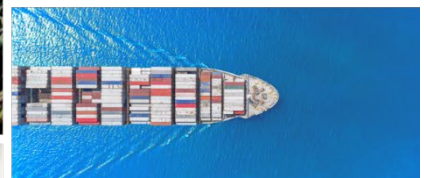




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# Sustainable Blue Economy 2030 - Emerging challenges and prospects



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## Authors – Editors

**Zacharias Siokouros** is a Naval Architect and Marine Engineer, and CEO at the Cyprus Marine and Maritime Institute.

**Elias Yfantis** is a Professor of Marine Engineering and a Senior Scientist at the Marine and Offshore Science, Technology, and Engineering Centre of the Cyprus Marine and Maritime Institute as well as the Acting Director of Academic Affairs.

**Sofia Maragkidou**, BA in Political Sciences and Diplomacy, MA in European Studies and EU Integration, is a Policy Officer and Project Administrator at the Centre for Marine and Maritime Policy Research and Regional Cooperation of the Cyprus Marine and Maritime Institute.

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## Foreword



This policy document has been published in the context of particularly difficult circumstances affecting the global community, Europe and therefore our country, such as the invasion of Ukraine by Russia which inevitably has an impact on the global economy, the COVID-19 pandemic and the increasingly and more noticeable effects of climate change and the consequent degradation of marine ecosystems. These extraordinary conditions demonstrate the need to accelerate the so-called green transition and improve the resilience and sustainability of the European and national economy. This is particularly true for the Blue Economy sectors which play an important role in the development of the European and national economy.

The Blue Economy will need to respond to a series of priorities set by the international and European Community which pose challenges, but at the same time create opportunities for further development. These concern the promotion of green transport, the development and utilisation of renewable energy sources, the production of healthy food, the development and implementation of innovative and environmentally friendly solutions, as well as the development of specialised human resources capable of coping with the demands of the so-called Twin Transition. Cyprus cannot and should not be isolated from these developments.

The aim of this policy document is, on the one hand, to highlight the importance of the Blue Economy for the development of Cyprus, so that the policy and decision-makers include the Blue Economy in their strategic and political priorities and on the other hand, to assist all stakeholders and the public in making informed decisions concerning the Blue Economy.

This document is part of a series of policy documents produced by the Cyprus Marine and Maritime Institute (<https://www.cmmi.blue/>) which address major - large scale - issues with short, medium and long-term impact.

The Institute's approach examines aspects relevant to:

- research, innovation, and technological development
- the social transformation of the industry and the economy
- the policy and regulatory framework at the European, regional, and local level

The Institute utilises the European dimension as a starting point (priorities and guidelines as reflected in the EU strategies and policies concerning the Blue Economy) seeking the creative "interpretation" and adjustment to the reality of Cyprus, considering the country's characteristics and particularities, especially the dynamically changing ones.

The first edition (01/July 2022) is a "snapshot" that will be updated periodically with re-editions.



Zacharias Siokouros,  
CEO of CMMI

## The sectors of the Blue Economy and their importance

Oceans and seas constitute the largest ecosystem on our planet. They hold 97% of Earth's water and 80% of all life forms. The ocean surrounds us and sustains us, providing oxygen and food for almost half of humanity, as well as critical resources for human health and well-being. At the same time, it contributes to socio-economic progress through the employment of a growing workforce and the creation of new jobs and businesses, responding in this way to the challenges that it confronts. These, include among others pollution (which is caused by plastic litter and microplastics, oil spills, dispersed chemicals and underwater noise), climate change, coupled with greenhouse gas emissions, the over-exploitation of marine resources and the destruction of natural habitats. The consequences of these phenomena include changes in water temperature and acidification, which lead to loss of biodiversity and negatively impact the conservation of underwater archaeology residues, the rise of sea levels and greater frequency and intensity of flooding and coastal erosion incidents. Therefore, the protection of the aquatic environment is imperative and can be achieved through the development and implementation of new, innovative, environmentally friendly technologies, as well as activities and initiatives that promote research, social awareness and ocean literacy (the connection of a person with the sea and the re-interpretation of that relationship).

The Blue Economy encompasses all sectoral and cross-sectoral economic activities based on or related to the oceans, seas and coasts. These can be marine-based or marine-related activities (e.g., shipping, fisheries, energy generation) or land-based (e.g., ports, shipyards, land-based aquaculture and algae production, coastal tourism). Alongside traditional sectors, innovative sectors are emerging and developing, such as marine renewable energy, the blue bioeconomy and biotechnology as well as desalination, thus offering significant potential for economic growth, sustainability transition, as well as new job opportunities.

*Table 1: Blue Economy sectors*

Established Sectors	Emerging Sectors
<ul style="list-style-type: none"> <li>• Marine Living Resources</li> <li>• Marine Non-Living Resources</li> <li>• Marine Renewable Energy</li> <li>• Port Activities</li> <li>• Shipbuilding and rrepair</li> <li>• Maritime Transport</li> <li>• Coastal Tourism</li> </ul>	<ul style="list-style-type: none"> <li>• Ocean Energy</li> <li>• Blue Bioeconomy &amp; Biotechnology</li> <li>• Desalination</li> <li>• Marine Minerals</li> <li>• Maritime Defence, Security and Surveillance</li> <li>• Research and Education</li> <li>• Infrastructure and maritime works</li> </ul>

*Source: European Commission (2021). The EU Blue Economy Report. 2021. Publications Office of the European Union. Luxembourg.*

### Marine Living Resources

It comprises the following activities:

- Capture fisheries (small-scale and large scale) and Aquaculture (marine, freshwater and shellfish).
- Processing of fish products (fish, crustaceans and molluscs), meal preparation and production other food products.
- distribution of fish products (including retail sale and wholesale).

### Marine Non-Living Resources

The sector includes 2 subsectors:

- **Oil and gas:** Extraction of crude petroleum, Extraction of natural gas and Support activities for petroleum and natural gas extraction.
- **Other minerals:** Operation of gravel and sand pits; mining of clays and kaolin, Extraction of salt and Support activities for other mining and quarrying.

### Marine Renewable Energy

The sector includes the offshore wind energy and ocean energy (wave energy, tidal energy, conversion of the oceans thermal energy). Offshore wind energy is currently the only one commercially developed form of energy.

### Port Activities

The sector includes Cargo handling and Warehousing and storage, Construction of water projects and Service activities incidental to water transportation.

### Shipbuilding and repair

Shipbuilding and repair sector includes the following activities:

- building of ships and floating structures, building of leisure and sporting boats, repair and maintenance of ships and boats.
- manufacture of cordage, rope, twine and netting, manufacture of textiles other than apparel, manufacture of sport goods, manufacture of engines and turbines and manufacture of instruments for measuring, testing and navigation.

### Maritime Transport

This sector includes:

- sea and coastal passenger water transport and inland passenger water transport.
- sea and coastal freight water transport and inland freight water transport.
- renting and leasing of water transport equipment.

### Coastal Tourism

This sector also covers maritime tourism. More specifically, coastal tourism includes beach tourism, leisure activities, nautical sports and cruise tourism.

The Blue Economy plays a key role in the economic development of the European countries. The following figures show the size and the importance of the Blue Economy.

