releases to waste generation, and causing a reduced biodiversity and loss and degradation of marine and coastal habitats, contamination, eutrophication phenomena, changes in coastal dynamics, marine litter and noise. Global warming further contributes to jeopardising marine resources and compromising their sustainability (UNEP/MAP 2011 and 2012).

Environmental pressures and impacts have been summarized for the Western Mediterranean basin to understand the interaction between economic, social and environmental systems. The analysis of potential changes and trends of socioeconomic sectors might give an indication of how related pressures might develop, and the level of urgency to mitigate them. Further efforts are therefore needed to characterize in more detail environmental pressures (magnitude, occurrence and persistence) and their impact degree (acute, chronic) both on environmental and socioeconomic systems.

Overexploitation of commercial fish stocks

Overexploitation of fishing resources is ranked among most important pressures in the region, along with biodiversity and habitat loss and chemical contamination. Overexploiting fisheries alter natural dynamics of commercial stocks, affect marine biological diversity and contribute to habitat damaging. Most stocks are outside safe biological limits (up to 80% according to EEA). Pressure on commercial fish stocks is mainly driven by fisheries, yet some aquaculture farmed species are fed fish-derived diets, increasing the pressure on wild fish populations.

According to FAO-FishStat data for 2011, total fish landings in the Western basin may have achieved close to 340 000 tons, 35% of regional catches (Plan Bleu, 2014). Small pelagic and bottom species make the bulk of the declared captures (70%). Regarding their spatial distribution, in average 70% of landings are recorded in countries surrounding the Alboran-Balearic Sea, 20% in the Tyrrhenian Sea and 10% in the Gulf of Lions. In addition, captures of overexploited or very relevant species out of total fish landings in Western sub-basins reach important shares: 38% in the Alboran-Balearic Sea, 46% in the Tyrrhenian Sea and 34% in the Gulf of Lions⁴. In the last decade (2000-2011), landings in all three sub-basins have experienced decreases, particularly relevant in the Gulf of Lions and the Alboran-Balearic Sea, which landed in 2011 66% and 17% less fish by comparison to catches reported in 2000.

Loss of biological diversity

The Mediterranean basin is considered as a biodiversity hotspot (7-8% of known marine species vs. 0,8% of the planet's ocean surface) and records high levels of species endemism (UNEP-MAP RAC/SPA, 2010). Species diversity in the Mediterranean increases from east to west: 43% of known species occur in the Eastern basin, 49% in the Adriatic, and 87% in the Western Mediterranean. The Western basin shows also more endemic species than other regions and a wide array of habitats: seagrass beds, rocky shorelines, frontal systems, estuaries and deltaic systems, underwater canyons, deepwater coral assemblages and seamounts. The basin also supports the greatest diversity of marine mammals, sea turtles and seabird life (Coll et al., 2010; UNEP/MAP RAC/SPA, 2010).

Loss, fragmentation and degradation of ecosystems and habitats as direct or indirect results of human activities are among Mediterranean ecosystems' main threats, applying to all taxonomic groups and to all basins. Seagrass meadows and coralligenous communities are the most important and productive Mediterranean habitats, in particular endemic *Posidonia oceanica*, considered the most important of the five Mediterranean seagrass ecosystems. *Posidonia* meadows decline in many areas due to pollution, coastal development, pleasure boating, fishing activities and NIS (e.g. macroalga *Caulerpa taxifolia*). It has completely disappeared from Toulon (France) and the Gulf of Gabes (Tunisia), and its deterioration degree ranks 90%, 52% and 20% in Marseille (France), Alicante (Spain) and the Ligurian Sea, respectively (UNEP/MAP 2012).

Many animal species are also threatened in the basin, in particular emblematic species (e.g. mammals, reptiles). Several species of marine mammals have reached dangerous low population levels, particularly the Mediterranean monk seal, listed by IUCN as "Critically Endangered", which is believed extinct from the Western Mediterranean. Common bottlenose dolphin, shortbeaked common dolphin and striped dolphin populations are considered as "Critically Endangered", as well as the sperm whale. Regarding reptiles, loggerhead, leatherback and green turtles are becoming increasingly rare and are also included in the IUCN Red List. Some cartilaginous fishes (of commercial importance) are equally considered as "Critically Endangered", e.g. sharks, rays, and chimaeras.

⁴ The list includes Dolphin fish, European anchovy, European hake, Red mullet, European pilchard (Sardine), Norway lobster, Deep-water rose shrimp and Common Pandora, and is based on the GFCM scientific assessments.

Overall, there are considerable knowledge gaps on marine species and habitats in the Western basin. Existing knowledge is patchy in distribution. The UNEP/MAP SPA and Biodiversity Protocol identifies over 100 Mediterranean species of special conservation interest, but even the information on these species and their habitats is limited. The status of a number of Mediterranean species is of concern, yet there is still insufficient information to determine whether there has already been a loss of genetic biodiversity.

Pollution by hazardous substances

Chemical contamination makes up another critical environmental concern in the Western Mediterranean. Globally, estimates point out that land-based sources and atmospheric inputs from land industry sources contribute 80% to marine chemical pollution, while the maritime transport sector accounts for 10% of human sources of marine contamination.

UNEP/MAP issued in 2011 and 2012 two overviews targeting the spatial distribution and trends of heavy metals and persistent organic pollutants (POPs) in Mediterranean coastal sediments and biota. The assessments revealed high metal concentrations in the northwestern part of the basin, along the French coasts (in the areas of Marseille-Fos and Toulon), the coasts of Spain (Barcelona, Cartagena and Malaga), and along the western Italian coast (Naples and the Gulf of Genoa), both in sediments and biota. In southern shores, high concentrations are also recorded in sediments of Tunis and Bizerta lakes (northeastern Tunisia), off Moroccan coasts (Tangier-Martil and Nador) and in the area of Skikda (Algeria).

POPs are also a matter of concern in the Western basin. Chlorinated pesticides are found in moderate concentrations both in northern and southern shores, including estuaries (Rhône and Ebro rivers), ports, bays and gulfs (Barcelona, Marseille-Fos, Liguria, Nador Lagoon, and the bays of Algiers, Tunis, Naples, among others). Regarding PCBs, areas of concern include northwestern coastal areas -in the vicinity of industrial, urban sites and wastewater discharges-, especially near the cities of Barcelona, Marseille and Genoa, and along the coastal strip from Livorno to Nice. River inputs (Ebro and Rhône) represent the most important source of contaminants (both industrial and pesticides) to the basin.

