

BLUE ECONOMY PROJECT

Blue economy for a healthy Mediterranean- Measuring, Monitoring and Promoting an environmentally sustainable economy in the Mediterranean region

Scoping Study

(January 2016)

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1. Background

1.1. The road towards sustainable development

Natural resource exploitation has been the main feature for economic development and trade for most of global history. At present, it is generally accepted that economic development around the world is leading to the irreversible depletion of natural resources, environmental degradation and consequent threat to future generations, which are key reasons and challenges for rethinking economic patterns. Environmental resources are considered today as economic assets and called “natural capital”. An efficient and sustainable management of the natural capital is a critical policy objective for the economic process.

A first consensus on sustainability was reached in 1987 by the World Commission on Environment and Development (WCED or Brundtland Commission). The release of the Brundtland report (“Our common future”) set the basis for economic interpretations of sustainable development, which had been broadly defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED 1987). The first major endorsement of sustainable development came at the 1992 Rio Conference, which set forth the Rio Declaration on the Environment and Development and the Agenda 21. Since then, a number of international conferences, national laws, local initiatives, government programs and non-governmental campaigns have been endeavoring to set a roadmap to implement sustainable development worldwide.

The Mediterranean region is considered one of the top biodiversity spots in the world. Indeed, it offers a contrasting topography a variety of landscapes, and also comprises a vast set of coastal and marine ecosystems that deliver valuable benefits to its coastal inhabitants. The region has long been occupied and marine and coastal resources have traditionally supported coastal populations and human uses. Today, a third of total Mediterranean riparian countries’ population inhabits coastal areas.

The growing awareness of the intense pressures that cause environmental degradation of the Mediterranean natural wealth highlights the need for a sustainable approach; governance bodies established over the recent decades have defined tools and mechanisms to achieving a more sustainable development allowing the preservation and sustainable uses of the Mediterranean natural capital. At this stage of economy reframing, a new concept of “Blue Economy” has emerged to foster the shift towards a new, ocean (marine)-based sustainable economy.

1.2. Introduction to the “Blue Economy” Project

The challenges affecting the Mediterranean Sea call for shared integrated responses and improved governance, particularly relevant when considering the ever-increasing demands for natural resources and pressures on the marine environment, as well as the continued need for sustainable growth and jobs in marine and maritime sectors and regions.

In this context, new indicators considering both economic and environmental aspects are being developed at the international scale by a number of initiatives and projects; however, they are often set at the international level, without taking into consideration the particularities of regional seas.

The Project “A blue economy for a healthy Mediterranean – Measuring, monitoring and promoting an environmentally sustainable economy in the Mediterranean region” is an eighteen-month project aiming to identify indicators, select tools and recommend policies to promote an environmentally sustainable “Blue Economy” in the Mediterranean region, in synergy with ongoing governance efforts deployed by the UNEP/Mediterranean Action Plan (UNEP/MAP) or the Union for the Mediterranean (UfM) towards the implementation of a sustainable development in the region. Three Regional Activity Centres (RACs) for the UNEP/MAP, i.e. Plan Bleu/ RAC, SCP/RAC and PAP/RAC, are engaged partners to work in conjunction to achieve the Project’s aim.

The Project’s implementation period is eighteen months. It became effective on July 2015 and will last until December 2016.

The principal objectives of the Project are:

1. To define a vision and definition of the sustainable “Blue Economy” in the Mediterranean region based on healthy environmental ecosystems, acknowledged and endorsed by relevant Mediterranean stakeholders.
2. To integrate the tools and measures defined by the Blue Economy vision in the context of four ongoing Mediterranean regional processes, set up in the context of the Barcelona Convention, contributing to the identification of measures and objectives for sustainable development:
 - The revision of the Mediterranean Strategy for Sustainable Development (MSSD review)
 - The Integrated Coastal Zone Management (ICZM) Protocol
 - The Ecosystem Approach (EcAp) Initiative
 - The Sustainable Consumption and Production (SCP) Action Plan

To this end, operational objectives target the drafting of a first definition of the Blue Economy and the vision for its implementation across the Mediterranean basin, under the support of regional key stakeholders; as well as mainstreaming blue economy concepts adapted to the Mediterranean, along with identified tools and measures already made available by ongoing regional governance processes.

The Project is structured around three main work groups, each one developing different lines of action and tasks:

- Component 1: Define and monitor the environmentally sustainable
- Component 2: Support the Implementation of an environmentally sustainable economy
- Component 3: Promote and mainstream an environmentally sustainable economy

1.3. Objectives of the Scoping study

The purpose of the present report is to develop the “Scoping study”, which lies among the first tasks to be delivered to Component 1 of the Blue Economy Project.

The objective of the Scoping study is two-fold. First, it aims to provide the global conceptual framework for a blue economy, by exploring concepts of sustainable development, the way they have evolved over time and how they have been translated into marine and coastal areas, in particular at the Mediterranean level. The Scoping study needs to come up with a first definition of a “Blue Economy” adapted to the Mediterranean

region, taking into account regional specificities and governance efforts that have been deployed over the last decades.

On the other hand, the Scoping study targets a complete description of the next task to be delivered to the Project's first component: the "Full study". The Full study is envisaged as a comprehensive study, based on the Blue Economy definition set for the Mediterranean region by the Scoping study, to provide methodological tools and measures enabling to promote blue economy experiences and/or activities carried out across the Mediterranean basin. The final purpose of the Full study is the recommendation of effective national and regional policy instruments to foster the sustainable, blue economy development of the Mediterranean region.

2. Definition of a Blue Economy in the Mediterranean

2.1. Global guiding processes and initiatives towards sustainable development

Since the end of the 1980s decade there has been a strong global determination for eradicating poverty and healing the planet by realising sustainable development. To this purpose, a wide set of roadmaps, strategies and projects have been established to deal with environmental, social and economic challenges. The following section is aimed at highlighting the major shifting paradigms and initiatives towards sustainable development that have been defined and undertaken at the global and supranational levels and which have directly or indirectly influenced the Mediterranean region, namely: the UNEP process towards Green and Blue Economies; the Circular Economy; Gunter Pauli's Blue Economy Project; and the EU Blue Growth initiative.

2.1.1. The United Nations Environmental Programme: From a Green Economy to a Blue Economy

In 1992 an unprecedented, ground-breaking Earth Summit on Environment and Development was held in Rio de Janeiro, Brazil. Among the main focuses of the Summit, lied the examination of the relationships between poverty, human rights, population, social development, women and human settlements.

The UN enhanced the need for countries to rethink economic development and find ways to halt the destruction of irreplaceable natural resources and pollution of the planet. As a result, participating countries adopted Agenda 21 and the Rio Principles; in addition, the Summit led to conventions on biodiversity, desertification and climate change, and set the stage for international efforts to effect integrated, sustainable development.

Twenty years later, at the 2012 Rio+20 Conference, the transition towards a Green Economy to achieve sustainable development and poverty eradication was recognized as a tool for accomplishing social, economic and environmental development. UNEP has defined Green Economy as a low-carbon economy, resource efficient and socially inclusive, where growth in terms of income and employment is driven by public and private investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services. In summary, the Green Economy vision consists of a system of economic activities related to the production, distribution and consumption of

goods and services resulting in an “improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities”.

Table 1 Socioeconomic sectors associated to Green Economy

| RENEWABLE ENERGY | GREEN BUILDINGS | CLEAN TRANSPORTATION | WATER MANAGEMENT | WASTE MANAGEMENT | NATURAL RESOURCE MANAGEMENT |
|--------------------------|-------------------------------------|--------------------------------------|--------------------------|----------------------------------|----------------------------------|
| Solar Energy | Residential & Commercial Assessment | Fuels of the Future | Water Recycling | Recycling & Municipal Waste | Organic Agriculture |
| Wind Energy | Energy Efficiency Retrofits | Electric & Hybrid Cars | Grey & Rainwater Systems | Salvage - 2nd Hand | Low-impact Aquaculture |
| Geothermal Energy | Water Efficiency Retrofits | PEV's (personal electronic vehicles) | Low-water Landscaping | Toxics Remediation | Habitat Conservation/Restoration |
| Wave Energy | Green Products & Materials | Public Transportation | Water Purification | Brownfield Cleanup | Urban Forestry & Parks |
| Bio-Gas | LEED Construction | Rideshare & Flex Programs | Stormwater Planning | Sustainable Products – Packaging | Reforestation & Afforestation |
| Fuel Cells | | Energy-efficient shipping | | | Sustainable Fisheries |
| | | | | | Soil Stabilization |

Source: UICN, Green to Blue Economy

Sub-sectors related to marine and coastal environments displayed in bold text.

A Green Economy is expected to create employment, businesses and investments while expanding clean energy production, increasing resource efficiency, reducing wastes and conserving natural resources. After Rio+20 and the UN commitment to drive for a Green Economy, the IUCN, member of the Green Economy Coalition¹, defined a number of major general activity sectors and sub-sectors -not particularly targeting the marine environment- on which the Green Economy should focus.

One of the major outcomes of the Rio+20 Conference, placed high on the Agenda of the UN General Assembly, was the mandate to launch a process to develop a set of sustainable development goals (SDGs). The SDGs consist in a set of time-bound targets aimed to stimulate action over the short/ mid-term (2015-2030) focusing on ending poverty and hunger while preserving the environment. They are built on the foundation laid by the Millennium Development Goals (MDGs) with the aim to address in a balanced way all three dimensions of sustainable development (economic, social and environmental) as well as to reflect the main aims of the UN Green Economy (see Table 2).

¹ The Green Economy Coalition (GEC), integrated by a diverse set of organisations and sectors from NGOs, research institutes, UN organisations and business to trade unions, is a multi-stakeholder network committed to accelerating the transition to a green and fair economy.

Table 2 Global Roadmap towards Sustainable Development: a definition of Sustainable Development Goals

| UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS | |
|--|--|
| Goal 1 | End poverty in all its forms everywhere |
| Goal 2 | End hunger, achieve food security and improved nutrition and promote sustainable agriculture |
| Goal 3 | Ensure healthy lives and promote well-being for all at all stages |
| Goal 4 | Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all |
| Goal 5 | Achieve gender equality and empower all women and girls |
| Goal 6 | Ensure availability and sustainable management of water and sanitation for all |
| Goal 7 | Ensure access to affordable, reliable, sustainable and modern energy for all |
| Goal 8 | Promote sustained, inclusive and sustainable economic growth , full and productive employment and decent work for all |
| Goal 9 | Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation |
| Goal 10 | Reduce inequality within and among countries |
| Goal 11 | Make cities and human settlements inclusive, safe, resilient and sustainable |
| Goal 12 | Ensure sustainable consumption and production patterns |
| Goal 13 | Take urgent action to combat climate change and its impacts |
| Goal 14 | Conserve and sustainably use the oceans, seas and marine resources for sustainable development |
| Goal 15 | Protect, restore and promote sustainable use of terrestrial ecosystems , sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss |
| Goal 16 | Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels |
| Goal 17 | Strengthen the means of implementation and revitalize the global partnership for sustainable development |

Source: UNEP, <https://sustainabledevelopment.un.org/topics>

2.1.2. The UN Blue Economy Concept Paper

The Blue Economy under the UN framework took its starting point at the Rio+20 Conference on Sustainable Development and Green Economy. It emerged as a branch of the latter, with the objective to provide a better adaptation of the paradigm to coastal, sea-resource based countries, and it was therefore referred to as “a green economy in a blue world”.

The Blue Economy encompasses Green Economy’s principles and main objectives. However, the concept has evolved from being the blue aspect of the Green Economy into a paradigm of worldwide reference, particularly in coastal developing countries, conceptualising seas and oceans as “developing spaces” and providing an opening opportunity for sustainable development, on the condition that sound management of ocean resources and means to restore and/or achieve healthy state are put in place.

The Blue Economy is mutually supportive with the Green Economy model. It also encompasses the principle of “poverty eradication”, related to food security and livelihoods, although it has a more specific vision: “improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities, including the principles of a low carbon economy based on resource efficiency and social inclusion, in particular in states where future resources are marine-related”.

In this sense, the Blue Economy goes beyond the concept of ocean-based economy, and shifts away from the traditional “brown – high energy, low employment and industrialised development” model, which considers seas and oceans as a free resource extraction and waste dumping, where environmental costs are externalised from economic calculations. On the contrary, at the core of the Blue Economy lies the commitment to decouple socioeconomic development from environmental degradation, by the

incorporation of the real value of the natural capital (ocean values and services) into all aspects of economic activity.

