



Supporting Implementation of Maritime Spatial Planning in the Western Mediterranean region

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Tyrrhenian Case Study

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Supporting Implementation of Maritime Spatial Planning in the Western Mediterranean region



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Tyrrhenian Case Study

PART A. General description of the Tyrrhenian Case Study

PART A Document Information

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1. GENERAL DESCRIPTION OF THE TYRRHENIAN CASE STUDY

1.1 THE MARINE ENVIRONMENT

The considered area of the Tyrrhenian case study (fig. 1) is defined by the following coastal points: Tuscany Region Northern Administrative limit, Fosso Chiarone (Tuscany), Cape Ferro (North-eastern Sardinia) and Cape Falcone (North-western Sardinia).





From a geomorphologic point of view, the case study area is characterized by a continental shelf presenting variable widths, rather wide in the north-eastern part in correspondence of the Tuscany coasts, and medium in correspondence of the Sardinia coasts. In the northern part of Sardinia, the shelf is wide in proximity of Bonifacio mouths, becoming narrower in the North-West side of the island. At the North-East of the Sardinia the continental slope is interrupted by several underwater canyons. The marine area of the case study reaches the maximum depth of 2520 m. The coastal areas that fall within the case study areas are characterized mainly by shallow rocky reefs in the North of Sardinia island and by fine sands along the Tuscany coast, which is recognized as an area subjected to important erosion processes. The hydrography of the area is characterized by main horizontal sea currents that follow anticlockwise directions (cyclonic). The central Tyrrhenian Sea is mostly influenced by the winds blowing year-round eastward from the Strait of Bonifacio. Off-shore, at the East of Bonifacio, the zone is interested by highly intense currents (annual mean speed > 0.250 m/s) and the “Cold Tyrrhenian Eddy” cools the water of the southern part of the area of the case study, especially during the autumn and winter seasons. On the contrary, in the northernmost part of the case study area, in correspondence to the Tuscan Archipelago and the area above, which is not interested by this cooling phenomenon, the average temperatures are usually higher. Within the case study area there are three National Parks: the Tuscan Archipelago (Tuscany Region), the Asinara island and the Maddalena (Sardinia Region).

The National Park of the Tuscan Archipelago, established in 1996, covers about 80,000 hectares. It consists of seven islands (Elba, Giglio, Capraia, Montecristo, Pianosa, Giannutri and Gorgona) arranged in a semi-circle between the lower Ligurian Sea and the upper Tyrrhenian Sea, and about forty islets. Elba is the largest island of the Tuscan Archipelago and the third in Italy, with a coastal development of 147 km and an area of 223.5 km². Giglio, granitic and mountainous, is the second island of the Archipelago for size and inhabitants with a coastal development of 28 km and a surface of 21.2 km². Capraia is an island of volcanic origin with a coastal development of 27 km and a surface of 19.3 km². Montecristo is an integral nature reserve since 1971 and, therefore, it is accessible only for scientific reasons. It has a coastal development of 16 km and an area of 10.4 km². Pianosa, declared a Nature Reserve since 1996, has a coastal development of 26 km and an area of 10.2 km². Giannutri, which still preserves the remains of a rich Roman villa, has a coastal development of 11 km and an area of 2.6 km². Gorgona is the smallest and of the islands of the Archipelago with a coastal development of 5.5 km and an area of 2.2 km².

The Asinara Island is located in front of the Punta di Capo Falcone, the extreme North-West corner of Sardinia, just spaced from the small Isola Piana.¹ Geographically, it is included between Punta Salippi, the extreme South-East, and Punta dello Scorno, which marks the extreme northern limit. The Protected Marine Area surrounds the Asinara Island and has an extension of about 108 km². Two main slopes characterized the island:

- the western slope, characterized by steep slopes that continue in the submerged part; the morphology of the seabed consists of crags rich in gorges, canals and cracks, the platform sinks in certain points quickly reaching the depth of 50 m;
- the eastern slope, characterized by low ribs, gradually descends to a maximum depth of 50 m. The seabed consists mainly of inconsistent substrates. It is formed by coarse sands of organogenic detritus, from which large rocky outcrops frequently emerge.

The National Park of La Maddalena Archipelago is the first national park in Sardinia, established in 1994.² The archipelago of La Maddalena, located in the North-East of Sardinia, consists of a group of islands of various sizes. The most interesting aspects of coastal morphology concern the conformation of the coasts, generally rather jagged, in which there are frequent rias of various dimensions.

The area of the case study falls within two Marine Strategy Framework Directive assessment areas: the Tuscan Archipelago and the Central Tyrrhenian Sea. The results of the MSFD Initial Assessment report³ in relation to the marine habitats that are objects of monitoring programmes, indicate that along the Tuscany coast,

¹ www.parcoasinara.org

² <http://www.lamaddalenapark.it>

³ MSFD reporting on Initial Assessments (Art. 8), Italy, 2012



seagrass meadows, represented by *Posidonia oceanica* and *Cymodocea nodosa*, cover 201,4 km² presenting partially unstable conditions in terms of distribution near the urban and industrial sites and near the Arno river mouth. On the contrary, around the Tuscan Archipelago (Elba, Giglio, Pianosa, Capraia and Gorgona islands), where the human impact is very limited, they mainly present a good status. In the Tuscan Archipelago and Central Tyrrhenian Sea coralligenous beds extend at a depth ranging from 23 m to a lower limit estimated to exceed 100 m. The extension of maërl beds in the Tuscan Archipelago have been estimated to be around 592 km², mainly in the area from Elba Island to Piombino coast and from Elba Island to the western limit of the assessment area of the Tuscan Archipelago, where the depth range starts from 32 up to 114 m depth. In North Sardinia maërl extends for an estimated surface of 202 km² between 43 and 79 m depth. The available data for both coralligenous and maërl beds are insufficient for the moment both in terms of distribution and habitat conditions, since no dedicated on field activity has been carried out along the Italian coasts. Data related to the presence and distribution of deep corals in these two assessment areas are absent. Past studies recognized the presence of a black coral forest of the species *Parantipathes larix*, which is one of the less known species of Antipatharians present in the Mediterranean Sea.⁴

Among the benthic animal species of particular relevance monitored in the framework of the Marine Strategy monitoring programme,⁵ the ribbed Mediterranean limpet (*Patella ferruginea*) can be observed along the coasts of Sardinia and Tuscan Archipelago. Although the populations in Sardinia are in clear decline, the presence of this species has been reported in Asinara MPA and in the Maddalena. Another benthic species of relevant importance is the noble pen shell (*Pinna nobilis*) that is well represented in both the assessment areas, even though there is severe lack of information on this species ecology, population trends and distribution.

Several seabird species are objects of monitoring surveys within the two assessment areas. The Tuscan Archipelago as well as the Circum-Sardinian seas representing areas of breeding of the Mediterranean shag (*Phalacrocorax aristotelis desmarestii*), the yelkouan shearwater (*Puffins Yelkouan*), the scopoli's shearwater (*Colonyctris Diomedea*), and the audouin's gull (*Larus audouinii*). The Mediterranean shag's colonies vary in locations between years and data on demographic parameters are insufficient to evaluate trends, while the yelkouan shearwater is more stable in distribution. The colonies of the scopoli's shearwater are mainly located in the islands in both the assessment areas, and data on demographic parameters collected so far are insufficient for trend analysis, even though populations seem stable or even increasing. Regarding the audouin's gull, trends related to its populations show demographic fluctuations, from marked decrease and local extinction to increase.

The loggerhead sea turtle (*Caretta caretta*) distributes for the entire Italian-Provence-Corsican basins with a minimum estimated abundance of 61805 individuals. There are no available data on population trend, however it is estimated that 50% of the population migrates from Greece, Central Turkey and Libya and the pressures on this species in the Western Mediterranean basin can affect the population trend of this species in the Eastern Mediterranean.⁶

The case study area includes part of the Marine Mammals Sanctuary or Pelagos Sanctuary⁷, an international marine 'protected area' established by a 1999 by an international Agreement (entered into force on February 2002) between France, Italy, and Monaco to protect endangered and endemic marine mammals in an area of approximately 90 000 km² of internal, territorial, and adjacent high seas waters, between Toulon (France), Cape Falcone (North-Western Sardinia), Cape Ferro (North-Eastern Sardinia) and Fosso Chiarone (Tuscany).

⁴ Bo, M., Canese, S., & Bavestrello, G. (2014). Discovering Mediterranean black coral forests: *Parantipathes larix* (Anthozoa: Hexacorallia) in the Tuscan Archipelago, Italy. *Italian Journal of Zoology*, 81(1), 112-125.

⁵ <http://cdr.eionet.europa.eu/it/eu/msfd8910/msfd4text/envuhgcp/>

⁶ Initial Assessment SIMWESTMED

⁷ Notarbartolo-di-Sciara, G., Agardy, T., Hyrenbach, D., Scovazzi, T., & Van Klaveren, P. (2008). The Pelagos sanctuary for Mediterranean marine mammals. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 18(4), 367-391.



The Italian territorial waters included in the Sanctuary have an area of 96,000 hectares. The area of the International Marine Mammal Sanctuary is characterized by deep seabeds and upward currents that facilitate the presence of large plankton banks that favour the survival of different species of cetaceans. In fact, in the area of the Sanctuary numerous cetacean species are present: the fin whale (*Balaenoptera physalus*), the striped dolphin (*Stenella coeruleoalba*), the sperm whale (*Physeter macrocephalus*), the long-finned pilot whale (*Globicephala melas*), the Risso's dolphin (*Grampus griseus*), the Cuvier's beaked whale (*Ziphius cavirostris*), the short-beaked common dolphin (*Delphinus delphis*), and the bottlenose dolphin (*Tursiops truncatus*).

Information related to the presence and distribution of some of these species of marine mammals are available from the MSFD Initial Assessment report. The fin whale (*Balaenoptera physalus*) distributes in the Italian-Provence-Corsican basins with a minimum estimated abundance of about 400 individuals. The Ligurian Sea and the Gulf of Lion are important summer feeding grounds, while the Tyrrhenian Sea is a potential corridor. There are no sufficient data in the area to infer population trend. The striped dolphin (*Stenella coeruleoalba*) distributes for the entire area of the Italian-Provence-Corsican basins with a minimum estimated abundance of about 88000 + 40000 individuals. Most sightings for this species are in pelagic waters and there are no sufficient data in the area to infer population trend although there is some evidence that the species relative abundance is increasing in a portion of the Ligurian Sea. The common bottlenose dolphin (*Tursiops truncatus*) distributes for the entire area of the Italian-Provence-Corsican basins with a minimum estimated abundance of about 1600 individuals. This species is distributed mainly in coastal areas of the continental platform (depth < 100 m), however, given the limited extent of the continental shelf platform, cases of overlap of the bottlenose dolphin primary habitat with areas with high anthropogenic pressure are evident, thereby suggesting the potential existence of habitat fragmentation. There are no sufficient data to infer trends. The Curvier's beaked whale (*Ziphius cavirostris*) distributes for the entire Italian-Provence-Corsican basins. The local population of the Ligurian Sea is estimated at about 100 individuals while there is no estimation for the local population of the Tyrrhenian Sea. This species typically distributes in pelagic areas (depth >600m), with preference for areas with slope and submarine canyons. Two important areas have been identified for this species: the northern part of the Ligurian Sea and an area in the north-central Tyrrhenian Sea (between Tuscany, Latium and Sardinia).⁸

1.2 ENVIRONMENTAL CONSERVATION

Due to the high environmental value of this zone the management framework of marine and coastal areas designed for conservation purpose in the Tyrrhenian Sea is complex and highly diversified (fig. 2).

⁸ Initial Assessment SIMWESTMED

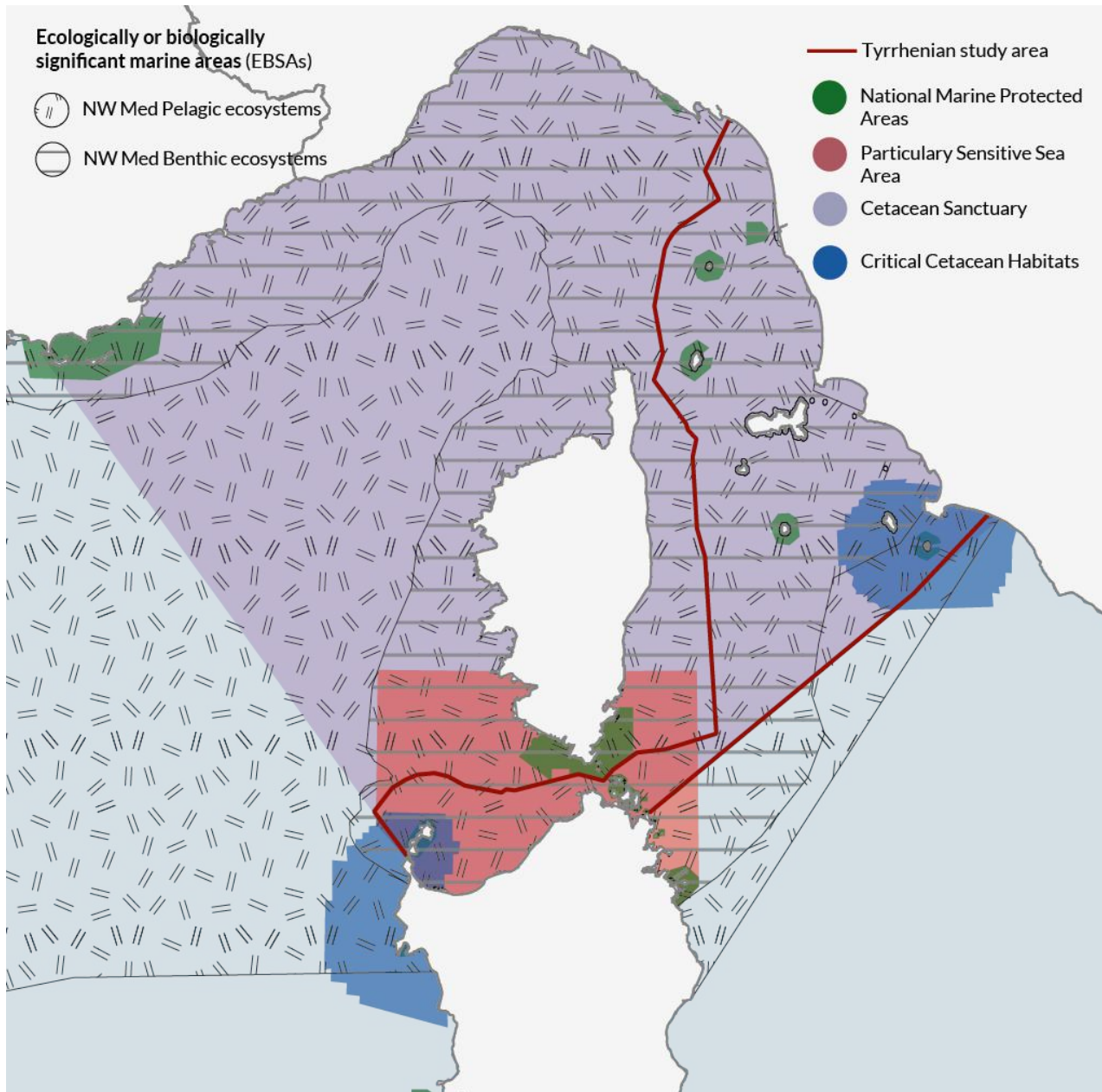


Figure 2. Main areas defined for conservation of the marine environment within the Tyrrhenian Study Area.

The entire study area is included within the Specially Protected Area of Mediterranean Importance (SPAMI) of the Pelagos Sanctuary for the Conservation of Marine Mammals. The Pelagos Sanctuary was recognized as a SPAMI in 2001 within the United Nations Environment Program Mediterranean Action Plan (UNEP-MAP) and established through the Barcelona Convention Biodiversity Protocol⁹, and its transboundary management was ensured through the ratification in 2002 of a trilateral agreement between France, Italy and the Principality of Monaco with the main goal to protect local cetacean populations.¹⁰

Together with the Pelagos Sanctuary which enclose the entire Study Area another area partially included, the Strait of Bonifacio, has been declared as priority for conservation through the establishment of a Particularly Sensitive Sea Area (PSSA) in 2011 after a coordinated request by Italy and French to the IMO with the objective to avoid the impacts from marine traffic on the ecosystems with high ecological value of the strait.¹¹ The Bonifacio Strait represents the only PSSA declared in the entire Mediterranean basin. Moreover the area is entirely included within two Mediterranean Ecologically and Biologically Significant Areas (EBSAs): the EBSA of

⁹ http://www.rac-spa.org/sites/default/files/doc_spamis/spamis/25_pelagos.pdf

¹⁰ <https://www.sanctuaire-pelagos.org/en/about-us/area-of-application-and-coastal-municipalities/68-anglais/the-pelagos-agreement>

¹¹ <http://pssa.imo.org/bonifacio/law.htm>



North West Mediterranean Pelagic Ecosystem and the EBSA of the NorthWestern Mediterranean Benthic Ecosystem. This type of designation was officially recognized by UNEP in 2014.^{12 13}

There are two Cetacean Critical Habitats (CCH) partially included within the case study have been declared by ACCOBAMS in 2010¹⁴: the CCH of Tuscany archipelago which covers the marine area surrounding Monte Argentario, the Giannutri and Giglio Island, and the CCH of North western area of Sardinia which surround the National Park of Asinara. There are four MPAs established under Italian legislation included within the case study extension: Isola Dell'Asinara National Park, Arcipelago Toscano National Park¹⁵, Secche Della Meloria MPA¹⁶, Archipelago Della Maddalena MPA (2). Furthermore the Tuscan Archipelago has been included for its great social, historical and natural value in the list of Biosphere Reserves under the UNESCO-MAB Programme since 2003.¹⁷

Moreover in the case study 19 Natura 2000 sites which recognition is based on the Habitats Directive (Council Directive 92/43/EEC) and Birds Directive (Council Directive 2009/147/EC) have been established and they are: Isola Di Gorgona, Area Terrestre e Marina Isola Di Capraia, Area Terrestre e Marina Isola Di Capraia, Area Terrestre e Marina Isola Di Pianosa, Area Terrestre E Marina Isola Di Montecristo e Formica Di Montecristo, Area Terrestre e Marina, Secche Della Meloria, Scoglietto Di Portoferraio, Scarpata Continentale Dell'Arcipelago Toscano, Isola Di Giannutri, Area Terrestre e Marina Scoglio Dell'Argentarola, Fondali Tra Le Foci Del Fiume Chiarone e Fiume Fiora, Isola Asinara, Stagno e Ginepreto di Platamona, Foci del Coghinas, Monte Russu, Capo Testa, Arcipelago La Maddalena, Isola Dell'Asinara, Isola Rossa, Costa Paradiso. Three Ramsar sites declared through the UNESCO Convention on Wetlands, known as the Ramsar Convention are also found within the Study Area: Palude della Diaccia Botrona, Lago di Burano, Laguna di Orbetello.¹⁸

Another initiative for the protection of the environment is the creation in 2012 by both French and Italian institutions of the European Grouping of Territorial Cooperation (EGTC) which was established to enhance the protection and development of the natural and cultural resources of the Bonifacio Strait through transboundary management.¹⁹

ARCHAEOLOGICAL AND HISTORICAL SITES

The marine space of the Case Study can be considered a hotspot for underwater cultural heritage in the Mediterranean context. Indeed, it covers some of the most important historical marine commercial routes in the Mediterranean basin. The marine area surrounding the Tuscany Archipelago is considered the most relevant marine zone within the SA in terms of underwater cultural heritage. Indeed, researches in the area have revealed the presence of 121 shipwrecks, 14 underwater structures, 106 topic areas with presence of archaeological remains (e.g. amphorae).²⁰

1.3 KEY MARITIME USES IN THE AREA

FISHING AND AQUACULTURE

¹² <https://www.cbd.int/ebsa/>

¹³ <https://www.cbd.int/doc/decisions/cop-12/cop-12-dec-22-en.pdf>

¹⁴ <http://www.accobams.org/conservations-action/protected-areas/>

¹⁵ <http://www.islepark.it/>

¹⁶ <http://www.parcosanrosso.org/meloria/>

¹⁷ <http://www.unesco.org/new/en/natural-sciences/environment/ecological-sciences/biosphere-reserves/europe-north-america/italy/tuscan-islands/>

¹⁸ <https://rsis Ramsar.org/>

¹⁹ <https://portal.cor.europa.eu/egtc/CoRAactivities/Pages/PMIBB.aspx>

²⁰ Archeomar: an underwater map of the Mediterranean

The study area is comprised within the FAO Area 37.1.3 “Mediterranean and Black Sea – Subarea Western Mediterranean – Division Sardinia” (fig. 3). In the region as in all the Mediterranean, the overall management of all fisheries is done in the framework of the General Fisheries Commission for the Mediterranean (GFCM-FAO) and in the study area there are two Geographical Sub Areas (GSAs) to be considered: 9 and 11.2 (fig. 3). In these GSAs, professional fisheries are highly heterogeneous and widely dispersed along the coasts, with fleets dominated by small-scale vessels.