Oil and Polycyclic Aromatic Hydrocarbon (PAH) pollution entering the marine environment is one of the shipping sector's main pressures. Satellite images allow the identification of oil spill hotspots, generally correlated with main shipping routes. In the Western Mediterranean, these are located along the major west-east axis connecting the Straits of Gibraltar and the Sicily Channel, and along the routes towards major discharge ports of the Ligurian Sea and the Gulf of Lions. REMPEC reported that in the last decade (2000-2009) nearly half of the accidents leading to significant spills in the Mediterranean (> 100 tonnes) occurred in the Western Mediterranean, and as a result 4 200 tons of oil entered this basin.

Despite MEDPOL monitoring efforts, the distribution of information is not ideal as the spatial coverage of existing data is insufficient and some southern regions appear underrepresented. In addition, short time series and differences among sampling conditions mean that most available pollution data are not adequate for robust trend analysis.

Eutrophication phenomena

Globally, the Mediterranean Sea is considered as an oligotrophic sea, characterised by very low nutrient concentrations. However, some coastal hotspots receive excessive loads of nutrients from sewage effluents, river fluxes, aquaculture farms, fertilisers and industrial facilities, resulting in intense eutrophic phenomena with adverse effects for the marine ecosystem and humans. Eutrophication in the region is mostly limited to coastal areas, enclosed bays, river estuaries and coastal lagoons with restricted water exchange with the open sea.

Although eutrophication has been more intense in the northern part of the Western basin (i.e. the Gulf of Lions), special attention must also be given to the southern part: here, the population is steadily growing, certain agricultural and industrial activities are rapidly developing, and sewage treatment facilities are still lacking. EEA and UNEP/MAP have pointed out that a number of Mediterranean countries have reported on medium-level eutrophication phenomena, among which, five coastal countries of the West Med sub-basin (Algeria, France, Morocco, Spain and Tunisia), generally near major cities.

Invasion of non-indigenous species (NIS)

Circa one thousand NIS have been recorded in the Mediterranean Sea (Zenetos et al., 2012). In the Western Mediterranean, over 300 NIS are found (vs. circa 800 in the Eastern Mediterranean). While in the Mediterranean Sea over 50% of marine NIS were probably introduced by corridors (mainly Suez Canal), in the Western basin maritime traffic (principally, ballast water taking on and discharging) and aquaculture activities are the main vectors for the introduction of all NIS groups (60% and 35%, respectively). A small fraction (ca. 15%) of NIS might have entered through corridors, although these show a slow but steady spreading progress over the basin.

The issue of invasive species and their effects is often underestimated and adequate prevention and mitigation measures are lacking due to lack of information. If established in the new environment, NIS may cause enormous damage to ecosystems, livelihoods and human health, and they are one of the most important causes of biodiversity loss as they overrun natural local species. Despite deployed efforts regarding identification and taxonomic classification, the knowledge gap on the processes and impacts of marine biological invasions demands important areas of action and cooperation as well as further research, to put in place adequate monitoring systems (in synergy with current efforts), create and keep updated an inventory of all marine NIS, as well as research on NIS life cycles and ecological and economic consequences.

Coastal artificialisation

Intensive urban growth and tourism development in coastal fringes have already caused major damage to coastal ecosystems. Artificial surfaces occupied by housing, services and recreation in coastal zones (ports, marinas, transport, waste and water treatment facilities, etc.) and the armouring of shorelines by coastal defence equipment and ports lead to alterations in coastal landscapes, destruction of coastal habitats, changes in local hydrodynamics and coastal erosion. CORINE coastal data has shown that, by the end of the 1990s, 1 500 km of the EU Mediterranean coast had been transformed to “artificial coast”, in the Western Mediterranean mostly concentrated in the Balearic Islands, the Gulf of Lions and Sardinia. European harbours accounted for 1.237 km of this total. Over 60% of the French Mediterranean coastline might already be sealed and artificialized (data from PACA Water Observatory).

Even for EU states, the lack of information and difficulties in analysing dispersed data have been obstacles to assessing the status and trends of coastal artificialisation and erosion. On the northern part of the basin, CORINE data have been used to produce an inventory of high ecological natural sites affected by coastal erosion. The Gulf of Lions, the Ligurian and the Tyrrhenian coasts contain many of such sites.

Emerging concerns: underwater noise and marine litter

Cetaceans, seals and fish species are affected not only by chemical pollution but also by noise, which has become a ubiquitous form of marine pollution in particular in areas of heavy maritime traffic and along developed coasts. Underwater noise is hence a growing concern in the Western Mediterranean: on one side, its northern part (Gulf of Lions, Tyrrhenian, and especially the Ligurian Sea, which registers high species richness) along with coastal

waters off the Algerian coast record the highest numbers of cetacean frequentation in the basin; on the other side, the region shows the greatest level of vessel activity, and is expected to intensify in the coming years. Ship traffic does not generate very intense noise, yet remains constant over time and affects large areas of the marine environment posing a serious hazard not only to individuals but also to entire populations, and may alter species' spatial distribution (UNEP/MAP 2011 and 2012).

Regarding marine debris, conducted studies in the Western basin show that litter concentrate more in bays than in open areas, and in shallow coastal areas rather than in deeper waters. However, only a tiny fraction of the (deep) seafloor has been surveyed to date. Although litter has been found at all surveyed locations (e.g. off Catalan coasts and canyons, Gulf of Lions, Algero-Balearic basin) high densities have been found at its north-western part and on the continental slope. In addition, litter has been found from shallow waters to the seafloor, even at much higher densities than at the surface. Despite a general spatial pattern showing increased litter density in coastal marine locations, low litter densities in near-shore sites (e.g. Gulf of Lions) suggest that factors such as geomorphology, hydrography and human activity affect litter distribution and accumulation rates. Large amounts of litter reaching deep ocean floors is a major issue, yet little is known about sources, spatial distribution patterns, abundance and impacts on habitats and associated fauna. Standardised, large-scale assessments need to be done to fully understand the magnitude of the issue and set the necessary actions to prevent the accumulation of litter and derived environmental concerns in the marine environment (Pham et al., 2014).