*Table 2: EU Blue Economy established sectors, main indicators, 2018<sup>1</sup>*

Indicators	EU Blue Economy, 2018
<b>Turnover</b>	€650 billion
<b>Gross Added Value</b>	€176 billion
<b>Gross Profit</b>	€68 billion
<b>Employment</b>	4.5 million
<b>Net investment in tangible goods</b>	€6.4 billion
<b>Net investment ratio</b>	3.60%
<b>Average Annual Salary</b>	€ 24,020

*Source: European Commission (2021). The EU Blue Economy Report. 2021. Publications Office of the European Union. Luxembourg.*

According to table 2, the established sectors of the EU Blue Economy directly employ close to 4.5 million people (many of these jobs are in regions where there are few alternative employment opportunities) and generated around €650 billion in turnover and €176 billion in gross value added. Moreover, approximately a third of the EU's population lives within a distance of 50 km from the coast, while over 200 million citizens live in coastal areas or on one of the many islands of Europe.

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<sup>1</sup>Turnover is calculated as the sum of the turnover in each sector. Net investment excludes maritime transport and coastal tourism. Net investment ratio is defined as net investment to GVA.

## Main EU policies and strategies for a Sustainable Blue Economy

Picture 1: Main EU policies linked to a sustainable Blue Economy



The main EU policies focusing on the sustainable development of the Blue Economy are presented in Figure 1.

More specifically:

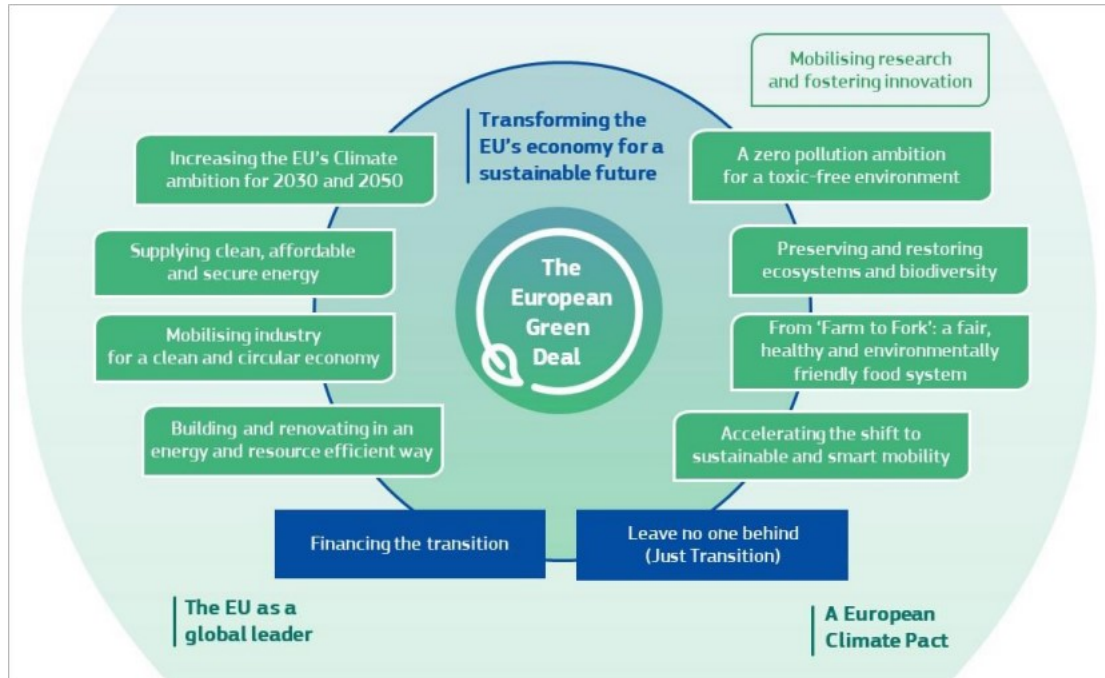
- **The European Green Deal<sup>2</sup>** is the EU's new growth strategy that aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use. It also aims to protect,

<sup>2</sup> <https://eur-lex.europa.eu/legal-content/EL/TXT/?uri=CELEX%3A52019DC0640>



conserve and enhance the EU's natural capital, and protect the health and well-being of citizens from environment-related risks and impacts.

Picture 2: The European Green Deal



Source: [https://eur-lex.europa.eu/resource.html?uri=cellar:b828d165-1c22-11ea-8c1f-01aa75ed71a1.0002.02/DOC\\_1&format=PDF](https://eur-lex.europa.eu/resource.html?uri=cellar:b828d165-1c22-11ea-8c1f-01aa75ed71a1.0002.02/DOC_1&format=PDF)

- **The European Commission’s Communication on “A new approach for a sustainable blue economy in the EU”<sup>3</sup>** takes a systemic view that integrates ocean policy into Europe’s new economic policy. The new approach provides coherence across the blue economy sectors, facilitates their coexistence and looks for synergies in the maritime space, without damaging the environment. It also underlines the need for investment in research, skills, and innovation.
- **The EU mission Starfish 2030 “Restore our Ocean and Waters”<sup>4</sup>**. EU missions are a commitment to solving major societal challenges. They will go beyond classic research and innovation and will spark innovation across sectors to deliver effective solutions. The Mission “Healthy oceans, seas, coastal and inland waters” aims at the full discovery and restoration of European marine and freshwater ecosystems by 2030 by cleaning our marine and fresh waters, restoring their rich biodiversity, and making our blue economy sustainable and climate friendly.
- **The Common Fisheries Policy (CFP)<sup>5</sup>** is a set of rules for sustainably managing European fishing fleets and conserving fish stocks. It focuses on the environmental, economic and social dimensions of fisheries, sustainable fish stock management, application of the multiannual plans (MAPs) to manage fisheries in different sea basins

<sup>3</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2021:240:FIN>

<sup>4</sup> [https://ec.europa.eu/info/publications/mission-starfish-2030-restore-our-ocean-and-waters\\_en](https://ec.europa.eu/info/publications/mission-starfish-2030-restore-our-ocean-and-waters_en)

<sup>5</sup> [https://ec.europa.eu/oceans-and-fisheries/policy/common-fisheries-policy-cfp\\_en](https://ec.europa.eu/oceans-and-fisheries/policy/common-fisheries-policy-cfp_en)

and ensuring a stable and enduring balance between fishing capacity and fishing opportunities over time.

