

# Concept of Blue School

## **IO1/A2 Benchmarking Study**

This project has been funded with support from the European Commission. This publication reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

## Preamble: Summary of the survey

Blue economy induces several sectors, among the most cited in the survey, we find fishing, tourism, transport, aquaculture, security, construction and renewable energy which relates to the economy and therefore professions related to the seas, oceans or coasts as well as the demand for human resources having an impact on the economy of the country.

Another component of the blue economy and even a prerequisite for it is the education and awareness of the population on the environment from an early age in order to make sustainable use of natural resources.

Finally, at the local level, the blue economy is perceived as a transversal activity, with a plurality of actors and business sectors, which fits into the field of local sustainable maritime development.

## 1. Definition and principles of blue economy

### *Definition and economic value*

The blue economy corresponds to the maritime economy applied to the principles of sustainable development. It consists in the development of traditional maritime activities, those that have evolved towards more environmentally friendly practices or new practices by ensuring compliance with the principles of sustainable development and by going towards the eradication of poverty.

On a global scale, the maritime economy includes a set of economic activities linked to the oceans and seas as well as coasts. Its economic weight is 1,500 billion euros (1,310 for traditional sectors and 190 for the new sectors) or the second economic item in the world behind the food industry (2,000 billion), but ahead telecommunications and internet (800) and aeronautics (620). In 2020, the estimated amount is 2,550 billion euros of turnover, including 450 for the new sectors.<sup>1</sup>

The current global context is conducive to blue growth; indeed the globalization of the oceans and seas is a reality and even a need in order to acquire all the goods necessary for industry (health, food industry, chemistry etc.). In addition, technological innovations make it possible to strengthen traditional sectors (tourism, diversification of fishing, port activity, heritage etc.) and to generate new ones via new resources, energy, proteins and drugs which corroborate towards economic growth.

Blue growth is thus described as a training lever for coastal areas, generating jobs in 6 major sectors:

- Naval and nautical (shipbuilding, repair, dismantling but also coastal and maritime tourism, in particular cruises as well as awareness of the marine environment and promotion of the culture, know-how and heritage of the sea – i.e.: museums, aquariums, company visits and participation in economic activities),
- Safety and security at sea (through maritime communication, an important issue to avoid devastating accidents economically and environmentally),
- Environment and coastal development (protection of the coastal and marine areas),



<sup>1</sup>[https://www.researchgate.net/publication/326033424\\_2018\\_Annual\\_Economic\\_Report\\_on\\_Blue\\_Economy/link/5b34b75f0f7e9b0df5d31776/download](https://www.researchgate.net/publication/326033424_2018_Annual_Economic_Report_on_Blue_Economy/link/5b34b75f0f7e9b0df5d31776/download)

- Port infrastructure and maritime transports (equipment including containers (freight) and the corresponding logistics: trading, storage etc.),
- Marine biological resources (sustainable exploitation with artisanal and industrial fishing, aquaculture, bio-prospecting etc.),
- Marine energy and mineral resources (offshore energy, mineral extraction from the seabed, etc.).

*The marine environment, a fragile wealth*

This enthusiasm must be put into perspective because of the poor knowledge of the marine environment, only 10% of the marine species are identified, and significant negative externalities of human activities combined with the consequences of global warming. The challenges facing the increasing pressure on the marine environment (incessant maritime traffic, overexploitation of resources and the coastal environment, rapid urbanization of the coast...) and the environmental consequences (waste management, water acidification, rise in temperature and sea level, changes in currents, loss of habitats and biological resources with direct impacts on the health of populations) cannot be ignored for the benefit of economic and financial interests only.

It is therefore important to reduce the remaining implementation gaps. This is partly explained by limited human and financial capacities, but also by administrative and political cultures, as well as by the slow awareness of the problems of inclusive sustainable development. Indeed, decision-making too often emphasizes the short term, without taking into account the longer term.

It is thereby essential to apply national (different national maritime policies integrated with cross-border cooperation between different countries) and Mediterranean regulations in order to respect the commitments, in particular of the Mediterranean Strategy for Sustainable Development 2016-2025 (MSSD), the Marine Strategy Framework Directive (MSFD), the Sustainable Consumption and Production Action Plan (SCP), Union for the Mediterranean (UfM) initiatives etc.

The combination of ocean activities varies in each country, depending on their unique national situation and the national vision adopted to reflect their own conception of a blue economy. Indeed, some will focus on maritime safety (Estonia) while others will focus more on environmental education (Greece, Portugal, Turkey) and others on economic exploitation (Cyprus, France).

To be considered as components of a blue economy, activities must:

- Provide social and economic benefits to present and future generations;
- Restore, protect and maintain diversity, productivity, resilience, essential functions and intrinsic value of marine ecosystems;
- Be based on clean technologies, renewable energies and circular flows of materials which will reduce waste and encourage the recycling of materials.