The main challenges for the achievement of a true sustainable, Blue Economy are detailed as follows:

- **Sustainable use of biodiversity**, linked to food and livelihood provision;
- **Food security**, focusing on development of sustainable fisheries or exploitation of wild fish stocks and sustainable and efficient aquaculture industries;
- **Climate change and carbon budgets**; facilitating the transition towards a low carbon economy and a renewable “blue” energy generation to address the acidification of oceans and pH decrease (CO₂ cycle); and enhance blue carbon cycles or carbon sequestration cycles, linked to the damage of coastal habitats such as mangroves, seagrass meadows or salt marshes;
- **Marine and coastal tourism**, which continue showing growing patterns despite the global crisis. Increases of greenhouse gas emissions, water demand, sewage, waste generation, loss and degradation of coastal habitat, biodiversity and ecosystem services need to be addressed.
- **Pollution and marine debris**: a growing human population, the intensification of agriculture and urbanisation of coastal areas are at the land-origin of increasing marine pollution while shipping and marine resource exploitation (hydrocarbon or mining) are sea-based pollution sources.

The current state of marine and coastal ecosystems indicates that further efforts are needed in the management of human activities. ICZM, spatial planning, integrated conservation, sustainable and efficient resource use have been pointed out as tools and mechanisms for the achievement of a sustainable development. In addition, the ecosystem approach has been proposed as an integrative approach to tackle challenges and ensure an ecosystem-based management of human activities allowing, on the one hand, a restoration and conservation of biodiversity and natural resources; and, on the other hand, resource extraction. In this sense, efficiency and optimisation of resource use is capital to ensure healthy oceans and marine environments, and the continued provision of key goods and services to human welfare and to sustainable development.

The development of a blue economy is expected to offer opportunities for a sustainable growth in a number of traditional and emerging economic sectors, which are considered as Blue Economy key sectors:

- **Increasing shipping/ port activities**: opportunity for coastal countries to position themselves, while dealing with challenges such as pollution, inefficiency, greenhouse gas emissions, invasive alien species in ballast waters and hull fouling.
- **Fisheries**: increased sustainable catches are to be achieved along with low energy use and reduced costs; food security and livelihoods are to be enhanced by restoring overexploited or collapsed fish stocks through the application of the precautionary principle and sound, science-based management of fisheries (e.g. eliminating subsidies).
- **Aquaculture**: high potential for sustainable development, on condition that sustainable production patterns are met, particularly regarding the proportion of fish in fishmeal.
- **Coastal tourism**: impacts need to be minimised by introducing the real value of ecosystem services in development planning and by fostering less impacting activities (e.g. ecotourism, nature-based tourism).

- **“Blue” energy:** parallel to the expected increase of deep water hydrocarbon exploration and exploitation, a high potential exists for the development of renewable energy (wind, wave, tidal, biomass, thermal conversion, and salinity gradients).
- **Biotechnology:** bio-prospecting, i.e. the sustainable extraction of biological components (bacteria, algae, etc.) has a high potential for health care, food supplies, environmental remediation and energy production.
- **Submarine mining:** new materials (with potential uses in ICTs and renewable energy) are being explored for potential extraction and commercialisation; measures are to be developed to ensure the sound management of the seabed natural capital and the procurement of optimal benefits in national EEZs.

Under the UN Blue Economy approach, the key to a successful shift towards a Blue Economy lies in the deployment of international efforts to refine and enforce international law and ocean governance mechanisms in a coordinated manner. A sound management of marine resources is needed within, yet also beyond, national waters (i.e. high seas, international waters) and seabed. Sustainable development is to be based on research criteria allowing setting up technically informed decision-making and adaptive management.

2.1.3. The Circular Economy

Although not specifically focusing on oceans or marine environments, in the context of designing and implementing a Blue Economy, it is important to highlight and consider the principles of the circular economy. This paradigm has progressively become a central item in strategies aiming at achieving a sustainable development worldwide and may have a key, yet indirect, role in achieving a healthy status of coastal and marine ecosystems, notably in relation to marine litter concerns. In fact, the general principles of the circular economy have been embodied directly or indirectly in the main regulatory texts targeting sustainable development, either at international, regional or local levels.

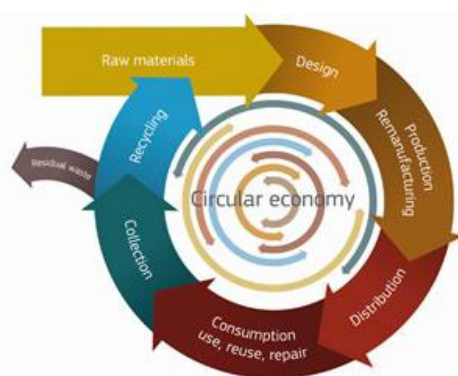


Figure 1 Circular economy. Inputs and outputs
(Source: <http://www.acceleration.eu>)

The circular economy represents an alternative to the linear economy, based on the “take-make-consume and dispose” model, which relies exclusively on resource extraction and where every product is bound to reach its “end of life” through various stages, namely: raw material extraction, production, distribution,

consumption and discard. Valuable materials are used to produce consumer goods or provide energy and are discarded as waste when worn out.

A circular economy switches to a model where (part of) wastes are transformed into new resources and are re-injected into the manufacturing circuit. Ideally, it sets up a closed, nature-inspired cycle, where raw materials become new materials at its end, through a more complex process based on different phases: raw material, design, production or remanufacturing, distribution, consumption (including use, reuse and repair), collection and recycling so as to become raw materials again. In practice, it aims at lowering to the maximum extent both inputs (i.e. resources, such as new-first use raw materials, energy or water) and outputs (residual wastes, emissions) (see Figure 1).

Several pillars underpin the circular economy: efficient material management, reduction of toxic substances, energy efficiency and economic incentives. As a result, the model tends towards a zero waste scenario, where new products are made out of secondary raw materials and waste is considered a valuable resource. Goods are reused, refurbished or dismantled and recycled in a constant circle. In this cycle, eco-design and econ-innovation play a key role, allowing recovering wastes and re-using them as raw material.

The circular economy is envisaged as a “win-win-win” model, advantageous for the environment, for business and for employment generation. Economic and social welfare is achieved by means of economic savings, new business opportunities, stability of supplies, job creation or health and well-being. On the other hand, besides energy and resource savings and climate change mitigation, circular economy’s environmental benefits are directly linked to the substantial reduction of wastes reaching marine and coastal environments and becoming marine litter.

In the EC context, the circular economy has been launched as a strategy aiming at turning the EU into a resource-efficient, green and competitive low-carbon economy. The strategy is in synergy with the EU’s Green Economy vision: new growth and job opportunities brought by using resources more efficiently. Better eco-design, waste prevention and reuse will spare costs to businesses, while also reducing total annual greenhouse gas emissions.

Circular Economy initiatives in the Mediterranean region: the SwitchMed Programme

The SwitchMed Programme has been undertaken as a multi-component initiative to address the need to foster and support sustainable patterns of production and consumption, resource efficiency and circular economies in the Mediterranean region. Four regional partners are involved in the coordination and implementation of the SwitchMed Programme: the EU, the United Nations Industrial Development Organisations (UNIDO), UNEP/MAP and its Regional Activity Centre for Sustainable Consumption and Production (SCP/RAC), and the UNEP/DTIE (Division of Technology, Industry and Economics).

With the vision of “moving towards a prosperous Mediterranean”, the Programme’s mission consists of building capacities, implementing pilot actions, engaging with policy-makers and creating partnerships towards productive, circular and sharing economies in the Mediterranean. SwitchMed has three major components:

- **Networking:** Consolidating a stakeholder network –the “SwitchMed Action Network” – to foster connections and information exchange between similar initiatives, for scaling-up social and environmentally friendly (eco) innovations in the Mediterranean region;
- **Demonstration activities and capacity building:** training green business entrepreneurs and start-ups (named “switchers” or “change makers”), empowering grassroots innovations, and providing capacity building for sustainable industry providers;
- **Policy:** engaging with policymakers to establish a regulatory and policy framework to drive the sustainable products and services market.

It should be highlighted that the outputs of the SwitchMed Programme are expected to address a number of the priority issues emanating from the Barcelona Convention-MAP Programme of Work (2015-2019), in synergy with already ongoing MAP governance strategies and initiatives:

- The incorporation of SCP and Green Economy objectives and measures into the framework of implementation of the Barcelona Convention and corresponding Protocols, as well as legally binding measures;
- Identification of SCP measures for the further development of the MAPs’ Ecosystem Approach Initiative, in particular through the identification of policy measures and indicators that foster the implementation of the EcAp in the Mediterranean;
- The integration of SCP and Green Economy objectives and measures into the thematic priorities of the MSSD, which currently include, water, energy, mobility, tourism, management of coastal zones, urban development and agricultural and rural development;
- The review and upgrading of the UNEP/MAP work plan and methods of work according to SCP and Green Economy objectives and, in particular, those of the MCSDD in order to enhance the corresponding regional multi-stakeholder coordination;
- Development and implementation of an SCP Roadmap for the Mediterranean, including an SCP regional Plan on Marine Litter (relevant to Regional Framework Strategy for Marine Litter and the LBS Protocol);
- The inclusion of specific SCP measures and objectives in the Five-Year Strategic Programme of Work 2015-2019 and the corresponding work programmes of UNEP/MAP components.

2.1.4. Gunter Pauli’s Blue economy vision: Blue economy innovations around the world

Gunter Pauli’s Blue Economy concept is not particularly focused on oceans or marine environments; the blue colour alludes to the view of Earth as seen from space and refers to the environment, in general terms. The Blue Economy concept is, in this case, practical, and refers to an ambitious “Blue Economy” Project aiming at highlighting successful business experiences carried out at local scale around the world, significantly impacting world economies and using nature-inspired technologies, while simultaneously responding to human’s basic needs, i.e. drinking water; food; housing or shelter; health care; and employment².

²Gunter Pauli’s “Blue Economy” Project aims at gathering, in 10 years, 100 experiences of best technologies inspired by nature, significantly impacting world economies and generating 100 million jobs.

The final goal of the Blue Economy Project is to show that a new Blue Economy model based on true economic sustainability can be shaped, able to compete at the global market and to generate increasing economic, social and environmental value (e.g. increasing profits or revenues; employment; and new resources, less waste or rising biodiversity).

Several principles and common goals are shared with UNEP's Green Economy, i.e. social equity, revenues and quality jobs generation, as well as environmental health preservation. However, the Blue Economy as envisioned by the Projects stresses the need to operate locally, envisaging a bottom-up approach based on experiences carried out at the local level. In this sense, it expresses its differences with the Green Economy model, which might continue taking place at the global scale and be based on standardized (although more sustainable) products.

The Blue Economy is envisaged to make up an alternative to the traditional model of economies of scale, delocalised, based on standardized products, secured worldwide through just-in-time deliveries and outsourcing where labour costs are reduced and employment regulations flexible. In contrast, the Project's Blue Economy model is based on injecting money into local economies and into any sector, offering quality products at lower cost prices. In this framework little transportation is required, therefore costs are reduced, and margins and prices to the consumer lowered.

In addition, the Blue Economy model is meant to emulate natural ecosystems, that is, rising biodiversity while tending towards a zero waste scenario. In this sense, its main principle is the cascading nutrients and energy through the social-economic-environmental system, which may lead to sustainability by reducing or eliminating inputs (e.g. energy) and waste (not only as pollution but also as an inefficient use of materials), just as the way ecosystems do. Such as in natural environments, no waste is to be produced as by-products of one process might be inputs to others. These concepts may be easily and directly linked to the principles of the circular economy.

In summary, the Blue Economy envisages the injection of cash into local economy, the use locally available resources and the elimination of what is not needed, and thereby the reduction of materials and costs, wastes, human ecological footprint and health risks.

2.1.5. The European vision: “turning the blue economy into a Blue Growth”

The EC Blue Growth concept 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 2020 Strategy targets cover five areas, namely: employment; research and development; climate and energy; education; and social inclusion and poverty reduction.

From the European perspective, the blue economy is made up of all economic activities depending directly or indirectly on the sea, supporting national economies (in terms of both gross value added and jobs), just as they are structured and organised today. In this context, blue economy is not based on sustainable practices and therefore generates environmental concerns.

In contrast, the EC has raised the concept of Blue Growth as a renewed and more sustainable blue economy, based on productive but healthy seas and oceans. The EC Blue Growth also advocates for economic growth and employment generation, through resource efficiency and exploitation of new resources. However, it

strongly points out the need to safeguard biodiversity and environmental protection of marine ecosystems to ensure the constant supply of environmental services provided by marine and coastal ecosystems. In this respect, the EU is already endeavouring to reach a successful blue growth through a range of ongoing parallel initiatives related to different fields: education; research and knowledge generation; financing and capital rising; maritime surveillance; or environmental protection, either coastal (i.e. Integrated Coastal Zone Management and Maritime Spatial Planning Directive) or marine (i.e. the Marine Strategy Framework Directive, aiming to apply the Ecosystem Approach to the management of human activities in marine and coastal environments and achieve GES by 2020).

Marine and coastal spaces are hence seen as having the potential for a new (and renewed) economic and sustainable development, but also for greenhouse gases and climate change mitigation. Blue Growth is to be achieved through the use of new sound technologies applied for the development of the blue growth sectors.