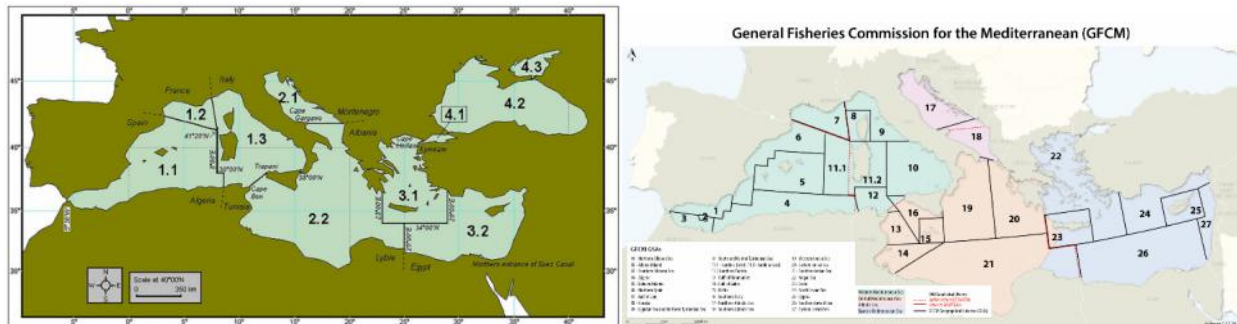


Figure 3. Subdivision of the Mediterranean Basin between FAO areas (left); and GSAs established by GFCM (right).

Compared to other Italian regions Tuscany and the eastern part of Sardinia have lower overall fishing capacity. The extension of the fishing grounds in the Tuscany Region reaches the border of the Corsican waters: altogether it is an area of 21,000 km² divided almost in half between the area to the North and the one to the South of the Elba Island. Almost all of the fishing activity is concentrated in the coastal strip and only rarely affects the depths lower than the continental shelf. The fishing fleet in the region is made up of 617 boats distributed in 25 ports.²¹ The analysis of the total days of activity for the principal types of fishing gears allows to individuate the more important sectors by region. In Tuscany the small-scale fishing is the most important, even if its value is low when compared with those of the majority of the other regions, followed by trawling, passive multi-purpose gears, and purse-seine fishing. In Sardinia small-scale fishing and passive multi-purpose gears have very high values, while it is relatively low the one of trawling.

Scientific assessments on major fish stock reported in the Italian National Triennial Fishing and Aquaculture Programme 2017-2019²² confirm nationally and regionally a situation of excessive exploitation. Specifically, *Merluccius merluccius* is in a state of overexploitation in all the Italian GSAs. In the reference GSAs most of the stocks are in a state of overfishing and only two stocks result under sustainable fishing regimes, the deep-water rose shrimp (*Parapenaeus longirostris*) and the red shrimp (*Aristaomorpha foliacea*).

Following national trends, fishing sector in the study area is in steady decline, due to several factor and the decrease of fishing effort, requested by Common Fisheries Policy measures. The decline has not been coupled by an improvement of the conditions of the biological resources. This is due to: the overcapacity of the fleets compared to the available resources; illegal fishing activities; effects of climate change on the species; inefficient shared management policies; lack of technological improvements.

Considering the socio-economic weight of the fishing activities to the Blue Economy, the Tuscany Region contributes to the supply chain with 1,362 units that affect the regional Blue Economy for 10.1% and constitute 0.3% of the total Tuscan economy and 4% of the total Italian fish chain. Compared to the national context, in Tuscany the ichthyic chain has a lower weight: it is only the fourth sector in terms of number of companies after accommodation and catering services, shipbuilding and sports and recreational activities. Livorno, Lucca and Grosseto are, in order, the Tuscan provinces with the greatest presence of companies belonging to this sector. In particular, Livorno and Grosseto together host 42.6% of the total regional fish supply chain. The ichthyic supply chain contributes 10% to the endowment of the Grosseto sea economy, to a

²¹ La pesca professionale, l’acquacoltura e lo stato delle risorse ittiche nel mare toscano, ARPAT

²² Programma Nazionale Triennale della Pesca e dell’Acquacoltura 2017-2019



greater extent than Livorno (8.5%). In both territories the impact of the supply chain on the local Blue economy is slightly lower than the previous years.

From a cultural point of view fisheries have always contributed to sustain the economy of the coastal populations of Tuscany, a region open to maritime contacts and traffics. Professional organisation of fishermen started since the Renaissance onwards, when lagoon production started to be exploited in the Orbetello area and several small ports were created along the coast. This can be seen in the “special fisheries” (such as transparent goby and picarel fisheries) which have been practiced in Tuscany for centuries. Moreover, in the past, fisheries were practised with a greater diversity of gears and activities (“tonnara” and “tonnarella” for tuna fishing, “menaide” and “agugliara” nets, coral fishing, etc.). Fishermen implemented a sort of “self-management”, following the seasonality of resource availability, alternating the most appropriate fishing gear at different times. The influence of fishermen coming from other regions of Italy was fundamental for fisheries development in the area, as Neapolitans, known as “Pozzolani”, which arrived first from Torre del Greco and Procida, followed by fishermen from Molfetta and Trani (Apulia). The only fishermen community with Tuscan origins is that of Porto Ercole. Even though Porto Santo Stefano is currently a basis of an important fishermen community, initially its “seafaring” habits were linked to trade ships. Today, the fishing vessels with the greatest gross tonnage are concentrated at the ports of Argentario.

For what concerns aquaculture production in the Western Italian regions, the use of marine waters (sea and transition environments) prevails. Considering data for 2013, Sardinia is the region with the highest number of aquaculture facilities (36 for fish and 45 for molluscs). Tuscany hosts a relatively high number of fish farming facilities being the first region in Italy in terms of production of sea bass and sea bream. Detailed regional information is published within the Italian Strategic Plan for Aquaculture 2014-2020.²³

MARITIME TRANSPORT

The Western Mediterranean is crossed by a significant number of main routes crossing the Mediterranean Sea. In addition to the main shipping routes, other types of transport, mainly ferry routes, are very frequent in certain areas regularly or seasonally and more in general the Mediterranean region is also important to the European cruise sector that has grown considerably in the last decade and is expecting to continue.

In this scenario, the centrality of the Italy is witnessed by the high volumes intercepted by Italian ports (more than 30% of the flows that pass through the Mediterranean). Italy remains leader of the short sea shipping sector in the Med area with over 216 million tons of transported freight and a market share of 36% for the year 2016. The consequences of this high volume of traffic are evident in the study area. More specifically in the Italian part of the Corsica Channel there are two main ports: Livorno and Piombino. These ports occupy a significant position at local, national and European level because of their flows of goods and people (both ferries passengers and cruises ones). Another sector strictly connected with maritime transport and impacting on the economic development is tourism. For what concerns the weight of shipping activities on the Blue Economy, 830 companies are in Tuscany (7.4% of the national total), of which 57% in Livorno and 14.5% in Grosseto.²⁴

One of the main transport activities in the area is passenger traffic between the Tuscan coast and the islands of the Tuscan Archipelago. There are different connections: ferries to the island of Elba leave from the port of Piombino and reach the ports of Portoferraio and Rio Marina and vice versa with crossings of approximately 60 and 40 minutes respectively; there is also a fast connection with hydrofoil for passenger transport only, which allows to reach Cavo and Portoferraio respectively in 20 and 40 minutes. In the period from April to October, daily trips are numerous and cover the whole day; ferries to the island of Capraia leave from the port of Livorno and reach Capraia island with a crossing of about 3 hours; ferries to the island of Giglio leave from Porto Santo Stefano and reach the port of Giglio with a crossing of about 60 minutes. In the period from April

²³ Programma Nazionale Triennale della Pesca e dell'Acquacoltura 2017-2019

²⁴ <https://www.portaltotirreno.it/>



to October the races are frequent and consist of several daily two-way connections distributed throughout the day. The ferry line Piombino-Cavo-Piombino is highly used, as well as Piombino-Portoferraio-Piombino line. The ferry lines are used primarily by worker to reach the workplace (44.3%) and by students for study reasons (2.4%). In the strait of Bonifacio, defined as Particularly Sensitive Sea Area (PSSA), shipping activities are highly monitored. Indeed, in the northern part of the strait, ships have to avoid the reefs of Sperduto and the Lavezzi islands, while in the South Sardinian islands of Razzoli and La Presa have to be circumvented. Navigation is possible along a stretch three miles wide and the ships are invited to follow a recommended route a mile wide. Since the Strait of Bonifacio is one of the most outstanding zones in the Mediterranean in terms of biodiversity, France and Italy have adopted a restrictive approach to navigation, in the sense that French or Italian ships carrying dangerous goods are banned from all transit of the Strait of Bonifacio. The Italian Merchant Marine decree of 26 February 1993, applicable to Italian ships only, forbids tankers carrying petroleum products or dangerous or toxic substances to cross the Strait of Bonifacio.²⁵

COASTAL AND MARITIME TOURISM

There are 5.986 tourism-related companies in Tuscany (7.4% of the national total), of which 34.7% are located in Livorno (2.079) and 18.7% in Grosseto (1.119). In general, it is the supply chain of accommodation and catering services related to beach tourism that brings together most of the Blue Economy companies in the area. Tuscany is sixth in the regional ranking by number of companies in the sector, which, for its part, affects the whole regional entrepreneurial fabric for 1.4%, in line with the national average (1.3%). Concerning coastal tourism, insights on bed capacity at municipality level and nights spent at tourist accommodation facilities can help to understand the concentration of tourists' arrivals and related local pressures.²⁶

CABLES AND PIPELINES

Cables in the area are different. The SA.PE.I, which is the deepest power cable up to date in the world reaching a depth of 1650 m, entered in operation in 2012. It has a total length of 435 km, of which 420 km are submarine. The cable allows 1000 MW of electric power transfer between mainland of Italy and Sardinia. The second one is the SA.CO.I that entered into operation connecting the Codrongianos (Sardinia) converter stations with S. Dalmazio (middle Tuscany), in order to initially perform large energy transfers from the new Sardinia (Sulcis) coal power plants towards the Italian mainland. This use almost immediately underwent some changes, actually allowing to compensate for production shortages in the island, both referring to load/production imbalance periods and to particular emergency conditions, and to regulate frequency in AC Sardinian grid.²⁷

1.4 LEGAL FRAMEWORK AND GOVERNANCE ASPECTS

The area includes waters under Italian jurisdiction and confine with French waters (mainly Territorial sea surrounding the Corse Island). Internal Waters, Territorial Waters and a part of the Ecological Protection Zone of Italy are included in the SA (fig. 4). The SA also partially covers an area which confines have been defined through the Caen Agreement (21 March 2015) between France and Italy, yet this agreement has not been ratified by both countries.²⁸

²⁵ <http://pssa.imo.org/bonifacio/law.htm>

²⁶ MIBACT – Ministero dei Beni e delle attività culturali e del Turismo, The strategic plan for tourism 2017-2022.

²⁷ Initial Assessment SIMWESTMED

²⁸ https://www.esteri.it/mae/it/sala_stampa/archivionotizie/comunicati/nota-della-farnesina-sulla-delimitazione.html

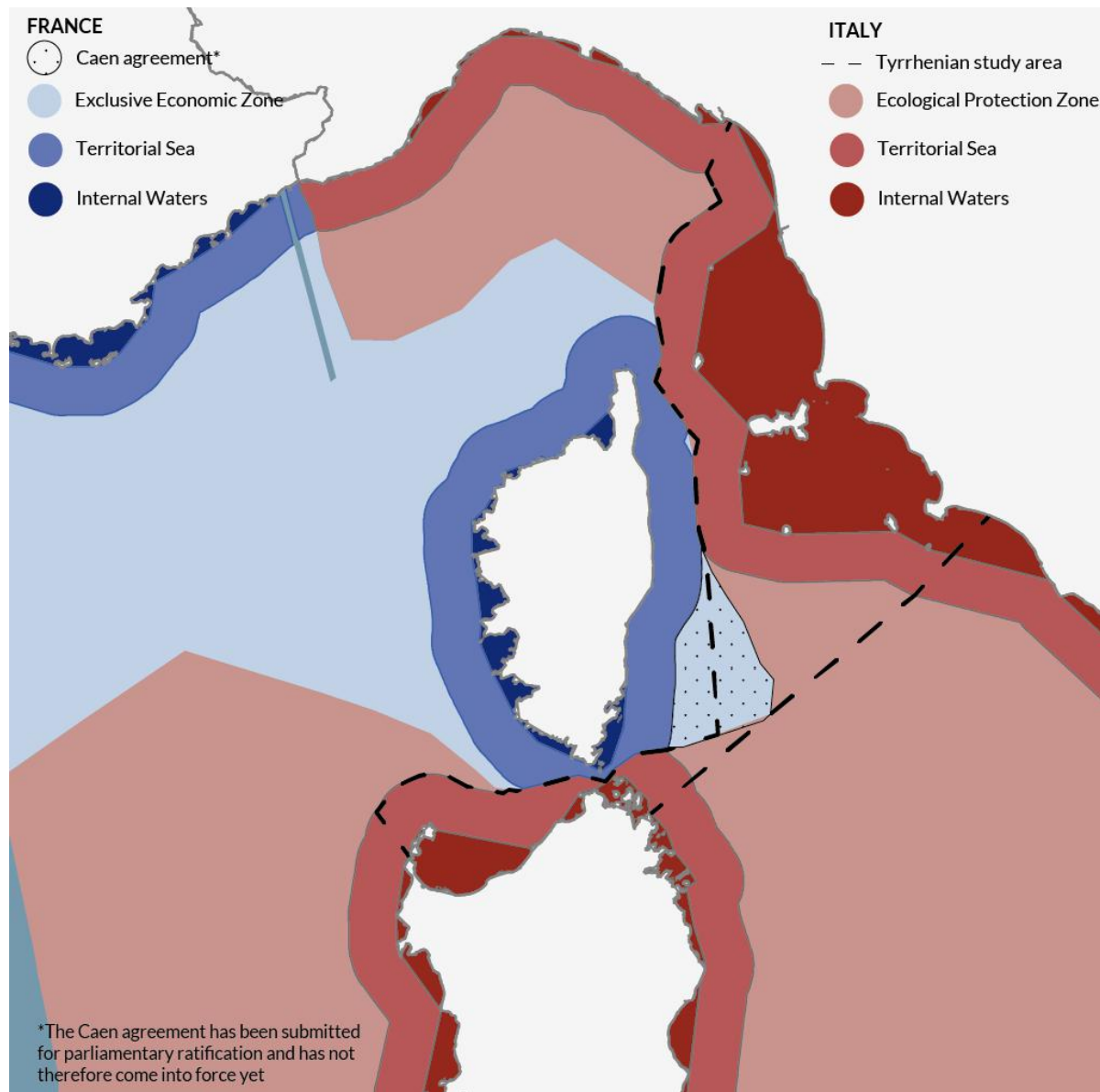


Figure 4. Boundaries and jurisdictional limits within and outside the Tyrrhenian Study Area.

The responsible authority for the implementation of the Maritime Spatial Planning Directive (MSP Directive - Directive 2014/89/EU) implementation in Italy is the Ministry of Infrastructures and Transport (MIT) which is also the main authority regulating marine traffic, also through the support of the Authority Port System (AdSP) which are delocalized on the main Italian ports. Main Authority Port System in the area are the AdSP of the Northern Tyrrhenian Sea for the coast and marine waters of Tuscany and the AdSP of the Sardinian Sea for the coast and marine waters of Sardinia.²⁹

On the other side the responsible authority of Italy for the implementation of the Marine Strategy Framework Directive (MSFD - Directive 2008/56/EC) is the Ministry of the Environment and Protection of Land and Sea (MATTM) which is also the main authority responsible for marine environment conservation. The Ministry of Agricultural, Food and Forestry Policies (MiPAAF) is responsible for fishery and aquaculture regulation and administration in Italian waters (fig. 4). Within the regulatory framework of the Case Study for fishery and

²⁹ <https://www.portaltotirreno.it/>



aquaculture sector an exception in the Italian context is represented by internal and territorial waters surrounding the Sardinia Island which are directly regulated by the Autonomous Region of Sardinia.³⁰ The framework regulating tourism in Italy is not coherent with a general structure, indeed tourism activities on coastal areas can be regulated both by local administrations (e.g. municipalities) or through institutions at higher administrative level (e.g. regions) depending from local specificities.

1.5 THE MSP PROCESS AT NATIONAL LEVEL, INCLUDING PARTICIPATION

Regarding the implementation of the MSP in the Italian national context, the references are to the Italian **Legislative Decree 17 October 2016, n. 201** implementing the MSP Directive, together with the **Guidelines adopted by Decree of the President of the Council of Ministers of 1 December 2017** "containing the guidelines and criteria for the preparation of maritime spatial management plans".³¹

For the transboundary cooperation, the cited Legislative Decree 201/2016 and rules 15 of the Guidelines foresee the usefulness to envisage the participation of Member States and of non-Member but neighbouring States in national planning **from the very beginning**, through instruments such as **program agreements or technical and/or consultation panels and forums**, or similar, **also taking advantage to utilise European projects in which Italy participates**.

In this transboundary cooperation context, it has to be recalled that the Italian Technical Committee (TC, see below), in reporting or directing technical projects and agreements for the individual Ministries and/or national bodies/organizations, shall always provide close coordination with the Ministry of Foreign Affairs and International Cooperation (MAECI) in order to avoid actions potentially detrimental to national interests.

With regard to cross-border cooperation for the adoption of the national MSP, the delimitations between Italy and some neighbouring countries are not yet formalized. In this context, the challenge for a rational allocation of sea space, in order to reduce conflicts between the different activities that take place in the Mediterranean is more important and necessary than elsewhere. The same guidelines show how the areas beyond the territorial waters require specific planning and management strategies, based on a cross-border governance structure, to be adopted according to the future demand for space, to anticipate possible conflicts and strengthen synergies. Therefore a significant effort is needed to overcome the definition of the boundaries that have been established considering only the political issues related to the areas of competence (e.g. national borders). Overcoming a traditional border-setting approach should therefore necessarily be based on cross-border cooperation. As foreseen by the aforementioned Legislative Decree 201/2016, the Interministerial Coordination Table (ICT) has identified the maritime reference areas, attributable to the three sub-regions referred to in the Marine Strategy (Article 4 of Directive 2008/56/EU): the Western Mediterranean Sea, the Adriatic Sea, the Ionian Sea and the central Mediterranean Sea.