- **The Strategic guidelines for a more sustainable and competitive EU aquaculture for the period 2021 to 2030<sup>6</sup>** aim at the development of the EU aquaculture sector that supplies nutritious and healthy food with a low environmental and climate footprint, that creates economic opportunities and jobs and becomes a global reference for sustainability and quality.
- The **EU Sustainable and Smart Mobility Strategy<sup>7</sup>** lays the foundation for how the EU transport system can achieve its green and digital transformation and become more resilient to future crises.
- The **EU strategy on adaptation to climate change<sup>8</sup>** sets out how the European Union can adapt to the unavoidable impacts of climate change and become climate resilient by 2050. The Strategy has four main objectives: to make adaptation smarter, swifter and more systemic and to step up international action on adaptation to climate change.
- **The EU's biodiversity strategy for 2030<sup>9</sup>** is a comprehensive, ambitious, and long-term plan to protect nature and reverse the degradation of ecosystems. The strategy aims to put Europe's biodiversity on a path to recovery by 2030 and contains specific actions and commitments.
- **The EU strategy on offshore renewable energy<sup>10</sup>** proposes concrete ways to support the long-term sustainable development of this sector, given that it is expected to play an important role in achieving the EU's ambitious energy and climate goals.
- **The EU's new framework programme for research and innovation, "Horizon Europe"<sup>11</sup>**. It is the EU's key funding programme for research and innovation. It tackles climate change, helps to achieve the UN's Sustainable Development Goals and boosts the EU's competitiveness and growth. The programme facilitates collaboration and strengthens the impact of research and innovation in developing, supporting and implementing EU policies while tackling global challenges. It supports creating and better dispersing of excellent knowledge and technologies. It creates jobs, fully engages the EU's talent pool, boosts economic growth, promotes industrial competitiveness and optimises investment impact within a strengthened European Research Area.

## The EU goals for a sustainable Blue Economy

The main EU policies and strategies relevant to the Blue Economy and its growth set specific goals to make the Blue Economy in the EU more sustainable. These goals are presented in detail below:

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<sup>6</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2021:236:FIN>

<sup>7</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52020DC0789>

<sup>8</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2021:82:FIN>

<sup>9</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1590574123338&uri=CELEX:52020DC0380>

<sup>10</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2020:741:FIN&qid=1605792629666>

<sup>11</sup> [https://ec.europa.eu/info/funding-tenders/find-funding/eu-funding-programmes/horizon-europe\\_en](https://ec.europa.eu/info/funding-tenders/find-funding/eu-funding-programmes/horizon-europe_en)

- Restoration of the health of our oceans and waters by 2030. The achievement of this goal requires meeting the following interlinked specific objectives and targets:
  - Protecting and restoring marine and freshwater ecosystems and biodiversity, in line with the EU Biodiversity Strategy 2030.<sup>12</sup>
  - Protecting a minimum of 30% of the EU's sea area and integrating ecological corridors as part of a true Trans-European Nature Network.
  - Strictly protecting at least 10% of the EU's sea area.
  - Restoring at least 25,000 km of free-flowing rivers.
  - Contributing to marine nature restoration, including degraded seabed habitats and coastal ecosystems.
- Prevention and elimination of pollution of our ocean, seas and waters, in line with the EU Action Plan Towards Zero Pollution for Air, Water and Soil. This goal includes the following:
  - Reducing by at least 50% plastic litter at sea.
  - Reducing by at least 30% microplastics released into the environment.
  - Reducing by at least 50% nutrient losses, and the use and risk of chemical pesticides.
- Making the sustainable blue economy carbon-neutral and circular. This goal requires:
  - Eliminating greenhouse gas emissions from maritime economic activities in the EU and sequestering those emissions that cannot be avoided (net zero maritime emissions). More specifically:
    - The EU aims to reduce net greenhouse gas emissions by at least 55% by 2030, compared to 1990 levels.
    - The European Green Deal requires a 90% reduction in the transport sector's emissions by 2050, including the maritime transport sector, so that the EU becomes a climate-neutral continent by 2050.
    - The EU Sustainable and Smart Mobility Strategy aims at having zero-emission ocean-going vessels market ready by 2030.
  - Developing zero-carbon and low-impact aquaculture, and promoting circular, low-carbon multi-purpose use of marine and water space.

## Actions at a European level for a Sustainable Blue Economy

Achieving the aforementioned ambitious energy and climate goals requires the following actions at a European level:

- **Development and use of digital technologies, such as artificial intelligence, 5G networks, cloud and edge computing and the internet of things in all sectors of the Blue Economy.** Digitalisation also offers new opportunities for distance monitoring of air and water pollution or monitoring and optimising how energy and natural resources are used.
  - Innovative technologies such as big data, artificial intelligence, advanced modelling, sophisticated sensors and autonomous systems are likely to transform the Blue Economy in the near future. New technologies can enable

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<sup>12</sup> This goal is included in the EU Action Plan: 'Towards Zero Pollution for Air, Water and Soil'.  
[https://ec.europa.eu/environment/pdf/zero-pollution-action-plan/communication\\_en.pdf](https://ec.europa.eu/environment/pdf/zero-pollution-action-plan/communication_en.pdf)

- traditional sectors such as shipping, fisheries and tourism to improve their sustainability and circularity.
- New digital technologies can also contribute to better predict the effects of extreme weather events (e.g., floods, storm surges) and regional sea-level rise.
  - Digitalisation and advanced tools for fisheries (such as remote electronic monitoring systems, catch reporting using mobile applications, ecosystem modelling and artificial intelligence tools) can optimise fishing operations and at the same time enable data collection and analysis, improve control and monitoring, reduce administrative burden, and ultimately support the sustainable management of marine biological resources without requiring physical presence.
  - Development of blue biotechnologies, as they offer solutions to produce materials, enzymes, food supplements and pharmaceuticals.
- **Boosting investments in the research, technological development and innovation sectors**, as they will support the transformation process for the creation of sustainable Blue Economy value chains and enable green and digital transition.
- Encouraging and provision of financial support by the national government and the EU to:
    - work to improve the digitalisation of the ocean, the resolution and usability of the data and the transformation of this data into knowledge and tools that will contribute to the formulation and implementation of rational policies in the sectors of the Blue Economy. Such data may concern for example predicting environmental changes and phenomena in the sea basins of the EU as well as their impacts, environmental monitoring, fisheries and aquaculture management (including monitoring of live ecosystems and fisheries resources in time and space), safe navigation and the progress of the maritime transport sector regarding the reduction of greenhouse gas emissions.
    - businesses and research organisations that use or generate renewable resources, preserve marine ecosystems, reduce pollution and increase resilience to climate change.
    - emerging sectors such as blue biotechnologies, offshore renewable energies and maritime security which rest on innovation for their very existence. Through innovation, coastal communities can rebuild or reshape their economies and become local drivers of sustainability.
- **Development and use of offshore renewable energy.** Offshore renewable energy could help generate a quarter of the EU's electricity in 2050, mainly (though not exclusively) through offshore wind energy. A sustainable ocean energy mix should include (in addition to bottom-fixed offshore wind) floating wind, thermal, wave and tidal energy – emerging technologies that are expected to reach a commercial stage in the following years.
- **Boosting the uptake of low- and zero-emission ships and the production and use of renewable and low-carbon fuels** (e.g., hydrogen, ammonia, biofuels) **in the maritime transport sector.** The increased deployment and use of renewable and low-carbon fuels must go with the creation of a comprehensive network of recharging and

refuelling infrastructure to fully enable the widespread uptake of low- and zero-emission ships in that sector.