A first list, not definite, of five value chains able to generate sustainable growth and jobs has been proposed so as to boost and stimulate related sectors, including:

- Blue (renewable) energy;
- Aquaculture;
- Tourism;
- Marine mineral resources; and
- Blue (sustainable) biotechnology.

In addition, on a regional level, the Mediterranean EU Member States³ have launched the BLUEMED Initiative for blue growth and jobs. By signing the Venice Declaration on Mediterranean Sea Cooperation, they have decided to advance the strategic marine and maritime research and innovation Agenda for Blue Growth in the Euro-Mediterranean Region, aiming in particular at:

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

2.2. Mediterranean initiatives for sustainable development: state of play

Two major governance structures have been consolidated and strengthened at the Mediterranean regional level over the last four decades, with the aim to tackle rising environmental, social and economic concerns that are challenging the region. The long-established Mediterranean Action Plan, the Barcelona Convention's

³Greece, Spain, France, Croatia, Italy, Cyprus, Malta, , and Slovenia.

operational body adopted in 1975 by Mediterranean countries, has today a long background in the area of integrated planning and management of the Mediterranean cultural, socioeconomic and environmental (marine and coastal) heritage. On the other hand, the Union for the Mediterranean (UfM) is a multilateral partnership created in 2008 aimed to bring together the EUMS and the southern and eastern Mediterranean countries in order to enhance regional cooperation and dialogue.

Both the MAP and the UfM have developed and implemented action lines aiming to address environmental, economic and social challenges in the region. Recently, they have acknowledged the need for a shift towards sustainable development and have called for promoting a blue, sustainable economy in the Mediterranean region. The following section is aimed to highlight the major Mediterranean governance efforts, i.e. strategies, initiatives and projects, regarding the achievement of a blue, sustainable economy at the Mediterranean regional level while taking specific account of the region's context and particularities.

2.2.1. The revision of the Mediterranean Strategy for Sustainable Development

The MAP's Mediterranean Strategy for Sustainable Development (MSSD) was initially adopted in 2005 by the Contracting Parties (CPs) to the Barcelona convention in order to provide a strategic policy framework for securing a sustainable future for the Mediterranean region, in line with the main outcomes of the Rio Summit on Environment and Development. A decade later, after the assessment of its implementation progress and in view of the outcomes of the Rio+20 Summit on Sustainable Development and Green Economy, the CPs to the Barcelona Convention requested the UNEP/MAP to launch a review of the Strategy.

Table 3 Interrelations between MSSD 2016-2025 and SDGs

| MSSD 2016-2025 | GLOBAL SUSTAINABLE DEVELOPMENT GOALS |
|--|--|
| Ensuring sustainable development in marine and coastal areas | 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development |
| Promoting resource management, food production and food security through sustainable forms of rural development | 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture 6. Ensure availability and sustainable management of water and sanitation for all 15. Protect, restore and promote sustainable use of terrestrial ecosystems , sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss |
| Planning and managing sustainable Mediterranean cities | 7. Ensure access to affordable, reliable, sustainable and modern energy for all 11. Make cities and human settlements inclusive, safe, resilient and sustainable |
| Addressing climate change as a priority issue for the Mediterranean | 13. Take urgent action to combat climate change and its impacts |
| Transition towards a green and blue economy | 8. Promote sustained, inclusive and sustainable economic growth , full and productive employment and decent work for all 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation 12. Ensure sustainable consumption and production patterns |
| Improving governance in support of sustainable development | 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development |
| Cross-cutting sustainable development goals related to social issues | 1. End poverty in all its forms everywhere 3. Ensure healthy lives and promote well-being for all at all stages 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all 5. Achieve gender equality and empower all women and girls 10. Reduce inequality within and among countries |

Source: Mediterranean Strategy for Sustainable Development 2016-2025.

Specifically, the Parties asked to take into consideration the process for defining the global SDGs, issued from the Rio+20 Conference, as well as to develop synergies and linkages with other complementary UNEP/MAP regional initiatives to work in partnership and reach common objectives.

The Strategy 2016-2025 builds on the vision “A prosperous and peaceful Mediterranean region in which people enjoy a high quality of life and where sustainable development takes place within the carrying capacity of healthy ecosystems”. This is achieved through common objectives, strong involvement of all stakeholders, cooperation, solidarity, equity and participatory governance”. Its mission is to guarantee the health of the ecological assets, threatened by increasing human pressures, through the integration of environmental concerns into key development decisions. Therefore, it focuses specifically on the interface between environment and socioeconomic development to harmonise interactions and efforts to achieve socioeconomic and environmental goals in the Mediterranean basin and adapt international commitments to regional and national scales.

According to requirements, the MSSD 2016-2025 takes up the outcomes of Rio+20 and the UNEP process towards Green and Blue Economies, as well as the development of the 17 SDGs. In order to bring together environmental, social and economic aspects, the MSSD 2016-2025 does not focus on specific socioeconomic sectors (e.g. tourism or agriculture) yet addresses issues across sectorial, institutional and legal boundaries

and highlights the interrelations between environmental issues and economic and social challenges. It specifically stresses the need for a transition towards a new economic model, based on the Green and Blue Economy conceptual paradigms. In this sense, six major objectives are specifically addressed by the MSSD 2016-2025. Table 3 shows interrelations and common objectives between the new version of the MSSD and the emerging UN SDGs.

In particular, “The transition towards a green or blue economy” makes up specifically one of the goals of the Strategy. Several related issues are intended to be addressed and have become the strategic directions of this target (see Table 4).

Table 4 A transition towards green and blue economies in the Mediterranean: strategic directions and targets

| MSSD OBJECTIVE | STRATEGIC DIRECTION | TARGET |
|---|--|--|
| 5. Transition towards a green and blue economy | 5.1. Create green and decent jobs for all, particularly youth and women, to eradicate poverty and enhance social inclusion | By 2025, the majority of Mediterranean countries are committed to green or sustainable public procurement programmes |
| | 5.2. Review the definitions and measurement of development, progress and well-being | |
| | 5.3. Promote sustainable consumption and production patterns | |
| | 5.4. Encourage environmentally-friendly and social innovation | |
| | 5.5. Promote the integration of sustainability principles and criteria into decision-making on public and private investment | |
| | 5.6. Ensure a greener and more inclusive market that integrates the true environmental and social cost of products and services to reduce social and environmental externalities | |

Source: Mediterranean Strategy for Sustainable Development 2016-2025.

2.2.2. The Integrated coastal zone management Protocol (ICZM)

The Mediterranean Action Plan’s Protocol on Integrated Coastal Zone Management (ICZM Protocol) was adopted by CPs to the Barcelona Convention in Madrid in 2008, and entered into force in 2011. While coastal zones had traditionally been subject of sectorial regulations (either national management plans or international laws), the ICZM Protocol is the first supranational instrument aiming at applying a holistic and coordinate approach to their management at the Mediterranean regional scale.

Conscious that Mediterranean coastal zones have been following an unsustainable development pattern for the last decades, by prioritizing economic development and disregarding environmental related impacts, the Protocol defines ICZM as a “dynamic process for the sustainable management and use of coastal zones, taking into account at the same time the fragility of coastal ecosystems and landscapes, the diversity of activities and uses, their interactions, the maritime orientation of certain activities and uses and their impact on both the marine and land parts” (Art. 1). On the other hand, Article 5 exposes its six major objectives:

- a) Facilitate sustainable development of coastal zones: environment and landscapes are to be taken into account along with economic, social and cultural development;
- b) Ensure the sustainable use of natural resources, particular regarding water uses;
- c) Preserve coastal zones for current and future generations;
- d) Preserve the integrity of coastal ecosystems, landscapes and geomorphology;
- e) Prevent and/or reduce effects of natural hazards (e.g. climate change);

- f) Achieve coherence between public and private initiative (interests) and between decisions of the public authorities (national, regional or local) affecting coastal zones.

Overall, the Protocol aims at protecting and preserving Mediterranean environmental and cultural heritage, managing coastal human activities and addressing hazards. To this purpose, Mediterranean coastal ecosystems are specifically detailed in Articles 10 (wetlands and estuaries, marine habitats, coastal forests and woods, and dunes), 11 (coastal landscapes) and 12 (islands); as well as the necessary measures and actions to be determined for their preservation and sustainable development.

On the other hand, relevant coastal and maritime activities potentially impacting environmental systems are also enumerated, along with necessary regulations to be adopted in order to decouple socioeconomic performance and sustainable use from environmental pressures and impacts (Art. 9):

- Agriculture and forestry
- Fishing
- Aquaculture
- Tourism, sporting and recreational activities
- Utilization of specific natural resources
- Infrastructure
- Maritime activities

Furthermore, the Protocol highlights the need to take into account the interrelations between socioeconomic and environmental systems -i.e. to apply an ecosystem approach- to planning and management of coastal areas (Art. 6c) to ensure sustainable uses and management of coastal resources. The need for developing international cooperation, and coordination and synergies with already ongoing governance processes is equally stressed, e.g. the MSSD, existing Mediterranean networks on monitoring and observation, or national coastal strategies and plans. Land policies, environmental assessment and economic, financial and fiscal instruments are to be developed to foster initiatives for the integrated management of coastal zones, at all levels (regional, national, local).

2.2.3. The Ecosystem Approach Initiative: a roadmap towards the Ecosystem Approach based management

In 2008, the CPs to the Barcelona Convention adopted a strategic holistic framework to achieve Good Environmental Status (GES) through the endorsement of the Ecosystem Approach (EcAp) Initiative for a sustainable, integrated ecosystem-based management of human activities in the Mediterranean basin. Indeed, the Mediterranean Sea is considered to be severely threatened by intensive human activities such as fisheries, extraction of natural resources, maritime traffic, pollution and nutrient inputs and coastal urban development. The ability of Mediterranean ecosystems to deliver goods and services appears therefore compromised.

The implementation of the MAP's EcAp Initiative has involved a rational and strategic seven-step process, intended to be run in a six-year-cycle structure, identified for moving towards a more effective, ecosystem-based management. The seven steps are as follows:

1. definition of an Ecological Vision for the Mediterranean

2. setting of common Mediterranean strategic goals
3. identification of important ecosystem properties and assessment of ecological status and pressures
4. development of a set of ecological objectives corresponding to the Vision and strategic goals
5. derivation of operational objectives with indicators and target levels
6. revision of existing monitoring programmes for on-going assessment and regular updating of targets
7. development and review of relevant action plans and programmes

The Ecological Vision for the Mediterranean in the context of EcAp has been defined as “a healthy Mediterranean with marine and coastal ecosystems that are productive and biologically diverse for the benefit of present and future generations”.

Table 5 Ecological Objectives established by the MAP's Ecosystem Approach Initiative (EcAp)

| EcAp INITIATIVE - ECOLOGICAL OBJECTIVES | |
|---|---|
| 1 | Biodiversity is maintained or enhanced. |
| 2 | Non-indigenous species do not adversely alter the ecosystem. |
| 3 | Populations of commercially exploited fish and shellfish are within biologically safe limits. |
| 4 | Alterations to components of marine food webs do not have long-term adverse effects. |
| 5 | Human-induced eutrophication is prevented. |
| 6 | Sea-floor integrity is maintained. |
| 7 | Alteration of hydrographic conditions does not adversely affect coastal and marine ecosystems. |
| 8 | The natural dynamics of coastal areas are maintained and coastal ecosystems and landscapes are preserved. |
| 9 | Contaminants cause no significant impact on coastal and marine ecosystems and human health. |
| 10 | Marine and coastal litter does not adversely affect coastal and marine ecosystems. |
| 11 | Noise from human activities cause no significant on marine and coastal ecosystems. |

Source: UNEP/MAP Decision 20/4 on “Implementing the Ecosystems Approach Roadmap” (2012)

Eleven Ecological Objectives (EOs) have been validated covering areas such as biodiversity and non-indigenous species, pollution and marine litter, and hydrography and coastal dynamics (see Table 5); corresponding operational objectives and indicators have also been laid down. Regionally good environmental status (GES) targets and indicators have been defined. A draft Integrated Monitoring and Assessment Programme has been achieved, aimed at running an integrated monitoring and at producing, for the first time, an assessment of the status of Mediterranean marine and coastal environments according to the mentioned thematic areas by 2023.

2.2.4. The Regional Action Plan on Sustainable Consumption and Production (SCP Action Plan)

The objective of the MAP's Regional Action Plan on Sustainable Consumption and Production (SCP Action Plan) is to set up a regional framework identifying sustainable consumption and production priorities and tools allowing a shift towards a sustainable, no waste, low carbon and resource efficient socioeconomic development, based on a circular and green economy, in the Mediterranean region.

The common vision of the SCP Action Plan is to establish “by 2027 a prosperous Mediterranean region, with non-pollutant, circular, socially inclusive economies based on sustainable consumption and production patterns, preserving natural resources and energy, ensuring the well-being of societies and contributing to clean environment and healthy ecosystems that provide goods and services for present and future generations”.