It is therefore up to the Technical Committee to draw up a Management Plan for each area.

For the Management plan of the Western Mediterranean Sea area, where the present pilot case falls, the Italian administrative regions belonging to this maritime area are: Liguria, Tuscany, Lazio, Campania, Basilicata, Calabria, Sicily and Sardinia. Therefore, the planning concerning the pilot case will be included in a much larger area, with the related complexity issues.

1.6 IDENTIFICATION OF LEGAL AND POLICY INSTRUMENTS FOR THE IMPLEMENTATION OF THE PROVISIONS OF THE MSP DIRECTIVE, WITH PARTICULAR REFERENCE TO THE PROTECTION OF MARINE MAMMALS IN THE TYRRHENIAN CASE STUDY

³⁰ Cataudella, S., and M. Spagnolo. "Lo stato della pesca e dell'acquacoltura nei mari italiani." Ministero delle Politiche Agricole Alimentari e Forestali: Rome, Italy (2011): 877.

³¹ Decreto del Presidente del Consiglio dei Ministri del 1 dicembre 2017 "Linee Guida contenenti gli indirizzi e i criteri per la predisposizione dei piani di gestione dello spazio marittimo.



The presence of the Pelagos Sanctuary in the Tyrrhenian case study, between France and Italy, shows an important element of connection also with regard to cross-border cooperation in the MSP: the protection of marine mammals and their habitat as a policy priority.

Having in mind the objective of the MSP Directive, including the ecosystem and biodiversity conservation, to avoid that the various pressures (impacts caused by human activities and natural phenomena) can cause loss of biodiversity and degradation of ecosystem services - a correct picture of the legal and policy framework will support its implementation in the establishment of maritime spatial plans, especially with reference to biodiversity conservation, in particular of marine mammals. In fact, it cannot be underestimated that healthy marine ecosystems and their multiple services, if integrated into planning decisions, can deliver substantial benefits in terms of food production, recreation and tourism, climate change mitigation and adaptation, shoreline dynamics control and disaster prevention.

As for marine mammals and their presence in the Mediterranean Sea, about twenty cetacean species have been reported in this basin, about half of which come from Atlantic populations entering the sea only sporadically. Only nine small cetacean species and three large whale species are sighted frequently in the Mediterranean Sea. They are the minke whale (*Balaenoptera acutorostrata*), fin whale (*Balaenoptera physalus*), short-beaked common dolphin (*Delphinus delphis*), long-finned pilot whale (*Globicephala melas*), Risso's dolphin (*Grampus griseus*), killer whale (*Orcinus orca*), sperm whale (*Physeter macrocephalus*), false killer whale (*Pseudorca crassidens*), striped dolphin (*Stenella coeruleoalba*), rough toothed dolphin (*Steno bredanensis*), bottlenose dolphin (*Tursiops truncatus*) and Cuvier's beaked whale (*Ziphius cavirostris*).³²

Several threats have been recognized impacting these valuable marine species.³³ Fishery is notably one of the main activity impacting cetaceans in the area. Pelagic drift net fishing in particular highly impacted marine mammals in the past, before being banned in the area of the Sanctuary in 2002. In general, fishery causes direct mortality through by-catch, and the excessive extraction of demersal species can cause the depletion of trophic sources for cetaceans. Maritime transport is another activity highly impacting marine mammals. The vessel noise causes short-term habitat degradation with consequent small-scale redistribution of all the cetacean species. Vessel collisions cause direct mortality in particular of fin whale and sperm whale. The increasing in maritime traffic in the area, including offshore motorboat races, high-speed passenger vessels, pleasure crafts and naval ships has exacerbated such threats. Even the expansion of commercial whale-watching industry can potentially increase the level of disturbance toward fin whales. Other threats that act against the protection of such marine animals are: pollution, which derived from coastal areas as well as is introduced by navigation and transportation vessels; coastal development, which cause habitat degradation and the increasing input of pollutants and pathogens into the marine environment; military sonar and seismic exploration, which can cause direct mortality as well as high level of disturbance affecting cetaceans' distribution.

Effective and durable marine mammals protection in the Mediterranean Sea Area implies the cooperation with existing programmes and plans, at the different levels (international and EU, regional and national), as specified in the following paragraphs.

2. LESSONS LEARNT AND CONCLUSIONS

According to Ehler and Douvere (2009), a maritime spatial plan must give an integrated vision of the spatial aspects and needs of sectoral policies in the areas of economic development, maritime transport, environmental protection, energy, fisheries, tourism and so on. A maritime spatial plan should be closely integrated with the public programs and highlight the spatial dimension of integrated management, derived from the system of existing policies and plans at local, regional, national, EU and international levels. MSP should provide a common vision and consistent direction, setting out shared principles, goals, objectives for the area and defining what these priorities mean in time and space.

³² Notarbartolo di Sciarra, G. (2016). Marine Mammals in the Mediterranean Sea: An Overview. In *Advances in Marine Biology* (Vol. 75, pp. 1–36). <https://doi.org/10.1016/bs.amb.2016.08.005>.

³³ Initial Assessment SIMWESTMED



In the framework of the Tyrrhenian Case Study (**PART A and B**) the transboundary methodological components of MSP were thoroughly considered since the pilot area presents strong cross-border elements between Tuscany and Sardinia, on one side, and Italy and France, on the other (Tuscany/Corsica-Sardinia/Corsica). These elements refer to multiple aspects and characteristics, e.g.: economic aspects (maritime transportation and ports, tourism, fishery and aquaculture); legal aspects (UNCLOS EPZ/EEZ, international straits, TSS and VTS, international agreements such as the Pelagos Sanctuary, etc.); environmental aspects (PSSA, marine mammals sanctuary, SPAMI, national parks and MPAs, islands); geomorphological characteristics (currents, bathymetry, presence of many islands and archipelagos, etc.). Specific focus of activities within this case study was on cross-border cooperation within MSP for the protection of marine mammals.

Within the wide area of the Tyrrhenian case study, a focus was put on the Tuscan Archipelago and related coastal area (**PART C**). An MSP exercise was developed to explore present and future needs of the area related to the implementation of MSP and the desire to strongly support the Blue Growth while preserving the present and valuable coastal and marine environments.

Overall, the Tyrrhenian case study allowed the exploration of possibilities, opportunities and weaknesses of applying MSP at both transboundary and local level, by considering different aspects relevant for the development of MSP, incorporating a cross-border and integrated approach.

Strengths and opportunities

The exercise within the wider area was the **very first attempt** to address governance issues relevant for a cross-border MSP, having in mind the necessity to explore specific requirements and procedural steps (processes) as a precondition for the formal Transboundary Maritime Spatial Planning (TMSP) process to take place. It is important to stress that all the activities were **fully informal**, strictly limited to the pilot area within the SIMWESTMED project.

The activities within the wider Tyrrhenian area were exploring how the adoption of the maritime spatial plan/plans for the management of all the anthropic maritime activities, taking into account the interactions and impacts of both natural and anthropic origin, can also be a useful tool for the **protection of marine mammals** and their habitat. In particular, these issues were addressed since the EU MSP Directive, as a legally binding instrument, transposed and implemented at the national level, is based on the ecosystem approach (as referred to in Article 1(3) of Directive 2008/56/EC). Therefore, the MSP plans should consider the species protection implications, with the aim of ensuring that the collective pressure of all activities is kept within levels compatible with the achievement of Good Environmental Status (GES) and that the capacity of marine ecosystems to respond to human-induced changes is not compromised insofar protecting endangered species, such as the marine mammals, through complex and all-inclusive management plans. Having in mind that the **ecosystem approach** (as required by the EU MSP Directive) towards GES (as required by EU MSFD) can only be achieved as a collective effort of Parties across the border, the MSP Directive expressly provides for effective transboundary cooperation and collaboration between Member States and neighbouring third Countries, underlining that Member States should consult and coordinate their plans with the relevant ones, enhancing effective cooperation across the marine region concerned (MSP Directive, Article 11).

The governance-oriented activities within the Tyrrhenian pilot demonstrated that MSP **can be considered** as a complementary tool that is also **useful for improving the protection of marine mammals**, supporting both the implementation of the Pelagos Sanctuary and the Ramoge and ACCOBAMS Agreements (being the relevant transnational legal instruments in the area), and the sustainable development of the Mediterranean through UN Environment/MAP-Barcelona Convention. We have seen that in the application of the EU MSP Directive in the present pilot case the obligation of transboundary cooperation – in particular for the protection of endangered species such as marine mammals, and their habitat - is fully embedded in the governance systems of the neighbouring areas within the Tyrrhenian, as the countries involved - Italy and France - are both:

- EU Member States;
- UNCLOS Contracting Parties;
- Contracting Parties to the Regional Sea Convention of the UN Environment/MAP-Barcelona Convention;



- Contracting Parties to the Agreement establishing the Sanctuary for the Marine Mammals (Pelagos) and the two Agreements - RAMOGE and ACCOBAMS.

Obligation to cooperate and collaborate clearly and substantially derives from the aforementioned legal systems and related instruments.

The pilot activities within the Tyrrhenian highlighted that transboundary MSP does not necessarily need to lead to a joint plan, but it should rather offer **effective links between national MSP processes**. Taking into consideration the value and the need to achieve greater protection of marine mammals in the Tyrrhenian, the plans in this particular area (including Pelagos Sanctuary) should be based on the **ecosystem approach** and in particular the **11 Ecological Objectives** agreed by the Contracting Parties to the Barcelona Convention and taken by the EU MSFD.

Having in mind the above, the **Regional Sea (Barcelona) Convention system** seems to be the key instrument for the regional institutional cooperation to pursue the cooperation across the marine region concerned, as part of the planning and management process that considers the environmental aspects (including strengthening the protection of marine mammals through a concerted, coordinated and coherent planning of marine spaces, based on the best available data and knowledge), with the **adoption of national MSPs** that, based on a specific consultation, cooperation and harmonisation, take into account this particular environmental aspect.

The exercise of MSP process performed in the Tuscany focus area clearly illustrates how the planning challenges in intensively used areas can be addressed. This work may constitute a first solid base for planning at national and regional level, in order to foster proper decisions and to support management and conservation actions of environmental components after a thorough understanding of possible issues and difficulties.

The definition of spatial limits for this focus area have been elaborated considering needs and priorities emerged from desk-based analysis and the Initial Assessment, as well as to foster a proper analysis on human uses, ecological processes, synergies and conflicts, and define recommendations to establish proper strategies and plans^[251]. The geographical extent of the focus area is meant to intercept external instances that might influence MSP in the case study, understanding processes (both ecological and social), connections (e.g. biological, physical, within and across communities and economies) at different scales (e.g. local, regional, national scales). Then, MSP issues, possible management and planning actions have been refined in focused analyses on local scales and, depending on the characteristics of the concerns, proposing approaches and planning measures with different spatial resolution. We have been able to understand which problems should be solved with strategic plans and which instead require more precise spatial measures. This exercise can be considered as the first explorative work of MSP implementation in the Tuscany focus area.

Overall, the work done in this pilot was performed on an experimental basis which revealed the will of national and international partners to test MSP in the Mediterranean. Thanks to the continuous confrontation between project partners (national and international) a strong networking between experts, sectors, institutions and competent authorities was built. The case study was built on the capitalization of previous projects which facilitated and strengthened data and knowledge gathering. Moreover, the case study fostered the starting process of involvement and confrontation dialogue with local and national stakeholders building the first steps towards an inclusive stakeholder engagement, involvement process. A robust capacity building process has been at the core of the exercise, through the exchange of best practices and knowledge.

Weaknesses and limits

Cross-border collaboration still remains a major challenge. Having in mind that MSP is primarily a national activity, TMSP is even a greater challenge. Pilot activities testing different aspects of transboundary



collaboration are fundamental to understand and learn how both significant barriers and minor difficulties to cross-border collaboration can and should be resolved, and how to progress in that field.

The starting point of any TMSP process should be an **official decision of the concerned countries to cooperate**, accompanied by the identification of the **responsible authorities** and bodies to be involved. Although this is particularly relevant for the formal TMSP process, pilot TMSP activities should follow the same approach.

The Tyrrhenian pilot case aimed at exploring governance prerequisites necessary to be in place for the implementation of TMSP, which proved to be a rather **sensitive** task. Namely, as the pilot failed to ensure from the beginning the consent of the responsible authorities on the specific **scope of work** and the **institution fully responsible** for the implementation of the cross-border activities, the scope of work has continuously been changed in order to accommodate different requirements from the members of the Steering Committee. This resulted in hampering participation and support from project partners and stakeholder consultation process, which means that the implementation of activities was mainly based on desk analysis.

Therefore, it can be proposed that any future TMSP activities should:

- ensure, prior to initiate TMSP, the **official decision of the concerned countries** regarding the implementation of activities;
- be led exclusively by **national authorities** of the concerned countries so to ensure that the activities are legitimate and fully supported by these authorities, and that they bring added value;
- envisage the involvement of **existing institutional regional cooperation structures**, such as the Barcelona Convention, as a supporting partner and confirmed framework for facilitating cooperation.

As a first instance, the effectiveness of the planning decisions is strongly dependent on the quality of the data and information taken into account. Therefore, it is considered necessary for the purpose of the maritime space within the case study area to improve the quality of the data used to strengthen the assumptions made for the assessment. The difficulties encountered in the preparation of a solid knowledge framework, being one of the important results of the study, reflect the level of available information on the predominant activities, pressures and environmental components. Lack of relevant and detailed data limits the building of the knowledge framework necessary to develop an effective plan proposal.

An overall and long-term vision of environmentally safe, healthy, productive and biologically diverse seas sets the wide goals to an ecosystem-based marine spatial planning of human activities, supporting the identification of the environmental priorities that planning must take into account at different planning scales and in different sub-areas. The increasing demand of space for maritime traffic and connections, as well as the coastal development to support an increasing tourism offer, involving potential environmental consequences, cannot be addressed properly without a strategy involving sectoral policies and adequate spatialization of priorities and needs in the area and surrounding waters. The analysis of the specific wide and local characteristics and sectoral needs of the planning issues, needs and opportunities is therefore necessary to provide a rational basis for setting priorities, to coordinate actions in space and time and to manage and direct concrete measures to where and when they are needed most.

In order to achieve a proper focus on the issues and opportunities within the case study area, the involvement of stakeholders proved to be an indispensable although very difficult step of the MSP process. In the case of the focus area, it was necessary to start from the baseline step of the definition of the key stakeholders that should have been involved in the effort. The engagement process highlighted the need to enforce and structure proper consultations within the MSP process, in order to enhance trust among stakeholders and decision-makers, encourage voluntary compliance with rules and regulations, share the understanding about problems and challenges of the area, and generate new options and solutions through the inclusion of diverse information (e.g. local knowledge and traditions).



Tyrrhenian Case Study

PART B. Thematic focus: process and instruments for transboundary cooperation on MSP

PART B Document Information

Deliverable Title	Tyrrhenian case study (1.3.6.2.) Thematic Focus: Process and instruments for the transboundary cooperation on MSP
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8. CONCLUSIONS

ANNEX A: DATA AND INFORMATION ACQUIRED FROM COUNTRY FACT SHEETS



LIST OF ACRONYMS

ABMT Area-Based Management Tools
ABNJ Areas Beyond National Jurisdiction
AC Alternating Current
ACCOBAMS International Agreement on the conservation of cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic Area
AIS Advanced Information Security (network)
AP Action Plan
ASCOBANS Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas
BBNJ Biodiversity in areas Beyond National Jurisdiction
CAMP Coastal Area Management Programme
CBC Cross-border Cooperation
CBD Convention on Biological Diversity
CCH Cetacean Critical Habitats
CFP EU Common Fisheries Policy
CITES Convention on International Trade in Endangered Species of Wild Fauna and Flora
CLC Civil Liability Convention
CMS Convention on Migratory Species
CNR Italian National Research Council
CNRS French National Centre for Scientific Research
COLREG Convention on the International Regulations for Preventing Collisions at Sea
CoNISMa Italian National Interuniversity Consortium for Marine Sciences
COP Conference of the Parties, as the supreme decision-making body of a specific Convention
CORILA Consortium for coordination of research activities concerning the Venice lagoon system
DGR Deliberation of the Sardinian Regional Government DWT Deadweight tonnes
EAF Ecosystem Approach to Fisheries
EASME Executive Agency for Small and Medium-sized Enterprises
EBSA Ecologically or Biologically Significant Areas
EcAp Ecosystem Approach (of the UN Environment/MAP)
ECST European Charter for Sustainable Tourism (in Protected Areas)
EEA European Environment Agency
EEZ Exclusive Economic Zone
EGTC European Grouping of Territorial Cooperation
EIA Environmental Impact Assessment
EMFF European Maritime and Fisheries Fund
EMODNET European Marine Observation and Data Network
EO Ecological Objectives
EPZ Ecological Protection Zone
EU European Union
FAL Facilitation Committee
FAO Food and Agriculture Organization
GDPR European law on general data protection regulation
GES Good Environmental Status
GFCM General Fisheries Commission for the Mediterranean
HNS Hazardous and Noxious Substances
ICC Italian Inter-ministerial Coordination Committee
ICMMPA International Committee on Marine Mammal Protected Areas
ICT Italian Inter-ministerial Coordination Table
ICZM Integrated Coastal Zone Management
ILO International Labour Organization
IMAP Integrated Monitoring and Assessment Programme
IMMA Important Marine Mammal Areas
IMO International Maritime Organisation
IMP Integrated Maritime Policy



Co-funded by the European
Maritime and Fisheries Fund



IMRCC Italian Maritime Rescue Co-ordination Centre
INSPIRE Directive Directive on Infrastructure for Spatial Information in the European Community
INTERREG: A Key instruments of the European Union supporting cooperation across borders through project funding
IUCN International Union for Conservation of Nature
IWC International Whaling Commission
kV Kilovolt
LNG Liquefied Natural Gas
LSI Land-Sea Interactions
MAECI Italian Ministry of Foreign Affairs and International Cooperation
MAP Mediterranean Action Plan
MARPOL International Convention for the Prevention of Pollution from Ships
MATTEM Italian Ministry of environment, land and sea protection
MEDPOL Programme for assessing and mastering pollution in the Mediterranean region
mW Megawatt
MELS Ministry for the Environment, land and sea (Italy)
MEPC Marine Environment Protection Committee
MiBACT Italian Ministry of Cultural Heritage
MIT Ministry of Infrastructure and Transport
MMPATF Marine Mammal Protected Areas Task Force
MPA Marine Protected Area
MSFD Marine Strategy Framework Directive
MSP Maritime Spatial Planning
NFP National Focal Point
NGO Non-Governmental Organization
OEABCM Other Effective Area-Based Conservation Measures
OPRC (Convention on) Oil Pollution Preparedness, Response and Co-operation
PACA Provence-Alpes-Côte d'Azur
PAP/RAC Priority Actions Programme Regional Activity Centre
PMIBB International Marine Park of the Strait of Bonifacio
PMIS Port Management Information System
PP Participatory Process
PSSA Particularly Sensitive Sea Area
QSR The Mediterranean Quality Status Report
RAC Regional Activity Centre
RAMOGE Saint-Raphaël – Monaco – Genoa; the Contracting Parties of the Agreement on the protection of the marine and coastal environment of an area of the Mediterranean Sea
RAMOGEPOL An emergency response plan set up within the RAMOGE Agreement by France, Italy and Monaco in 1993 to combat incidences of accidental marine pollution in the Mediterranean
REMPEC The Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea
RFMO Regional Fisheries Management Organization
RLP Regional Landscape Plan
RSC Regional Seas Convention
SC Steering Committee
SCI Sites of Community Importance
SEA Strategic Environmental Assessment
SEIS Shared Environmental Information System
SHOM French Naval Hydrographic and oceanographic Service
SMART Specific, Measurable, Achievable, Relevant and Time-bound (SMART criteria in project management)
SPA/BD Protocol Protocol on Specially Protected Areas and Biodiversity in the Mediterranean
SPA/RAC The Regional Activity Centre for Specially Protected Areas
SPAMI Specially Protected Areas of Mediterranean Importance
SPZ Special Protection Zones
SSC IUCN Species Survival Commission
STCW Standards of Training, Certification and Watch-keeping (for Seafarers)
TC Italian Technical Committee
TEN-T Trans-European Transport Network
TGML MSFD Technical Group on Marine Litter
TMSP Transboundary Maritime Spatial Planning
TNEC Italian National Board on Coastal Erosion



TPEA Transboundary Planning in the European Atlantic
TSS Traffic Separation Scheme
UNCLOS United Nations Convention on the Law of the Sea
UNECE United Nations Economic Commission for Europe
UNEP United Nations Environment Programme
VTMIS Vessel, Traffic, Monitoring, Information System
VTS Vessel Traffic Service
WCPA World Commission on Protected Areas
WHC World Heritage Convention
WHO World Health Organization

1. OBJECTIVE OF THE DOCUMENT

In the context of the SIMWESTMED project, the transboundary methodological components of Marine Spatial Planning (MSP) are essential to achieve a comprehensive and applicable example of planning in the Mediterranean. As defined by the Grant Agreement, the scope of SIMWESTMED project is to support MSP in the EU Member States and to enforce cross-border cooperation in the Mediterranean concerning MSP.

