



Topic summary:

In this document the essential concepts relating to the economy of the sea are outlined with particular reference to fishing and aquaculture, tourism and commercial navigation sectors, whose economic, environmental and social profiles are highlighted.

Main concepts covered:

- * Blue economy
- * Fisheries resources
- * Traditional activity: fishing, aquaculture
- * Maritime traffic
- * Economic Sector

Transversal competencies acquired:

- * Communicating orally / writing in mother/foreign language
- * Managing information
- * Getting organized and planning
- * Respecting a framework and instructions.



Definition of key notions:



Blue economy:

Includes all activities related to oceans, seas and coasts.



Sustainable fishing:

Fishing using methods that do not degrade the reproductive capacity of fish while ensuring that the ecosystem is not damaged.



Aquaculture:

Animal or plant production activity in an aquatic environment (fresh water or marine environment).



Fishery resources:

Living resources (plant or animal) in aquatic environment.



Maritime Traffic & Commercial Navigation:

Maritime traffic related to the security of international shipments and the prevention of marine pollution caused by the ships.





The Mediterranean Sea, due to its history, is an area marked by many maritime exchanges, both commercial and migratory. Since Roman times, it has played an important part in the economy because of its livelihood for part of the coastal population. However, this activity has lost its importance in the Mediterranean. Today, the maritime economy is based on offshore energy, maritime equipment and maritime and coastal tourism. This economic sector is currently booming and could be a source of income for all border countries. However, given the threats that these activities may pose to the Mediterranean and its biodiversity, inclusive sustainable economic development must be promoted in order to ensure the sustainability of the region. This is the concept of the blue economy. It includes all the economic activities of the maritime sector and seeks to ensure the economic sustainability combined with the sustainable development. It proposes a diversification of activities around fishing activities, but it is a sector in difficulty in the territory. For this topic, we will use the example of professional fishing (including fishing and aquaculture) to provide a non-exhaustive presentation of the issues facing the territory.

Concerning the maritime traffic, the ship is the mean of transport that reaches the most extreme dimensions. It is a complex system equipped with numerous high-tech facilities and it often carries very dangerous goods. So it is clear that safety management is a priority. However, only recently international shipping policies have been established, discouraging shippers from compromising safety, security and performance environmental issues, and encouraging innovation and efficiency.

We have structured our thinking around the three pillars of sustainable development: the economic, social and environmental pillars.



Sustainable development issues identified in this topic:

What are the challenges of sustainable development specific to the Mediterranean marine economy?

1. Environmental aspect

The Mediterranean Basin is a hotspot of biodiversity. That means that it is a territory that concentrates a great diversity of animal and plant species. It is the second largest hotspot in the world, as it concentrates 10% of the world's biodiversity. However, the Mediterranean is also the most polluted sea in the world. There is a strong presence of microplastics, which is a real scourge in the region. In addition, it is a territory that is particularly exposed to climate change. A report commissioned by the Union for the Mediterranean (UFM) and presented in December 2018 at the Climate Summit in Poland states that global warming will have a particularly severe impact on the Mediterranean region and will have serious economic and environmental consequences. Thus, «the effects of climate change on the Mediterranean region will be higher than the world average». Indeed, the high level of maritime traffic in the Mediterranean tends to threaten the well-being of endemic species. This, associated to the fishing activities, tends to weaken the fishing resources of the territory. For example, a study of the Food and Agriculture Organization of the United Nations (FAO) observed, in 2015, that the Mediterranean presents the highest exploited proportion of fish stocks at an unsustainable biological level (95% of stocks). However, these figures do not provide an accurate picture of the state of stocks, which are very difficult to assess, but international public actors agree on the need to intervene for the protection of this area.