The Action Plan does not specifically focus on maritime sectors; however, it aims at addressing key human activities that have, directly or indirectly, a particular impact on the marine and coastal environment and related transversal and cross-cutting issues. In order to reorganise the Mediterranean production and consumption model according to sustainable practices, three strategic objectives are defined and a number of operational objectives and actions are structured around four consumption and production priority areas:

- Food, fisheries and agriculture, including sustainable fishing practices;
- Goods manufacturing;
- Tourism;
- Housing and construction, including coastal urban development.

Several other issues (i.e. land use; water, resource and energy efficiency; pollution (wastewater, chemicals and solid wastes); transportation and mobility; and consumer behaviour) are considered as transversal and are addressed through the operational objectives established for each priority area.

2.2.5. The Paris Declaration- A call for a Blue Economy

In 2012, at the MAP's 17th Conference of the CPs to the Barcelona Convention (COP17) held in Paris, the Mediterranean countries and the European Union signed the Paris Declaration calling for a "blue" economy to be established to safeguard and promote a clean, healthy and productive Mediterranean environment.

The Parties expressed their will to foster the process initiated at the Rio+20 Summit towards sustainable development, by implementing a Blue Economy at the regional Mediterranean scale through the strategic policy framework set up by the MSSD. In the Paris Declaration, the Blue Economy is also understood as a version of the UNEP's Green Economy applied to seas and oceans, allowing the switch to a more sustainable model unlocking the vast potential of the marine-based economy while significantly reducing ocean degradation and alleviating poverty.

In the Paris Declaration, the CPs:

- Reaffirmed their political commitment to the sustainable development of the Mediterranean Sea and its coastal zones through an ecosystem approach to the management of human activities;
- Agreed to develop a coherent, well-managed network of marine protected areas in the Mediterranean, aiming for a target of 10 per cent of marine protected areas by 2020;
- Decided to intensify their efforts to curb marine pollution from land-based sources, including marine litter, by adopting legally binding measures, and reduce pollution from offshore and marine-based activities through regional action plans;
- Adopted the action plan for the implementation of the ICZM Protocol, and encouraged all CPs to ratify it;

- Agreed to work to protect the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction, through the implementation of existing instruments and through the development of a multilateral agreement under the United Nations Convention on the Law of the Sea (UNCLOS);
- Supported the preparation by 2014 of a report on the state of the marine environment, including from a socioeconomic perspective.

The Declaration recognises that marine environments represent a key pillar for economic and social development and therefore are considered as a vital opportunity in the fight against poverty. It expresses the Parties' willingness to protect and manage marine and coastal zone ecosystems with a view to sustainable development, to address threats menacing ecosystem services –e.g. food security and climate regulations– and putting them at risk.

2.2.6. The Union for the Mediterranean

The Union for the Mediterranean (UfM) is an intergovernmental organisation aimed to bring together the twenty-eight EU MS and the fifteen southern and eastern Mediterranean countries in order to enhance regional cooperation and dialogue in the Euro-Mediterranean region. Established in 2008, it was launched as a continuation of the Euro-Mediterranean (Euro-Med) Partnership, also known as the Barcelona Process.

The UfM is aimed at increasing the potential for regional integration and cohesion among Euro-Mediterranean countries for the purpose of transforming the Mediterranean region into an area of peace, democracy, cooperation and prosperity. In this sense, it constitutes the first permanent structure dedicated to the intergovernmental Mediterranean partnership, empowering regional dialogue between the UfM Mediterranean countries and stakeholders.

A joint UfM Secretariat was created in 2010, the mandate and mission of which focus on identifying, processing, promoting and coordinating regional projects, in synergy with the principles and rules of international law, to enhance and strengthen cooperation among countries and positively impact regional well-being. These projects are required to respond to the current needs and aspirations of the Mediterranean populations and contribute to sustainable development, job creation, exchange of knowledge and innovation.

At the launching of the UfM, six priority areas of action were established, all of them upholding the principle of sustainable development:

- De-pollution of the Mediterranean
- Maritime and land highways
- Civil protection
- Alternative energies: Mediterranean solar plan
- Higher education and research
- The Mediterranean Business Initiative

In view of their respective ambitions and aims, synergies and cooperation needs between the UNEP/MAP and the UfM are significant. In this respect, a Memorandum of Understanding between the Barcelona

Convention and the UfM was signed during the 18th meeting of the CPs to the Convention held in Istanbul in December 2013. Indeed, the UfM Member States acknowledged that shifting towards sustainable consumption and production patterns is indispensable to reduce pollution and waste, as well as to increase resource and energy efficiency and minimize climate change and pollution impacts. They committed to policy reforms to accelerate the shift towards sustainable patterns, bearing in mind the unequal economic development and social disparities among Mediterranean countries, and confirmed that transition to a green and low emissions economy may provide real opportunities for preserving natural resources, job creation, improvement of the quality of life for all and ensure a sustainable future.

This cooperation agreement provided a framework for collaboration and mutual support on pollution prevention and control of Mediterranean coastal and marine waters, as well as on sustainable development.

The UfM Conference on Blue Economy

In November 2015, at the first UfM Ministerial Conference on Blue Economy, the Ministers and country representatives stressed the potential for a sustainable growth in the Mediterranean region and their will to work together in common purpose. Sustainable development was expected to be achieved by improving maritime governance and creating an environment conducive to job creation, research, innovation and knowledge-based business opportunities through the development of key maritime sectors. The UfM Blue Economy Initiative falls within the framework of the global UfM Sustainable Development Strategy, which entails activities in the fields of energy, climate change, urban development and water and environment.

The Conference called for a concrete definition of Blue Economy adapted to the Mediterranean region, and highlighted the importance of clean and healthy seas as drivers for a sustainable development of national and regional economies. The Declaration points out several traditional and emerging socioeconomic sectors so as to be (re) developed in an integrated manner in the context of a Blue Economy in the Mediterranean:

- Aquaculture
- Fisheries
- Coastal and maritime tourism
- Blue biotechnologies
- Shipping and ship-building repair sectors
- Ports
- Ocean and marine renewable energy, including offshore wind

All parties are to seek coordination and synergies among existing governance processes, as key enablers for the development of the Blue Economy in the Mediterranean. In this sense, they committed to strengthen a triple coordination: inside countries; between countries; and between Ministers and the EU Commission, IMO, the UNEP/MAP or other relevant organisations. For instance, according to the objectives of UNEP/MAP, the Conference Declaration states the commitment to foster tools and initiatives such as MSP and ICZM, the ecosystem approach to encompass land-sea interactions, or the development of a well-managed network of marine protected areas.

In addition, the Parties encouraged the establishment of a UfM Forum on Blue economy to foster exchanges on views and best practices, to facilitate information flows and to avoid the duplication of efforts.

The Conference was built on previous works: a UfM Stakeholders' Conference was held previously on Blue Economy to discuss and suggest proposals for specific actions on key priority topics of shared interest. Some of the topics discussed included:

- Partnerships for marine research and innovation in the Mediterranean to develop blue growth and jobs in the Mediterranean.
- Emerging knowledge-based business opportunities: innovative ICTs (data analytics, big data, cloud computing, mobile technologies) and open data able to help policymakers and administrators in their decision-making and stimulate investment and growth for businesses.
- Marine litter, a growing threat to the coastal and marine environment, posing significant risks to marine wildlife and ecosystems, human safety and livelihood.
- Maritime governance tools, such as sea basin strategies and maritime spatial planning, for the sustainable coexistence of activities at sea (i.e. tourism, aquaculture, and marine protected areas).
- New technologies and skills for maritime transport, ocean energy and offshore wind, for smart and clean ports, energy efficiency for ships.
- New tourism concepts for a sustainable Mediterranean, through best practice sharing and synergies development in new tourism products to address key sustainability challenges and to enhance cooperation opportunities.

2.3.A preliminary concrete definition of a Blue Economy adapted to the Mediterranean context

The first meeting of the Blue Economy Project's Advisory Board was held in July 2015 in Sophia-Antipolis, France, with the aim to present the principal objectives, components and activities, and to officially launch the Project.

One of the principal and former tasks of the Project, and object of the first component, is to find a suitable concrete definition of the concept of "Blue Economy" adapted to the Mediterranean context, according to international and regional initiatives targeting sustainable development as well as to the regional (Mediterranean) idiosyncrasy. To this purpose, a discussion session on the "Blue Economy" was launched throughout the meeting, to encourage a fruitful exchange between experts from different Mediterranean areas and fields.

The Group discussed on the existing paradigms and definitions regarding the blue economy concept at the global and regional levels. International initiatives and strategies aimed to achieve sustainable development (as detailed in previous sections of the present report) were examined and discussed. Synergies with main tools developed in the region to shift towards a more sustainable economic system were equally identified.

A number of issues were raised during the debate session to be considered for the definition and implementation of a sustainable, Blue Economy in the region. The Group highlighted the need that a Blue Economy is based on three equally-weighted pillars, thus giving equal consideration to economic growth, social equity and environmental concerns. It was also emphasised that environmental externalities related to goods production need to be incorporated into economic calculations to estimate the real costs and benefits of human activities linked to coastal and marine spaces.

In addition, it was demanded that the Blue Economy in the Mediterranean basin encompasses the principles of the several global and regional initiatives advocating for a renewed and more sustainable economic organisation. In this respect, synergies and links between international and regional instruments (regulatory texts, initiatives, strategies, projects, etc.) targeting a Blue Economy or sustainable development have been assessed and are presented in Table 6.

In the light of the results shown by the table, the definition adopted under the UNEP "A green economy in a blue world", appears as the most suitable for its application to the Mediterranean case. Its vision ("Improving human well-being and social equity, while significantly reducing environmental risks and ecological scarcities, meaning creating sustainable jobs, lasting economic value and increased social equity in the "Blue World", which consists in the world's oceans and coasts, as they are the cornucopia for humanity and provide us with food, oxygen and livelihoods") responds well to the expectations and concerns expressed by the Project's Advisory Group during its first meeting.

Table 6 Synergies among international and Mediterranean governance processes targeting sustainable development, regarding outcomes, principles and implementation tools

| | | UN Green Economy | UN Blue Economy | Gunter Pauli | EC Blue Growth | ICZM Protocol | UfM Blue Economy | EcAp Initiative | MSSD | SCP Action Plan |
|----------------------------------|---|------------------|-----------------|--------------|----------------|---------------|------------------|-----------------|-----------|-----------------|
| Main Outcomes | | | | | | | | | | |
| Environmental | Reduced environmental risks | X | X | | | X | | X | X | |
| | Reduced ecological scarcities | X | X | | | | | | X | |
| Social | Poverty eradication | X | X | | | | | | X | |
| | Employment generation | X | X | X | X | | X | | X | X |
| | Improved human well-being | X | X | | | X | | X | X | X |
| Economic | Economic growth/ revenue | X | X | X | X | | X | | X | X |
| | Sustainable consumption & production | | | | | X | X | X | X | X |
| Main Principles | | | | | | | | | | |
| Environmental | Resource efficiency & sustainable use | X | X | X | X | X | | X | X | X |
| | Low carbon | X | X | | | | | X | X | X |
| | Reduced or no waste | X | X | X | | | | X | X | X |
| | Biodiversity protection/ restoration/ enhancement | | | X | X | X | | X | X | X |
| | Environmentally inspired | | | X | | | | X | | |
| Social | Social equity | X | X | | | | | | X | |
| | Social inclusion | X | X | | | X | | | X | X |
| Economic | Circular economy | | | X | | | X | | X | X |
| | Competitiveness | | | X | X | | | | | |
| Transversal | EA to management of human activities | | X | | X | X | X | X | X | |
| Scale | Local scale economies | | | X | | | | | | |
| Main Tools and Mechanisms | | | | | | | | | | |
| | Spatial planning | | X | | X | X | X | X | X | |
| | ICZM | | | | X | X | X | X | X | |
| | Scientific research | X | X | X | X | X | X | | X | X |
| | Monitoring and observation | | | | X | X | X | X | | |
| | Environmental assessments | | | | | X | | X | X | |
| | Economic, financial, fiscal instruments | X | | | X | X | X | X | X | X |
| | (International) Regional cooperation | | X | | | X | X | X | X | X |
| | MPA design | | X | | | | X | | | |
| | Technology uptake/ transfer | | X | X | | | X | | X | |
| | | 13 | 17 | 11 | 11 | 11 | 13 | 7 | 22 | 13 |

In addition, the UNEP's Blue Economy approach appears to be in line with the majority of the Mediterranean regional efforts that have been adopted to ensure the shift towards a more sustainable development of Mediterranean riparian countries, as well as to achieve a healthy and productive status of marine and coastal ecosystems across the basin. In this sense, the UNEP approach encompasses a large number of the main principles and expected outcomes reflected in regional governance texts, such as the MSSD 2016-2025 and the SCP Action Plan. It also identifies several implementing tools and mechanisms allowing fostering and effecting towards a sustainable economic system. Some of these tools are already subject of regulatory instruments in the region, e.g. the ICZM Protocol to the Barcelona Convention.