This in order to achieve SDG 14 which aims at the conservation and sustainable use of the oceans, seas and marine resources for the purposes of sustainable and inclusive development; that is a concept of growth of the economy as part of a long-term perspective and which integrates the constraints linked to the environment and the functioning of society<sup>2</sup>.

Ultimately, according to WWF in 2015, blue economy is a marine-based economy that provides social and economic benefits for current and future generations by:

- Contributing to food security and poverty eradication,
- Protecting the diversity, productivity, resilience and intrinsic value of marine ecosystems, this natural capital upon which its prosperity depends,
- Being based on clean technologies, renewable energies, and circular material flows to secure economic and social stability over time, while keeping within the limits of one planet,
- Being publically governed in an inclusive, precautionary, accountable, transparent, adaptive, innovative, proactive, holistic, cross-sectoral and long-term process.

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<sup>2</sup> Many services provided by ocean ecosystems do not exist in markets, yet they contribute greatly to economic activity as well as climate change mitigation such as carbon sequestration, coastal protection, waste disposal and the existence of biodiversity.

To create a sustainable blue economy, public and private actors must:

- Set clear, measurable, and internally consistent goals and targets,
- Assess and communicate their performance on these goals and targets,
- Create an economic and legislative instrument that provides the blue economy with adequate incentives and rules,
- Plan, manage and effectively govern the use of marine space and resources, applying inclusive methods and ecosystem approach,
- Develop and apply standards, guidelines and best practices that support a sustainable blue economy,
- Recognize that the maritime and land-based economies are interlinked and that many of the threats facing marine environments originate on land,
- Actively cooperate, sharing information, knowledge, best practices, lessons learned, perspectives, and ideas, to realize a sustainable and prosperous future for all.

We will finally rely on the definition of UNCTAD (2014) in order to give our own definition to the concept of blue economy which **seeks to promote economic growth of activities linked to the sea, social inclusion and the preservation or improvement of livelihoods while ensuring environmental and ecosystem sustainability in the Mediterranean**. This means developing clean businesses in a circular economy (zero waste<sup>3</sup>); it is a real opportunity, indeed, many skills and needs are not currently covered. New human resources with innovation skills in one of the 6 sectors to make it evolve are and will remain necessary.

This approach is based on both a global and local scale. Indeed, to succeed in this bet for the future, the implication of all local actors in a real approach of sustainable local development is essential.

## **2. What is a Blue School?**

A blue school is a school turned towards its sea, its ocean and its coastline.

It must develop an educational project at the level of the whole establishment, on the functioning of its infrastructure, and on the commitment of the teaching teams and the participation of the students.

It means that the school implements sustainable practices (sorting and recycling of waste, reduction of greenhouse gases, saving of renewable energies, etc.), in connection, or in partnership, with the local ecosystem of the maritime economy through a specific school program (integrated into each of the different subjects) composed of recreational activities and educational outings on the environment and its preservation, enhancement of local cultures, know-how and marine heritage and the employment in this sector.

A blue school educates its students (secondary level – between 12 and 16 years old) on sustainable development and encourages them to be involved in the society as an interested citizen on sustainability issues and by the participation in the development of local agendas to build a responsible future.

## **3. Why a Blue School?**

The concept of Blue School comes from the need for involvement of schools in the environment and sustainable development for the education of its pupils/students in order to make them aware and proud of their cultural heritage around the sea which could be used. as a source of ideas for job creation (diversification of professional and entrepreneurial opportunities), economic growth and social cohesion (equal access to marine resources in order to cover basic needs such as health, security and employment).

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<sup>3</sup><https://www.youtube.com/watch?v=1af08PSlaIs>

The idea is therefore to introduce the blue economy into school education in order to build a generation based upon environmental sensitivity and empathy, inspired by local cultural heritage, linking marine life to economic growth and employment.

However, this heritage must not be overexploited economically. Many challenges arise in coastal areas: loss of traditional fishing in favour to industrial fishing, waste production and pollution by mass tourism, seasonal jobs of poor quality etc.

The blue school would make it possible to approach this heritage with the aim of preserving the seas, resources, ecosystems, coasts and their functions while being conscious of the threats in order to mitigate them in cooperation with the various stakeholders of the different countries.

Lastly, this marine heritage is linked to a history from which the young generations must learn in order not to repeat the mistakes and build a better future.

#### **4. What to do to become a Blue School?**

A blue school is a real educational project.

Teaching teams must be trained on the issues and problems of the blue economy in order to set up projects throughout the school, for students, involving local actors (fishermen, maritime companies, managers of maritime areas and marine protected areas, environmental association, public authorities, etc.).