2.4. The Asur perspective: Trends, opportunities and challenges for the West-Med

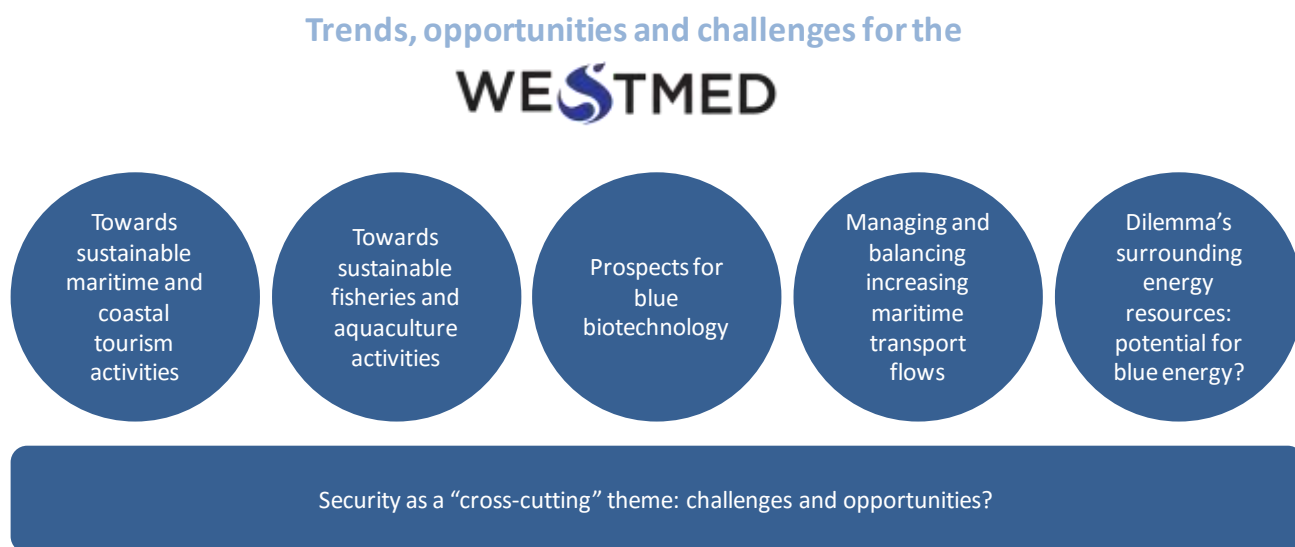
The EU Blue Growth strategy constitutes the maritime dimension of the EU Europe's 2020 Strategy (Europe's ten-year jobs and growth strategy) launched in 2010 to create the conditions for a smart, sustainable and inclusive growth. The concept of blue growth has been raised as a renewed and more sustainable blue economy, aimed to support sustainable growth in the marine and maritime sectors of European regional seas and based on productive but healthy seas and oceans.

From the above, and building from previous sections 2.2 and 2.3 providing a general picture of the present blue and green perspectives (socio economic and environmental context for the West Med), an initial set of trends and value chains able to generate sustainable growth and jobs in the future is presented below so as to boost and stimulate related sectors in the EU context, including sustainable tourism, sustainable aquaculture, prospects of blue (sustainable) biotechnology , blue (renewable) energy, exploitation of marine mineral resources and, finally, maritime transport , which is also to be considered in the framework of a blue, sustainable and smart maritime growth in the Mediterranean, given its current paramount importance and future perspectives in the region.

These value chains are all affected by one common challenge that has an impact throughout the area, which is maritime safety and security, considered as an essential prerequisite for the sustainable development of a range of relevant "blue" economic sectors, and a fundamental factor of the vision for the West Mediterranean as discussed in this non-paper.

A figure illustrating the identified five value chains and the cross cutting element on security follows:

Figure 4: Trends, opportunities and challenges for the West Med



Towards sustainable maritime and coastal tourism activities

During the last decade, the Western Mediterranean experienced increasing overnight stays, briefly interrupted by a drop in 2009 as a consequence of the financial crisis. Today levels have recovered and even exceeded 2008 values. Current analyses on future trends indicate that North African countries may undergo a significant increase in tourism activities in the coming years. In particular, Morocco and Tunisia tend to present more dynamic growth patterns than mature destinations (France, Italy, Spain), with tourism activities spreading along their coastlines, specifically in areas with important biodiversity characteristics attractive for tourism.

Several key factors may condition tourism development in the coming years: i) the investment in tourism equipment and infrastructure along with the on-going democratic processes in southern countries; ii) the efficient and innovative use of information and communication technologies (ICTs) by developing countries, which may contribute to a more equitable distribution of tourism benefits among the sector actors; iii) the development of new products and services (e.g. nautical, medical, religious and cultural tourism and cruises) and the re-examination of the Mediterranean brand identity as a "sea, sand and sun" destination; and iv) security and adaptability to climate change, which will strongly influence the development of the tourism sector. Political instability has devastating effects on international arrivals (as they have been observed in recent years). However, current events seem to come along with democratic processes, what is generally favorable to the development of tourism. On the other side, impacts of climate change, related to sea level rise, as well as water and energy availability could also seriously affect the sector. This should be countered by the development of renewable energies, eco-building, eco-mobility and eco-transportation, coastal management, oasis and desert development.

Challenge:

Driving the tourism sector environmentally sustainable, reinforcing social cohesion and cultural and economic development while enhancing Mediterranean environmental and cultural diversity and specificities.

Potential areas for cooperation:

- Manage increasing tourism flows and promote optimal seasonal and spatial spread, both within and among countries (coastal versus hinterland destinations, northern versus southern Western Mediterranean countries), e.g. through the use of ICTs.

- Addressing adverse tourism pressures and impacts (optimizing energy and resource inputs, waste management, limiting coastal artificialisation, etc.) through knowledge exchanges and sharing of best practices;
- Develop a coordinated research net regarding the assessment of the *carrying capacity* of territories in terms of tourism inflows;
- Develop Marine Spatial Planning to avoid conflicts with other uses and impacts on Mediterranean sensitive ecosystems (e.g. anchoring on *Posidonia oceanica* meadows, etc);
- Develop common standards to foster sustainable practices within the sub-region and thereby a sustainable tourism “brand” in the Western Mediterranean.

Towards sustainable fisheries and aquaculture activities

The Mediterranean fishing industry is today experiencing smaller catches and facing an uncertain future. Over the last century, fishing pressure has increased rapidly, shifting from primarily artisanal and coastal into an intensive and occasionally semi-industrial exploitation. Growth of vessel's power and increased technological equipment has caused exhaustion of fish stocks and alteration of ecosystems. As a result, since the early 90s the region has seen declining fishing catches while fish demand has experienced a constant growing trend, originating a deficit between imports and exports. The Western Mediterranean fishing fleet registered circa 20 000 vessels in 2008. To shift towards a more sustainable scenario and maximize sustainable economic rent, it has been estimated that fishing capacity would need to be trimmed significantly, and that only half of the current employment would be needed; however, the socioeconomic importance of the artisanal fleet for coastal communities should be considered, versus the semi-industrial and industrial fleets, which may need to be more strictly managed. The scientific consensus is that, without addressing this issue, several stocks will suffer a critical collapse, entailing socioeconomic consequences on trade and coastal livelihoods and the subsequent increase on imported seafood; as well as environmental costs deriving from an impoverished marine biodiversity and altered trophic webs.