It is necessary to stress, yet, that the principles of the circular economy are to be strongly taken into account in the Mediterranean region despite the fact that there is not much allusion to them in the UNEP Blue Economy document. As also pointed out by the Project's Advisory Group, a Mediterranean Blue Economy should build on a new way of designing business, where resources are available in cascading systems so that wastes of one product become new inputs and create new cash flows. The aim is to shift towards sustainable consumption and production patterns, in line with current governance efforts, in particular the ones addressing socioeconomic drivers such as the MSSD 2016-2025 and the SCP Action Plan.

Box 1 A definition of a Blue Economy adapted to the Mediterranean region

Definition

"Blue economy is a low polluting, resource-efficient and circular economy based on sustainable consumption and production patterns, enhancing human well-being and social equity, generating economic value and employment, and significantly reducing environmental risks and ecological scarcities.

The blue economy allows preserving Mediterranean healthy marine and coastal ecosystems and ensures the continuous delivery of goods and services for present and future generations.

Progress towards a successful blue economy relies on the sustainable development of key socioeconomic activities:

- *Fisheries and aquaculture;*
- *Tourism and recreational activities;*
- *Maritime transport and port activities;*
- *Bio-prospecting or exploitation of biological resources;*
- *Exploitation of renewable energy sources".*

3. Context elements to consider in the definition of the terms of reference for a Full study to support the implementation of the Blue economy in the Mediterranean region

3.1. Background

3.1.1. The full study in the framework of the Blue Economy Project

The “Blue economy for a healthy Mediterranean” Project has been conceived to highlight the link between a healthy (marine) environment and a sound and more sustainable economy, as well as to define and adapt the “Blue economy” paradigm to the Mediterranean context according to the several governance efforts that are being currently deployed, both at international and at a (Mediterranean) regional level. Overall, the aim is to move towards a more sustainable economic development allowing social welfare while ensuring the conservation and/or achievement of healthy environmental ecosystems in the region.

The Project aims at achieving this objective via (i) the definition of a Blue Economy in the Mediterranean region, taking into account its cultural and environmental features; ii) the identification of existing indicators allowing monitoring a Blue Economy in the region, iii) the selection of tools and measures already set by ongoing regional governance processes aiming to attain a sustainable development in the Mediterranean, and iv) the recommendation of policies to foster a Blue Economy across Mediterranean riparian countries.

In this context, the activity that is described in the present (third) section of the report is expected to produce a comprehensive study (henceforth referred to in this report as “Full study”) to set a methodology allowing assessing the state of Mediterranean economic activities with respect to the Blue Economy vision in the Mediterranean.

3.1.2. Objectives of the Full study and expected outcomes

In the context of the Blue Economy Project, the operational objectives of the Full study are:

- To prepare a **critical review of the existing indicators and tools** utilised in the Blue Economy policies and strategies, mainly at the Mediterranean regional scale, allowing proposing a core set of the more relevant indicators for the implementation of a “Blue Economy” strategy for the Mediterranean region;
- To develop a **trend analysis of the selected set of “Blue Economy” indicators** aiming to provide a global picture of the “Blue Economy” in the Mediterranean region;
- According to the analytical findings, **recommend a set of policies at national and regional levels** to foster a successful strategy targeting the implementation of a Blue sustainable economy across the Mediterranean riparian countries.

3.2. Scope of the full study

3.2.1. Data sources and needs

The “Full study” needs to come up with a critical review and selection of “Blue Economy” indicators and tools enabling to measure progress towards sustainable development in the Mediterranean and evaluate

sustainability of socioeconomic sectors taking place both in coastal and marine spaces. These indicators and tools are required to reflect social, economic and environmental aspects related to human activities.

Data on marine water uses, economic sectors and environmental concerns are scattered in a variety of sources, at different spatial scale: EU publications, countries official statistical compilations, databases within specific international agencies and conventions, private sector associations, marine NGOs, etc.

At the European level, two major data sources deliver environmental and socioeconomic information, also related to European seas:

- The European Environment Agency (EEA⁴), which disseminates mostly environmental data;
- EUROSTAT⁵, delivering a vast amount of economic information relevant to water management issues in the EU MS marine regions, classified according to the NACE⁶ system.

In addition, in the context of the EU Marine Strategy Framework Directive (MSFD), EU MS have been required to prepare Initial Assessments (IAs) of their marine waters including analysis of three main aspects: i) the environmental state of marine waters; ii) pressures and impacts on the status of these waters and their links with human activities; and iii) an economic and social analysis of the use of marine waters as well as the cost of their degradation. In this sense, national socioeconomic and environmental data regarding human activities taking place in coastal and marine regions of Croatia, Cyprus, France, Greece, Italy, Malta, Slovenia and Spain have been collected and presented in national MSFD IAs.

In general, sources other than European that may be useful to the preparation of the Full study are:

- National Statistical Authorities
- Private sector and trade associations
- Non-European, international organizations (e.g. FAO, FishStat, UNCTAD, UNWTO, World Bank, etc.)
- Reports that inter alia contain data on SES marine sectors (e.g. Douglas-Westwood Ltd (2005) for the hydrocarbon energy industry, etc.)
- Mediterranean thematic observatories (e.g. CIHEAM, UNEP/MAP and related RACs, the Mediterranean Energy Observatory, etc.).

A number of research or governance projects, either European or Mediterranean, may also be source of suitable data for the purposes of the Full study: some examples are EU FP7 research projects, such as Pegaso, Perseus, Devotes, Coconet, etc. or the regional Mediterranean ReGoKo Project, all of them focusing -at least to some extent- on the analysis of socioeconomic uses of marine and coastal environments.

⁴ www.eea.europa.eu

⁵ <http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/>

⁶ Deriving from the French « Nomenclature statistique des Activités économiques dans la Communauté Européenne », the NACE classification is a four-digit classification providing the framework for collecting and presenting a large range of statistical data according to economic sectors (e.g. production, employment and national accounts).

3.2.2. Thematic scope

The “Full study” needs to come up with a critical review and selection of “Blue Economy” indicators and tools to foster a sustainable development in the Mediterranean. By reason of the potential methodological and data needs as well as related difficulties, however, the study is to be developed as a demonstrative assessment, rather than exhaustive.

To this purpose, the Full study will carry out an assessment with a two-fold objective:

- a) analysing how sustainable are current Mediterranean activities;
- b) evaluating the progress that is being done at the regional level towards a Blue, sustainable economy.

Existing Mediterranean experiences in the field of sustainable, blue economies will need to be sought, in order to illustrate the results of the analysis. Both the assessment and the “business experiences” are to be related to key socioeconomic activities taking place in Mediterranean coastal and marine regions, and being object of Mediterranean strategies or initiatives (i.e. MSSD review, ICZM Protocol, EcAp Initiative and SCP Action Plan) aiming to put in place a sustainable development in the region.

Table 7 presents the Blue Economy sectors considered by governance instruments already put in place both at international and regional levels. Some of the socioeconomic sectors represent, in the context of the present Blue Economy Project, key activities for the development of a successful Blue Economy in the region, by reason of the high economic and/or social impacts that they currently generate for national economies (e.g. traditional sectors, such as tourism, fisheries, aquaculture or maritime transport); or due to their potential socioeconomic impacts in the case of emerging sectors (bio-prospecting, exploitation of blue, renewable energy sources). Either traditional or emerging, Blue Economy sectors need to be(re)developed in the context of an ecosystem-based management and according to sustainable patterns.

The key socioeconomic activities (Blue Economy sectors) selected for the purposes of the Blue Economy Project are as follows:

1. Tourism and recreational activities:

- The tourism sector is considered of upmost importance, as it represents a key sector for national economies in Mediterranean riparian countries, both in terms of economic and social impacts. For almost five decades, tourist activities have been in constant growth in the Mediterranean, representing a constant source of income and jobs. Indeed, it has been estimated that half of the 300 million international arrivals registered in 2011 in the Mediterranean region took place in coastal areas, accounting for a significant 15% of world figures. Revenues generated by tourism and recreational activities in coastal areas exceeded 250 billion Euros and produced a GVA close to 140 billion Euros in 2012. Estimates also indicate that the tourism sector provided in 2012 3.3 million direct jobs and 8.5 million total jobs in coastal Mediterranean areas.
- Besides their socioeconomic benefits, in view of the environmental pressures and impacts that tourism and recreational activities exert on coastal and marine ecosystems, it is strongly believed that a shift in the traditional Mediterranean mass tourism model is needed,

especially since prospective scenarios predict a continuous increase and expansion of the sector in the region, in particular in eastern and southern shores of the Mediterranean.

- Sustainable tourism practices need to involve a rational, efficient use of local resources (particularly water and energy), reduced and adequate management of wastes (pollution, wastewater, litter, gas emissions, etc.), protection and conservation of fragile coastal and marine environments (dunes, wetlands, beaches, seagrass meadows or coralligenous assemblages) as well as protection and respect for local culture and lifestyles and social structures.

2. Fisheries: Fishing and Aquaculture

- Fishing activities in the Mediterranean have been on the rise for the last century; technological advances have favoured a transition from a primarily artisanal and coastal activity towards intensive exploitation practices. As a consequence, commercial fish stocks have been subject of increasing pressures; the amount of populations being totally exploited or overexploited, and thus beyond safe biological limits, has reached 80% (EEA) while catches have experienced declining trends for the last decades.
- According to 2011 data, fish landings in the Mediterranean region may have amounted to almost 1 million tons, representing close to 1% of total world captures. Mediterranean catches may have generated in 2008 direct gross revenues of 3 200 million Euros, rising up to 9 700 million Euros in terms of total (direct, indirect and induced) economic impacts. GVA may have exceeded 2 000 million Euros. In addition, it is estimated that the Mediterranean fishing sector provided 230 000 direct jobs in 2008.
- Fishing activities need to switch towards sustainable practices, in order to allow stocks to renew their populations and thereby favouring the upturn of fishing captures. An ecosystem-based approach is needed to the sector's management, based on scientific advice, allowing the setting of sound management measures favouring low energy utilisation and costs. Furthermore, the removal of subsidies fostering unsustainable fishing represents an indispensable measure to avoid overfishing and allow restoring wild stocks.
- Parallel to decreasing wild fish stocks, aquaculture activities have experienced an important expansion and have become the fastest growing sector in the Mediterranean region. In 2011, the Mediterranean aquaculture sector produced 1.2 million tons of marine and brackish species, exceeding the fishing captures sector and representing 3% of world figures. It has been assessed that such aquaculture production generated 2.6 billion Euros in terms of production value, and 1.9 billion Euros in terms of GVA. Regarding employment, it is estimated that in 2008 the aquaculture sector provided 123 000 direct jobs.
- Aquaculture activities, without a pertinent sound management framework, may develop massively according to unsustainable patterns and be source of a number of environmental pressures, e.g. nutrient, pharmaceutical and pollution releases; impacts on local biodiversity and transfer of diseases and pathogens; or added pressure on wild fish populations, captured to feed farmed fish.
- Sustainable aquaculture involves two main challenges: first, alleviating pressures (instead of adding) exerted on wild fish populations; and second, responding to the increasing human demand on sea products. Such major objectives might be achieved by developing the

aquaculture sector according to sustainable practices, spatial planning and thereby allowing coastal communities to widen their socioeconomic activities.

Table 7 Regional Initiatives in the Mediterranean Region and links with Sustainable Development

| Sectors and sub-sectors | International or regional | | | Regional Mediterranean | | | | | Cited |
|---|---------------------------|-----------------|----------------|------------------------|-----------------|-------------|-----------------|------------------|-------|
| | UN Green Economy | UN Blue Economy | EU Blue Growth | ICZM Protocol | EcAp Initiative | MSSD Review | SCP Action Plan | UfM Blue Economy | |
| Agriculture | X | | | X | | (x) | | | 3 |
| Industry / Goods manufacturing | | | | X | | (x) | X | | 3 |
| Green building / Housing and construction | X | | | | | (x) | X | | 3 |
| Coastal development | | | | X | | (x) | X | | 2 |
| Fishing | X | X | | X | | (x) | X | X | 6 |
| Aquaculture | X | X | X | X | | (x) | | X | 6 |
| Tourism & Recreational | | X | X | X | | (x) | X | X | 6 |
| Use of natural resources | | | (x) | X | | (x) | | | 3 |
| Bio-prospecting/ Blue biotechnology | | X | X | (x) | | (x) | | X | 5 |
| Marine mineral mining | | X | X | X | | (x) | | | 4 |
| Maritime transport activities | | (x) | | (x) | | (x) | | | 3 |
| Shipping (energy-efficient) | X | X | | (x) | | (x) | | X | 5 |
| Port activities | | X | | (x) | | (x) | | X | 4 |
| Clean transportation | X | | | | | (x) | | | 2 |
| Infrastructures (Energy, Port, Maritime struct.) | | | | X | | (x) | | | 2 |
| (Blue, renewable) Energy | X | X | X | (x) | | (x) | | X | 6 |

In grey bold, non-maritime sectors.