Activities will have to be developed for the realization of these projects in connection with a theme and / or one or more maritime issues such as the creation of a fresco in the courtyard of the establishment representative of the local marine ecosystem, the setting implementing school plastic waste recycling activities or an awareness campaign on greenhouse gases and ocean acidification etc.

These projects and the key elements necessary for the students' understanding must be found in the school curricula and in all subjects:

- Geography, throughout the program, the environment and the territory will be objects of learning and analysis, it is normal to approach various themes such as: oceans and seas (depth and surface occupation), properties of the seas: salinity, transparency, purity; advantages of seas for human: transport, fishing, tourism; climate applying to the region, specific vegetation resulting therefrom; regional impact of climate change; water management (unequal distribution and access, wastewater management, oil pollution at sea etc.); environmental impacts of human activities (i.e.: impact of dam-type structures on marine biodiversity); analysis of port areas (production, trade); the coast, a coveted space; spatial planning (close to the school, close to the sea); enhancement of the territory; the land-sea link; how the cultural and civilizational circles are linked to the situation and the geographical position (positioning and location on a map)? etc.;
- Life and Earth Sciences: definition of natural resources, challenges of using natural resources (exploitation, better use); learning local marine species, adaptation of marine species to the seabed against pollution, high sea animals and their adaptation (food chain); evolution stages of biodiversity; food practices (environmental impacts on water, production capacity and fishery resources); meteorological and climatic phenomenon (floods, tsunamis, storms, droughts, earthquakes, fires etc.);
- Physical and Chemical Sciences in order to explain gas exchanges in particular: energy sources and transfers (renewable like wind and wave for electricity production) for example;
- Economics and Social Sciences / Management by addressing the economic potential of the seas, the danger of excessive exploitation and pollution of the sea; concept of environmental cost;

development of coastal tourism, main touristic areas and their impacts; the link between economy and environment: Is economic growth compatible with the preservation of the environment?

- History: heritage as a factor of sustainability and socio-economic, socio-cultural and personal development, enhancement of cultural heritage (values, culture, gastronomy) ; civilizations and the sea; importance of the sea in local economy; needed skills to live near the sea etc.

All other disciplines may appeal to the marine environment:

- In Literature or mother tongue, the reference to books on the sea like Mare Nostrum (studies of Roman conquests), the Greek gods (Odyssey) or any local book related to the sea;
- In Mathematics, marine environment can be a support to work on the orientation in space through the calculation of geographic coordinates;
- In Music and Arts through the study of nature as the inspiration of man (sounds and movements of the sea etc.);
- In Philosophy, an example of issue could be « Why do humans go to the unknown » (benefits and learning by travelling).

In order to discover more themes and go further in the knowledge acquired on the major issues of management of current maritime spaces in an educational logic as learn to know, learn to be, learn to live and learn to do, you could develop on this thematic:

- Waste and pollution (ports, plastics, shipping),
- Artificialisation of the coastline (concretization, reduction of the coastline, landscape degradation),
- Seawater quality (acidification, eutrophication, air / sea interactions etc.),
- Climate change (sources and impacts, coastal erosion, water stress, desertification, natural hazards etc.),
- Biodiversity (current loss, invasive species, endemic species, Marine Protected Areas etc.),
- Energy (production and resources, fossil fuels, renewable energies etc.),
- Maritime economy (fishing (different types), maintenance of the aquatic resource, aquaculture, commercial navigation and trade, transportation, security etc.),
- Tourism (mass / sustainable),
- Cultural heritage (traditional activities (fishing, diet), eco-culture, literature, art etc.),
- Politics and governance (international and cross-border cooperation, education-research partnerships, migratory flows) ;

Many educational activities related to the educational project of the establishment will be offered for students to discover and encourage reflection through knowledge and learning:

- Visits of sites linked to the marine environment (ports, natural parks, museum, research center, laboratories, shipbuilding yards, etc.);
- Discovery of sea professions related to the places visited or the intervention of a professional in the classroom, the presentation by students on little known professions;
- Practical experiences allowing the development of skills and the ease of understanding of phenomena (i.e.: melting ice and rising sea level, making your own volcano, making a culinary recipe, cleaning a beach and analysis of waste found etc.) ;
- Collective and practical research by the students requesting interview of actors, visit of places in addition to literary research in order to establish a brief or a presentation;
- Sustainable development activities in my school (and bringing it to the students, teachers and parents) by the creation of an environmental club for change in the behaviour of students or by the implementation of selective sorting, water recovery system, educational garden, composting etc.; and in the city (region – country etc.) by the interactions with local institutions to contribute to the drafting and implementation of agenda 21.

**Blue schools are meant to provide an educational framework for students to become united eco-citizens, involved for their future and protection of the marine environment.**