Aquaculture is a promising sector for the Western Mediterranean. Southern countries in the basin have small aquaculture industries but show growth potential for the coming years, particularly Algeria, Morocco and Tunisia. Italy, Spain and France have already large and well-organized aquaculture sectors, based on the traditionally buoyant blue mussel production and the increasing finfish culture, and are leading producers in the region. Total aquaculture production in northern countries has however levelled off on account of lack of new suitable areas for mollusc or fish farming, by reason of geographic or environmental issues, competition for coastal space with other users, or regulations and governance issues. Opportunities for expansion may be driven by the development of new and more environmentally friendly production techniques; and the establishment of rearing cages in the open sea.

Challenge:

Turning fisheries and aquaculture activities into blue (environmentally sustainable) sectors through an adequate management framework for environmental resources, pressures and impacts.

Potential areas for cooperation:

- Considering that most fully exploited or overfished commercial fish stocks are shared by two or more countries in the basin, should stock management be carried out at the sub-regional level?
- Which, and in which manner, should cooperation measures and tools be implemented to manage fish stocks at the sub-regional level?
- Creation of a research net fostering research and knowledge exchange as well as sharing of good practices regarding fish stock management and sustainable aquaculture;

- Differentiation of the sub-region's aquaculture products: improve the quality and safety of products, particularly in southern developing sectors, to create a "quality label" for Western Mediterranean products indicating a safe and sustainable aquaculture, for both local markets and exports. How could large producers (Spain, France and Italy in the region) be involved?

Prospects for blue biotechnology

Exploitation of marine biological resources can well be extended beyond fisheries and aquaculture. Prospects emerge in this domain for a highly innovative sector requiring research investment and knowledge generation. This emerging sector has until now only been weakly developed in the sub-region, which is mainly due to limited research in this domain. Given the high biodiversity of the basin and potential market for blue biotechnologies, the sector is likely to have growth potential especially for northern countries, in particular in countries conducting scientific research on marine organisms (e.g. Spain, France and Italy). Research projects are also being carried in countries from the Southern rim. Several factors may favor the consolidation of the sector as a sustainable and economically viable activity in the region in the mid-term: further investment in marine research, as well as in product development; driving of public and private investments; and the development of an adequate specific governance framework for this activity. Cooperation may be challenged by a sector development based on confidentiality practices as well as by competition for patents, not only among countries, but mainly among private companies.

Challenge:

Develop knowledge and research to encourage the sustainable exploitation of marine biological resources.

Potential areas for cooperation:

- Is cooperation possible in the context of a sector dominated by companies competing for patents?
- Assessment of the governance principles that are key in decision-making, and develop an adequate governance framework, policy instruments and appropriate management tools for a coordinated development of (sustainable) aquaculture and blue biotechnology;
- Assess the potential socioeconomic importance of seafloor biodiversity;
- Stimulate knowledge generation through basic scientific research on the interactions of marine organisms and ecosystems.

Managing and balancing increasing maritime transport flows

The maritime transport sector in the Mediterranean Sea was well-developed before the 2009 financial crisis and, although hit by it, it tends to recover rapidly. It is expected that shipping routes in the basin increase in the following years, both in number and traffic intensity. Although the relative importance of eastern Mediterranean ports will rise, the greatest level of vessel activity is expected to keep concentrated around western and central Mediterranean ports. Regarding energy resources, North European demand is likely to be answered by an increase in LNG transits via the Mediterranean from gas fields in the Persian Gulf and the Far East; in this case, the density of LNG tanker deployment around the Italian coastline may significantly increase. The future of non-bulk transport of goods (which reported the highest growth over the last decade) may depend upon factors such as economic growth, energy and CO2 prices, and the various transport policies integrating infrastructures (e.g. use of equipment, commercialization and regulation).

Regarding the Western Mediterranean's southern rim, it is of note that the Moroccan port sector is undergoing a significant reform since 2006. It currently represents 2% of container flow in the sub-region yet a growth in port activities is expected in the coming years. In contrast, Algerian ports appear saturated and in need of infrastructure renovation. Algeria also accounts for 2% of traffic in the sub-region, although container flows have

been in constant increase since the mid-2000s. With the exception of oil and gas terminals -the Algerian economy mainly relies on the energy sector and oil and gas make up the bulk of exports- the maritime transport and port sectors have received rather little investment. Since almost all Algerian international trade moves by sea, a reorganization and modernization of ports is planned to meet current demands and facilitate trade and transport. Given the potential of the sector and the strategic location of the country with respect to Mediterranean maritime routes, a recovery of the Algerian maritime transport is expected.

Challenge:

- Territorial cooperation between countries needed to increase sector's competitiveness and sustainability, effectively integrating ports with the hinterland, ensuring multimodal transport (coordinated land transport infrastructure lying behind the port facilities, i.e. road, rail and, in some cases, air) and improving territorial cohesion.

Potential areas for cooperation:

- Improve governance to optimize and rationalize traffic intensity, management of ports and coordination between stakeholders;
- Examination of the options for the organization of logistics platforms and intermodal transport to optimize access to ports and foster mobility solutions;
- Foster knowledge exchanges between private and public partners in the maritime sector on how to increase the sector's competitiveness: develop observatories as databases at the disposal of the different sector stakeholders, to serve as open-access information centers and respond to the needs of the various actors and share best practices. Information-exchanges to be established between countries to improve coverage, working practices and overall awareness of vessel activity in the Mediterranean;
- Ensure security and develop monitoring and surveillance programs (regarding environmental and security concerns) to ensure accident prevention and response, detect illicit pollution and illegal activities and transits, as well as to avoid congestion and foster safer transportations.

Dilemma's surrounding energy resources: potential for blue energy?

Hydrocarbon (oil and gas) will remain the dominant fuel in the Mediterranean over the coming years. Exploitation of energy resources in the Western Mediterranean is today limited to hydrocarbon exploration and exploitation. Offshore production is restricted to a small declining production zone in Spain. Exploration licenses on large and deep to ultra-deep areas have been granted both in France and in Spain. Spain has recently granted a very large exploration license in the slope of the Gulf of Lions shelf named "Nordeste", a large part of it located in an area belonging to the EEZs claimed both by France (2012) and Spain (2013). Exploration activities in EU waters are facing strong environmental opposition, due to their recognized ecological sensitivity, their seismic instability and their ultra-depth. Moreover, production in these areas would very expensive, and, therefore, production might be delayed to 2030, if not dropped out. Regarding southern countries, Algeria is currently the largest oil and gas producer in the sub-region and, although its production is located only onshore, its offshore is being explored and considered as a promising deep water frontier. The state-owned company planned to start drilling offshore in 2011-2012. Morocco and Tunisia may also have potential for hydrocarbon exploration and exploitation on their continental shelf, but the sector has not been developed yet.