(x) Maritime sectors indirectly referred.

3. Blue energy

- Marine environments offer a high potential for developing renewable sources of energy, which represent an alternative to carbon-based finite energy sources. Among wind, wave, tidal, biomass and thermal energies, offshore wind power generation is the most developed sub-sector and could meet a significant demand of the human electricity demand, although at present offshore wind technologies remain at an early stage of development.
- According to EU data, in 2011 the offshore wind capacity in European seas may have accounted for 10% of the total installed capacity and generated 35 000 total (direct and indirect) jobs. The EU has estimated that, by 2030, the offshore capacity deployed in European waters may exceed the onshore, meeting 14% of the European energy demand and generating 300 000 jobs. In addition, the development of other offshore renewable technologies, such as the wave, tidal and thermal, may make progress, be appropriate for commercialisation and complement the offshore wind sector as blue energy sources.

4. Bio-prospecting

- Blue biotechnology or bio-prospecting is an emerging and still underdeveloped sector related to the use of marine biological resources through biotechnologies (e.g. gene sequencing, biofuels). Although to this day it has relatively remained underexplored, it is believed that marine biological resources may have a high potential to bring benefits to several domains, such as food security, energy provision, human health and environmental remediation.
- UNEP has estimated a global market for marine biotechnology products able to generate over 2.5 billion Euros by 2017, with a high potential for expansion. On the other hand, EU current estimates indicate that this sector might be producing a GVA close to 1 billion Euros in European waters, and also point out that it is contributing to the creation of high qualified jobs.
- Several conditioning factors may favour the consolidation of the bio-prospecting sector as a sustainable and economically viable activity in the Mediterranean region in the short/ mid-term, such as the implementation of a strategic approach aimed to fostering research and innovation; the driving of public and private investments; and the development of an adequate framework for an environmentally sound management of Mediterranean biological resources.

5. Maritime transport and port activities

- Maritime transport in the Mediterranean Sea is a buoyant activity which has experienced a significant growth over the last decades. Although affected by the financial crisis, the sector is rapidly recovering and today the Mediterranean registers a high maritime transportation activity of goods, energy products and passengers.
- The basin registers more than 600 ports or terminals showing vessel activity, some of them lying among the world top ports in terms of port calls, carrying capacity, container and cargo volume. 20% of the world seaborne trade takes place in the Mediterranean (exceeding 1.5 billion tons of freight transport), while the 34 million TEU recorded in Mediterranean ports account for 10% of the world container throughput. In terms of passenger transport, 170 million passengers were recorded to have transited the basin in 2010. Total revenues of maritime transport activities (including transport services, port services and shipbuilding) have been calculated at around 70 billion Euros in 2010, generating a GVA exceeding 25

billion Euros. It is also estimated that 550 000 jobs were directly created by this sector the same year.

- Maritime activities generate a number of environmental pressures and impacts related to ship pollution (both emissions and leaks), collisions and noise disturbance, grounding and anchor damage, and transportation of non-indigenous species. Prospective scenarios indicate that shipping routes in the basin will increase in the following years, both in number and traffic intensity. Although the shipping industry is considered the most environmentally benign means of commercial transport, sustainable practices are needed to deal with the sector's expected expansion, in particular in an enclosed and vulnerable sea such as the Mediterranean. Sustainable practices involve improving cost efficiency; technological investments to reduce emissions and enhance engine efficiency while reducing vessel noise; maritime spatial planning, to avoid seafloor damage and take into consideration marine mammals and turtles distribution; ship recycling; antifouling; ballast water and sewage treatment; and appropriate reception facilities and practices at ports.

The Full study, i.e. the assessment on the progress towards a Blue Economy in the Mediterranean as well as the selected blue economy (business) experiences, should build on the Blue Economy sectors above highlighted. The activities defined as priorities in the SCP Action Plan should be taken into consideration.

In addition, the analysis should take into account, whenever possible, two major concerns involving severe environmental impacts in coastal and marine ecosystems and hence making up critical issues as regards the achievement of a blue, sustainable development: coastal urbanisation, and waste generation and management, both related to an increasing coastal population in Mediterranean riparian countries. Given the cross-cutting nature of both issues, they might be linked to a wide range of human activities: coastal development and urbanisation might be directly related to increasing tourism activities and maritime transport activities; on the other hand, waste generation is related to all socioeconomic sectors, as it involves not only solid wastes, but also gas emissions and pollution releases. A specific consideration on its implications for marine litter should be however made.

In view of the reasons set out above, it is proposed that coastal development as well as waste generation and management are equally evaluated and addressed, whenever pertinent, under the assessment conducted for each Blue Economy sector considered in the Full study.

3.2.3. Geographical scope

The geographical scope of the Full study covers the Mediterranean Sea regional area, and focuses on its coastal regions and marine areas. The selection of the scale at which the assessment will be conducted—regional, sub-regional, and national, etc.—may vary depending on a number of factors, such as the socioeconomic activity evaluated or according to data needs and availability; the choice of the scale will therefore need to be duly justified.

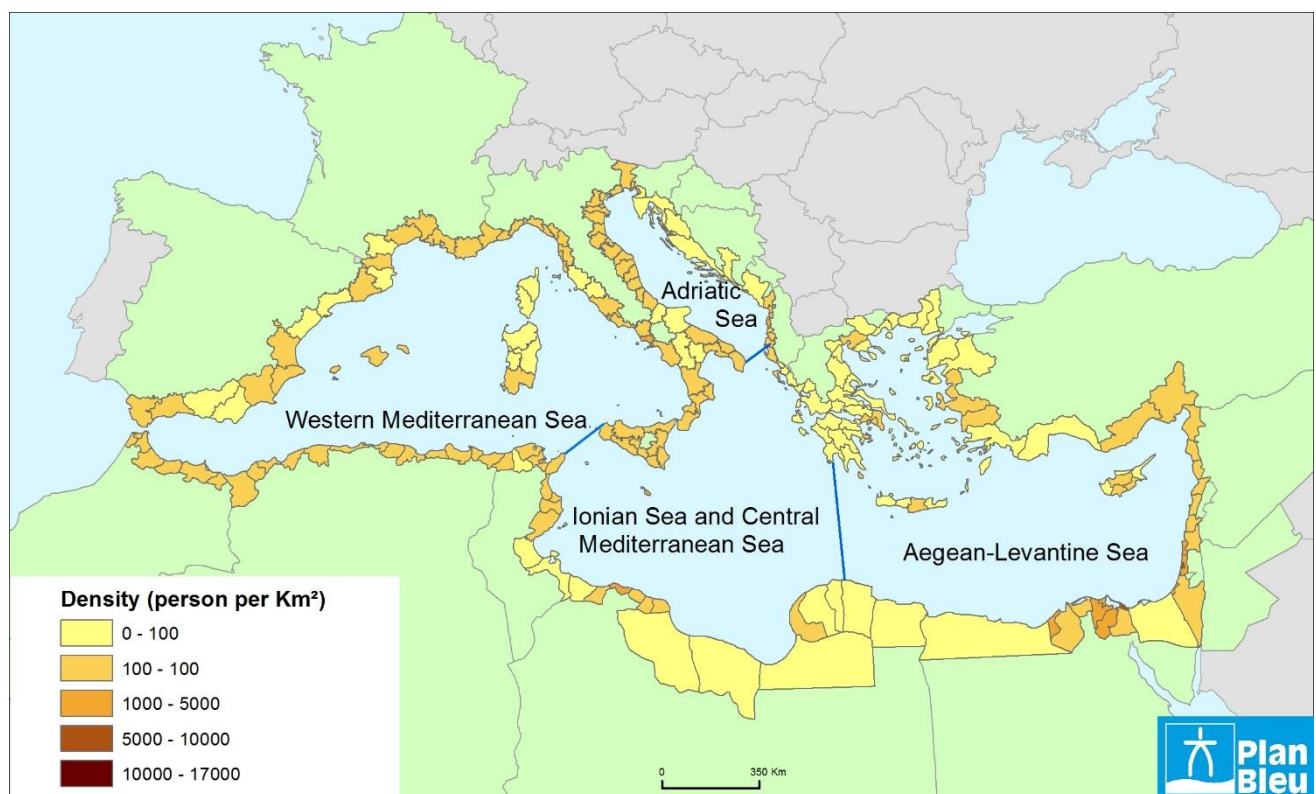
Mediterranean coastal regions

The analysis of socioeconomic sectors taking place in coastal regions can be undertaken according to established territorial administrative units for each country. In this sense, coastal areas may be defined in EU

countries in accordance to the European “Nomenclature of Units for Territorial Statistics” (NUTS) system, used to reference the subdivisions of countries for statistical purposes. In the case of EU Member States, a hierarchy of three NUTS levels is set based on the existing national administrative subdivisions. Two levels of local administrative units (LAUs) complement the subdivision at the local scale. On the other hand, equivalent levels may be used in Eastern and Southern Mediterranean countries.

This coastal approach might be suitable for the analysis of several Blue Economy sectors highlighted in the previous section, such as the tourism and recreational activities; some aquaculture activities located in coastal areas; maritime transport and port activities; as well as the coastal renewable energy sector. However, the scale of analysis may vary and be selected according to the socioeconomic sector assessed. The choice of the scale will need to be justified.

Figure 1 Mediterranean coastal regions (population density) and MSFD regional seas



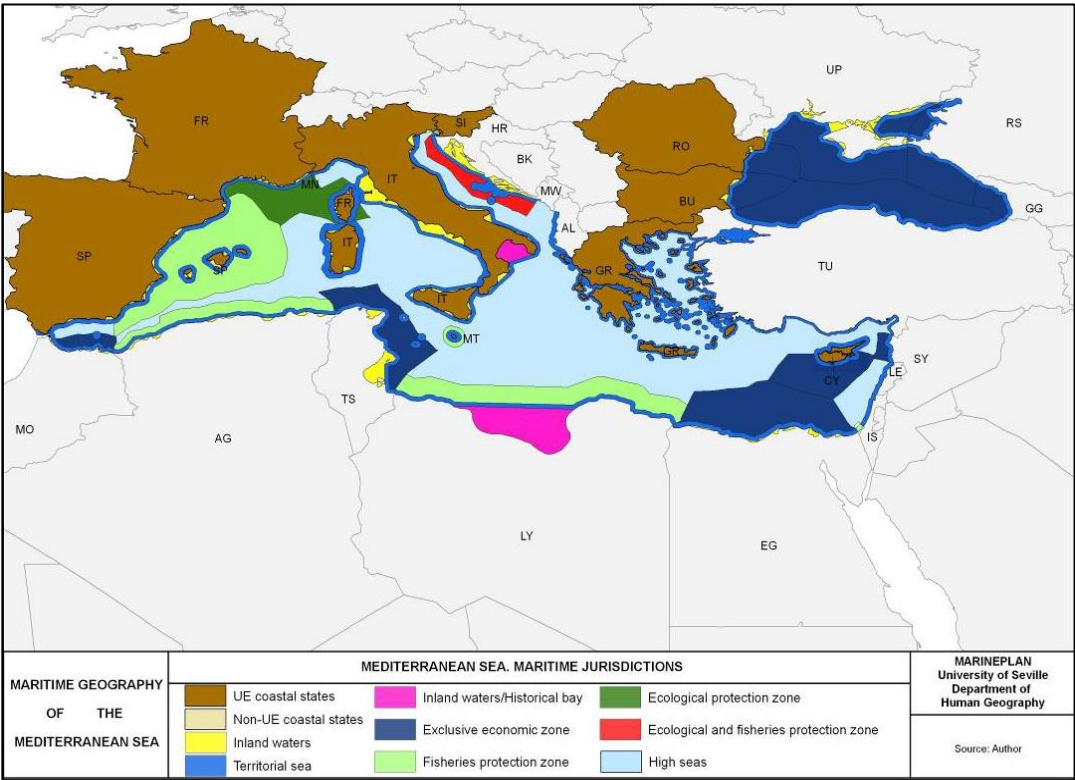
The definition of the coastal regions should take into account the ICZM Protocol, mainly the article 3/1 and need also to be confirmed by the countries.

Mediterranean marine areas

The overarching governance framework for the Mediterranean Sea is set by the United Nations Convention on the Law of the Sea (UNCLOS), which is in force since 1994 and provides rights and duties to coastal states in a number of differentiated jurisdictional zones. The sovereign rights include the exploration and exploitation of living and non-living resources in waters and seafloor under national jurisdictions. However,

the general duty established by UNCLOS –to preserve and protect the environment, in particular those which are rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other form of marine life- is not limited to any legal zone and includes waters and seafloor in areas beyond national jurisdictions.

Figure 2 Maritime jurisdictional zones in the Mediterranean and Black Seas



Source: Jurisdictional waters in the Mediterranean and Black Seas, University of Seville, 2009.