The MSP Directive (2014/89/EU) expressly provides for effective transboundary cooperation and collaboration between Member States and neighbouring third Countries, underlining that Member States should consult and coordinate their plans with the relevant ones, enhancing effective cooperation across the marine region concerned (MSP Directive, Article 11).

Article 11 – Cooperation among Member States

1. As part of the planning and management process, Member States bordering marine waters shall cooperate with the aim of ensuring that maritime spatial plans are coherent and coordinated across the marine region concerned. Such cooperation shall take into account, in particular, issues of a transnational nature.
 2. The cooperation referred to in paragraph 1 shall be pursued through:
 - (a) existing regional institutional cooperation structures such as Regional Sea Conventions; and/or
 - (b) networks or structures of Member States' competent authorities; and/or
 - (c) any other method that meets the requirements of paragraph 1, for example in the context of sea-basin strategies.
-

MSP is primarily a country-based process, used to spatially analyse and organise human activities in marine areas to achieve ecological, economic and social objectives. But, even if the planning of marine spaces regards only the marine waters of each coastal Member State, another important element to be taken into account is given by the particularities of the marine regions (Article 4, co 5, MSP Directive).

Transboundary cooperation is therefore essential to ensure that the MSP plans are coherent and coordinated across the coastal zones and the marine regions, where the political and jurisdictional delineation of boundaries typically does not correspond to the limits of maritime activities or ecosystems. An effective transboundary cooperation and collaboration in MSP between Member States is meant to be promoted to improve the efficiency of planning and management of coastal and marine resources and activities, facilitating decision-making. (*"Cross-border cooperation in Maritime Spatial Planning"- Reporting on the Service Contract: EASME/EMFF/2014/1.3.1.8/SI2.714082: Study on international best practices for cross-border Maritime Spatial Planning by NIRAS, 2017"*).

As for the terms used in this paper to define the cooperation on transnational issues, and taking into account the wording of the MSP Directive (see Article 1, co 2 "... taking into account land-sea interactions and



enhanced cross-border cooperation, in accordance with relevant UNCLOS provisions”; and Article 6, co 2, let (f) “*Member States shall ... ensure transboundary cooperation between Member States in accordance with Article 11*”), either the terms “transboundary” or “cross-border” are used as their meanings are similar.

In the Tyrrhenian pilot case the **cross-border aspects** are addressed between Tuscany and Sardinia, on one side; and between Italy and France on the other (Tuscany/Corsica-Sardinia/Corsica), which include relevant to multiple themes, e.g.: economic aspects (Maritime Transport and ports, Tourism, Fishery and Aquaculture); legal aspects (UNCLOS EPZ/EEZ, international straits, TSS and VTS, International Agreements such as the Pelagos Sanctuary, etc.); environmental aspects (PSSA, marine mammals Sanctuary, SPAMI, National Parks and MPAs, Islands); geomorphological characteristics (currents, bathymetry, presence of many islands and archipelagos, etc.).

In this context, the present Report – based on an overall framework of the relevant legal and institutional instruments (at all levels: international, EU, regional and national) to the implementation of the MSP Directive on cross-border collaboration, aims to identify the correct context to advance proposals concerning the process and instrument/s to reach an MSP transboundary cooperation with a particular focus on the protection of marine mammals. In particular, the activities envisaged are the following:

1. Consultations with the relevant project partners on the process of the cross-border cooperation between the Italian and French case study areas;
2. Analysis of the legal and institutional framework, as well as of the governance aspects of a transboundary cooperation in maritime spatial planning to develop a common vision for the implementation of the provisions of the MSP Directive, with particular reference to the protection of marine mammals in the Tyrrhenian case study area;
3. Identification of the main requirements for the transnational MSP, taking into account general experience;
4. Analysis of the MSP process at the national level, including participation of the key stakeholders (main institutional actors) relevant for the transboundary activities in the case study area;
5. Overview of the existing regional institutional cooperation structures in the pilot area, supporting a transnational collaboration in the fields relevant for MSP, with a particular attention to the Barcelona Convention, as the first RSC, and the related MAP Components, specifically REMPEC and SPA/RAC; as well as other international Agreements, networks or structures of Member States’ competent authorities, such as Pelagos and Ramoge Agreements; as well as other methods in the context of sea-basin strategies;
6. Drafting proposals on the harmonised MSP approach in the pilot area, within the framework of an integrated ICZM/MSP approach, considering the appropriate measures to guarantee a favourable conservation status of marine mammals.

The Report reflects on output C113, addressing governance issues relevant for the cross-border MSP, having in mind the necessities of the pilot case study area to explore specific requirements and procedural steps (processes) as a precondition for the formal Transboundary Maritime Spatial Planning (TMSP) process to take place.

This Report can be considered as an unofficial general framework, indicating possibilities for a cross-border cooperation that could be used as an initial input for the future formal initiatives relevant for the cross-border MSP.

2. INTRODUCTION TO THE CASE STUDY AREA

The present pilot case area is a part of the Mediterranean, a semi-enclosed sea with characteristic oceanographic dynamics and water circulation patterns, which are the source of a rich biological productivity. Its vast and unique biodiversity has led to its recognition as one of the most important biodiversity hotspots in the world. This wide range of specificities translates into a rich concentration of biodiversity, including, within marine wildlife, marine mammals that live in and migrate through the sea.

The area includes a part of the Italian Ecological Protection Zone (EPZ) and considers the French Exclusive Economic Zone (EEZ), a part of the Marine Mammals Sanctuary or Pelagos Sanctuary Agreement³⁴ and it is connected to the main sub regions of the Marine Strategy Framework Directive (Directive 2008/56/UE – Article 4), identified with (at least) the Italian part of the Western Mediterranean Sea marine sub-region.

In the present case study the marine area is defined by the following coastal points:

- Tuscany Region Northern Administrative limit, which includes the whole jurisdictional area of the Port Authority System of the Northern Tyrrhenian Sea;
- Fosso Chiarone (Tuscany), as the Eastern limit of the Pelagos Sanctuary and as the Southern Administrative limit of Tuscany;
- Cape Ferro (North-eastern Sardinia), as the Southern limit of the Pelagos Sanctuary;
- Cape Falcone (North-western Sardinia), as the Western limit of the Pelagos Sanctuary.

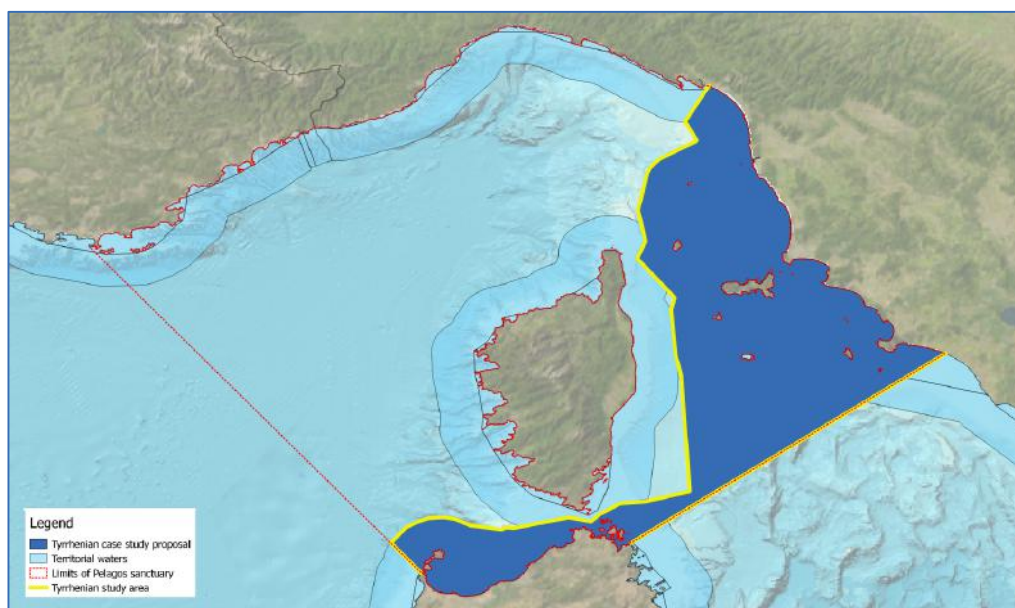


Figure 1A: Tyrrhenian case study area

Most of this wide area covers the Italian territorial waters. In fact, the fragmented line joining Livorno with Cape Falcone coincides mainly with the demarcation of Italian territorial waters, apart from a segment between the Italian EPZ and French EEZ³⁵. This delimitation, as presented here and in all following related documents, is instrumental to this project only and is made without prejudice of any claim of State sovereignty.

This area encompasses the Italian parts of:

- the **Corsica Channel**, a 80 km wide stretch of water that separates the Corsica Island from the Elba Island and divides the Ligurian Sea from the Tyrrhenian one and the Tyrrhenian Sea from the Corsica one. The Channel is an area characterised by a great environmental sensitivity, subject to increased pressure that is associated with a range of human activities, such as marine traffic, fishing, touristic activities, coastal urbanization, underwater operations, scientific research, etc. Although these activities contribute to cross-border socio-economic development, they can negatively impact on the environment. Besides the Pelagos Sanctuary, in

³⁴ The Sanctuary of the Marine Mammals (or Pelagos) was established through an International Agreement between Italy, France and the Principality of Monaco, signed in Rome on November 25th 1999. The Agreement promotes, through integrated management, concerted and harmonized actions among the three signatory Countries for the protection of marine mammals and their habitats against all possible causes of disturbance: pollution, noise, accidental capture and injury, disruption, etc. (<https://www.sanctuaire-pelagos.org>).

³⁵ According to the Caen Agreement signed on 21 March 2015 between Italy and France. The Agreement has been submitted for parliamentary ratification and has not come into force yet.



2015 the Italian and French Governments have signed a Memorandum of Understanding concerning the regulation of international maritime traffic in Corsica Channel to improve safety of navigation and the marine environment through the adoption of separate traffic flows from North and South, and also providing enhanced monitoring to a better and quicker response in case of emergency;

- the **international Strait of Bonifacio**, a three-mile wide international strait, with a maximum depth of 89 metres, separating Sardinia from Corsica, between the Sea of Sardinia and the Tyrrhenian Sea. The 28 November 1986 Agreement between the Government of the French Republic and the Government of the Italian Republic defines the delimitation of the maritime boundaries in the Area of the Strait of Bonifacio (considering that the Caen Agreement signed on 21 March 2015 between Italy and France has been submitted for parliamentary ratification but has not come into force yet).

The area itself lies within territorial waters of the two States (Italy and France) and it is governed by the international legal “right of unimpeded transit passage” (UNCLOS), where ships have to take a recommended route over one mile wide. In this area, the maritime traffic is congested and it may expose new economic developments to more risks.

The Strait is an area characterised by most outstanding zones in the Mediterranean in terms of biodiversity, subject to increased pressure and problems such as the trade traffic and the risks of damaging the biological balance of the area in case of accident. Besides the **Pelagos Agreement**, the Strait is, due to its priceless environmental heritage, in the focus of interest of **Natura 2000 sites** (the area is almost entirely a SCI/SPZ); includes two protected areas instituted in the 1990s (the Natural reserve of the Strait of Bonifacio and the National Park of La Maddalena Archipelago), where restricted measures have been adopted to preserve the area. Among them, it has in particular to be mentioned:

- the designation of the Strait and adjacent areas as a **particularly sensitive sea area (PSSA)** by the Marine Environment Protection Committee (MEPC) of the International Maritime Organisation (IMO), in June 2011;
- the adoption of **maritime traffic national laws** (Italian Merchant Marine Decree of 26 February 1993 and French Decree No. 84/98 of 3 November 1998, as amended by Decree No. 56/2003) to ban the transit of the Strait by French and Italian ships carrying dangerous goods and establishing precautionary areas at the periphery of two-way recommended routes and a mandatory reporting system.

In addition, the considered marine area includes:

- three **National Parks** (Asinara, La Maddalena Archipelago and the whole Tuscan Archipelago and its 7 major islands: Gorgona, Capraia, Elba, Pianosa, Montecristo, Giglio and Giannutri) and two **Marine Protected Areas** (Asinara and Secche della Meloria);
- three main **ports** (Livorno, Piombino and Porto Torres).

2.1 DATA AND INFORMATION ACQUIRED FROM COUNTRY FACT SHEETS

From the Country fact sheets analysis of Italy and France – where a collation of information across the project area has been done to provide an overview of the area’s characteristics (including marine environment; maritime activities; key sectoral and socio-economic trends and emerging pressures, legal issues, governance) – emerges a synthesis of the main transboundary issues relevant for the present case study area with spatial concerns (see **Annex A** for a detailed analysis).

First of all, impacts deriving from **fishing activities** (overfishing) could be considered in a wider context because of the mobility of fish stocks, so the activity has to be managed in a joint way on a basin scale. Concerning **Oil and Gas extraction**, focus could be put on new themes in the field of research and development, even in the deep offshore context. **Shipping activities** interact with a variety of uses of the marine environment, from interactions with inshore fisheries in the coastal zone to recent challenges like large offshore infrastructure projects associated with marine wind farms. Pollution deriving from shipping activities (e.g. ballast waters, noise and pollution) affects marine and coastal biodiversity, tourism and fishing activities. Other relevant transboundary interactions of shipping are related to operational, administrative and custom procedures – land and sea side – safety and security taking into account also international regulations and the policies and strategies of the EU. The **network of protected areas** – including the Pelagos Sanctuary, small



islands and the Natura 2000 network – deserves a special attention, with a management planning that takes into account all other potentially conflicting activities.

An interesting example of a transboundary cooperation is that of the Pelagos Sanctuary for the Mediterranean Marine Mammals.

3. GOVERNANCE ASPECTS OF A TRANSBOUNDARY COOPERATION IN THE EU MARITIME SPATIAL PLANNING

Action towards integrated sea management is a fundamental step by all riparian States sharing a regional sea, taking into account the different stages and modalities of transposition and implementation of the EU MSP Directive. At the regional level, cross-border cooperation is listed as one of the main steps for MSP implementation outlined in the Conceptual Framework for Marine Spatial Planning in the Mediterranean (COP 20, Tirana, Albania, December 2017, Decision IG.23/7 Annex II). However, so far there has been mostly a unilateral perspective in the management of the shared sea resources. There is a space for improvement in cooperation in the light of integrated management when it comes to the preparation of MSP plans, by enhancing a transboundary cooperation and governance in the present pilot case area.

Unlike on land, the need to proceed with transboundary planning at sea is stronger because the marine environment is naturally fluid and, as such, not enclosed within the administrative boundaries; in addition, many marine resources and marine activities are cross-border and mobile in nature; finally, in this dynamic environment, it is not easy to contain many activities and their impacts within administrative territories (S. Jay et al., 2016)³⁶.

In order to better frame the perspective, it is important to highlight that in the international context and therefore in the shared sea areas, the key words are regulation, cooperation and management of these marine areas. In particular, a collaborative approach within neighbouring jurisdictions is essential for effective and operational planning and management of marine areas across borders. The central document within the EU regulating planning of marine areas, the MSP Directive itself, in Article 11, gives directives on the transboundary cooperation, stating that at the national level Countries shall cooperate to guarantee that maritime spatial plans are coherent and coordinated across the marine region concerned, taking into account in particular issues of a transnational nature.

The considerations related to the cross-border approach, in addition to being expressly provided for by the MSP Directive itself, are fully taken into account and are the basis of the entire legal structure of the EU, with particular importance in the areas related to policy integration, territorial cohesion and environmental fields such as nature (marine) conservation, river basin management, and alike.

In the spatial planning of marine areas the transboundary cooperation is “an integral part of an ecosystem approach to MSP, as marine and coastal ecosystem dynamics transcend administrative boundaries and steer planning towards wider regional or sea basin considerations” (S. Jay et al., 2016).

Also, in the transboundary context, MSP approach should be adaptive, ecosystem-based and should include all relevant stakeholders, meaning it should be practiced within the ecosystem-based boundaries (marine regions), so that a wiser management of all uses and of the ecosystems can be achieved (Douvere, 2008), instead of per sector or per economic activity.

However, for TMSP to be operational requires the development of a common vision from regional actors in assessing, evaluating and monitoring marine spatial plans (Soininen & Hassan, 2015). Therefore, the importance should be emphasized not only of the cross-border nature of marine and coastal ecosystem

³⁶ Transboundary dimensions of marine spatial planning: Fostering inter-jurisdictional relations and governance, Stephen Jay et al., in *Marine Policy*, 2016 Elsevier Ltd.



dynamics, but also and in particular of the governance components in the TMSP, based on the governance variations of different jurisdictions, as well as the cultural, social and policy once.

3.1 REQUIREMENTS FOR A TRANSBOUNDARY MSP

MSP is an important component of a set of policy rules and processes, that are part of the international and European Union maritime governance systems (UNCLOS, Barcelona Convention, IMO, IMP, sectorial Directives, etc.) and in which cooperation and collaboration between neighbouring States becomes fundamental for the effective coherence of the management of marine regions and sub-regions.

MSP is identified by the overarching EU Integrated Maritime Policy (IMP) as a cross-cutting policy tool enabling public authorities and stakeholders to apply a coordinated, integrated and **transboundary approach**. In other words, the transboundary criterion is to be considered as a constitutive element of the MSP.

As a starting point of the TMSP processes, an official decision of the concerned Countries is needed stating the beginning of the process with the identification of the relevant responsible authorities and bodies involved.

In this complex structure of coordinating a transboundary cooperation needed within cross-cutting policy tools, each coastal State has its own legal system and discipline that applies to the marine and coastal areas. Anyhow, States are called to reconcile differences in approach, procedures and rules, requiring political commitment and significant financial and human resources.

Therefore, key elements for establishing a cooperation on MSP between Countries includes knowledge and understanding of **the formal planning systems and process across borders**. For establishing the relations between neighbouring Countries, the legal framework of reference is fundamental to find the minimum requisites for a shared MSP agreement.