In the Mediterranean, the fisheries resource is small in quantity but large in diversity: «While representing only 0.82% of the total surface area of the oceans, the Mediterranean Sea is home to 8 to 9% of marine biodiversity. It is the richest marine ecosystem in terms of species diversity. Between 10,000 and 12,000 Mediterranean species have currently been recorded, including just over 600 species of fish, 2,000 crustaceans, 1,400 molluscs, 150 echinoderms, 450 jellyfish, 600 sponges and 1,350 algae and marine plants. In addition, there are 5 species of reptiles and 21 species of mammals. In addition, fish consumption has concentrated on the noblest varieties, such as whiting and cod, which are used to make breaded fish sticks. In the past, fishermen sold fish on a seasonal basis (as is the case in local agriculture). However, the fishing effort no longer respects this seasonality and the fish are caught all year round and according to the quantities demanded by the market.

It is with this in mind that the EU, in cooperation with the countries on the Southern shore of the Mediterranean, have committed themselves to develop a blue economy that respects the environment and the principles of sustainable development. This includes all the economic activities of the maritime sector. These sectors represent a strong potential for the prosperity of the territory. It is therefore necessary to develop these activities while preserving the territories. Concerning the professional fishing industry, the principles of the blue economy can be translated into concrete measures to diversify activities. In order to have a more qualitative than quantitative management of the fish resource (fish, crustaceans...), professional fishermen can now take passengers aboard their boats to discover their profession and the beauty of the coast. This activity, practiced

only by professionals, is called “pescaturism”. In Italy, they can even offer meals, in suitable places, from their own fishing and to accommodate tourists in their own accommodation.

As for maritime traffic, Particularly Sensitive Sea Areas have been established over the years, to identify those ones that require special protection due to their fragility and importance on an ecological, socio-economic and scientific level (eg. Strait of Bonifacio, France and Italy). MARPOL (Marine Pollution) is the main instrument implemented by the International Maritime Organization for the prevention of pollution. Its objective is to preserve the marine environment through the complete elimination of pollution from hydrocarbons and other harmful substances and the minimization of the accidental spillage of these substances.

2. Economical aspect

The professional fishing sector in the Mediterranean is characterized by a more traditional fishing industry. For instance, 91% of the vessels are less than 12m long, which is characteristic of an artisanal fishing activity. Professionals tend to use nets, long lines and traps, avoiding the industrial fishing such as trawlers and large seiners. For example, in France, the Mediterranean area contributes only 3% of the fishing catch. Most of these catches are located in North Atlantic and North-East Atlantic. By way of comparison, the Sud Provence Alpes Côtes d’Azur region produces 4000 tons, compared to 208,000 for Brittany. However, this is an activity where it is difficult to obtain complete statistics because the sale of fish is made directly to customers from the port. However, we have some figures on global fishing catches at our disposal.

The total catches of the main producers in the world (2015) are displayed by the following table:

States	Tonnes	%
China	17 853 070	17.06 %
Indonesia	6 565 350	6.27 %
India	4 862 038	4.65 %
EU-28	5 160 318	4.93 %
Vietnam	2 757 314	2.63 %
United States	5 045 443	4.82 %
Peru	4 838 874	4.62 %
Japan	3 553 473	3.40 %
Russia	4 463 825	4.27 %
Philippines	2 154 943	2.06 %
Norway	2 441 089	2.33 %
Bangladesh	1 623 837	1.55 %
South Korea	1 656 819	1.58 %
Chile	2 132 337	2.04 %
Myanmar/Burma	1 953 510	1.87 %
Thailand	1 693 050	1.62 %
Malaysia	1 496 054	1.43 %
Others (*)	34 399 523	32.87 %
Total	104 650 868	100.00 %

If we compare these figures with the statistics of the Mediterranean coastal countries (see table below), we can see that their production is relatively low compared to the world production. Only Spain is characterized by a fairly high production (17.47% of European production).

MS	Tonnes	%
IT	191634	3.71 %
EE	70753	1.37 %
ES	901512	17.47 %
HR	72264	1.40 %
FR	497435	9.64 %
Totale	1733598	
Total EU-28	5160318	
Percentage	33,59	

Fishing industry in the Mediterranean is a fragile sector, which is struggling to recruit because working conditions are difficult. Diversification should enable professional fishermen to benefit from additional income, offering greater stability and thus contributing to better living conditions.

Pescaturism, which came from Italy, was developed in France in the 2010's. The countries of Southern Mediterranean Rim wish to develop this activity to strengthen the economic income of fishermen and reduce the fishing effort. Algeria adopted in 2016 national pescaturism regulations and Tunisia is currently experimenting with this activity in the Northern.