On the other hand, the Mediterranean offers a high potential for developing renewable sources of energy such as solar on land, alternative to carbon-based finite energy sources. On sea, among wind, wave, tidal, biomass and thermal energies, offshore wind power generation is the most developed sub-sector and could meet a significant share of the human electricity demand, although at present offshore wind technologies remain at an early stage of development. Although offshore wind projects might be undergoing authorization processes for Spanish and

Italian coasts, France is the only country having granted in 2014 a license to gradually develop and operate floating wind turbines at the Mistral site, off the Fos-sur-Mer coasts, for a total capacity of 26 MW in 2030.

Challenge:

Develop and gradually increase the sub-region's share of energy production based on maritime renewable resources to meet increasing demands.

Potential areas for cooperation:

- Foster research regarding the improvement of renewable energies' performance, i.e. offshore wind, but also thermal, tidal, wave...
- Delimitation of adequate maritime zones (MSP) to manage conflicts with other activities (fisheries, tourism, transportation...).
- Develop research to anticipate potential environmental impacts derived from both renewable energy sources and deep-water exploitation of hydrocarbons and develop adequate management mechanisms;
- Develop surveillance, monitoring programs and technical assistance to ensure security and environmentally safer activities;

Security as a “cross-cutting” theme: challenges and opportunities?

Security is certainly an essential prerequisite for the sustainable development of a range of relevant “blue” economic sectors, and an essential element of the vision for the West Mediterranean as discussed in this non-paper (Chapter 1). Security, both physical and environmental, is for example a pre-requisite for sustainable tourism development. Growing concerns of personal safety, in fact, are currently threatening the full mobility of visitors across the basin, as an “authentic” experience needs to be based on sense of safety, as well as the assurance that offered services and activities can protect and valorize local cultural and natural environments. Physical and environmental security are also essential pre-requisites for a sustainable development of new energy sources, as perception of unsafe and polluting activities will certainly provide an obstacle to the development of potentially promising renewable energy technologies in the basin. Safe and environmentally-secure infrastructures are finally a core asset for the sustainable development of an “ASUR” West Med strategy, and future investments should focus on how to promote smart infrastructures which could assure such requisites.

“Maritime security” (e.g. systems and equipment, services, integrated maritime surveillance)⁵ is a sector in itself, still to be properly developed and sustained, and with strong economic potentials and return of investments across the EU. The current focus of EU and national policymakers on physical protection, legal migration and monitoring of potential negative externalities of human activities across the sea, in fact, provides a growing demand for smart and innovative security technologies. The extent to which such potentials could be captured by a dynamic economic ecosystem across the West Mediterranean (i.e. research and innovation centers, businesses and other local actors) is certainly an aspect to be tested with stakeholders, and an element to be discussed within the potential West Med strategy.

Challenge:

Further support to physical and environmental security is an essential prerequisite to boost a range of strategic economic areas, as well as a potential economic sector in which trigger long-terms investments with economic and social returns to be captured locally.

Potential areas of cooperation:

- Smart and secure infrastructures are needed to fully exploit potentials in a range of strategic economic

⁵ https://ec.europa.eu/maritimeaffairs/maritimeday/sites/mare-emd/files/giulienetti_en.pdf

sectors (e.g. maritime tourism, renewable energy, maritime transport):

- Further support to existing research and innovation practices and greater integration between research and innovation centers and local businesses is required to boost the sector across the basin (if certain critical mass exists);
- Greater support in the attraction of strategic long-term investments in the “maritime security” sector across the basin could also allow the flourishing of a local “niche” sector with high potentials (still to be thoroughly tested).

An initial global scoping of the maritime related economic sectors of interest per country (including Portugal and Mauritania, even if they are not bordering the Western Mediterranean sea) is presented in the following table.

This initial table will be used as a tool to identify current and potential developments per country, as well as strategic interest linked to opportunities. This strategic interest per domain will be added as a third column in a later stage.

Table 1: Analysis of the current and potential developments of maritime domains in the Mediterranean countries

	Algeria		Morocco		Tunisia		Libya		Malta		Italy		France		Spain		Portugal		Mauritania	
DOMAINS	current dev	potential dev	current dev	potential dev	current dev	potential dev	current dev	potential dev	current dev	potential dev	current dev	potential dev	current dev	potential dev	current dev	potential dev	current dev	potential dev	current dev	potential dev
Maritime transport and shipbuilding																				
Deep sea shipping																				
Short sea shipping																				
Passengers ferry																				
Shipbuliding																				
Food, nutrition, health and eco-system services																				
Catching fish for human consumption																				
Catching fish for animal feeding								?												
Marine aquatic products																				
Blue biotechnology								?												
Energy and raw materials																				
Oil and gas																		?		
Offshore wind																				
Ocean renewable energy																				
Carbon capture & storage																				
Aggregate mining																				
Marine mineral mining				?			?	?												
Securing fresh water supply																				
Pipelines and cables																				
Maritime and coastal tourism																				
Coastal tourism																				
Yachting and marinas																				
Cruise tourism																				
	High		Medium		Low															

3. THEMES FOR INCREASED COOPERATION AND COORDINATION IN THE WEST-MED

The ambition of the Western Mediterranean maritime strategy is to identify concrete themes for increased cooperation and coordination, based on the trends, opportunities and challenges as identified in the previous chapter. The key to a successful transformation and evolution of the West-Med basin lies in the shift towards an *ASUR* development, built on regional efforts to refine and enforce international law and ocean governance mechanisms in a coordinated manner. The rationale for supporting a Western Mediterranean maritime strategy is to ensure and foster political dialogue, to open spaces for economic, social and environmental cooperation, by encouraging more efficient management of resources as a means of enhancing regional interdependence and development.

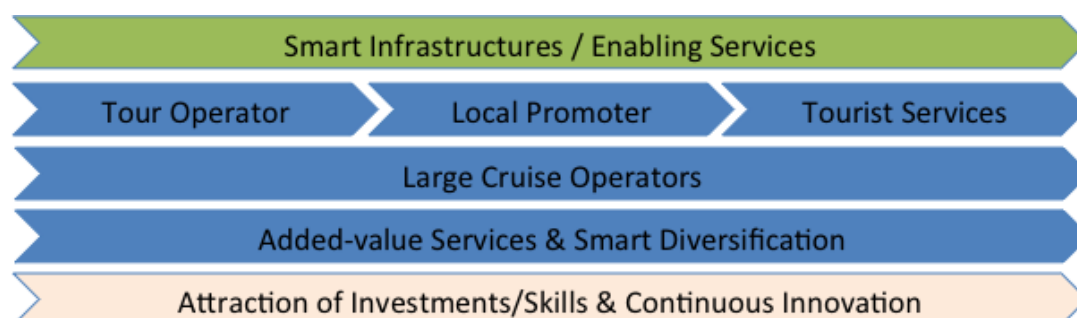
Below are a number of themes that we consider *a priori* to be of great interest for discussion. Some of these themes are more thematic in nature, but most are cross-cutting and integrated. We expect that the interest to promote these themes will differ by country and region. Hence, we have included some indicative maps – rather intended to inspire than to exclude.