The analysis of the *regulatory instruments* and *administrative structures* of coastal and marine activities may highlight significant differences between adjoining jurisdictions. For example, in Italy, there are varying degrees of autonomy between regions, with responsibilities distributed between the State and the Autonomous Regions (i.e. the Autonomous Region of Sardinia compared to Tuscany Region), whereas in mainland France, there is a concentration of decision-making powers at the central level, relying on decentralised services at regional level or local authorities for various operational aspects. These differences should be carefully taken into account in the TMSP and cross-border processes.

Information on the official MSP authorities, as well as other authorities that have responsibilities for implementing MSP is central. Without prejudice to the competence of each Member State to determine activities in their maritime spatial plan or plans, the sectors and responsible sectoral bodies to be considered on their MSP for their sustainable development are mainly those of energy at sea, maritime transport, fisheries and aquaculture, preservation, protection and improvement of the environment, including resilience to climate change impacts, sustainable tourism, sustainable extraction of raw materials and other similar sectors (Article 5, MSP Directive).

It has to be considered that national (and sub-national) authorities have competency for MSP within their national borders: in fact, the Directive recognises the competency of Member States in carrying out MSP for their marine waters (Article 2, *“the Directive shall apply to marine waters of Member States”*). For the transnational aspects, on the contrary, the Directive does not require any kind of shared planning, but only the relatively weak measure of cooperation between Countries.

As part of the planning and management process, another key element is the **identification of common interest's aspects** of Member States bordering the concerned marine region, in particular of a transnational nature. As part of this step to ensure that maritime spatial plans are coherent and coordinated, it is important to verify if there are any contact points for cooperation or breakpoints, finding some common ground or, in



case of opposing objectives, how they can be resolved to contribute towards preventing or reducing conflicts between different uses in the broader marine ecosystem.

Reaching a common conceptualization of planning issues and goals, establishing clear and common objectives of management and planning would be an ideal scenario in shared sea basins.

Cooperation with Member States with which sea basins are shared is aimed at ensuring the coherence and coordination of the respective maritime spatial management plans of the region or the marine sub-region itself, taking into account **existing institutional regional cooperation structures**, such as for example those foreseen by Regulation (EU) No 1380/2013 of 11 December 2013 on the Common Fisheries Policy, in particular Article 18 on regional cooperation on conservation measures and Regional Sea Convention referred to the Mediterranean Sea, the Barcelona Convention (see chapters 6 on Regional level and 7).

The framework provided by the MSP Directive, which acts within the Integrated Maritime Policy of the Union to seek the coordination (not the replacement) of policies on specific maritime sectors, is based on the enhanced cross-border cooperation in accordance with the UN Convention on the Law of the Sea (UNCLOS) (Article 1, Directive MSP).

Therefore, for the implementation of the MSP, the international cooperation component, which uses the legal instruments provided for by the international legal system and first of all by UNCLOS (the international reference Convention), takes on an important role. Thus, it will be worthwhile investigating, also in this specific case study, the instruments that embody the enhanced cross-border cooperation.

Even if the planning of marine spaces regards only the marine waters of Member States, another important element to be taken into account is given by the **particularities of the marine regions** (Article 4, co 5, Directive MSP). In other words, the analysis of the governance context is extended to the relevant marine region whereabouts the national plan will operate, meaning a relative coordination and exchange of information with the neighbouring Countries and the pertinent international bodies.

Transboundary cooperation requires investigating **instruments that embody cross-border cooperation** in the area. On the legal basis, for area-based management tools (ABMTs), from UNCLOS, and the UN Fish Stocks Agreement, MSP may provide an operative tool for the sustainable use of the sea foreseen by UNCLOS; therefore, this planning approach comprehends sectoral area-based management tools (ABMTs) (e.g. fisheries closures), cross-sectoral ABMTs (e.g. marine protected areas), Strategic Environmental Assessments and Environmental Impact Assessments (Chair of the Preparatory Committee established by resolution 69/292, 2017)³⁷.

Within the transboundary context, the application of other two processes helps foster cooperation between neighbouring States: the **Strategic Environmental Assessment (SEA)** and the **Environmental Impact Assessment (EIA)**³⁸, as both processes allow for consultations to be carried out when potential significant issues of a transboundary nature are identified through the evaluation process³⁹. Through these processes the

³⁷ Chair of the Preparatory Committee established by resolution 69/292, 2017. Chair's non-paper on elements of a draft text of an international legally-binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction. Available at http://www.un.org/depts/los/biodiversity/prepcom_files/Chair_non_paper.pdf

³⁸ See the Convention on Environmental Impact Assessment in a Transboundary Context, done at Espoo, Finland, on 25 February 1991, and decision II/9 of its Parties at Sofia on 26 and 27 February 2001, in which it was decided to prepare a legally binding protocol on strategic environmental assessment, the Protocol on Strategic Environmental Assessment to the Convention on Environmental Impact Assessment in a Transboundary Context, the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, done at Aarhus, Denmark, on 25 June 1998, and taking note of the relevant paragraphs of the Lucca Declaration, adopted at the first meeting of its Parties.

³⁹ It should be useful to recall the meaning of "**Strategic Environmental Assessment**", which is the evaluation of the likely environmental, including health, effects, which comprises the determination of the scope of an environmental report and its preparation, the carrying-out of public participation and consultations, and the taking into account of the environmental report and the results of the public participation



plan and policy formulation process and project approval procedure are acknowledging that natural ecosystems have no boundaries. As a result, whilst respecting national jurisdiction, the SEA and EIA can assist in fostering cooperation so that national plans and policies and projects undertaken have a higher potential to contribute towards regional efforts at guaranteeing a sustainable development (the sustainable growth of maritime economies, the sustainable development of marine areas and the sustainable use of marine resources) of regional seas like the Mediterranean. It has to be underlined that within the process of the Environmental Impact Assessment (EIA) a specific section related to marine mammals (potential impact and mitigating measures associated) has been included.

In addition, a consideration of tools such as the **carrying capacity and the cumulative impact assessment**, that could indicate activities that may have transboundary effects of the neighbouring MSP plan or plans in the relevant marine zone, should form an integral part of the negotiations or cross-border cooperation within the transboundary MSP.

Knowledge production and sharing of information are the backbone of TMSP as a reflexive governance arrangement. The exchange of data and information and the production of knowledge at the regional sea level presuppose not only collaboration between national governments, NGOs, EU institutions, European Marine Observation and Data Network (EMODNET), international organizations (IMO, UN Environment) and representatives of maritime activities, but also the harmonization of data and information systems of these actors and institutions, in order to realize a legitimate and robust knowledge base for joint planning processes at the regional sea level (Jan P. M. van Tatenhove, 2017)⁴⁰.

In particular, data interoperability should be based upon the principles of the INSPIRE Directive⁴¹.

Last but not least, the **relevance of the role of public participation**, the importance of which in politics and the legislative process has been recognized globally⁴², should be taken into consideration. It has to be noted that in order to facilitate stakeholder participation and cooperation, case studies showed that **establishing dedicated engagement bodies** (i.e. mandated coordinating bodies accepted across different jurisdictions; for instance, the “Fishermen’s Advisory Board” in Rhode Island) may facilitate discussion and exchanges between different parties, improving transparency and trust-building⁴³.

Resuming the previous assumptions, it is not a matter of confirming the relevance (if not necessity) to proceed with a transboundary and/or cross-border approach, recognized both in the literature and in the MSP Directive itself; rather, in this specific pilot case, **it is a matter to indicate and recommend how to proceed with the aforementioned cross-border cooperation, identifying main sectors and key issues on which to focus such a cooperative process, establishing clear and joint objectives, and gathering relevant information.**

3.2 GENERAL EXPERIENCE

In order to have a complete picture both on the aspect of the previous experiences and on the potential opportunities for financial support, it has to be recalled that the European Commission has supported the development of MSP processes throughout the EU, by facilitating cooperation between Member States in the management of maritime space in EU waters.

In order to do so, the Commission has co-financed since 2009 a number of preparatory actions on MSP in the Baltic Sea, the North Sea, the Atlantic, the Adriatic Sea and the Mediterranean Sea. This was followed by the

and consultations in a plan or programme; and of the “**affected sea zone**”, which means the marine zone likely to be affected by the transboundary effects of a plan or programme on the ecosystem.

⁴⁰ Jan P. M. van Tatenhove (2017) *Transboundary marine spatial planning: a reflexive marine governance experiment?*, Journal of Environmental Policy & Planning, 19:6, 783-794, DOI: 10.1080/1523908X.2017.1292120.

⁴¹ See footnote 10.

⁴² See the UNECE Convention on access to information, public participation in decision-making and access to justice in environmental matters or **Aarhus Convention** of June 25 1998.

⁴³ *Cross-border cooperation in Maritime Spatial Planning*- Reporting on the Service Contract: EASME/EMFF/2014/1.3.1.8/SI2.714082: Study on international best practices for cross-border Maritime Spatial Planning by NIRAS, 2017.



launch in 2014 of initiatives to establish lasting MSP mechanisms for cross-border MSP cooperation in the Baltic, the Black and the Celtic Seas.

In the same context, EASME published two calls for proposals for projects to support the launch and implementation of concrete cross-border MSP cooperation initiatives between Member States. In 2016, the call covered the Northern European Atlantic, the Western and the Eastern Mediterranean; while in 2017, the call covered the North and Baltic Seas and the Outermost Regions.

The Commission has also concluded a number of studies on various aspects of MSP, which could be utilized as a useful reference for negotiations or cross-border cooperation within the transboundary MSP:

- A study on the legal aspects of MSP (2008)⁴⁴;
- A study on the economic effects of MSP (2010)⁴⁵, which concluded that economic effects of MSP are reduced transaction costs for new maritime activities and an improved investment climate;
- A study looking into the potential of MSP in the Mediterranean (2011)⁴⁶;
- A study on data for MSP⁴⁷;
- A technical study on MSP for Blue Growth⁴⁸.

A relevant key point that needed to be raised is that most of the project experiences, such as the Transboundary Planning in the European Atlantic (TPEA) project, emphasized that **“transboundary MSP is unlikely to lead to a joint plan, but it should rather offer effective links between national MSP processes”**⁴⁹. (Jay et al., 2016, p. 87).

Joint transboundary approach building upon CAMP networks

A transboundary approach to MSP should be fostered building upon CAMP (Coastal Area Management Programme) networks within the UN Environment/MAP-Barcelona Convention.

This Programme of collaboration between the Mediterranean Action Plan (MAP), national and local authorities, and institutions, as well as international financial institutions, is based on the principles of sustainable development, integrated planning, and the management of Mediterranean coastal areas.

It is useful to highlight that with the creation of the Network of CAMP projects it is intended not only to further disseminate the results of CAMP projects, but also to pursue common goals with elements of cohesion and harmonisation, utilising the experiences and relevant outputs as a great alternative and a concrete and tangible solution to many related issues. The development of a Mediterranean Network allows sharing and learning from others' experiences, finding common strategies to be adopted in the Mediterranean field, test and improve approaches and methodologies, foster coordination and cooperation in the Mediterranean area. Networking in fact means building relationships between people and organizations which have interests and common objectives, with the aim of sharing information, ideas and resources and creating opportunities for further development of the project and, in general, of the activities within their competencies.

⁴⁴ http://ec.europa.eu/maritimeaffairs/documentation/studies/spatial_planning_en.htm

⁴⁵ http://ec.europa.eu/maritimeaffairs/documentation/studies/study_msp_en.htm

⁴⁶ http://ec.europa.eu/maritimeaffairs/documentation/studies/study_msp_med_en.htm

⁴⁷ <https://publications.europa.eu/ga/publication-detail/-/publication/f01f1b26-1b60-11e7-aeb3-01aa75ed71a1>

⁴⁸ https://www.msp-platform.eu/sites/default/files/20180419_published_version_.pdf

⁴⁹ Jay et al., 2016, p. 87; see also Jan P. M. van Tatenhove (2017) Transboundary marine spatial planning: a reflexive marine governance experiment, *Journal of Environmental Policy & Planning*, 19:6, 783-794, DOI: 10.1080/1523908X.2017.1292120.



4. THE MSP PROCESS AT THE NATIONAL LEVEL, INCLUDING PARTICIPATION

Regarding the implementation of the MSP in the Italian national context, the references are to the Italian **Legislative Decree No. 201 of 17 October 2016**, implementing the MSP Directive, together with the **Guidelines adopted by Decree of the President of the Council of Ministers of 1 December 2017** “*containing the guidelines and criteria for the preparation of maritime spatial management plans*”⁵⁰.

For the transboundary cooperation, the cited Legislative Decree 201/2016 and a rule 15 of the Guidelines foresee the usefulness of envisaging **from the very beginning** the participation of Member and Non-Member but neighbouring States in national planning, through instruments such as **programme agreements or technical and/or consultation panels and forums**, or similar, **also taking advantage of utilising European projects in which Italy participates**.

In this transboundary cooperation context, it has to be recalled that the Italian Technical Committee (TC, see below), in reporting or directing technical projects and agreements for the individual Ministries and/or national bodies/organizations, shall always provide a close coordination with the Ministry of Foreign Affairs and International Cooperation (MAECI) in order to avoid actions potentially detrimental to national interests.

With regard to cross-border cooperation for the adoption of the national MSP, the delimitations between Italy and some neighbouring countries are not yet formalized. In this context, the challenge for a rational allocation of sea space, in order to reduce conflicts between the different activities that take place in the Mediterranean is more important and necessary than elsewhere. The same guidelines show how the areas beyond the territorial waters require specific planning and management strategies, based on a cross-border governance structure, to be adopted according to the future demand for space, to anticipate possible conflicts and strengthen synergies. Therefore, a significant effort is needed to overcome the definition of the boundaries that have been established considering only the political issues related to the areas of competence (e.g. national borders). Overcoming a traditional border-setting approach should therefore necessarily be based on cross-border cooperation. As foreseen by the aforementioned Legislative Decree 201/2016, the Inter-ministerial Coordination Table (ICT) has identified the maritime reference areas, attributable to the three sub-regions referred to in the Marine Strategy (Article 4 of Directive 2008/56/EU): the Western Mediterranean Sea, the Adriatic Sea, the Ionian Sea and the central Mediterranean Sea.

It is therefore up to the Technical Committee to draw up a Management Plan for each area.

For the Management Plan of the Western Mediterranean Sea area, where the present pilot case falls, the Italian administrative regions belonging to this maritime area are: Liguria, Tuscany, Lazio, Campania, Basilicata, Calabria, Sicily and Sardinia. Therefore, the planning concerning the pilot case will be included in a much larger area, with the related complexity issues.

4.1 PARTICIPATORY PROCESS

The relevance of the role of public participation has been recognized, transposed and implemented also in the Italian legal order.

As for the **Italian legal system**, in particular, we shall recall the **Law 108/2001** with which Italy ratified the Aarhus Convention on access to information, public participation in decision-making and access to justice in environmental matters, identifying specific rights for citizens; and the **Legislative Decree 195/2005** with which Italy has implemented Directive 2003/4/EC on public access to environmental information, extending the rights of citizens and duties of the public authorities as regards access to information, by defining the obligation for administrations to make available and disseminate environmental data in forms and formats that are easily available to the non-public audience as well.

⁵⁰ Decreto del Presidente del Consiglio dei Ministri del 1 dicembre 2017 „Linee Guida contenenti gli indirizzi e i criteri per la predisposizione dei piani di gestione dello spazio marittimo”.



Other sector regulations, on a national and sub-national level, have also introduced obligations regarding the collection, processing and dissemination of environmental information, promoting a new culture of participation in decision-making processes that have as their object in particular environmental policies. A significant example is given by the **Tuscany Region**, with the **Regional Law 69/2007** to facilitate the promotion of inclusive decision-making processes. As far as the **Autonomous Region of Sardinia** is concerned, there is only a legislative proposal on participatory process, containing “rules for citizen participation in the elaboration of regional and local public policies”.

From the perspective of MSP, engaging stakeholders and sea-users is regarded as a critical element. In fact, it should be underlined how the participatory processes, foreseen for the management and territorial planning activities, have obviously to be adapted to the peculiarity of the planning of the marine spaces, where prevailing will be the institutional interests at a national level and therefore also cross-border (considering the prevailing national competence on the MSP sea areas), as well as the economic sectors that carry out activities in these areas.

EU MSP Directive, Article 9 – Public participation

1. Member States shall establish means of public participation by informing all interested parties and by consulting the relevant stakeholders and authorities, and the public concerned, at an early stage in the development of maritime spatial plans, in accordance with relevant provisions established in Union legislation.
2. Member States shall also ensure that the relevant stakeholders and authorities, and the public concerned, have access to the plans once they are finalised.

Based on the principles contained in the cited legal instruments, the MSP Directive, in Article 9, gives directives on the participatory process (PP), stating that at the national level Countries shall:

- adopt and implement **specific mechanisms for MSP's public participation**, by providing for clearly defined and identified tools of information and consultation, as well as the right of access to the plans finalised, at an early stage;
- through these mechanisms, **inform** all the identified “interested parties”;
- through these mechanisms, **consult** all the relevant identified “stakeholders, authorities, and the public concerned”.

Thus, Countries should define what they mean by:

- “early stage” in the development of maritime spatial plans;
- “interested parties” that should be informed for each specific maritime spatial plans before its adoption;
- “stakeholders, authorities, and the public concerned” that should be consulted for each specific maritime spatial plans before its adoption;
- “plans finalised” for the exercise of the right of access.

For the participatory process, the Italian Legislative Decree No. 201 of 17 October 2016, together with the Guidelines adopted by Decree of the President of the Council of Ministers of 1 December 2017, containing the guidelines and criteria for the preparation of maritime spatial management plans⁵¹, foresees the participation of different actors:

⁵¹ Decreto del Presidente del Consiglio dei Ministri del 1 dicembre 2017 „Linee Guida contenenti gli indirizzi e i criteri per la predisposizione dei piani di gestione dello spazio marittimo”.



- The **Inter-ministerial Coordination Committee (ICC)**, which operates at the Department of European Policies of the Presidency of the Council of Ministers. A representative of each of the following Ministries is part of the Committee:

- a. Ministry of Foreign affairs and international cooperation,
- b. Ministry of Infrastructure and transport,
- c. Ministry of Economic development,
- d. Ministry of Agricultural, food and forest policies,
- e. Ministry of Environment and the protection of the sea and the territory,
- f. Ministry of Cultural heritage and tourism,
- g. Ministry of Defence,
- h. Ministry of Education and scientific research,
- i. Ministry of Health,
- j. Ministry of Labour and social policies,
- k. Ministry of Economics and finance,

as well as the (l.) Department for Regional Affairs and autonomies of the Presidency of the Council of Ministers and of the Customs and Monopolies Agency.

The ICC is chaired by a representative of the Department of European Policies of the Presidency of the Council of Ministers.

- The **Technical Committee (TC)**, which operates at the Ministry of Infrastructure and Transport as the competent Authority. The TC consists of:
 - a. three representatives of the Ministry of Infrastructures and Transport, one of whom is president;
 - b. two representatives of the Ministry of the Environment and of the protection of the territory and the sea;
 - c. two representatives of the Ministry of Agricultural, Food and Forestry Policies;
 - d. two representatives of the Ministry of Economic Development;
 - e. two representatives of the Ministry of Cultural Heritage and Activities and Tourism;
 - f. a representative of the Regions designated by the Conference of Presidents of the Regions for each maritime area of reference. In the event that several Regions are part of a maritime area of reference, the Committee is composed of one representative of each Region concerned.