The container transport can represent the growth of maritime traffic in the Mediterranean: in the last 20 years, container handling in the Mediterranean ports has increased six-fold and the top thirty ports exceed 50 million TEU (from 9 million TEU in 1995 to 53 million today) with a percentage increase of 500% and as many as nineteen ports exceed one million TEUs a year. Data show that the Mediterranean has gained a central position in the global trade of goods, as «recovering water» against the Atlantic. The exponential development of the container market has opened up spaces for competitive positioning in many port systems and represents an opportunity to growth for the Mediterranean Basin.

3. Social aspect

Beyond the economic and environmental aspect, pescaturism contributes to the enhancement of the local heritage.

Indeed, the professional fishing in the Mediterranean has remained faithful to its foundations, keeping its artisanal aspect far from the industrial fishing. Fishing gear, nets, longlines and traps were invented by fishermen. Some practices may be more environmentally friendly than others. For example, longline fishing allows the selection of adult-sized fish. Most fishing techniques have been invented by fishermen themselves over time. In some territories, other ancient practices are still present even if they are hardly used any more: the madrague or tonara consisting in the installation of fixed fishing nets along the coast mainly for the capture of tuna was used by fishing communities in order to manage the fishing catch. Also, professional fishing has contributed to shaping coastal territories, and in particular large coastal cities such as Marseille or Sète. It has also been an important source of social cohesion on the coasts. Fostering exchanges and creating jobs, it has contributed to the emergence of communities with strong cohesion. Pescaturism contributes to the discovery of the port heritage and the local traditions by allowing individuals to meet fishing professionals. Thus, it raises awareness of the sector's challenges. Heritage walks are organised to allow visitors to discover artisanal fishing and its products. There are also citizen initiatives to promote human heritage. In addition, pescaturism helps to maintain activity in the area by allowing fishermen to benefit from a more stable income. It can also

promote the attractiveness of the profession for young workers. EU has drawn up the Blue Book (2007) in which is marked the need to propose an integrated maritime policy system, given from the awareness that much of our future depends on the still unused potential of the oceans, with the aim of offering growth, employment and sustainability. Therefore, we can conclude on the following points: the rejection of the sectorial approach until now followed by the Union and the Member States (ie: a policy for ship owners, one for ports, one for shipyards, one for the environment, one for fishing, one for pleasure craft, etc.); and the affirmation of the need for a «holistic» policy, which addresses in a global and inter-sector ways all aspects of maritime problems.

Position of the topic in the school program:

	11	12	13	14	15	16	17
Mother / Foreign language / Litterature							
History	X		X				
Geography	X		X	X	X	X	X
Mathematics							
Biology / Geology	X	X					
Physic / Chemistry							
Social Science / Economy / Law						X	X
Art / Musics							
Technology / Computer science							

Ressources:

- The two tables shown are taken from the document: Facts and figures on the common fisheries policy - Basic statistical data - 2018 EDITION, by Directorate-General for Maritime Affairs and Fisheries of the European Commission
- The state of fishing and aquaculture in the Italian seas (Ministero delle Politiche Agricole, Alimentari e Forestali - 2011)
- “Rapporto annuale sulla pesca e sull’acquacoltura in sicilia 2013” (assessorato regionale dell’agricoltura, dello sviluppo rurale e della pesca mediterranea) -rapporto ISPRA 2016 su Pesca ed Acquacultura
- SEA-Med Project Technical Series : The European Commission’s new proposal for a Council Regulation on the conservation and sustainable use of fisheries resources in the northern and southern Mediterranean Sea ? An experience conducted in the Taza National Park, , Algérie. Bellia R. 2016. http://d2ouvy59p0dg6k.cloudfront.net/downloads/le_pescatourisme_algerie.pdf
- WWF Principles for sustainable fishing tourism, WWF Mediterranean Marine Initiative, Rome Italy, Gomei M., Bellia R (2019) http://awsassets.panda.org/downloads/wwf_fishingtourism_web_doublepage.pdf