3.1. An Attractive and Authentic sea-basin: Sustainable Maritime Tourism

This is a common theme potentially involving all countries and regions, willing to anchor maritime tourism development more clearly to local assets (i.e. ecosystem and cultural value) but also to climate change adaptation (sea level rise, erosion) and limitation of environmental impacts.



Maritime tourism in general and cruise tourism in particular has been growing rapidly in the past decades across the West Med, and cooperation between countries and regions can help to strengthen value propositions and ensure that more value is captured by local and regional players.



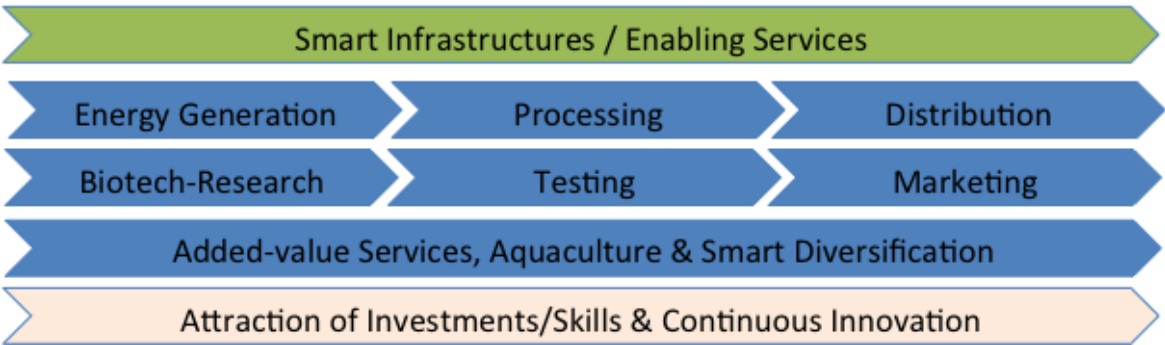
Sustainable connectivity systems for local transport are desperately needed, coupled with new business models allowing local destinations to capture the value generated by the sector, so to maximize potentials of an essential sector for the entire basin. The interdependence between South and North shore of mainstream coastal tourism is yet to be explored and coordinated. Inter-connected actions could provide a solid basis for sustainable growth in the sector across the entire region. Joint clustering initiatives, coupled with sustainable infrastructures and long-term investment supporting a shared vision, are key initiatives that can assure value for all destinations in accordance with their touristic potentials (nature, patrimony, facilities).

3.2. Smart Specialisation: Stimulate the Emerging Blue Economy

This theme includes the modernisation of the maritime economy, by using innovative concepts such as Smart specialisation and value chains.



Maritime activities have been extremely important for the economic growth of the region but have been declining in recent times and need renovation or adaptation in their core business activities – in order to create sustainable jobs. Indeed, in comparison to other sea-basins, the Mediterranean region appears to fall behind in the development of emerging Blue activities.



Blue Energy is key to future economic development. Maritime renewable energy potentials in the region are wind (floating offshore in France, Morocco and Portugal) and waves (Strait of Gibraltar). Yet, these technologies need additional investments both in generation and distribution technologies, including grids facilities across the basin. Connectivity is therefore crucial and cross-border grids are still to be built, particularly energy cables (underwater grid in the Med, connections between EU and Africa) representing a key investment potential. In this context, large and recent renewable energy investments in Northern

Africa (NORA – the world’s largest solar energy project being built in Morocco) need to be taken into account as well.

Blue biotech can offer innovative solutions to a wide range of sectors and activities, both maritime and non-maritime. They include food production, pharmaceuticals, cosmetics, but also ship maintenance (anti-fouling) and various environmental applications such as oil remediation.⁶ Aquaculture, prevalent in most Med countries, can benefit from blue biotech as well. Aquaculture has not used its full potential yet due to technical difficulties for offshore farms, challenges in obtaining licenses, environmental concerns, skills shortages, and high upfront investment needs. The linkages between fishing potentials and the role of aquaculture can be also further addressed, in order to promote greater synergies amongst more “traditional” and “innovative” activities in the area.

The above areas have been also thoroughly addressed by the BLUEMED Initiative (and its Strategic Research and Innovation Agenda), which should be taken into consideration when discussing this theme.

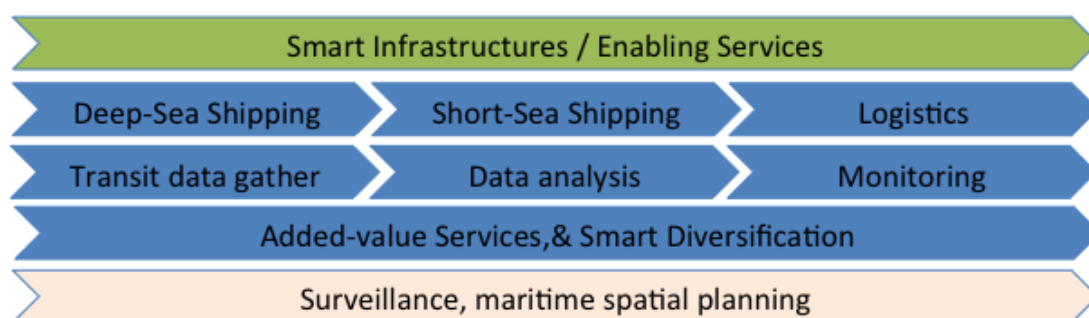
3.3. Safer and cleaner maritime transport

Under this theme, it is proposed to promote and develop safer and cleaner maritime transport at sub-basin scale with a focus on “traditional” economic activities (i.e. transport and fishing) facing environmental and security issues and in need of new focuses towards more sustainable development and greater local value.



This theme has the potential to generate a large amount of added value and, if well-coordinated, provide a strong critical mass, which might attract greater strategic long term-investments and generate constant innovation in key sectors (e.g. transport, trade) in accordance with EU policies and Barcelona Convention (environment protection, maritime spatial planning including ICZM). Promotion of greater environmental sustainability and physical security would strengthen the quality of business environment and the local ecosystems, with spill-over effects across the basin.

⁶ http://ec.europa.eu/maritimeaffairs/documentation/studies/documents/study-blue-biotechnology_en.pdf



Multi-nodal transport is a key element in the theme to link current potentials of deep-sea and short-sea trade, by exploiting existing connectivity amongst EU ports and large logistic hubs, with the growing role of Tangier as “entrance” of Atlantic routes in the region. Greater sustainable connectivity and smart investment in the region would allow a growing interconnection with minimized risks of environmental impacts with integrated surveillance and maritime spatial planning implementation thanks to maritime highways and their connection.