- **Further development of marine infrastructure**, with emphasis on submarine cables for the transfer of energy, the interconnection of continental and island regions but also the creation of inter-regional distribution networks that will strengthen energy security. These cables also facilitate telecommunications. Subsea gas and liquid fuel pipelines are also critical marine infrastructure.
- **Development of zero-emission ports**. The ports will need to become clean energy hubs (through the use of integrated electricity, hydrogen and other renewable and low-carbon fuels systems) that will promote circular economy (through the collection, transshipping and disposing of waste from ships and other port industries, and the decommissioning of ships) communication (through the use of submarine cables) and industrial development (by serving as industrial clusters). A further aspect that helps achieve decarbonisation and zero pollution in the ports sector is the use of smart, digital solutions and autonomous systems, as these optimise traffic flows and cargo handling in and around ports.
- **Effective management of marine protected areas, expansion and creation of more such areas**, as they multiply the amount of fish and marine life, thus contributing to the preservation of biodiversity. They also contribute to the protection of underwater cultural heritage, to the connection of the local community with its natural capital as well as to the promotion of sustainable development models in these areas.
- **Implementation of maritime spatial planning**. To apply an ecosystem-based management approach, national maritime spatial plans should aim to cover all maritime sectors and activities (for instance, mariculture and offshore renewable energy systems, tourism, protection of maritime and underwater cultural heritage), as well as area-based conservation and management measures. Planning also improves the level of certainty and predictability of private investments and can promote synergies between economic sectors. Moreover, it ensures that potential negative impacts on the natural environment are identified and avoided at a very early stage in the planning process. National maritime spatial plans should be coherent with national energy and climate plans, as well as with good environmental status as defined in the Marine Strategy Framework Directive<sup>13</sup>.
- **Preservation and restoration of coastal vegetation systems** such as tidal marshes, mangroves and seagrasses – which accumulate ‘blue carbon’<sup>14</sup> in their plants, soils and sediments. Similarly, designing artificial reefs, restoring important seabed habitats (coral reefs, macroalgal forests and others), and developing solutions to depollute areas or fight eutrophication are vital to rebuilding biodiversity and, thus, the resilience of coastal and marine ecosystems.
- **Taking measures to protect, showcase and promote our maritime cultural heritage**. Maritime cultural heritage includes coastal towns and villages, ports, lighthouses, many ancient wrecks, and monuments, submerged prehistoric cities and landscapes as well as cultural practices, artistic and language expressions and skills, traditional and historical knowledge. This heritage provides valuable information about the history of the regions and the social importance of the oceans, but also about the

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<sup>13</sup> <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02008L0056-20170607>

<sup>14</sup> Carbon stored by coastal and ocean ecosystems

history of climate change and its effects on humanity. The sustainable exploitation of the maritime cultural heritage can contribute to the creation of sustainable communities, the promotion of sustainable tourism, the improvement of well-being, quality of life, the strengthening of identity, social capital and growth. To encourage the sustainable use of maritime cultural heritage as a regional, cultural and tourism good, its mapping and inclusion in the preparation of national maritime spatial plans is required.

- **Development of a sustainable food sector through the introduction of new algae- and sea-based food and feed products.** In addition to their potential to produce bio-based products and biofuels, algae can provide viable and sustainable alternative food and feed materials. Algae-based food can alleviate environmental pressures exerted by agriculture, aquaculture, and fisheries. Investing in micro-algae as a new source of animal feed can help reduce catches of wild fish for animal feed.
- **Development and upgrading of knowledge and skills of the human capital** through the implementation of educational and training programs including vocational training programs, that respond to future skills needs of the international labour market in the sea-related sectors. In the Blue Economy labour market, the twin transition is already giving rise to job vacancies and is increasingly highlighting the need for a qualified workforce— e.g., up to 30% of offshore renewable energy companies, for instance, complain either that the skills they need are unavailable or there are shortages in existing skills (e.g., technicians).
- **Stimulating cooperation between coastal regions and islands sharing common needs in the same sea basin** to develop adaptation strategies and joint approaches to coastal zone management, invest in sustainable coastal defences and adapt coastal economic activities.
- **Promoting ocean literacy** (development of profound emotional connection with the sea) **and raising public awareness** of the role and importance of the oceans and seas for the life on our planet. The promotion of ocean literacy to the younger generations is becoming particularly important as they are the future citizens and consumers that will develop attitudes and make decisions that will inevitably influence the marine environment.
- **Closer cooperation among the decision-makers, the large and small businesses, the academic and research organisations and the society to promote the health of our oceans** and adopt policies and strategies that will focus on the sustainable development of the Blue Economy.

## The importance of the Blue Economy for Cyprus

The Blue Economy plays an important role in the country's development. As an island state, it is not surprising that the Blue Economy in Cyprus is dominated by coastal tourism, followed by the maritime transport sector. In addition, the marine living resources sector, and more specifically the aquaculture industry of Cyprus, is constantly developing to meet the domestic and global demand for high-quality food.



In recognition of the significance and contribution of the tourism and maritime transport sectors to the country's economic development, the Deputy Ministry of Tourism and the Deputy Ministry of Shipping were established in 2018.

## Tourism

Cyprus is the third largest island in the Mediterranean, after the Italian islands of Sicily and Sardinia, with an area of 9,251 square kilometers. Since the establishment of the Republic of Cyprus, tourism played an important role in the country's economy. Since 1960, Cyprus became one of the main tourist centres of the Mediterranean, following rapid and continuous growth. Due to the suitability of its tourism product, geographical location and climatic conditions, it welcomes a large number of tourists annually.

During the years before COVID-19, tourism contributed up to 12% to the national GDP. The year 2019 was a milestone for Cypriot tourism as tourist arrivals recorded the highest historical performance, reaching approximately 4 million arrivals<sup>15</sup>. The two traditionally biggest tourism source markets for Cyprus are the United Kingdom and Russia, constituting more than 50% of the current total tourism influx<sup>16</sup>. Regarding seasonality, historically, the highest percentage of tourist arrivals is marked during the "summer" period of May-October, which makes Cyprus an excellent summer tourist destination<sup>17</sup>.

Despite the positive results of recent years, the tourism sector in the country deals with specific challenges, which should be tackled to maximise the performance of the tourism industry to benefit the Cypriot economy. In particular, the Republic of Cyprus faces difficulties in extending the tourist season, beyond the period May – October. In addition, the tourism market in Cyprus depends on tourist inflows from a small number of markets, such as the United Kingdom and Russia. These challenges stem mainly from the fact that the country's tourism product was based for many years, almost exclusively, on the two-fold model "sun and sea".