As observers:

- a. a representative of the Ministry of Defence;
- b. representatives of other administrations, whenever issues relating to them are dealt with.

Finally, may be invited to participate:

- a. representatives of research bodies and institutes, recognized associations and category;
- b. representatives of the Committee for the safety of offshore operations (foreseen by legislative Decree No. 145/2015), at the request of the Ministry of Economic Development if issues related to the security of energy supplies and offshore mining activities are dealt with at the meetings.

It should be pointed out that the TC itself, in its composition, sees a large group of public subjects participating in the drafting of the plan. The TC can also provide for consultations and hearings with other public and private parties in order to better focus the various issues dealt with.

Considering the requested specific mechanisms to inform and consult all the relevant identified stakeholders, authorities, and the public concerned, the cited Guidelines, in **rules 6 and 16**, establish that, to ensure **stakeholder participation** and the related **publicity** of the maritime spatial planning process, **the central element is the dedicated website** as a fundamental tool to ensure maximum participation, to provide both general and timely information on individual plans and the various phases of consultation, monitoring and reporting, make public the various documents produced.

The aforementioned tools to be used in this sense are constituted by:

- a) e-mails addressed to interested persons;
- b) press releases;



- c) local media;
- d) newsletter or blog on the subject;
- e) on-line through the websites of the Public Administrations; and
- f) public meetings and sessions.

As far as cross-border co-operation is concerned, **consultation with neighbouring Countries** is counted, taking advantage also of already existing technical and/or consultation panel and conventions.

In the TMSP a specific challenge is identified on the organisation of cross-border stakeholder involvement, due to a different stakeholder practice, legal constraints and policy constraints.

In the Italian framework, participation (both in the planning phase and in monitoring and implementation) is guaranteed through the **Strategic Environmental Assessment (SEA) procedure** and foreseen to be as extensive as possible. In particular, the plans, due to the nature of the contents, shall be submitted to the Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA) procedures, which in turn provide for further steps and competent subjects.

As part of the SEA procedure and for the purpose of expressing the “reasoned opinion”, the Ministry for the Environment (MELS) is the competent authority and the Ministry of Cultural Heritage (MiBACT) is the concerting authority.

Thus, the SEA will be the object of consultation between Countries directly or indirectly affected by the impacts of the Plan.

The terms “plans” and “programmes” on the current legislation

The current legislation (Directive 2001/42/ EC, Legislative Decree No. 152 of 3 April 2006) requires that acts producing direct environmental effects are subject to Strategic Environmental Assessment.

To facilitate the correct application of Community legislation, the document on the implementation of Directive 2001/42/ EC concerning the assessment of the effects of certain plans and programmes on the environment, by the European Community itself, clarifies that, even if the terms “plans” and “programmes” are not synonymous, *“both can cover a wide range of meanings that sometimes coincide”*. According to the European legislation, thus, *„any act that decides how to implement a strategy for the reorganization of the territory, setting rules or an orientation on the type of development that can be allowed in certain areas”*, shall be considered a “plan”.

With a specific focus on the **Pelagos Sanctuary**, the participatory process related to the planning of the concerned sea area, based on a set of selected criteria essential to identify stakeholders, should take into account also the **followings**:

- **institutional actors involved** (Government or public sector): Pelagos Secretariat and National Focal Points (NFP), SPA/RAC Centre and NFP being in the SPAMI List, RAMOGE Secretariat and NFP since it concerns the same Contracting Parties upon overlapping issues;
- **users** from the more frequent **economic activities** (private sector for profit): maritime transports and fishery;
- **civil society** (not for profit): NGOs, universities, research institutes, local community organizations, and other groups generally related to the Pelagos Sanctuary;



- general public: to be identified applying the set of criteria⁵².

In this context, the transboundary cooperation within the participatory process requires tailored stakeholder engagement activities, in particular taking into account differences of culture, practice, awareness, institutional arrangements and jurisdictions.

Finally, it should be mentioned the recent new **European Law on general data protection regulation (GDPR)**, with the adoption of **Regulation 2016/679/EU** of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and its transposition to National legal orders. This new regulation, which applies to every organization that processes, transmits and stores personal data of EU residents, is intended to enhance and unify the efforts currently in place to protect personal data. GDPR requires citizens to be informed on how their information is being used, who collects their personal data and what kind of data they collect, and to be notified if a breach has taken place. Informing citizens of how their personal data is used helps to create a sense of transparency and accountability, which will empower digital civic engagement, and hence participatory processes.

5. IDENTIFICATION OF LEGAL AND POLICY INSTRUMENTS FOR THE IMPLEMENTATION OF THE PROVISIONS OF THE MSP DIRECTIVE, WITH PARTICULAR REFERENCE TO THE PROTECTION OF MARINE MAMMALS IN THE TYRRHENIAN CASE AREA

The presence of the Pelagos Sanctuary in the Tyrrhenian case area, between France and Italy, shows an important element of connection also with regard to cross-border cooperation in the MSP: the protection of marine mammals and their habitat as a policy priority.

Having in mind the objective of the MSP Directive, including the ecosystem and biodiversity conservation, to avoid that the various pressures (impacts caused by human activities and natural phenomena) can cause loss of biodiversity and degradation of ecosystem services – a correct picture of the legal and policy framework will support its implementation in the establishment of maritime spatial plans, especially with reference to biodiversity conservation, in particular of marine mammals. In fact, it cannot be underestimated that healthy marine ecosystems and their multiple services, if integrated into planning decisions, can deliver substantial benefits in terms of food production, recreation and tourism, climate change mitigation and adaptation, shoreline dynamics control and disaster prevention.

As for marine mammals and their presence in the Mediterranean Sea, about twenty cetacean species have been reported in this basin, about half of which come from Atlantic populations entering the sea only sporadically. Only nine small cetacean species and three large whale species are sighted frequently in the Mediterranean Sea. They are the minke whale (*Balaenoptera acutorostrata*), fin whale (*Balaenoptera physalus*), short-beaked common dolphin (*Delphinus delphis*), long-finned pilot whale (*Globicephala melas*), Risso's dolphin (*Grampus griseus*), killer whale (*Orcinus orca*), sperm whale (*Physeter macrocephalus*), false killer whale (*Pseudorca crassidens*), striped dolphin (*Stenella coeruleoalba*), roughtoothed dolphin (*Steno bredanensis*), bottlenose dolphin (*Tursiops truncatus*) and Cuvier's beaked whale (*Ziphius cavirostris*).

Nowadays, the most serious threats to marine mammals are: taking, defined as to harass, hunt, capture of kill or attempt to harass, pollution, as listed in the 2017 UN Environment/MAP Action Plan for the Conservation of

⁵² See Stakeholder Participation Toolkit for Identification, Designation and Management of Marine Protected Areas, RAC/SPA and IUCN-Med, Ed. RAC/SPA, Tunis. 2016.



Cetaceans in the Mediterranean Sea⁵³; reduction or depletion of food resources; incidental catches in fishing gear; degradation and disturbances of habitats caused by other factors⁵⁴.

Effective and durable marine mammals' protection in the Mediterranean Sea Area implies the cooperation with existing programmes and plans, at the different levels (international and EU, regional and national), as specified in the following paragraphs.

5.1 INTERNATIONAL LEGAL REGIME

As a starting point, from the existing and emerging **international legal regime**, the overarching legal instrument is represented by the **UN Convention on the Law of the Sea**, 1982 (hereinafter referred to as **UNCLOS**), dealing with the protection and preservation of the marine environment, as contained in **Part XII of the Convention**⁵⁵. The marine environment regulated by the UNCLOS is not a spatial entity removed from the territorial jurisdiction of any single State, rather it is a concept comprising all zones of marine jurisdiction governed by the Convention, including internal waters and high seas. (M.L. McConnell et al, 1991)⁵⁶. So far, these principles are intrinsically part of the international environmental law.

The primary obligation of States in relation to the global marine environment is stated in Article 192: *"States have the obligation to protect and preserve the marine environment"*. The marine environment is not a distinct entity separate from any State's territorial jurisdiction, as evidenced by Article 193 of the UNCLOS.

These two Articles 192 and 193 are insofar generally regarded as statements of customary international law on the extent of a State's environmental responsibility toward the oceans. A State breaching its obligation to protect and preserve the marine environment would also be in breach of international law. This is further substantiated by Article 235(1) of UNCLOS, which provides that: *"States are responsible for the fulfilment of their international obligations concerning the protection and the preservation of the marine environment. They shall be liable in accordance with international law."*⁵⁷

In Section 2 on "Global and Regional Co-operation", Article 197 provides that *"States shall cooperate on a global and, as appropriate, on a regional basis... in formulating and elaborating international rules for the... protection and preservation of the marine environment, taking into account characteristic regional features."*. The obligation to cooperate includes an obligation to notify affected States of actual or imminent danger to the marine environment, to make contingency plans for dealing with such dangers, to research, to study and to exchange information and data in order to provide scientific criteria for the development of rules, standards, procedures and practices to reduce, prevent or control pollution to the final result to protect and preserve the marine environment as a whole. At any rate, Part XII shall be considered within all the interrelated provisions of the Convention, because the extent of State powers to protect and preserve the marine environment is largely determined by its interface with other matters regulated by the Convention, such as resource exploitation and maritime passage of vessels and aircraft.

Moreover, under UNCLOS States Parties agree to adopt domestic laws and regulations to prevent, control, and reduce marine pollution from different sources, in particular by dumping, from land-based sources, seabed activities, and vessels (see UNCLOS, Section 5 on international rules and national legislation to prevent, reduce and control pollution of the marine environment, in particular Article 211 on pollution from vessels, combined with Article 207 on pollution from land-based sources and the following ones). Thus Countries have to ensure

⁵³ Action Plan for the Conservation of Cetaceans in the Mediterranean Sea. UN Environment/MAP, Athens, Greece 2017.

⁵⁴ See footnote 38.

⁵⁵ United Nations Convention On The Law Of The Sea, Dec. 10, 1982, U.N. Dec. A/Conf.62/122, U.N. Sales No. E.83.V.5 (1983), reprinted in 21 I.L.M. 1261.

⁵⁶ Moira L. McConnell and Edgar Gold, The Modern Law of the Sea: Framework for the Protection and Preservation of the Marine Environment, 23 Case W. Res. J. Int'l L. 83 (1991).

⁵⁷ See footnote 21.



that vessels flying their flag are compliant with applicable international rules and standards for the prevention, reduction, and control of marine pollution, also by adopting domestic laws, regulations and measures for their implementation and providing for effective enforcement of these rules. Therefore, obligations foreseen by UNCLOS are strictly connected with the framework of **1973/78 MARPOL Convention**⁵⁸ and, specifically, to Annex V for preventing loss and discard of debris and garbage generally and fishing gear particularly.

Numerous and significant international conferences and meetings were convened on these issues, recognising that persistent marine debris, particularly discarded or lost fishing gear, is causing substantial harm to a large variety and number of marine animals when they either ingested or became entangled in it, and posing operational risks to recreational and commercial marine traffic. (H. R. Koehler et al., 2000)⁵⁹. Even if today major source of marine pollution is land-based activity, the focus of most international responses has been vessel activity. Thus at the international level emerge the global conventions regarding the protection of the marine environment, underlining concern over the impacts of persistent garbage and debris in the sea on marine flora and fauna (included marine mammals), on marine ecosystem function generally, and on various human activities. In particular, as global agreement, the **1973/78 MARPOL Convention** and the **London Dumping Convention of 1972** were adopted for responses to marine pollution⁶⁰ from a source which involved vessels and land-based activity (regulating the deliberate disposal at sea of various garbage generated on land), related to the UNCLOS obligation that foreseen the duty to cooperate globally and regionally and to develop rules and standards on that basis. Under MARPOL 73/78 – which in its 20 Articles, 2 Protocols, and 6 Annexes establishes specific regulations governing the discharge of pollution and wastes from ships at sea – the term “pollution” at the beginning was defined primarily as oil and other noxious substances, and only later has included the disposal of garbage (particularly including plastics) by ships at sea, with the entry into force of Annex V in 1988, and the related guidelines updated over the years. Garbage is defined as “*all kinds of victual, domestic and operational waste, excluding fresh fish and parts thereof, generated during the normal operation of the ship and liable to be disposed of continuously or periodically except those substances which are defined or listed in other Annexes to the present Convention*”; and plastics are defined as including “*but not limited to synthetic ropes, synthetic fishing nets and plastic garbage bags*”. In general, Annex V prohibits both the deliberate discharge of plastic, including synthetic fishing nets, and non-food garbage into the ocean, providing guidelines to govern specific discharge into the ocean; bans the dumping of plastics and synthetic ropes and fishing gear at sea, regulating the dumping of other types of ship-generated garbage at sea. Parties must therefore ensure that marinas, ports or terminals provide adequate port reception facilities for collection and disposal of garbage that is generated by ships while at sea. Annex V was amended in 1995 to enhance the powers of port States to enforce MARPOL regulations.

The international organisation responsible for supporting the implementation of the MARPOL Convention is the agency called “**International Maritime Organization – IMO**”, which purpose is to, *inter alia*, provide support and tools for cooperation among governments in regulating various issues in trans-global shipping, including issues of marine pollution. Under Article 211 of UNCLOS, IMO is recognized to authorize the establishment of marine pollution standards, thus recommending regulations under MARPOL. In these years, thanks to the IMO work and its principle of “safer ships and cleaner seas”, maritime States and their shipping industries have applied effective standards on maritime safety and environmental protection, with a global economic benefit.

From the second half of the 20th century it has become increasingly evident that the conservation status of marine mammals and cetaceans, as an integral part of the marine ecosystem, can be adversely affected by factors such as degradation and disturbance of their habitats, pollution, reduction of food resources, use and

⁵⁸ International Convention for the Prevention of Pollution from Ships, Nov. 2, 1973, 12 I.L.M. 1319, as modified by the Protocol of 1978.

⁵⁹ Legal instruments for the prevention and management of disposal and loss of fishing gear at sea, H. R. Koehler et al., International Marine Debris Conference held in Hawaii in August 2000.

⁶⁰ Pollution at the beginning was defined primarily as oil and other noxious substances, and only later has included garbage.



abandonment of non-selective fishing gear, and by deliberate and incidental catches. Stressing that their conservation is a common concern, it was therefore recognized the importance of adopting integrating actions to conserve marine mammals (that include also cetaceans) with activities related to the socio-economic development of States, including maritime activities such as fishing and the free circulation of vessels in accordance with international law, emphasizing the need to promote and facilitate cooperation, utilising coordinated and concerted actions to contribute to the conservation of marine mammals and their habitats. In this context, are to be cited the conventions on endangered species, in particular:

- The 1946 International Convention for the Regulation of Whaling;
- The 1973 **CITES or Washington Convention on International Trade in Endangered Species of Wild Fauna and Flora**, with the aim to halt and regulate the trade in wild animals and plants crosses borders between countries, through international cooperation to safeguard certain species from overexploitation;
- The 1979 **Convention on the Conservation of European Wildlife and Natural Habitats**;
- The 1984 **Global Plan of Action for the Conservation, Management and Utilization of Marine Mammals** of the UNEP;
- The 1992 **Convention on Biological Diversity**, under which are developed frameworks such as **Ecologically or Biologically Significant Areas (EBSAs)**;
- The so called **CMS Family**, which refers to the **Convention on Migratory Species** and the collection of **Agreements** and **Memoranda of Understanding** that have been concluded under it:
- **The 1979 Bonn Convention on the Conservation of Migratory Species of Wild Animals**, concerning the conservation and effective management of particularly species of wild animals that migrate across or outside national jurisdictional boundaries (migratory species), recognising that the States are and must be their protectors when they live within or pass through their national jurisdictional boundaries (based on the fundamental principles stated in Article II);
- **The 1996 ACCOBAMS Agreement on the conservation of cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic Area**, with the aim to coordinate measures to achieve and maintain a favourable conservation status for cetaceans, calling the Parties to prohibit and take all necessary measures to eliminate any deliberate taking of cetaceans, in a cooperative frame to create and maintain a network of specially protected areas to conserve cetaceans (in particular, Articles I and II).

Worthy of mention for the global protection of marine mammals are also the **fisheries management plans** using the ecosystem approach to fisheries (EAF), under FAO; and the framework of the **International Whaling Commission (IWC)**, set up under the 1946 International Convention for the Regulation of Whaling, aiming at providing for the proper conservation of whale stock, within which it the Mediterranean Sea Area was designated as a Whale Sanctuary. The IWC establishes Conservation Management Plans for key species and populations; it has also adopted a Strategic Plan for Whale-watching for a responsible activity consistent with international best practice.

In the International Union for Conservation of Nature's (IUCN) framework it has been created the **Marine Mammal Protected Areas Task Force (MMPATF)** by the IUCN itself, the International Committee on Marine Mammal Protected Areas (ICMMPA), the World Commission on Protected Areas (WCPA) Marine Vice Chair, and members of the IUCN Species Survival Commission (SSC), aiming at supporting a global profile for the role of marine mammals in protected areas.

Important Marine Mammal Areas (IMMAs) are defined as *discrete portions of habitat, important to marine mammal species, that have the potential to be delineated and managed for conservation*.

IMMAs includes the following considerations: the specific vulnerability of marine mammals; the role of marine mammals as indicators to support the identification of MPAs and spatial protection measures, been easily monitored; the role of marine mammals as umbrella species which helps ensure that a properly designed



conservation plan will be beneficial to the broader ecosystem; and the role of marine mammals as flagship species representing powerful political and public levers for the conservation of less popular or well-known organisms, communities or habitats.

Furthermore, elements to identify IMMAs may support the assessment of marine areas esteemed in terms of biodiversity within the Maritime Spatial Planning process⁶¹.

Although the existence of the international legal obligation to protect and preserve the marine environment and the importance of cooperation, still fails the coordination of responses and the degree of those responses at the States implementation level. These **legal obligations** can be summarized in the three main-related following ones:

- 1) the obligation to **protect and preserve the marine environment** and, specifically, not to pollute;
- 2) the obligation to **cooperate on global and regional levels**, primarily to **develop acceptable standards, rules and practices** in response to the first obligation; and,
- 3) the obligation effectively to **adopt, implement and enforce at a national level, the agreed upon standards**, under the second obligation, in response to the first obligation⁶².

Not fulfilling one of the three obligations implies the defeat of the entire regime.

As a necessary step forwards, the UN are negotiating for the inclusion of marine spatial planning (MSP) in a new international legally binding **agreement for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction (BBNJ)**, with the related obligations for coordination and cooperation, testifying once again the cross-border characteristic of the MSP as an inclusive tool, also in the field of biodiversity protection, including the species of marine mammals and their habitat.

⁶¹ See: <https://www.marinemammalhabitat.org/activities/immas/>

⁶² See footnote 21.



Treaty governing marine Biodiversity in areas Beyond National Jurisdiction (BBNJ)

The General Assembly under the 1982 United Nations Convention on the Law of the Sea, according to resolution 72/249 is finalising the drafting of a legally binding treaty governing marine biodiversity in ocean waters beyond national jurisdiction (BBNJ).

A drafting intergovernmental conference was held on 4 September 2018; a second session is tentatively scheduled from 25 March to 5 April 2019. A third session is scheduled from 19 to 30 August 2019.

The main issues at the heart of the new instrument include capacity building and the transfer of marine technology; area-based management tools, including marine protected areas; environmental impact assessments; and marine genetic resources, including questions on the sharing of benefits.

Source: <https://www.un.org/press/en/highlights/BBNJ>

For what concerns **public participation** as a key element of TMSP, at the international level the most important instrument is the UNECE Convention on access to information, public participation in decision-making and access to justice in environmental matters or **Aarhus Convention**⁶³ of June 25 1998, which requires that the Contracting Parties of the Convention guarantee rights of access to information, public participation in decision-making and access to justice in environmental matters. The Convention sets out minimum requirements for public participation in various categories of environmental decision-making, and also foresees the development of compliance mechanism to ensure that the Contracting Parties implement its provisions.