Environmental monitoring and surveillance is certainly an important element in re-launching sustainable economic activities in the region, whilst physical surveillance is central to the “normalization” of the basin, given current geo-political instability. Nonetheless, interests differ strongly between actors, with surveillance and shipping not being of interest for the same stakeholders (surveillance: public/electronics and IT, shipping: transport/economy). Therefore greater cooperation towards common public/private interests should be supported in the corridor.

3.4. Promote Integrated Maritime Spatial Planning

A sound and coordinated management of marine resources and human activities is needed within, yet also beyond, national waters (i.e. high seas, international waters) and seabed. Current consumption and production patterns (and related increasing rates of waste generation and energy and water consumption), exacerbated rates of resource exploitation (mineral and biological), present and expected intensification or maritime transport activities, overfishing, and human-derived environmental pressures (pollution, deterioration of marine and coastal ecosystems, etc.) have intensified pressures on coastal and marine resources and environments, and jeopardize economic development and welfare. The development of an effective Maritime Spatial Planning (MSP) might be a key tool to address usage conflicts between maritime activities.

From the above, and to illustrate this competition for maritime spaces and marine resources the following topics deserve attention:

- Address tensions between tourism, Marine Protected Areas and shipping lanes;
- Accommodation of offshore oil and gas as well as renewable energy sites (e.g. offshore wind); find a balance between traditional (hydrocarbons) and renewable energy sources (tidal, offshore wind, thermal...);
- Assess port extension plans – and optimize these in light of sustainable coastal developments;
- Address issues related to fisheries and depletion of stocks; maritime spatial planning can help to assess problems and generate solutions;
- Identify synergies between maritime economic activities, e.g. sustainable tourism (responsible use of Marine Protected Areas, e.g. for whale watching); ports and offshore development;
- Embedding and connecting of grids and pipelines

- Food security and the need to address increasing demand for fish products, increasing food wastes (particularly in northern countries), and the development of a sustainable and viable aquaculture (through, the creation of a “quality brand” for Western Mediterranean products, for instance).

3.5. Knowledge building: promote cooperation in education, training and scientific capacity and skills

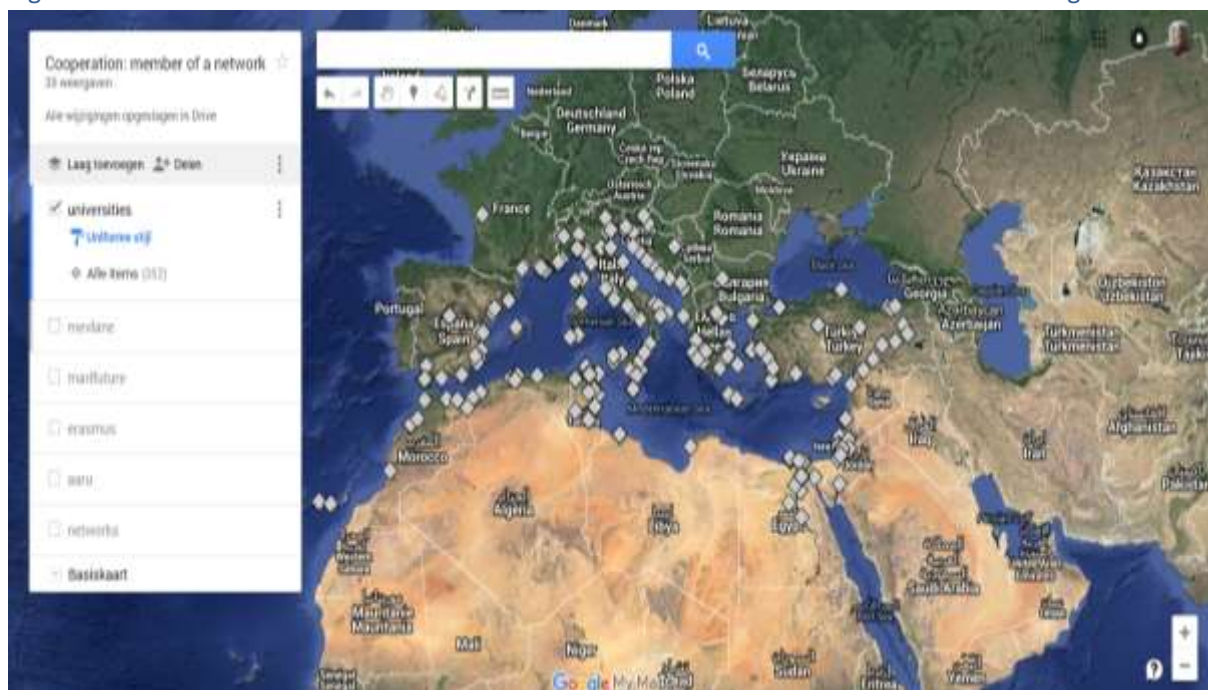
Knowledge and capacity building are crucial for a variety of reasons and applications. In this respect, the Union for Mediterranean Declaration on the Blue Economy (17th November, p.3) calls for a need to improve education, training and scientific capacity and skills development in the maritime domain and to increase the potential in these fields⁷. Such knowledge and competencies are needed to:

- Develop innovative sea-related activities, both at technical level (e.g. maritime shipping, coastal protection, offshore oil and gas, blue energy) as well as scientific level (e.g. blue biotechnology, aquaculture, maritime surveillance);
- Engage with both public and private stakeholders, including small and medium enterprises, in research and innovation actions of cooperation;
- Assess and anticipate marine environment-related risks for societies;
- Monitor changes and developing foresight modeling and analysis capabilities required for decision-making and fostering adaptation capacities.
- Develop innovative sea-related competences, particularly at technical, doctoral and first stage researchers’ level;
- Provide evidence basis for policy making;
- Prioritise the implementation of cross-cutting actions with high societal impact;

Cooperation in maritime research can bring important advantages: promoting innovation and knowledge sharing, access to international talents, reputation building and pooling of resources are only some of them. To avoid the above areas have been also thoroughly addressed by the BLUEMED Initiative (and its Strategic Research and Innovation Agenda), which should be taken into consideration when discussing this theme.

⁷ In this regard, the Declaration also invites to include partner countries on a voluntary basis into the BLUEMED Initiative (and its Strategic Research and Innovation Agenda). Discussions should build on the work already done and look into the relevant topics identified by the above Strategic Research and Innovation Agenda.

Figure 5: Overview of institutions and networks in the area of maritime education and training



Source: Ecorys study (pending) and Google Earth

By the same token, there is strong interest and potential to promote cooperation in maritime education and training. Building on already existing cooperation in the sea-basin, more can be done to bring benefits both in the fields of higher education and vocational training (including naval and maritime academies as well as coast guards).