To address these challenges, the Deputy Ministry of Tourism drafted the National Tourism Strategy 2020-2030<sup>18</sup> which focuses on establishing Cyprus as a year-round, quality, digitally smart and socially beneficial destination through several initiatives and action plans. In this framework, a series of special forms of tourism is being promoted, for which Cyprus has comparative advantage, such as sports, cultural and religious tourism, conference tourism and rural tourism. Concerning cultural tourism, Cyprus has unique characteristics and attractions to showcase given its history spanning 11 millennia and its geographical position at the crossroads of three continents. At the same time, emphasis is given to the construction of

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<sup>15</sup> Annual Report 2019, Ministry of Tourism, [https://www.tourism.gov.cy/tourism/tourism.nsf/All/045DB40080D19184C22588080048A31A/\\$file/Annual\\_Report\\_2019\\_el-gr.pdf?OpenElement](https://www.tourism.gov.cy/tourism/tourism.nsf/All/045DB40080D19184C22588080048A31A/$file/Annual_Report_2019_el-gr.pdf?OpenElement) (available only in Greek)

<sup>16</sup> Annual Report 2019, Ministry of Tourism, [https://www.tourism.gov.cy/tourism/tourism.nsf/All/045DB40080D19184C22588080048A31A/\\$file/Annual\\_Report\\_2019\\_el-gr.pdf?OpenElement](https://www.tourism.gov.cy/tourism/tourism.nsf/All/045DB40080D19184C22588080048A31A/$file/Annual_Report_2019_el-gr.pdf?OpenElement) (available only in Greek)

<sup>17</sup> Annual Report 2019, Ministry of Tourism, [https://www.tourism.gov.cy/tourism/tourism.nsf/All/045DB40080D19184C22588080048A31A/\\$file/Annual\\_Report\\_2019\\_el-gr.pdf?OpenElement](https://www.tourism.gov.cy/tourism/tourism.nsf/All/045DB40080D19184C22588080048A31A/$file/Annual_Report_2019_el-gr.pdf?OpenElement) (available only in Greek)

<sup>18</sup> [https://www.tourism.gov.cy/tourism/tourism.nsf/planning\\_el/planning\\_el?OpenDocument](https://www.tourism.gov.cy/tourism/tourism.nsf/planning_el/planning_el?OpenDocument) (available only in Greek)

specific tourist infrastructure projects (e.g., casino resorts, golf courses, marinas) which contribute significantly to the development of the country's economy and job creation.

### **Maritime Transport (Shipping)**

Over the past decades, Cyprus has evolved into a modern, integrated and efficient shipping centre and global shipping power.

Shipping is one of the most important growth pillars of the Cypriot economy with its contribution reaching - despite the COVID-19 pandemic - 7% of GDP (around €1.2 billion). It is also an important source of employment, as approximately 3% of the country's active workforce offers services to the wider shipping industry. In particular, more than 55.000 seafarers are employed in ships under Cypriot flag and approximately 9.000 people are employed in shipping companies based in Cyprus. In addition, the Fleet under the Cypriot flag - ranks 11<sup>th</sup> worldwide and 3<sup>rd</sup> in the European Union. Finally, the country is one of the three largest ship management centres worldwide and the largest in Europe<sup>19</sup>.

The factors that contributed to the development of the specific sector and the ranking of the Cypriot flag among the highest quality and most competitive flags worldwide are the geostrategic position of the country (located at the crossroads of three continents), its long maritime tradition, the continuous development of its maritime infrastructure, its status as a member state of the European Union, the specialised knowledge of its human resources, the favourable tax regime, the existence of a strong shipping cluster committed to providing high-quality services, as well as bilateral (regional or international) agreements of strategic importance concluded between Cyprus and other states.

The new long-term Strategy "SEA Change 2030" of the Shipping Deputy Ministry should also be highlighted. The strategy was announced in 2021 and focuses on the pillars of Sustainability, Extroversion and Adaptability. This strategy aims to make Cyprus an important and powerful actor in shaping global maritime policies and an attractive shipping centre aiming at sustainable development and excellence. This new philosophy is expected to lay the foundations for:

- Strengthening the competitiveness of the Cypriot Registry and the shipping industry.
- An effective response to the growing demands of modern shipping, and to the existing and future challenges that arise from international and regional economic and geopolitical developments.
- Further strengthening of relations with other states, as well as with regulatory authorities at international and European levels.
- Continuous consultation and communication with the shipping industry through the creation of an online platform "Cyprus Open Maritime Exchange" (COME).
- Further strengthening of security levels on ships under the Cypriot flag and promotion of preventive actions.
- Formation of a special framework for the creation of a Limited Liability Shipping Company.
- Redesigning and strengthening the staffing of the Maritime Offices network of the Republic of Cyprus abroad.

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<sup>19</sup>[https://www.dms.gov.cy/dms/shipping.nsf/cyprusmaritime\\_en/cyprusmaritime\\_en?OpenDocument](https://www.dms.gov.cy/dms/shipping.nsf/cyprusmaritime_en/cyprusmaritime_en?OpenDocument)



- Providing flexible, immediate, efficient, and integrated customer-oriented service 24/7, a) through the digitalization of the Shipping Deputy Ministry services, b) the creation of a user-friendly e-Maritime Library which will facilitate locating and obtaining information about maritime legislation, as well as circulars, announcements and instructions and c) through the creation of an e-Helpdesk which will act as a single point of contact to respond to all the requests of shipping companies through web mobile application.
- Addressing digital risks by creating an education and training framework on cybersecurity.
- Providing financial tools to encourage research and innovation in shipping.
- Ensuring adequate training and skills for seafarers by promoting e-education, e-training, and e-learning leveraging available technologies.
- Formation of culture for seafaring, maritime, and blue professions through targeted actions.
- Promoting maritime connectivity with other states and creating a framework for a safer, greener, and accessible-to-all coastline.

## Marine Living Resources

### *Fisheries*

The fisheries sector of Cyprus consists of coastal fishing, bottom trawling, and multipurpose vessel fishing. In addition to professional fishing, amateur fishing is practiced in the waters of Cyprus, either from the shore or from a boat. The main fishing stocks targeted by the fisheries sector of Cyprus can be divided into two categories, the demersal (e.g., the picarel, striped red mullet, red snapper, white sea bream, red porgy, common dentex, dusky grouper, octopus, etc) and large pelagic species (e.g. albacore tuna, bluefin tuna and swordfish).

The annual contribution of fisheries to the Cypriot economy is relatively low. It is estimated to be around €7,4 million with the total annual fish production amounting to around 1.200 tonnes in Cyprus<sup>20</sup>. The annual per capita consumption of fisheries products in Cyprus amounts to approximately 20 kilos<sup>21</sup>. Nevertheless, the fisheries sector is considered important for the country because it generates economic and social benefits to coastal areas, creates jobs and offers healthy products to consumers. In Cyprus, approximately 1.276 people are directly employed as fishermen, of which 803 are full-time and 473 part-time<sup>22</sup>.

The fisheries sector of Cyprus is currently facing significant sustainability problems which are due to various factors, such as the overfishing of certain benthic and pelagic species, the low productivity of the waters of the region, the limitation of fishing areas in Cyprus due to the Turkish occupation, the lack of professional training of fishermen in modern fishing and navigation methods as well as consumers' preference for specific types of fish combined with their reluctance to accept new species. In addition, the increasing presence of invasive alien

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<sup>20</sup><http://www.moa.gov.cy/moa/dfmr/dfmr.nsf/All/1175E80F97FB1A3642257D9D002FE9B6?OpenDocument>  
(available only in Greek)

<sup>21</sup><http://www.moa.gov.cy/moa/dfmr/dfmr.nsf/All/1175E80F97FB1A3642257D9D002FE9B6?OpenDocument>  
(available only in Greek)

<sup>22</sup><http://www.moa.gov.cy/moa/dfmr/dfmr.nsf/All/1175E80F97FB1A3642257D9D002FE9B6?OpenDocument>  
(available only in Greek)

species exacerbates the adverse effects on the marine ecosystems and the fisheries sector. There is also a need to improve the marketing system of fisheries products.