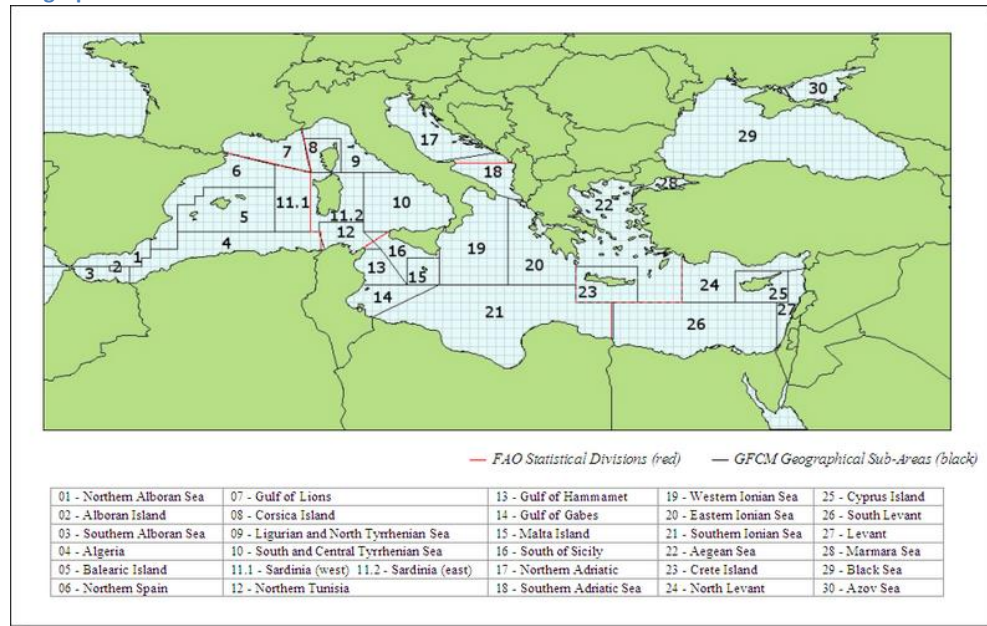
Few EEZ have been claimed in the Mediterranean Sea by reason of its territorial maritime complexity; therefore, in most cases, the high seas extend seaward of the territorial waters, particularly in the eastern basin. National jurisdictions range from 12 nautical miles (less in straits) up to a maximum of 200 nm in case of EEZs. Egypt, Morocco and Tunisia have declared EEZs in their marine waters; despite disagreements concerning their jurisdictional spaces, France and Spain have also declared EEZ in their Mediterranean waters, replacing a former Ecological Protection Zone (EPZ) and Fisheries Protection Zone (FPZ), respectively. Italy deployed an EPZ in its Western Mediterranean side in 2012; in addition, a number of Mediterranean states, including Algeria, Malta and Libya, have declared FPZs.

The Full study will need to take into account declared national jurisdictions in order to conduct the assessment of the Blue Economy sectors in the Mediterranean, in particular concerning activities taking place in coastal and offshore waters as well as regarding the seafloor, such as fisheries and aquaculture activities; bio-prospecting or exploitation of biological resources; and renewable energy sources.

In addition, it should be noted that data and indicators on fishing pressure are regularly provided by the General Fisheries Commission for the Mediterranean (GFCM), both in the Mediterranean and Black Seas. GFCM statistics are annually published and available online with updated fleet information, i.e. qualitative

and quantitative data on fishing vessels, operational units, fishing periods and gears. Information is aggregated by Mediterranean Geographical Sub Areas (GSAs) (see Figure) with the aim to deliver an indication of the fishing effort and capacity exerted yearly in every sub-area. Consequently, Mediterranean GFCM-GSAs might also be taken into consideration for the purposes of the assessment object of the Full study.

Figure 3 GFCM Geographical Sub-Areas in the Mediterranean Sea



Source: Jurisdictional waters in the Mediterranean and Black Seas, University of Seville, 2009.

3.2.4. Data limitations

The Full study will present an assessment focusing on the current state of human activities in the Mediterranean region in relation to a blue, sustainable economy. In a way, the analysis will present a methodology based on indicators enabling to evaluate how sustainable are economic activities that take place today in the Mediterranean basin, susceptible to impact marine and coastal waters, and will highlight some sustainable local experiences carried out throughout the basin in order to provide some examples of blue (sustainable) economic initiatives.

The assessment was initially intended to be developed at the regional level; however, such a wide scope raised several issues of methodological nature, detailed as follows:

- i. It should be noted that socioeconomic data and indicators allowing the characterisation of (maritime) activities might still be scarce, and may be particularly limited to activities' turnover and employment as indicators of economic and social performances, respectively. Although indicative and partially explicative, turnover and employment are, on their own account, unable to completely characterise the complexity of the economic and social dimensions of human activities. In this sense, it is encouraged to seek other complementary indicators reflecting welfare, when available.
- ii. Information might be mostly available at official national statistical services; although statistical services progressively provide further and more detailed and updated data, the examination of national statistical databases of over twenty Mediterranean riparian countries may imply an

extensive work, regarding only data collection. In this respect, the use of international thematic databases (FAO, World Bank, UNWTO, UNCTAD, etc.) may constitute a shortcut.

- iii. Most of the existing socioeconomic data are currently presented at the national level, sometimes at the regional level, and more rarely at the sub-regional one. A focus on a particular area, e.g. coastal and/or marine spaces, may lead to additional difficulties as such a scale is rarely coherent with these of data currently produced on a regular basis by statistical authorities.
- iv. In view of this national organisation of data, the Mediterranean share of maritime or coastal activities in countries bordered by several regional seas might need to be estimated using interpolations, which may lead to unrealistic results.
- v. Although the adoption of a regional scope for the study could provide a global Mediterranean picture on the state of a Blue Economy in the basin, the above mentioned issues could lead to jeopardising the quality of the final outcome, taking into account the Project's resources. The consideration of sub-regional or even more local areas to perform the "Full study" might be of higher interest, especially considering that smaller geographic areas allow for a better evaluation of human activities, the distribution of economic and social impacts, and identification of environmental impacts, which may be useful for the management of marine regions.

The Full study is to include a gap analysis section. The assessment of the availability and quality of information as well as the identification of knowledge gaps are intended to provide guidance for scientific research and monitoring efforts.

3.2.5. Review of available indicators to assess selected socioeconomic activities in terms of their "sustainability"

The Full study will establish a critical review on existing indicators allowing measuring sustainable patterns in the region, in two different aspects: first, the progress achieved towards a blue, sustainable economy in the Mediterranean; and, second, regarding how sustainable are economic activities taking place today in the region.

For this purpose, several tasks will be carried out:

- i. Development of a literature review process to identify available and/or already used indicators to characterise socioeconomic sectors according to sustainability criteria.
 - Several governance strategies and research projects carried out in the Mediterranean region already propose indicators taking into account environmental, economic and social aspects, namely:
 - MSSD 2016-2025 (see Appendix 1);
 - ICZM Protocol;
 - Pegaso Project, Perseus project, Medina project;
 - EcAp GES;
 - SCP Action Plan.
 - Other indexes are being explored and developed under global initiatives, e.g. the Ecological Footprint, the Human Development Index (HDI) or the Green Economy Progress (GEP)

measurement framework; their suitability and usefulness in the context of the Mediterranean Blue Economy will also need to be addressed.

- ii. Establish reasoned criteria for the selection of a core set of “Blue Economy indicators” enabling:
 - a) Assessing the sustainability of socioeconomic activities in the Mediterranean, and
 - b) Assessing progress towards the achievement of sustainable development.
- iii. Production of Indicator sheets to characterise Blue Economy indicators:

This task involves several stages:

 - a) Definition of a general template and descriptors (e.g. indicator relevance, clear definition and understanding of what each indicator is measuring, data sources and availability) for the characterisation of each indicator identified, to facilitate the comparability among them.
 - b) Characterisation of the indicators selected according to the descriptors set.
 - c) Data availability is a key issue to indicator construction. An evaluation of the type of data needed for each indicator (scale, availability, etc.) is required.
 - d) Identification of key data gaps.

3.2.6. Assessing Blue Economy in the Mediterranean region

The following tasks need to be conducted for the assessment of the state of play of the Blue Economy in the Mediterranean basin:

- i. Selection of the Blue Economy sectors being object of the assessment.
- ii. Provision of a general description (economic, social and environmental aspects) of the selected Blue Economy sectors to develop the Full study, to illustrate their current state at the Mediterranean regional level.
- iii. Description of the scale at which the assessment is to be done, providing corresponding justification e.g. sector addressed, data available, etc. (see the section on “Geographical scope”).
- iv. Development of case studies, based on existing experiences, regarding sustainable economic examples already carried out in the Mediterranean.
 - Some environmentally sustainable economic experiences have already been identified and gathered under Component 2 of the Blue Economy Project, which is aimed to support the implementation of an environmentally sustainable economy. In this sense, the “First eco and social innovations gathering in the Mediterranean” (or SwitchMed Connect event) was planned in synergy with the SwitchMed Programme to present Mediterranean stakeholders and initiatives (named “*promising cases*”) acting in the field of a sustainable economy, in particular regarding activity themes related to food security, housing and construction, sustainable tourism, fashion and textiles, as well as a waste management.
 - A list of the promising cases that attended the event is shown in Table 8 .

Promising cases on sustainable economy collated in the framework of this Project may be used to develop the study cases for the Full study provided that:

 - a) They are related to the Blue Economy sectors identified in the previous section;
 - b) The link (direct or indirect) with marine and coastal environments is duly indicated.

Table 8 Promising cases across the Mediterranean region: experiences of sustainable economy

| Case description | Country | Sustainable Sector |
|---|-------------------|----------------------|
| Management of electronic waste | Tunisia | Waste |
| Bags & furniture made by waste | Lebanon | Waste |
| Consumer experience preventing waste & label | Morocco | Waste |
| Ecotourism experience | Morocco | Tourism |
| Green responsible products line (included a tourism program) | Lebanon | Tourism |
| Eco hotel | Jordan | Tourism |
| Sustainable diving tourism | Spain (Catalonia) | Tourism |
| B&B | Tunisia | Tourism |
| Agency of sustainable tourism | Tunisia | Tourism |
| Enhancing water conservation through adopting green water practices in the Palestinian hotels | Palestine | Housing/Tourism |
| Sustainable village (energy) | Jordan | Housing/Energy |
| Sustainable housing(housing initiative) | Algeria | Housing |
| Green spaces in buildings | Tunisia | Housing |
| Market competitive sustainable products. Green building industry | Israel | Housing |
| Traditional building with dust and others | Algeria | Housing |
| Eco-building consultancy (Casa Bratoun) | Lebanon | Housing |
| Sustainable fish consumption network | Spain (Catalonia) | Fishing |
| Lemonade with citric waste | Spain (Mallorca) | Agriculture |
| Cooperative of consumers (local & sustainable food) | Tunisia | Agriculture |
| Catalyst for transitioning small-scale food-producing communities towards sustainability | Egypt | Agriculture |
| Creating green spaces. Rooftop farms. | Egypt | Agriculture |
| Eco agriculture market | Lebanon | Agriculture |
| Biodynamic products to ensure sustainable development. | Egypt | Agriculture/Clothing |
| Advanced agriculture hydroponics & aquaponics | Israel | Agriculture/Fishing |
| Sustainable breeding bees and bio production | Algeria | Agriculture |
| Organic farm, sustainable tourism | Tunisia | Agriculture/Tourism |
| Eco construction of compost methanisation plants. | Morocco | Agriculture |
| Delivery by bike and touristic tours by bike | Lebanon | Tourism &Transport |
| Package delivery community | Morocco | Transport |
| Sustainable and collaborative textile production (craftswomen) | Tunisia | Clothing |
| Sustainable products upcycled rubber | Lebanon | Clothing |
| Sustainable eco- conscientious upcycled products | Egypt | Clothing |
| Sustainable fashion | Morocco | Clothing |
| Jewellery with natural materials | Jordan | Clothing |
| Jewellery and clothes | Lebanon | Clothing |
| Sustainable shoes | Israel | Clothing |
| Sustainable design | Spain | Clothing |

Source: First eco and social innovations gathering in the Mediterranean, SwitchMed Connect Workshop, Barcelona 29th-30th October 2015. Blue Economy Project in collaboration with SwitchMedProgramme.

Business experiences linked to the Blue Economy sectors relevant for the Mediterranean region have been highlighted

- v. Use of the selected core set of Blue Economy indicators to assess the sustainability of socioeconomic activities in case studies.
- vi. Highlighting of major challenges and difficulties related to scale, data or information gaps, or any issue found during the development of the assessment.