3.6. Promote maritime cluster development

Experiences in other sea-basins have demonstrated that integrated maritime development can be greatly enhanced through the support to maritime clusters. This is also emphasized by the BLUEMED Initiative (and its Strategic Research and Innovation Agenda), which identifies the maritime clusters amongst the key enablers in the Mediterranean. The concept of (maritime) clusters revolves around mechanisms to increase productivity, growth and jobs. This is achieved by producing externalities or synergies that can be grouped into:

- Business-to-business and research cooperation. This involves new forms of cooperation across sectors, and building new value chains of products and services. Proximity helps to boost such cooperation, but cluster activities can further enhance this process. The triple helix approach involving business, research and government actors is a powerful concept in this respect;
- Competency development and knowledge sharing. Clusters provide a locus for the labor market, retention and development of skills which are essential for building competitive advantages, and which extend beyond the borders of individual firms. Those able to attract the best skills have a decisive advantage over others. Cooperation with specialized educational institutes in the area of training are of mutual advantage;
- Marketing and visibility. Joint promotion of the cluster, its members and their products and services internationally is an important synergy and an important reason for companies to collaborate;
- Smart infrastructure and planning. Maritime clusters require by definition the sharing of infrastructure, including ports, inland infrastructure as well as zoning of activities. Not all maritime

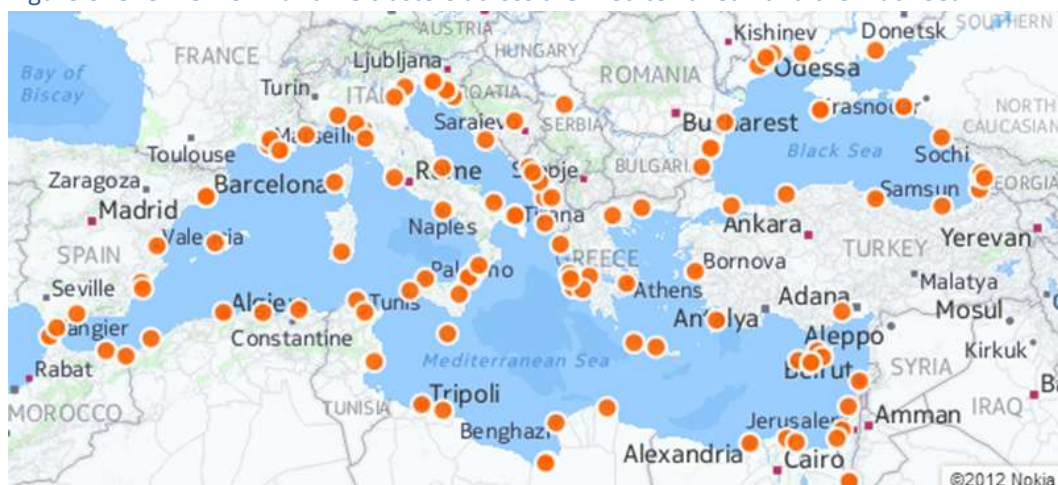
economic activities go well together, and intelligent and integrated physical as well as maritime planning are required to prevent tensions; and

- Trans-boundary cooperation. In its form of cross-border, transnational and international cooperation, it enables access to markets, allows clusters to jointly address future challenges, and supports benchmarking and learning.

Bringing about the above synergies requires above all professional cluster management, supported by the time and dedicated efforts by skilled support staff.

An inventory of maritime clusters in the Mediterranean and Black Sea (Ecorys 2014)⁸ pointed to the localisation of the 117 clusters in both sea-basins as represented in Figure 3.

Figure 6: Overview of maritime clusters across the Mediterranean and the Black Sea



Source: Ecorys (2014)

Actors in the Mediterranean are increasingly aware of the need to construct competitive advantage through maritime clusters – and that this is a trial and error process. There is no ‘one size fits all’ and not one ‘silver bullet’ process to build a cluster. Maritime clusters are not fundamentally different from other clusters, although their limited critical mass makes it more difficult to pursue specialisation strategies.

3.7. Maritime surveillance and environmental monitoring

Maritime surveillance and environmental monitoring are important in re-launching sustainable economic activities in the region, whilst physical surveillance is central to the “normalisation” of the basin, given current geo-political instability. Nonetheless, interests differ strongly between actors, with surveillance and shipping being of interest to some stakeholders (surveillance: public/electronics and IT, shipping: transport/economy). Therefore greater cooperation towards common public/private interests should be supported in the corridor.

Environmental monitoring is also needed to collect data, which allows better analysis of the environmental situation (see chapter 2). There is a strong need to better understand the trends in sea water pollution, eutrophication and waste generation – data being a basis for knowledge needed for

⁸ https://webgate.ec.europa.eu/maritimeforum/sites/maritimeforum/files/Maritime%20Clusters%20in%20MED-BS%20def_0.pdf

developing evidence-based policies.⁹ In this respect, there is a need to connect to existing initiatives taken by the EC as well – e.g. EMODNET¹⁰.

3.8. A Unified sea-basin: the case for closer governance

The envisaged Maritime Strategy for the Western Mediterranean is not to be developed in a vacuum, but to be positioned within the already existing and emerging broader cooperation. To support the sea-basin, support is needed from the existing institutions and initiatives where they can find some interest as components of a sub-basin scale maritime integrated strategy.

A maritime strategy in the Western Mediterranean sub-basin should build and tap on existing regional initiatives:

- Such a strategy would be in line with the recent decisions of **UfM** related to Blue Economy; it could show the way for replication of the process in other parts of the Mediterranean;
- **Mediterranean Action Plan** actions and policies could benefit from more coordinated maritime policies in this subregion where there are important environmental issues;
- **GFCM** could benefit from better coordination of fisheries policies beyond territorial waters;
- **Maghreb Arab Union** could get new impetus through cooperation of Maghreb countries in defining and implementing such a strategy.

Among these initiatives and institutions, **the 5+5 Dialogue** should be considered an interesting potential support for the development and implementation of such a strategy: it is broadly the scale of the expected strategy, it is a pragmatic and problem-oriented forum, which proved very resilient (the process survived strong political changes and tensions), and its governance scheme covers the three levels required in good governance for macro-regional strategies: political level (Ministers of Foreign affairs), coordination, and implementation. Nevertheless, the EU is not member of the 5+5 Dialogue.

⁹ Union for the Mediterranean Declaration on the Blue Economy, 17th November 2015, p.3

¹⁰ <http://www.emodnet.eu>



TOWARDS A MARITIME STRATEGY

BUILDING A MARITIME STRATEGY FOR THE WESTERN MEDITERRANEAN

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