### ***Aquaculture***

Aquaculture is another Blue Economy sector that needs to be highlighted. This specific sector is constantly developing, to respond to the needs of the Cypriot market but also the ever-increasing demand for fisheries products at a global level. The contribution of aquaculture to the fisheries products consumed worldwide each year has increased, from about 10% in the 70s, to around 50% in 2020<sup>23</sup>. Up until now, aquaculture in Cyprus is considered very important. It constitutes an integral part of the Cypriot Fisheries sector, since it represents approximately 80%, both in quantity and value, of the total Cypriot production of fisheries products<sup>24</sup>. It is also the third most important export product in terms of value in the broader agricultural primary production sector. The total value of aquaculture products in 2020 amounted to around € 39.7 million<sup>25</sup>. The direct full-time employment in the aquaculture sector is 315 persons. However, a greater number of people are employed in aquaculture-related jobs<sup>26</sup>.

In Cyprus, there are in operation (licensed) nine marine open sea cage farms culturing mainly European seabass and gilthead seabream, three marine hatcheries, one land-based shrimp hatchery/farm and eight small freshwater units culturing mainly rainbow trout and smaller quantities of sturgeon<sup>27</sup>. Apart from the aforementioned private fish production units operating in Cyprus, there are also two government-operating aquaculture research stations, one for marine species and the other for freshwater species. The main marine species commercially cultured are the gilthead seabream (*Sparus aurata*) and European seabass (*Dicentrarchus labrax*). The total production of seabream and seabass in percentages is 65 and 35 percent, respectively.

It is noteworthy that the creation of offshore aquaculture units with open sea cages has started to become popular in Cyprus. The latter is an environmentally friendly method of intensive fish farming and aims to further develop the Cyprus marine aquaculture.

## **Suggestions for Cyprus**

In line with the new political priorities of the EU and the actions that should be implemented at the European level to achieve a sustainable Blue Economy, a series of proposals for Cyprus is presented below:

- **Collection of socio-economic data relevant to the Blue Economy that will facilitate decision-making, policy design and implementation** as well as valid financial forecasting and planning.

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<sup>23</sup><http://www.moa.gov.cy/moa/dfmr/dfmr.nsf/All/CF42DB069283278342257E960035E13B?OpenDocument>

<sup>24</sup><http://www.moa.gov.cy/moa/dfmr/dfmr.nsf/All/10BCDD05359BEEAA42257D7800289948?OpenDocument>  
(available in Greek only)

<sup>25</sup><http://www.moa.gov.cy/moa/dfmr/dfmr.nsf/All/CF42DB069283278342257E960035E13B?OpenDocument>

<sup>26</sup><http://www.moa.gov.cy/moa/dfmr/dfmr.nsf/All/CF42DB069283278342257E960035E13B?OpenDocument>

<sup>27</sup><http://www.moa.gov.cy/moa/dfmr/dfmr.nsf/All/CF42DB069283278342257E960035E13B?OpenDocument>

- **Development and implementation of a Maritime Research, Technological Development, and Innovation Strategy for the period 2023-30** and a relevant Action Plan that will focus on the sectors of the Blue Economy where great prospects for economic development, jobs creation and increased competitiveness or challenges due to the Twin Transition are expected. The Action Plan will identify and develop funding mechanisms that will facilitate:
  - participation in European and international funding programs.
  - research carried out by companies (including start-ups and SMEs) but also the cooperation of the companies with the academic and research institutions of the country.
  - the removal of obstacles that hinder the development of maritime innovation, the transformation of research into applicable products and services (linking Research with Production) and the adoption of a cross-disciplinary approach that aims to generate tangible and measurable results.
  - provision of support to existing and new clusters that promote the sustainable development of the Blue Economy, so that they obtain the necessary critical mass to help them engage in business and commercial activities. Clusters include businesses, research and academic institutions, technology parks, financial service providers, non-profit organizations and public bodies that cooperate to develop and exchange know-how, develop services and allocate and use common resources. Clusters can therefore support their members' access to green technologies, innovative and entrepreneurial solutions, funding and markets, facilitating the Twin Transition. In addition, they help build relationships based on trust between their members, which is vital for accelerating innovation.
  - the support of centres of excellence that develop RTDI (Research, Technological Development, and Innovation) activities to contribute to the sustainable development of the Blue Economy sectors.
  - the financing of strategic research programs in the areas of the Blue Economy.
- **Preservation, upgrading and allocation of infrastructure** (e.g. ports, fishing shelters, such quays, shipyards, vessels as research vessels, navy and marine police vessels, innovation platforms, databases resulting from relevant research programs and educational and research institutions active in sea-related fields) **which are critical for the economy of Cyprus**, its energy needs and export potential, the support of coastal communities, the execution of various operational programs (e.g. monitoring the marine environment, the fish stocks, etc) the implementation of research activities and innovation programs as well as programs for facilitating the exchange of know-how, the development of new products and services and for ensuring the safety and protection of the maritime territory of the Republic of Cyprus as well as the maritime and coastal transport routes within the framework of its regional and international obligations and rights.
- **Mapping and positioning marine infrastructure and facilities** to support the creation of leisure products and services as well as marine, coastal and diving tourism.
- **The exploitation of the existing and the development of new marine infrastructure** to further upgrade the tourism product, such as use of zero-emission boats for coastal tourism, or access to marine protected areas.

- **Taking measures to support cruise tourism and strengthen regional cooperation in this sector**, so that Cyprus becomes a home-port for cruise liners in the Eastern Mediterranean.
- **Supporting the creation of marine and underwater research parks and relevant facilities for the development of innovative technologies** in areas such as Information and Communications (ICT) at Sea [e.g., unmanned surface vessels and submarines], Maritime Surveillance, Blue Energy and Marine Environment Monitoring as well as for the development of marine infrastructure (e.g. ports, marinas, marine aquaculture units, artificial reefs, mining platforms, etc). within the framework of the Maritime Spatial Planning of the Republic of Cyprus.
- **Upgrading the services offered by the Cypriot port management companies with renewable energy sources** to cover their needs, as well as **the provision of fuels with reduced carbon footprint** to ships or **the electrification of ships** within the ports.
- **Mapping of areas of environmental importance (coastal habitats, salt flats)** and of services involved in their management to facilitate the licensing of relevant development projects and infrastructure, research, as well as actions for coping with emergencies.
- **Taking measures to protect, showcase, support and promote our country's maritime and underwater cultural heritage**, as it is an integral part of its history but also its marine ecosystems.
- **Taking measures to support marine and coastal ecotourism** aiming at the promotion of the diverse marine cultural heritage of the country, the intelligent management of tourist flows, the diversification of the tourism product and the expansion of tourism beyond the peak season.
- **Conducting an Integrated Study for Coastal Protection** to identify, map and permanently monitor potential risks from erosion, climate change, and possible tsunamis, as well as creating appropriate monitoring and response mechanisms.
- **Proper and timely planning, based on reliable socio-economic data, to supply the Blue Economy of Cyprus and Europe with the necessary and appropriate human workforce** that will satisfy the current and future needs of the Blue Economy sectors.
- **Adaptation of existing and development of new educational and vocational training programs** that will respond to skills needs and supply and demand trends in the Blue Economy labour market. The main goal of such programs is to maintain and improve the existing human capital, but also to create the capacity to meet the future needs of the Blue Economy sectors for a specialised and experienced human workforce that will be able to adapt to changing requirements and new opportunities that are emerging in these sectors.
- **Establishing Cyprus as a regional and international destination for education and vocational training in the Blue Economy sectors** such as Shipping, by capitalising on existing educational and training centres and encouraging the creation of new ones, especially in emerging sectors as well as technological sectors that are critical for the Blue Economy (e.g. robotics, maritime technologies, new fuels and decarbonisation, digitalization in the marine maritime industry, etc).
- **Integration of Ocean Literacy programs in primary and secondary education** through:
  - the development of pilot programmes and projects in primary schools.
  - the inclusion of programs related to the Sea in secondary education curricula.