3.2.7. Conclusions and recommendations towards a successful Blue Economy in the Mediterranean region

- i. According to the assessment results, national and regional policies allowing promoting Blue Economy practices in the Mediterranean are to be highlighted.
- ii. The selection of national and regional policies will take into account policy needs and/or efforts undertaken in the context of other governance processes in the region, in order to establish synergies.
- iii. The focus will be particularly on the ICZM Protocol, the MSSD 2016-2025, the SCP Action Plan, the EcAp Initiative, and any other governance mechanism implemented at the regional scale found relevant for the purposes of the consolidation of the Blue Economy in the Mediterranean (e.g. Marine Litter Regional Action Plan).

4. Conclusions

This Scoping study has been planned as one of the first outcomes of the “Blue Economy” Project, with the objective to draw the global conceptual framework for a Blue Economy in the Mediterranean region. The aim of the study was to elaborate a first definition of a “Blue Economy” adapted to Mediterranean specificities yet in coherence with ongoing efforts worldwide. To this purpose, concepts on green and blue economies and sustainable development defined at the global scale have been examined and compared, along with their evolution over time and their adaptation to marine and coastal areas. Indeed, over the past decades, significant effort has already been put toward defining a comprehensive global agenda to link human development, ecosystem services and the sustainable use and conservation of biodiversity, and thereby achieve peace and security, human rights, poverty eradication and sustainable development.

At the global level, the UNEP Blue Economy approach, one of the major outcomes of the Rio+20 United Nations Conference on Sustainable Development, has been particularly retained; the UNEP Blue Economy aims at achieving sustainable development through decoupling socioeconomic development from environmental degradation, by incorporating the real value of the natural capital (ocean values and services) into all aspects of economic activity. In addition, to attain a sustainable, Blue Economy and a healthy status of Mediterranean coastal and marine ecosystems, the principles of the circular economy are to be taken into account, in particular its non-pollutant, resource-efficient and circular aspects.

On the other hand, at a regional level, the Mediterranean region has experienced throughout the last four decades the strengthening of an institutional governance framework allowing, on one side, responding to increasing environmental pressures challenging marine and coastal ecosystems; and, on the other side, enhancing cooperation and partnership among Mediterranean political, economic and social actors. Two major regional governance organizations, UNEP/MAP and UfM, have officially declared a strong commitment

to foster the development of a Blue Economy in the Mediterranean region. In addition, ambitious governance instruments (i.e. the ICZM Protocol, the MSSD 2016-2025, the EcAp Initiative and the SCP Action Plan) have already been put in place in order to achieve a sustainable development in the region along with good environmental status of coastal and marine ecosystems, by adopting integrated approaches to the management of human activities and environmental assets.

After the review of the global and regional context elements and the examination of the regional socioeconomic, environmental and governance frameworks, it has been considered that a Blue Economy in the Mediterranean shall build on a non-pollutant, resource-efficient and circular economy based on sustainable consumption and production patterns, enhancing human well-being and social equities, generating economic value and employment, and significantly reducing environmental risks and ecological scarcities. The Blue Economy shall allow preserving Mediterranean healthy marine and coastal ecosystems and ensure the continuous delivery of goods and services for present and future generations. Taking into account the present socioeconomic picture of the Mediterranean basin, a series of human activities have been highlighted as relevant to the successful achievement of a regional Blue Economy, namely:

- Fisheries
- Aquaculture
- Tourism and recreational activities
- Maritime transport and port activities
- Bio-prospecting or exploitation of biological resources
- Exploitation of renewable energy sources

In this context, the evaluation of the progress towards a sustainable, Blue Economy in the Mediterranean will most likely become a critical issue for its implementation process. There is a need to develop a methodological framework to assess the various aspects characterising a Blue Economy allowing providing orientation and support in its application. Such methodology is to be based on existing indicators, which will be required to provide detail regarding how sustainable are Mediterranean socioeconomic sectors as well as concerning the extent and efficiency of governance efforts carried out at regional and national scales.

In this respect, the upcoming stages of Component 1 of the “Blue Economy” Project are intended to address methodological issues involved in the development of a Blue Economy in the Mediterranean region. A comprehensive assessment aiming to provide an overview of the Mediterranean present situation with reference to a Blue Economy is envisaged. As a result, a series of national and regional policies to foster the setting up of a Mediterranean strategy towards a sustainable, Blue Economy will be provided, along with a core set of suitable Blue Economy indicators orienting and supporting its implementation in the region.

5. References

- European Commission, Directorate General Environment. The Circular Economy Strategy. Closing the loop
- An EU action plan for the Circular Economy,
http://ec.europa.eu/environment/circular-economy/index_en.htm
- European Commission, Directorate General Maritime Affairs and Fisheries. Blue Growth: sustainable growth from the oceans, seas and coasts
http://ec.europa.eu/dgs/maritimeaffairs_fisheries/consultations/blue_growth/index_en.htm
- European Environmental Bureau. Walking the circle – the 4 guiding pillars for a Circular Economy: Efficient material management, reduction of toxic substances, energy efficiency and economic incentives,
<http://www.eeb.org/index.cfm/library/walking-the-circle-4-pillars-to-a-circular-economy/>
- Mediterranean Action Plan, Protocols to the Barcelona Convention:
<http://www.unepmap.org/index.php?module=content2&catid=001001001>
- Pauli, Gunter. Blue Economy: <http://www.paradigm-pubs.com/catalog/detail/BluEco>
- Pauli, Gunter. Blue Economy: http://www.gunterpauli.com/The_Blue_Economy.html
- 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. Available for download from Plan Bleu website: www.planbleu.org
- Regional – Governance & Knowledge Generation Project, <http://regoko.planbleu.org/en>
- UNEP, FAO, IMO, UNDP, IUCN, GRID-Arendal (2012). Green Economy in a Blue World. ISBN: 978-82-7701-097-7.
- UNEP. Sustainable Development Knowledge Platform, <https://sustainabledevelopment.un.org/>
- UNEP (2013). Green Economy Definition. <http://www.unep.org/greeneconomy/AboutGEI/>
- UNEP (2014) Blue Economy Concept Paper.
<https://sustainabledevelopment.un.org/content/documents/2978BEconcept.pdf>
- UNEP(DEPI)/MED IG.21/9 Annex II – Thematic Decisions, Decision IG.21/3 on the Ecosystems Approach including adopting definitions of Good Environmental Status (GES) and targets
http://195.97.36.231/dbases/CoPDecisions/2013_IG21_CoP18/13IG21_09_Annex2_21_03_ENG.pdf
- UNEP(DEPI)/MED IG.20 Annex I – Paris Declaration
http://pap-thecoastcentre.org/razno/DeclarationEN_Paris_17emeCOP_fev2012.pdf
- UNEP(DEPI)/MED WG.421/5 Annex - Draft Decision IG.22/2 Mediterranean Strategy for Sustainable Development 2016-2025.
- UNEP(DEPI)/MED WG.421/ 8 Annex - Draft Decision IG.22/5 Regional Action Plan on Sustainable Consumption and Production in the Mediterranean
- UNEP/MAP/PAP: Protocol on Integrated Coastal Zone Management in the Mediterranean. Split, Priority Actions Programme, 2008.
http://www.pap-thecoastcentre.org/pdfs/Protocol_publikacija_May09.pdf
- Union for the Mediterranean, <http://ufmsecretariat.org/>
- Union for the Mediterranean Ministerial Conference on Blue Economy
http://ufmsecretariat.org/wp-content/uploads/2015/11/2015-11-17-declaration-on-blue-economy_en.pdf

Appendix 1MSSD 2016-2025 Transition towards a green and blue economy: Strategic directions, actions and indicators

| Strategic Direction | Actions | Scale | Indicators |
|--|---|---------------------|--|
| 5.1. Create green and decent jobs for all, particularly youth and women, to eradicate poverty and enhance social inclusion | 5.1.1. Undertake a skills assessment and gap analysis, monitor and forecast demand for green jobs to strengthen the role of green jobs in eradicating poverty and enhancing social inclusion. | National | Nº of countries undertaking skills assessment and gap analysis on green jobs Number of countries with administrative processes in place for monitoring and forecasting green job demand |
| | 5.1.2. Develop training and capacity building programmes for green skills and green jobs, particularly for youth and women. | National | Nº of countries with training and capacity building programmes for green jobs |
| | 5.1.3. Raise awareness, particularly among decision-makers, about the potential of the green economy transition to promote resilient, low-carbon, resource-efficient and socially-inclusive economic development. | National | Status of projects |
| | 5.1.4. Compile and disseminate best practice guidelines, including harmonised regional definitions, to promote the growth in green jobs and green and social entrepreneurship. | Regional | Status of guidelines and number of related dissemination activities carried out |
| 5.2. Review the definitions and measurement of development, progress and well-being | 5.2.1. Embed indicators that are more inclusive of environmental and social aspects of progress, including resource efficiency indicators that take into account national specificities, within statistics databases and environmental assessments. | National | Nº of countries where indicators that are more inclusive of environmental and social aspects of progress are included in the national statistics databases |
| | 5.2.2. Identify, collect and share in an open database alternative statistics and indicators on societal progress and well-being, including integrated environmental and economic accounting and data on the environmental goods and services. | Regional | Status of open database with alternative statistics and indicators on societal progress and well-being |
| 5.3. Promote sustainable consumption and production patterns | 5.3.1. Implement the Sustainable Consumption and Production Regional Action Plan for the Mediterranean. | National | Status of implementation of the Sustainable Consumption and Production Regional Action Plan |
| | 5.3.2. Undertake awareness-raising programmes on sustainable lifestyles for promoting sustainable behaviour. | National | Nº of countries with awareness-raising programmes on sustainable lifestyles |
| | 5.3.3. Carry out capacity building programme to support countries in implementing the Sustainable Consumption and Production Regional Action Plan for the Mediterranean. | Regional | Status of capacity-building programme on the implementation of the Sustainable Consumption and Production Regional Action Plan for the Mediterranean |
| 5.4. Encourage environmentally-friendly and social innovation | 5.4.1. Increase capacity for eco-innovation in the industry and service sectors, through regulatory measures and economic incentives, including promoting market uptake. | National | Nº of countries with regulatory measures and financial incentives supporting eco-innovation in the industry and service sectors Number of countries with programmes to support the market share of green products |
| | 5.4.2. Support networks of eco-incubators and clusters for green and social businesses and entrepreneurs. | National | Nº of countries with networks of eco-incubators and clusters for green and social businesses and entrepreneurs |
| | 5.4.3. Promote and support collaborative partnerships between universities, businesses and research centres. | National | Nº of countries with collaborative partnerships between universities, businesses and research centres in place |
| | 5.4.4. Create a Mediterranean network of green and social incubators and training programmes. | Regional | Status of Mediterranean network of green and social incubators and training programmes |
| | 5.4.5. Create and promote a Mediterranean business award for environmental innovation. | Flagship Initiative | Business award put in place |
| 5.5. Promote the integration of sustainability principles | 5.5.1. Raise the awareness of financial actors on the economic risks arising due to lack of environmental and social impact assessments, encouraging them to mainstream such assessments through the provision of tools and guidelines. | National | Nº of countries with awareness initiatives on the economic risks arising due to lack of environmental and social impact assessments |

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| and criteria into decision-making on public and private investments | 5.5.2. Promote eco-design criteria and environmental certification of products & services. | National | Nºof countries promoting eco-design criteria and environmental certification of products and services |
| | 5.5.3. Build capacity of national agencies on sustainable investment and corporate social responsibility, including corporate environmental responsibility. | Regional | Status of capacity building programmes for national agencies on sustainable investment and corporate social responsibility |
| | 5.5.4. Initiate or strengthen dialogue with international funding institutions with a view to obtaining a commitment regarding the use of environmental and social criteria for investments | Regional | Status of dialogue with international funding institutions on the use of environmental and social criteria for investments |
| 5.6. Ensure a greener and more inclusive market that integrates the true environmental and social cost of products and services to reduce social and environmental externalities | 5.6.1. Promote environmental tax reform to reduce tax on labour and integrate the polluter-pays principle and extended producer responsibility into finance policy. | National | Nºof countries undertaking environmental tax reform |
| | 5.6.2. Carry out reviews on the environmental impacts of public subsidies with a view to the phasing out of environmentally-harmful subsidies. | National | Share of sustainable public procurement |
| | 5.6.3. Provide assistance to countries interested in integrating the polluter- pays principle, extended producer responsibility and payments for ecosystem services into national finance policies. | Regional | Status of advisory programme on integrating the polluter pays principle and extended producer responsibility into national finance policies |
| | 5.6.4. Promote trade cooperation between countries, to contribute towards sustainable and more inclusive economic development and job creation, with a focus on moving towards more upmarket goods and services and sharing added value. | Regional | Nºof “green” companies identified in the Mediterranean coproduction Observatory. |
| | 5.6.5. Integrate sustainability principles into public procurement at national and local levels. | Flagship Initiative | Share of green or sustainable public procurement. Target: by 2025 the majority of Med countries are committed to green or sustainable public procurement programmes |

Source: Mediterranean Strategy for Sustainable Development 2016-2025.