From the perspective of the public participation on sectors of environmental law, in particular to protect endangered species, biodiversity, and fragile ecological areas, in the principal biodiversity-related conventions consideration is given to the intersection of public participation and resources development, focusing on the three global conventions of most direct relevance for this topic, namely, the 1992 multilateral **Convention on Biological Diversity (CBD)**, the Convention on Wetlands (**Ramsar**), and the World Heritage Convention (**WHC**), which have helped to encourage further public-participation activities.

According to the new CBD **Draft Decision on Spatial Planning, Protected Areas, and “other effective area-based conservation measures-OEABCM”**⁶⁴ (in discussion at COP14, Sharm-El-Sheik, Egypt, November 2018), Parties are called to facilitate mainstreaming of protected areas and OEABCM into key sectors, such as, inter alia, agriculture, fisheries, forestry, mining, energy, tourism and transportation. It welcomes the voluntary guidance on integration of protected areas and OEABCM into the wider-land and seascapes and on mainstreaming these across key sectors. Moreover, the Draft Decision identifies and prioritizes *“the sectors most responsible for habitat fragmentation, including transportation, agriculture, energy, infrastructure and urban development, in order to develop strategies to engage them in developing strategies for mitigating the impacts on protected areas and protected area networks including OEABCM and areas under active restoration programmes”*. Thus, it calls for reviewing and adapting *“landscape and seascape plans and frameworks (both within and across sectors), including, for example, land-use and marine spatial plans, and sectoral plans, such as subnational land-use plans, integrated watershed plans, integrated marine and coastal area management plans, transportation plans, and water related plans, in order to improve connectivity and complementarity*

⁶³ UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters adopted on 25th June 1998.

⁶⁴ The term **“other effective area-based conservation measures”** defines “a geographical defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in situ conservation of biodiversity, with associated ecosystem functions and services and where applicable, cultural, spiritual, socio-economic, and other locally relevant values”.



and reduce fragmentation and impacts”; and “sectoral plans to ensure that the many values provided by protected areas and OEABCM, under all governance types, are recognized and incorporated into sectoral plans.”.

Clearly, the new proposal leads to a greater integration of the existing management tools to inclusive, integrated and harmonized planning, based on the cooperation of the various actors and institutions (including national, supranational and international) involved.

5.2 EU LEVEL

At the **EU level**, relevant EU policies and legislation need to be considered, including, among others:

- the **Marine Strategy Framework Directive (MSFD)**⁶⁵, which obliges Member States to achieve and/or maintain good environmental status of their marine waters and to take measures to meet the established targets, monitoring and reporting among others the conservation status of marine mammals. It provides 11 descriptors of the status of the marine environment and requires Member States to periodically assess these descriptors in order to evaluate their short and long-term variations. Of these, the descriptor 10 concerns monitoring, assessment and measures to ensure that *“Properties and quantities of marine litter do not cause harm to the coastal and marine environment”* and the descriptor 11 concerns underwater noise, recognized in the two distinct components of the impulsive noise (descriptor 11.1) and of the low frequency continuous noise (descriptor 11.2). The operational implementation of these two descriptors is also ensured by the support provided by two technical groups: the technical group on marine litter (TG Litter) and the technical group on underwater noise (TG Noise). A specific theme is set on marine mammals, corresponding to the themes of the monitoring programmes.
- **Natura 2000**⁶⁶ and the related legislation, in the context of which cetaceans – included in Annex I on natural habitat types of community interest whose conservation requires the designation of special areas of conservation – are considered to be “listed species”. The Habitat Directive aims to promote the maintenance of biodiversity by requiring Member States to take measures to maintain or restore natural habitats and wild species listed on the Annexes to the Directive at a favourable conservation status (defined in Articles 1 and 2), introducing robust protection for those habitats and species of European importance (Article 12), and in particular requiring Member States to take requisite measures to establish a system of strict protection for all cetaceans in European waters.
- The **Common Fisheries Policy (CFP)**⁶⁷. The European Commission has repeatedly addressed the problem of by-catches of marine mammals through Regulations (e.g. Regulation EC/812/2004). As recognized both in the Green Paper on the reform of the Common Fisheries Policy and in the Commission Communication COM (2008) 187, integrated management of marine activities requires an ecosystem approach. The CFP has adopted actions for the protection of non-target species such as marine mammals (by the strategy of by-catches prevention and discards elimination), and the protection of sensitive habitats (for example, measures to eliminate destructive fishing practices).
- The **Recommendation on Integrated Coastal Zone Management (ICZM)**⁶⁸ and the related **2010/631/EU Council Decision on the conclusion of the ICZM Protocol to the Barcelona Convention**⁶⁹, becoming part of

⁶⁵ Directive 2008/56/EC of the European Parliament and of the Council of 17.06.2008 establishing a framework for community action in the field of marine environmental policy.

⁶⁶ http://ec.europa.eu/environment/nature/natura2000/index_en.htm

⁶⁷ http://ec.europa.eu/fisheries/cfp_en

⁶⁸ Recommendation of the European Parliament and of the Council of 30.05.2002 concerning the implementation of Integrated Coastal Zone Management in Europe (2002/413/EC), OJ L 148, 6.6.2002.

⁶⁹ 2010/631/EU Council Decision of 13 September 2010 concerning the conclusion, on behalf of the European Union, of the Protocol on Integrated Coastal Zone Management in the Mediterranean to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean.



the European *acquis communautaire*, and providing a valid horizon and a vast panorama to prepare an effective management that is integrated with the context.

- The **Renewable Energy Directive**⁷⁰, “requiring national action plans foreseen sustainability criteria, taking into account *“areas designated... for the protection of rare, threatened or endangered ecosystems or species recognised by international agreements or included in lists drawn up by intergovernmental organisations or the International Union for the Conservation of Nature”* (Article 17); and
- The already cited **INSPIRE Directive**⁷¹.

In 2007, the **Integrated Maritime Policy for the European Union (IMP)** was adopted to provide a more coherent approach to maritime issues (EC 2007), calling for an increased coordination between different policy areas.

With the objective to support the sustainable development of seas and oceans and to develop a coordinated, coherent and transparent decision-making in relation to the EU’s sectoral policies affecting the oceans, seas, islands, coastal and outermost regions and maritime sectors, including through sea-basin strategies or macro-regional strategies, the European Union has therefore developed an approach to ocean management and maritime governance in the IMP, including, as its environmental pillar, **Directive 2008/56/EC** of 17 June 2008 establishing a framework for a Community action in the field of marine environmental policy (**Marine Strategy Framework Directive**) to achieve a Good Environmental Status.

Together with ICZM and the MSFD, the IMP thus identifies MSP as an important tool for the sustainable development of marine areas and coastal regions, and for the restoration of Europe’s seas to environmental health.

Within this framework, the MSP Directive aims to deal with the high and rapidly increasing demand for maritime space for different purposes, including ecosystem and biodiversity conservation, requiring an integrated planning and management approach to face the multiple pressures and human impacts, such as maritime shipping, fishing activities and aquaculture installations (as indicated in the first Recital of Directive 2014/89/EU on MSP).

Moreover, the **Port State Control Directive 2009/16/EC** (replacing Directive 95/21/EC), as amended by the Directive 2013/38/EU, entered into force in 2013, aiming to ensure that there is effective control of compliance with international standards by ships in EU ports and, thereby, ensure that ships sailing in EU waters have been appropriately constructed and are adequately maintained. In addition, Directive 1999/35/EC provides for a system of mandatory surveys for the ro-ro ferries and high speed passenger crafts to be carried out by the host States.

Finally, the **participatory processes**, which are governed by a complex and organic EU legislation, tailored and implemented by Member States are to be taken into account.

The **Lisbon Treaty** contains specific provisions on democratic principles and the related strategies of democratization based on the participation of citizens and organized civil society in European governance. Article 10 prescribes that: *“Every citizen shall have the right to participate in the democratic life of the Union. Decisions shall be taken as openly and as closely as possible to the citizen”*. Further, Article 11.1 TUE, an example of a general principle addressed to European institutions, provides that: *“Institutions shall, by appropriate means, give citizens and representative associations the opportunity to make known and publicly exchange their views in all areas of Union action”*. The commitment of European institutions to promote

⁷⁰ Directive 2009/28/EC of the European Parliament and of the Council of 23.04.2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC.

⁷¹ Directive 2007/2/EC of the European Parliament and of the Council of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE).



participatory democracy entails the active promotion of “*an open, transparent and regular dialogue with the representative associations and civil society*” (Article 11.2 TUE). (Dr Víctor Cuesta Lopez, 2009).

Furthermore, **Directive 2003/35/EC** of 26 May 2003 (**the Public Participation Directive**) has been adopted with the objective to contribute to the implementation of the obligations arising under the Århus Convention, in particular by providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment; and improving the public participation and providing for provisions on access to justice.

A particular mention then deserves the **Directive 2001/42/EC** of 27 June 2001 on the assessment of the effects of certain plans and programs on the environment (**SEA Directive**), which provides for public consultation to ensure transparency in the decision-making process.

5.3 REGIONAL LEVEL

At the regional level, an important tool is constituted by the Regional Fisheries Management Organizations (RFMOs), managing fisheries that extend beyond the areas of national jurisdiction (e.g. straddling fish stocks and highly migratory fish stocks). In the Mediterranean Sea there is the **FAO General Fishery Council for the Mediterranean, FAO/GFCM**, which plays an important role for the marine mammals protection within planning, safeguarding of marine environment and of threatened species in connection with fishing activities, dealing with the interaction between vulnerable species and human activities also through the mitigation of by-catch and the depredation of marine mammals, in trying to eliminate the discard of fishing gear and related debris. Its Contracting Parties are called to comply with relevant international law and agreed upon standards, such as UNCLOS and the Food and Agriculture Organization's Code of Conduct for Responsible Fisheries as a voluntary agreement⁷². One of the general principles of the Code of Conduct is that the “*harvesting, handling, processing and distribution of fish and fishery products should be carried out in a manner which will ... minimize negative impacts on the environment*”. Under the Code of Conduct States, sub-regional and regional fisheries management organizations are invited to adopt appropriate measures to minimize catch by lost or abandoned fishing gear and its impact on non-target species, in particular endangered species (Article 7.2 (f) and (g); Article 7.6.9), and to conduct fishing activities with due regard for the IMO requirements relating to the protection of the marine environment and the loss of fishing gear (Article 8.4.1; Article 8.7.1).

The **Bern Convention on the Conservation of European Wildlife and Natural Habitats** has also to be mentioned, for which, within the habitats conservation, among the categories of protected areas and reserves shared with other parties (border areas) the only Italian reserve shared with other Parties is the Pelagos Sanctuary for Marine Mammals.

Within the framework of the **UN Environment/MAP-Barcelona Convention**, the only legally binding framework for the protection of the Mediterranean marine and coastal environment, the implementation of the legal documents and activities and the coordinated collection of various fundamental information for the management and planning of activities in the Mediterranean is planned and implemented through the Coordinating Unit of MAP providing also the Secretariat to the Barcelona Convention, based in Athens, Greece, and supported by the **MAP Components**, i.e. six Regional Activity Centres (RACs) and the Mediterranean Pollution Assessment and Control Programme (**MEDPOL**)⁷³, including – for what concerns the pilot case study – on levels of key contaminants and marine litter, through **MEDPOL**; on pollution from ships, through **REMPEC**; on biodiversity, through **SPA/RAC**, on integrated coastal zone management, through **PAP/RAC**.

A special role is played by the seven Protocols to the Barcelona Convention and the related strategies and Action Plans.

⁷² The Code was adopted by the Twenty-eighth Session of the FAO Conference, 31 October 1995.

⁷³ See <http://web.unep.org/unepmap/who-we-are/institutional-framework/secretariat/map-components>



The **Prevention and Emergency Protocol** on cooperation in preventing pollution from ships and, in cases of emergency caused by hydrocarbons and other prejudicial substances, combating pollution of the Mediterranean Sea (adopted in 1976; entered into force in 1978; amended in 2002; entered into force in 2004) aims to maintain and promote, either individually or through bilateral or multilateral cooperation, contingency plans and means for combating pollution of the sea by oil and other harmful substances.

Thus, it has to be recalled the **Regional Strategy for Prevention of and Response to Marine Pollution from Ships (2016-2021)** adopted by the COP 19 of the **Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC)**⁷⁴, which aims at preventing pollution from ships and maritime accidents and at enhancing the level of preparedness for response to major pollution incidents, in the Mediterranean region, thus implementing the 2002 Prevention and Emergency Protocol to the Barcelona Convention, as an integral part of the UNEP/MAP's Mid-Term Strategy (2016-2021), in the implementation of which the maritime industry together with the cooperation and participation of the private sectors concerned should be improved through consultations, technical and financial contributions. The Regional Strategy (2016-2021) lists the priority issues to be addressed when implementing the Emergency Protocol.

The **Dumping Protocol** for the prevention and elimination of pollution of the Mediterranean Sea by discharges from boats, airships, or incineration at sea (adopted in 1976; entered into force in 1978; amended in 1995, amendments not yet in force) aims to preserve the Mediterranean prohibiting activities such as incineration at sea and discharge of wastes or other materials, except for dredging materials, fishing wastes, platforms and other structures.

The Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources and Activities (**LBS Protocol**; adopted in 1980; entered into force in 1983; amended in 1996, entered into force in 2008), including Regional plans under Article 15 of LBS, aims to protect the

Mediterranean Sea against pollution from land-based sources, on eliminating substances that are toxic, persistent and liable to bioaccumulate.

The **Protocol on Specially Protected Areas and Biodiversity in the Mediterranean** (SPA/BD Protocol, adopted in 1982; entered into force in 1986; amended in 1995; and Annexes adopted in 1996, amended in 2009, 2012 and 2013) aims to protect and improve the state of the Mediterranean natural and cultural heritage, particularly through the establishment of Specially Protected Areas in order to conserve, protect and restore the health and integrity of ecosystems. Article 4 of the Protocol provides a comprehensive statement of the objective of marine protected areas with strong antecedents in the 1992 Convention on Biological Diversity.

Article 4

The objective of specially protected areas is to safeguard:

- (a) representative types of coastal and marine ecosystems of adequate size to ensure their long-term viability and to maintain their biological diversity;
 - (b) habitats which are in danger of disappearing in their natural area of distribution in the Mediterranean or which have a reduced natural area of distribution as a consequence of their regression or on account of their intrinsically restricted area;
 - (c) habitats critical to the survival, reproduction and recovery of endangered, threatened or endemic species of flora or fauna;
 - (d) sites of particular importance because of their scientific, aesthetic, cultural or educational interest;
 - (e) sites of biological and ecological value:
-

⁷⁴ www.rempec.org/admin/store/about/87_0.asp



- the genetic diversity, as well as satisfactory population levels, of species, and their breeding grounds and habitats;
 - representative types of ecosystems, as well as ecological processes;
- (f) sites of particular importance because of their scientific, aesthetic, historical, archaeological, cultural or educational interest.

The Protocol places a general obligation on Parties “to protect, preserve and manage in a sustainable and environmentally sound way areas of particular natural or cultural value, notably by the establishment of specially protected areas (Article 3(1)(a) – called “Specially Protected Area of Mediterranean Interest” (SPAMI) and provides for a set of protective measures to use in case such an area is established, including the regulation of the passage of ships or the regulation or prohibition of any activity involving the exploration or modification of the soil or the exploitation of the subsoil.

The Protocol is applicable to all marine waters, irrespective of their legal status as well as to the seabed and subsoil and to coastal terrestrial areas designated by each Party.

If a SPAMI is established on the high sea, the protection measures are those prescribed by the State proposing the SPAMI: other Parties must comply with measures but enforcement must be in accordance with international law⁷⁵. **The Pelagos Sanctuary for marine mammals, the site encompassing an area established also on the high sea, was included in the list in 2012.**

For the implementation of the 1995 SPA/BD Protocol through a measurable framework of actions, the **SAP/BIO** was adopted in **2003**, to assess the status of marine and coastal biodiversity and the main problems concerning biodiversity, and identifies concrete actions at national and regional level (UNEP/MAP-RAC/SPA 2003). Always in the context of the UN Environment/MAP-Barcelona Convention, additional specific biodiversity-oriented instruments have been adopted, including eight Regional Action Plans, seven of which on the conservation for the most threatened and most emblematic species and sensitive habitats in the Mediterranean, including cetaceans, in particular the bottlenose dolphin.

Under Article 11 and 12 of the Protocol, on the formulation and implementation of action plans for the conservation and recovery of species, Parties have adopted and therefore updated the Action Plan for the Conservation of Cetaceans in the Mediterranean Sea.

The **Action Plan (AP) for the conservation of cetaceans**⁷⁶ (Decision IG.21/17 on the Programme of Work of COP 18, 2013, on the update of the Action Plan for the Conservation of Cetaceans in the Mediterranean Sea and Decision IG.22/12 adopted by the 19th Meeting of the Contracting Parties to the Barcelona Convention), clearly states that concrete protection measures, coordinated programmes for scientific research and public awareness campaigns can ensure the survival and assist in the recovery of cetacean populations.

⁷⁵ Legal Aspects of Maritime Spatial Planning, European Commission, 2008.

⁷⁶ Action Plan for the Conservation of Cetaceans in the Mediterranean Sea. UN Environment/MAP Athens, Greece 2017. http://www.rac-spa.org/sites/default/files/action_plans/ap_cetaceans_en.pdf



The Action Plan for the conservation of cetaceans

With the objectives to protect and conserve the cetacean habitats including feeding, breeding and calving grounds, as well as to protect, conserve and recover the cetacean populations in the Mediterranean Sea Area, the AP recommends the following **general priorities**:

- prohibition of deliberate taking;
- prevention and elimination of pollution;
- elimination of incidental catches in fishing gear;
- prevention of over-exploitation of fishery resources;
- protection of feeding, breeding and calving grounds;
- monitoring, research and data collection and dissemination with regard to biology, behaviour, range and habitats of cetaceans;
- educational activities aimed at the public at large and fishermen.

The Barcelona Convention Contracting Parties have the **obligation** to take all the necessary measures to ensure a favourable conservation status for cetaceans by protecting them and their habitats from induced and cumulative effects resulting directly or indirectly from activities under national jurisdiction or control, closely cooperating to achieve and maintain a favourable conservation status for cetaceans.

Such measures should include:

- the prohibition of any deliberate taking of cetaceans as well as ensuring enforcement of existing laws;
- the adoption of fishery policies that avoid the adverse effects of fisheries on the conservation status of cetaceans in the Mediterranean Sea Area;
- the regulation of fishing gear and practices in order to eliminate by-catches and to prevent fishing gear from being lost or discarded at sea;
- a ban on the use of large-scale driftnets;
- the safe release of any cetaceans incidentally caught in fishing gear;
- the adoption of national and regional strategies to phase-out the discharge of toxic compounds in the Mediterranean Sea Area, giving priority to those substances contained in the black and grey lists of the Protocol for the Protection of the Mediterranean Sea Against Pollution from Land-Based Sources;
- the establishment of port reception facilities for the collection of ship generated garbage and of bilge and ballast waters;
- the development of scientific research and monitoring, using non-destructive and non-invasive procedures;
- the creation of a network of marine protected areas, including feeding, breeding and calving grounds for cetaceans;
- the development of widespread campaigns to increase public and fishermen awareness to support the conservation measures and to encourage the establishment of voluntary observer programmes to report sightings and strandings.