- the development of raising awareness programs about the Sea and the opportunities for employment and entrepreneurship activities in the Blue Economy sectors.
  - the creation of infrastructure, such as Marine Parks, Aquariums (including Virtual Reality Aquariums), Museums of Maritime Tradition and Underwater Archaeology and Museums for the Sea that will be easily accessible to the public and especially to children as well as demonstrations and realisation of visits to ships and maritime vessels such as the ones of the Navy and the Marine Police.
- **Capitalising on Cyprus' privileged geostrategic position and strengthening regional cooperation in various Blue Economy sectors** such as shipping, energy, maritime tourism (including cruise tourism), aquaculture, marine research, and education, aiming at job creations and economic growth in the Eastern Mediterranean region. To this end, it is necessary to promote networking and dialogue between research and academic institutions, businesses, public bodies and civil society organisations in the Eastern Mediterranean region.

## Conclusions

Addressing the challenges associated with the Sustainable Blue Economy and Development requires and entails the active involvement of the "quadruple helix" stakeholders, i.e., government bodies (at European, regional, national and local level), the academic and research community, the business community, professional associations, civil society organisations and collective entities.

Research, Innovation and Education are self-evident conditions for a Sustainable Blue Economy, given the demanding specifications and limitations set by the definition of "Sustainable" on the one hand and the definition of the "Blue" on the other.

Both established and emerging sectors of the Blue Economy rely on Research and Innovation to (a) achieve technological maturity, (b) to improve performance and efficiency, (c) to promote competitiveness and (d) to reduce their carbon and environmental footprint in general.

Established and emerging sectors of the Blue Economy rely on formal and informal Education, Training, Specialisation and Vocational Training including Lifelong Learning and Professional Development schemes to equip the human workforce with the necessary knowledge and skills.

Ocean literacy is also important, as (a) it contributes to the reconceptualisation and redefinition of the relationship between the humans and the sea, and (b) it raises awareness on the issues of marine environment protection, marine ecosystems preservation and restoration as well as preservation and protection of biodiversity.

Local, national, and regional development policies and strategies, including national and regional smart specialization strategies, should include in their focus areas and priorities the harnessing of the potential of the Blue Economy sectors.

The promotion and strengthening of regional cooperation are necessary to address common challenges, protect common goods and develop coordinated strategies and policies that will focus on sustainability and contribute to exploiting the potential of the Blue Economy at regional level, thus contributing to the socio-economic development of the Eastern Mediterranean region.

## Annex A: Indicative activities of CMMI

CMMI's strategic objective is to promote the sustainable development of the Blue Economy, by meeting the real needs of the industry and society.

In the framework of the organisation's objectives and strategic priorities which are in line with the policies implemented at the local, national, regional and international levels and, CMMI has formulated (and is gradually implementing) actions, initiatives and projects to promote the sustainable development of the Blue Economy.

Sector	Initiatives – Activities – Projects
<b>Marine Living Resources</b>	<p>By developing a network of buoys, equipped with appropriate devices and sensors, CMMI collects marine data, implements marine observation systems and telemetry, processes and scientifically analyses the data collected. In addition, it uses ocean models to perform simulations and examine scenarios.</p> <p>CMMI conducts marine research utilising the latest scientific advances in marine ecology and biological indicators monitoring to investigate the status of vulnerable species and priority habitats at various geographic locations and depths while exploring ways to address the problems caused by natural and man-made disturbances.</p> <p>CMMI participates in a research program on the socio-economic empowerment of communities as users of the sea to ensure the sustainable development of coastal areas.</p>
<b>Marine Non-Living Resources</b>	<p>CMMI is active in hydrocarbon-related research, particularly for reducing the industry's carbon footprint and using natural gas as a bridge fuel, focusing on the maritime transport sector and the energy mix.</p>
<b>Marine Renewable Energy (Offshore Wind Energy)</b>	<p>Considering the morphology of the seabed and the sea depths of Cyprus as well as the available technologies and alternative solutions, CMMI believes that floating wind turbine systems are not a priority.</p>

<p><b>Ports and Port activities</b></p>	<p>CMMI is studying the technological dimensions of the mandatory supply of electrical power (generated by renewable energy sources) by port infrastructure/facilities to docked ships (cold ironing), in accordance with the EU legislative package "Fit for 55".</p>
<p><b>Shipbuilding and repair</b></p>	<p>CMMI is designing a small Zero Emission Vessel to develop know-how for the appropriate retrofitting of small vessels so that they become zero-emission vessels.</p>
<p><b>Maritime Transport</b></p>	<p>CMMI promotes the digital transformation of the shipping sector by conducting research in relevant fields.</p> <p>CMMI is implementing a project to optimize ship management conditions and behaviour.</p> <p>CMMI has established the Cyprus Decarbonisation Hub and promotes the decarbonisation of the shipping sector.</p> <p>CMMI is planning to build a small, autonomous, zero-emission vessel.</p> <p>CMMI is studying bio-methane as an alternative fuel, as well as related supply chain issues.</p> <p>CMMI is developing a software to monitor air pollutants from shipping activities in the Eastern Mediterranean region and to estimate the carbon footprint of combined transport.</p> <p>CMMI has developed a software to assess the impact of the implementation of the Fit for 55 legislation package on the shipping sector.</p> <p>CMMI is participating in a research program to improve the environmental footprint of the cruise industry.</p>



<p><b>Coastal tourism (including maritime tourism)</b></p>	<p>CMMI is planning to build a visitable artificial reef with 3D-printed building blocks using environmentally friendly materials.</p> <p>CMMI is planning to create an educational and awareness space for marine life that will welcome tourists and the public.</p> <p>CMMI promotes diving training programs.</p> <p>In the framework of studying and monitoring marine life, CMMI produces audio-visual material for documentation and dissemination of information.</p> <p>CMMI is implementing a project that aims to create eco-friendly and smart cruise packages targeting Millennials and Gen Z.</p> <p>CMMI is participating in a project that aims to create promotional material for 5 popular diving sites in Larnaca. More specifically, the project aims to generate 360° images accompanied by short descriptions of these areas, which - among others - will include information about depth, currents, coordinates, accessibility, visibility, points of interest and marine life. The material will be used for the promotion of diving tourism and the organization of diving activities.</p>
<p><b>Marine Renewable Energy</b></p>	<p>CMMI is examining the solution of coastal floating solar systems, the suitability of maritime areas of Cyprus (depths, normal sea conditions), as well as issues of anchoring, resistance of construction materials (against corrosion) and interconnection with the grid and/or storage of electricity.</p>
<p><b>Blue Bioeconomy and Biotechnology</b></p>	<p>By developing a network of buoys, equipped with appropriate devices and sensors, CMMI collects marine data, implements marine observation systems and telemetry, and analyses the collected data. In addition, it uses ocean models to perform simulations and examine scenarios.</p>

	<p>CMMI conducts marine research utilizing the latest scientific advances in the fields of marine ecology and biological monitoring to examine the status of vulnerable species and priority habitats at various geographic locations and depths while exploring ways to address the problems caused by natural and man-made disturbances.</p>
<b>Desalination</b>	<p>In the framework of its decarbonisation projects, CMMI is examining the desalination process to explore the utilization of energy from renewable sources (solar, wind).</p>
<b>Marine Minerals</b>	<p>Considering the seabed’s morphology, the depths in the marine areas of Cyprus, the available technologies and the cost of their application, CMMI believes that the extraction of minerals from the seabed is not a priority.</p>
<b>Maritime Defence, Security and Surveillance</b>	<p>CMMI is developing maritime robotic systems (land, air, surface and underwater) with interoperability capabilities in heterogeneous multi-role systems that can serve surveillance purposes of marine areas and critical coastal infrastructure.</p>
<b>Research and Education</b>	<p>CMMI has ten (10) Research and Innovation Centres and five (5) Administrative Units to support the Institute's operations (finance, human resources, communication and public relations, academic partnerships and training programs, infrastructure and equipment).</p> <p>CMMI is planning to establish a Blue Career Guidance Office to provide career guidance on marine and maritime professions.</p> <p>CMMI has created the Blue Centre of Vocational Excellence (Blue CoVE) which aims to provide Vocational Education, Training, and Professional Specialization programmes to address the real skills needs of the blue economy. It will nurture and promote cooperation between the business world and the research, academic and educational community, thus contributing to “knowledge triangle” integration<sup>28</sup>. The Blue CoVE has been already certified by the competent authority (Human Resources Development Authority).</p> <p>CMMI organises the Blue Schools which target tertiary education students (of ages 19-29). Blue Schools encompass ocean literacy-related activities (e.g., events, seminars, workshops, field trips etc.) which aim to further enhance the</p>

<sup>28</sup> Knowledge Triangle integration involves activities in education, innovation, and business creation.

	<p>students' knowledge of the ocean and the marine environment, thus contributing to the better understanding of the planet we live on.</p> <p>CMMI creates learning material to address professional training needs.</p> <p>CMMI collaborates with Academic Institutions to implement Master's Degree Programs and Industrial PhDs.</p> <p>CMMI is implementing an EU project aiming at developing innovative education and training programs that target young people interested in learning about professions in the maritime transport, shipbuilding and ship repair, ports, and cruise tourism sectors.</p> <p>CMMI is implementing an EU project that aims to develop educational and training programs targeting the staff of SMEs active in the tourism sector in the Western Mediterranean region.</p> <p>CMMI conducts research for the development of educational material tools and methods.</p>
<b>Infrastructure</b>	<p>CMMI is developing marine robotic systems to monitor critical subsea infrastructure and facilities.</p>

Beyond the established and emerging Blue Economy sectors, CMMI also develops actions in the following sectors that are aligned with the priorities of the European Green Deal:

Sector	Initiatives – Activities – Projects
<p><b>Ocean literacy</b></p>	<p>As part of its social mission, CMMI aims to raise awareness among people of all ages about the protection of the marine environment. That is why it plans and implements activities as part of its program to promote ocean literacy, called "Our Sea". Such actions are the following:</p> <ul style="list-style-type: none"> <li>• Organisation of "Name a reef" competitions that offer the opportunity to Primary School students to be actively involved in the process of naming a natural reef located in the waters of Cyprus. In this way, the children learn, explore, and develop their creativity, while familiarizing themselves with marine biodiversity in the Mediterranean.</li> <li>• Organisation of the European Maritime Day in Cyprus. It is an event that celebrates the Sea. It targets people of all ages, especially children and young people, with the aim of raising awareness and mobilizing them about the importance of the sea and the protection of the marine environment. In the framework of this event, several interactive, social, artistic and environmental activities are carried out.</li> <li>• Realisation of visits and presentations to primary schools to inform the students and the teachers about the marine environment and marine ecosystems.</li> <li>• Organisation of the Blue Youth Camps for students (of ages 13 to 15) which aim to bring them closer to the marine environment through multi-topics activities that promote learning, exploring, and protecting Our Sea. The objective is to introduce them to blue professions and promote ocean literacy.</li> <li>• Implementation of a research program to examine the knowledge and perceptions of primary school students, develop methods and produce educational material to promote ocean literacy in schools.</li> </ul>
<p><b>Blue Skills</b></p>	<ul style="list-style-type: none"> <li>• Organization of Blue Career Days/Fairs targeting secondary school students to inform them about employment opportunities, the required knowledge, and skills in blue professions.</li> </ul>

	<ul style="list-style-type: none"> <li>• Realisation of visits and presentations to schools to inform the students and the teachers about blue professions.</li> </ul>
<p><b>Support to coastal areas</b></p>	<p>CMMI is participating in an EU project aiming to create and implement coastal community empowerment programs that incorporate socially innovative and environmentally friendly solutions.</p>
<p><b>Regional Cooperation</b></p>	<p>CMMI provides advisory services to the government of the Republic of Cyprus regarding strengthening cooperation between Eastern Mediterranean countries in the tourism, especially cruise tourism.</p> <p>At the same time, it has developed an extensive network of Blue Economy stakeholders at regional and European levels with whom it cooperated to design and implement projects in the Blue Economy sectors. In addition, in the framework of promoting regional cooperation in Blue Economy sectors, CMMI:</p> <ul style="list-style-type: none"> <li>• has undertaken the administrative support of the Cyprus Foundation of the Sea, the Blue Economy Cluster of Cyprus. It aims to build an Innovation-driven Ecosystem in which organizations across different Blue Economy sectors undertake joint activities related to RTDI (research, technological development and innovation), networking, improving the business and policy, environment, human resources upgrading and engaging the society.</li> <li>• will host and support administratively, operationally and scientifically the Commonwealth Centre of Excellence in Cyprus (Blue Charter Centre of Excellence "Promotion of Marine Research Development and Innovation"). The Centre will aim to promote the sustainable Blue Economy and the effective management and protection of marine and coastal ecosystems through the development and promotion of regional cooperation.</li> <li>• has undertaken the administrative support of the Cyprus Shortsea Promotion Centre and participates through it in the European Shortsea Shipping Network.</li> </ul>

## Contact us

### CMMI – Cyprus Marine & Maritime Institute



[CMMI House, Vasileos Pavlou Square](#)

P.O.Box 40930, 6023

Larnaca, Cyprus



[www.cmmi.blue](http://www.cmmi.blue)



[info@cmmi.blue](mailto:info@cmmi.blue)



+357 24506100



@cmmicyprus



cmmicyprus



cmmicyprus