The activities envisaged in the Action Plan are coordinated by SPA/RAC in co-operation with other bodies concerned, in particular with reference to ACCOBAMS.

It has also to be ensured that:

- a) Cetaceans are covered, at national level, by appropriate regulation measures providing for the elimination of deliberate killing and for the mitigation of the adverse impacts from their interactions with human activities, in particular in relation to:
 - by catch and depredation in fishing gears;
 - seismic surveys and other marine noise generating activities;
 - harassment by leisure boating and scientific activities; and



- collisions with ships (ship strikes).
- b) Whale-watching activity is environmentally sound and sustainably conducted, through regulation or other appropriate approaches, using, as appropriate, high quality certification systems for whale-watching.
- c) The knowledge about cetacean populations is improved, furthermore ensuring that the data collected by the survey initiative serve also as baseline data for the Good Environmental Status concerning cetacean species as defined by the contracting Parties under the Ecological Objective 1 of the EcAp process.
- d) The cetacean-fisheries interactions is reduced or mitigated, in collaboration with the Secretariats of and GFCM, through investigating innovative and environmentally sound mitigation measures and by disseminating information on relevant best practices and successful initiatives.
- e) The impact of underwater noise is mitigated, pursuing the development and the implementation of a basin-wide strategy for underwater noise monitoring in the Mediterranean, as proposed by the ACCOBAMS/ASCOBANS/CMS Joint Noise working group, under the Ecological Objective 11 of the EcAp process; developing an acoustic mapping.
- f) Habitat conservation is pursued through the establishment by each Contracting Party of a list of marine areas under its jurisdiction identified as of special importance for cetaceans, where should be granted a protection status that ensures the long term preservation of the species and the sustainable management of human activities having impacts on cetaceans, using as appropriate the tools developed at regional and international levels for inventorying sites of conservation interest, in particular the list of areas of special importance for cetaceans in the ACCOBAMS area.

Furthermore, the Roadmap for a comprehensive coherent network of well-managed Marine Protected Areas (MPAs) to achieve Aichi Target 11 in the Mediterranean (MPAs Roadmap)⁷⁷ has to be considered appropriately. In order to guide the Contracting Parties to the Barcelona Convention and harmonize their efforts to achieve the globally agreed Aichi Target 11, the Roadmap activities proposed are oriented towards achieving four specific Objectives.

Objective 1: Strengthen networks of protected areas at national and Mediterranean levels, including in the high seas and in ABNJ, as a contribution to the relevant globally agreed goals and targets.

Objective 2: Improve the network of Mediterranean MPAs through effective and equitable management.

Objective 3: Promote the sharing of environmental and socio-economic benefits of Mediterranean MPAs, and the MPAs integration into the broader context of sustainable use of the marine environment and the implementation of the ecosystem and marine spatial planning approaches.

Objective 4: Ensure the stability of the network of Mediterranean MPAs by enhancing their financial sustainability.

The **Offshore Protocol** for the protection of the Mediterranean Sea from pollution caused by exploration and

⁷⁷ Roadmap for a comprehensive coherent network of well-managed Marine Protected Areas (MPAs) to achieve Aichi Target 11 in the Mediterranean. UN Environment/MAP, Athens, Greece, 2017.

http://www.rac-spa.org/sites/default/files/action_plans/fdr_en.pdf



exploitation of the continental Shelf, the sea floor and its subsoil (adopted in 1994, entered into force in 2011. Not yet ratified by Italy) aims to regulate, organize, and limit the increase in the activities concerning exploration and exploitation of the Mediterranean seabed and its subsoil, considering their adverse impact on environment and human beings. In particular, under Article 12, Parties are requested to prohibit the disposal of garbage at sea, including all plastics and therefore also the synthetic ropes, fishing nets and plastic garbage bags, all other non-biodegradable garbage. In parallel, Parties shall ensure (Article 13) the disposal of all wastes and harmful or noxious substances and materials in designated onshore reception facilities, adopting the related sanctions in respect of illegal disposal. Cooperation and coordination is requested for the development and implementation of contingency plans in cases of emergency to combat accidental pollution (coordinated with the contingency plan foreseen by the Emergency Protocol) (Article 16 and Section V). Finally, with regard to Specially Protected Areas of Mediterranean Importance, such as the Pelagos Sanctuary, Article 21 provides that “Parties shall take special measures to prevent, abate, combat and control pollution arising from activities in these areas. Such measures may include, *inter alia*:

- a) Special restrictions or conditions when granting authorizations for such areas;
- b) The preparation and evaluation of environmental impact assessments;
- c) The elaboration of special provisions in such areas concerning monitoring, removal of installations and prohibition of any discharge;
- d) Intensified exchange of information among operators, the competent authorities, Parties and the Organization regarding matters which may affect such areas.”

The **Hazardous Wastes Protocol** on the prevention of pollution of the Mediterranean Sea by transboundary movements of hazardous wastes and their disposal (adopted in 1996, entered into force in 2011) aims to reduce and progressively eliminate the hazardous waste generation, generally through substitution and other clean production methods considering the danger threatening the Mediterranean Sea caused by the transboundary movements and disposal of hazardous wastes, in the light of the Basel Convention on the control of transboundary movements of hazardous wastes and their disposal.

The **Protocol on Integrated Coastal Zone Management in the Mediterranean** (adopted in 2008, entered into force in 2011. Not yet ratified by Italy.) aims at establishing a common framework for the integrated management of the Mediterranean coastal zones, meant as a dynamic process for the sustainable management and use of such zones. In order to preserve the natural habitats and ecosystems of the coastal zone, which includes the territorial sea, the Contracting Parties are invited to adopt specific activities, laws and measures within the framework of a dedicated planning in this sense. Considering the aspect of protecting marine mammals in a planning context, the following provisions have in particular to be considered . Under Article 9, economic activities shall be conducted considering the fragile nature of coastal zones; in particular fishing practices must be compatible with sustainable use of natural marine resources; aquaculture shall be regulated by controlling the use of inputs and waste treatment; tourism is encouraged as far as it is sustainable to preserves coastal ecosystems, regulating or prohibiting the practice of various sporting and recreational activities, including recreational fishing and shellfish extraction; maritime activities shall be conducted in such a manner as to ensure the preservation of coastal ecosystems. Moreover, Article 10 requests Parties to take specific measures also to protect marine areas hosting habitats and species of high conservation value (editor’s note, such as the marine mammals), through legislation, planning and management, promoting regional and international cooperation for the implementation of common programmes on the protection of marine habitats. In accordance with the provisions of the MSP Directive, the ICZM Protocol, Article 28, identifies a transboundary cooperation as the fundamental process to coordinate national coastal strategies, plans and programmes related to contiguous coastal zones.

To varying degrees, the Protocols to the Barcelona Convention, addressing specific aspects for the achievement of the objectives of the Convention and, therefore, for the overall protection of the



Mediterranean, constitute substantial and solid juridical and operational tools for the preservation of marine mammals and their habitat.

To conduct an even more accurate analysis, the **State of the Mediterranean Marine and Coastal Environment Report 2012** gives a picture of multiple pressures acting simultaneously, and affecting different components of the Mediterranean marine and coastal environment, highlighting the following as the major issues requiring coordinated policy and management responses in the coming years in order to stem the tide of degradation of the Mediterranean ecosystems: **coastal development and sprawl**, driven by urban and touristic development; **chemical contamination** of sediments and biota caused by pollution from urbanisation, industry, antifoulants, and atmospheric transport; **eutrophication** caused by human-mediated input of nutrients into marine waters; **marine litter**; **marine** on biota, especially marine mammals, caused by intense maritime traffic, particularly in the Western Mediterranean, and intense offshore exploration and military activities; **invasive non-indigenous species** altering the food web and modifying habitats; **over-exploitation** beyond sustainable limits leading to changes in community structure, ecological processes and the delivery of ecosystem services and – on the other side – aquaculture adding new pressures such as nutrient and organic matter pollution eutrophication and eventual benthic anoxia, pollution through the release of antibiotics and biocides, and the introduction of non-indigenous species.

Among these pressures there is transport, specifically **maritime transport** as a strong traditional economic sector in the Mediterranean. In fact, the Mediterranean Sea is among the world's busiest waterways, accounting for 15% of global shipping activity by number of calls and 10% by vessel deadweight tonnes (dwt). (UNEP/MAP – Barcelona Convention 2012).

The maritime traffic, intersected by the oil tanker routes, branches off from east to west for the discharge terminals in the Gulf of Genoa and near Marseille; from south to north, connecting the Algerian and Libyan cargo terminals with the northern Mediterranean oil ports. (EEA and UNEP 1999).

There is also evidence of the impact of fishing activities on the populations of cetaceans, with by-catches – the accidental capture of non-target species in fisheries – resulting in injury and mortality. By catch is a serious issue in many parts of the Mediterranean. Longlines and driftnets result in significant by catch also of marine mammals (especially whales and dolphins) (Abdul Malak et al. 2011). Deterrent measures that attempted to reduce such by-catches had proved to be effective in some areas and useless in others, and therefore further methods need to be developed.

Illegal driftnet activities carried out by EU fishing vessels continue to be reported and have been cause of criticism regarding the Union compliance with applicable international obligations.

Banning driftnets respond to the new Common Fisheries Policy's goal to minimise the impact of fishing activities on the marine ecosystems and to reduce unwanted catches as much as possible.

Finally, it has to be underlined the important role of **Integrated Monitoring and Assessment Programme (IMAP)**, adopted by the Contracting Parties to the Barcelona Convention in their COP 19, for the production of knowledge at the regional sea level and the sharing of data and information, through a region-wide common indicators as the basis of harmonised monitoring at national level and regional data based assessments, with a particular mention of the Shared Environmental Information System (SEIS) Principles in the same IMAP Decision.

5.4 NATIONAL LEVEL AND THE ENVIRONMENTAL ASSESSMENT PROCESSES

Finally, at the national level, the measures within planning are taken over, adopted, or to be adopted by the Mediterranean Countries for the marine mammals protection in the Mediterranean Sea Area.

Countries and organisations should take into account and develop the work related to the effects of chemical pollution on health and reproductive cycles of marine mammals and of the species on which they feed.



In particular, as regards the major tool dedicated to the protection of marine mammals in this area, the **Pelagos Sanctuary** has a governance type through collaboration among relevant authorities (the three Countries Government: France, Italy and the Principality of Monaco), which address threats collectively. In fact, the governing body of the Agreement, the Conference of the Parties, has no direct competence on the management of the Sanctuary that is fully demanded to the National competence⁷⁸.

Thus, in these three Countries cetaceans are protected by national law (in Italy since 1980) and they have ratified the Bonn, Bern and Washington Conventions, the 1996 Barcelona SPA/BD Protocol and the 1996 ACCOBAMS Agreement, and have as well joined the International Whaling Commission (France since 1948, Monaco since 1982, and Italy since 1998).

In France and Italy, as part of the European Union, driftnets are outlawed since 2002 and a decommissioning process of the fleet was done.

As for the legal protection status of the Pelagos Sanctuary, the following measures have been taken at national levels:

France

- Ministerial Decree 01.07.11 establishing the list of protected marine mammals and the related protection measure at national scale, including the forbidding of the cetacean intentional disturbance.
- Ministerial Decree 11.07.11 regulating the use of the driftnets.
- Decree 07.12.11 related to the management of the nautical events.
- Decree No. 2012-1148 of 12.10.12 related to the declaration of the French EEZ in the Mediterranean Sea.
- The label “high quality whale watching” has been implemented in France in order to encourage whale-watching operators to carry out their activity on a sustainable way (Monaco is following the same process).

Italy

- Ministerial Decree 21.05.1980 related to cetacean protection.
- Ministerial Decree 03.05.1989 on “Discipline of the capture of cetaceans, tortoises and sturgeons”, prohibiting the capture of the cetaceans.
- Ministerial Decree of 22.05.1991 (and subsequent modifications) regulating the use of the driftnets.
- Law No. 157 of 11.02.1992 related to the total protection of the marine mammals.
- Furthermore, the regional provisions are to be mentioned and, in particular, the Tuscany Region Law No. 3 of 12.01.1994 on the implementation of the Law No. 157 of 11.02.1992 and the Sardinia Region Law No. 23 of 29.07.1998 on the protection of wildlife and on hunting in Sardinia: both laws foresee that the monk seal (*Monachus monachus*) and all species of cetaceans (*Cetacea*) (i.e. all marine mammals) are particularly protected, also from the point of view of sanctions.
- Law No. 391 of 11.10.2001 that ratifies the Agreement; its Article 5 provides for the prohibition of competitions of fast motorboats in the Italian territorial waters included in the Sanctuary area.
- Law No. 217 of 15.12.2011 enhancing the sanctions of the violation of the EU ban of the use of the driftnets for swordfish.
- Decree of the President of the Republic No. 209 of 27.10.2011 on the Italian institution of Ecological Protection Zones (EPZ) of the North-Western Mediterranean.
- Inter-ministerial Decree No. 70 of 2.03.2012 on general provisions to restrict or prohibit the transit of merchant ships for the protection of sensitive areas in the territorial sea.
- Law No. 217 of 15.12.11 that enhances the sanctions in case of violation of the EU ban of driftnets.

⁷⁸ See the Periodic review of the SPAMIs for the Pelagos Sanctuary.



Principality of Monaco

- Sovereign order dated 1993 and related to marine reserves, fisheries and underwater activities. The Agreement does not include any provision on penalties or sanctions.

The same Parties to the Pelagos Agreement (France, Italy and Monaco) have signed both the ACCOBAMS Agreement that represents a buffer zone for the Pelagos Sanctuary, and the RAMOGE Agreement against pollution (coastal and at sea) and their respective Permanent Secretariats closely cooperate.

To face accidental pollution, RAMOGEPOL covering the whole Pelagos Sanctuary would be activated; in case of ship strikes and stranding events, National Stranding Networks have been implemented.

Interactions between fisheries and marine mammals should be investigated by designing and implementing appropriate research and awareness initiatives, and inviting the EU Non-Member States to consider the banning of driftnet use.

To improve the implementation of the code of conduct for whale watching in the Mediterranean, it should be integrated into national legislation, as well as regulation to avoid the use of powerful noise sources – such as low-frequency active sonar – in those areas known to be highly frequented by cetaceans.

Equally important is to consider interactions with human activities, to be properly addressed to solve existing and potential problems, which still include:

- Interactions with fishing: by-catch in pelagic fisheries and competition between small-scale, artisanal coastal fisheries and coastal odontocetes.
- Whale watching: recommendations foreseen that the correct base is a strong educational element; guidelines are adopted to minimise disturbance; it has been established a national registry of commercial whale watching operators; activities are regularly monitored; and scientific data are collected on all cruises.
- Noise: effects of human-produced noise in the marine environment (including noise deriving from industrial, military, research, and shipping sources) have to be constantly assessed and regulated. In Italy, in line with the requirement of the MSFD, a national register of impulsive sources of noise has been established (localized and limited in time) and the University of Pavia, with CNR and CoNISMa, has been charged with implementing and managing this register with a structure open to future research and international sharing. The purpose of the Registry is to allow the assessment of the number of days/year and of the areas affected by sources of impulsive noise of high power that have the potential to expose marine animals to sound levels that cause damage.
- Traffic: impact of maritime traffic on cetaceans is assessed, and where possible mitigated.

The plans of the MSP shall, due to the nature of the contents, be submitted to other two operative tools foreseen by the international and therefore EU legal systems: the **Strategic Environmental Assessment (SEA)** and the **Environmental Impact Assessment (EIA)** procedures, which in turn provide for further steps and competent subjects. As part of the SEA procedure and for the purpose of expressing the “reasoned opinion”, the Italian Ministry for the Environment (MELS) is the competent authority and the Ministry of Cultural Heritage (MiBACT) is the concerting authority.

In particular, the SEA will be the object of consultation between Countries directly or indirectly affected by the impacts of the Plan.

As already seen, also participation processes will be guaranteed through the SEA procedure. The Italian Technical Committee (TC), already in its composition, guarantees a broad set of public entities participating in the drafting of the plan. The TC can also provide for consultations and hearings with other public and private parties in order to better focus the various issues dealt with.

The current legislation (Directive 2001/42/ EC, Italian Legislative Decree 3 No. 152 of April 2006,), *vice versa*, requires that acts producing direct environmental effects are subject to Strategic Environmental Assessment.



To facilitate the correct application of EU legislation, the document on the implementation of Directive 2001/42/ EC concerning the assessment of the effects of certain plans and programmes on the environment, by the European Union itself, clarifies that, even if the terms “plans” and “programmes” *“are not synonymous, both can cover a wide range of meanings that sometimes coincide”*. According to the European legislation, thus, a “plan” shall be considered *“any act that decides how to implement a strategy for the reorganization of the territory, setting rules or an orientation on the type of development that can be allowed in certain areas”*.

As already mentioned, the sustainable development of the national territory, including the marine spaces, should be based on a balanced relationship between social needs, economic activities and the protection of the environment, therefore in coherence also with the **European Landscape Convention of the Council of Europe of 20 October 2000** and the **European Space Development Scheme** (Potsdam, Germany, 1999).

In particular, at a sub-national level, there are the **Regional Landscape Plans (RLP)** that are instruments of territorial governance drawn up by the Region together with the Ministry for Cultural Heritage and Activities, which aims to protect, both in terms of conservation and preservation and use and enhancement, specific categories of territorial assets, including coastal territories, parks and reserves. **They should be seen as fundamental key tools of a “hinge” between the local spatial planning and the marine spatial planning (MSP).**

The **Regional Landscape Plan of the Autonomous Region of Sardinia**, referred to in the Regional Law No. 8 of 25 November 2004, approved with D.G.R. No. 36/7 of 5 September 2006, provides for the identification of the areas of coastal landscape, “on the basis of precise territorial analysis, of the environmental, historical-cultural and settlement values of the territories, among which are included (for Northern Sardinia, falling in the pilot case): the Gulf of Asinara, the Bassa Valle del Coghinas, the north-western coast of Gallura, the north-eastern coast of Gallura.

Twenty-seven (27) coastal landscape areas have been identified, to represent the reference area for the qualitative landscape differences of the regional territory, which outline the coastal landscape and which open up relations with the internal landscape areas in a unitary perspective of active conservation of the environment landscape of the region. The delimitation of the areas does not take on the meaning of boundary, caesura, leap, discontinuity; indeed, it should be understood as the “welding” between different territories useful for the recognition of the specificities and identity of a place.

The categories of goods encompass the *Posidonia Oceanica* meadows and areas of additional naturalistic interest, including the priority species and habitats in accordance with the Habitats Directive 43/92; and, pursuant to Article 142 of Legislative Decree No. 42 of 22 January 2004 and subsequent amendments, embrace also National and Regional Parks and Reserves (including marine ones), as well as the parks' external protection areas (Article 17 of the RLP). Such landscape assets are the object of conservation and protection, aimed at maintaining the characteristics of the constituent elements of the relative morphologies in order to preserve the integrity or the state of optimal balance between natural habitats and anthropic activities (Article 18 of the RLP). For them, any transformation is subject to a **landscape authorization**.

6. OVERVIEW OF THE EXISTING REGIONAL INSTITUTIONAL COOPERATION STRUCTURES IN THE PILOT AREA, SUPPORTING TRANSNATIONAL COLLABORATION IN THE FIELDS RELEVANT FOR MSP

6.1 REGIONAL SEA CONVENTIONS: BARCELONA CONVENTION AND RACS

The Regional Seas Programme of the United Nations Environment Programme (UNEP) is intended to foster regional cooperation for the benefit of the marine and coastal environment. Most of the Regional Seas initiatives function through non-binding action plans; some however have also adopted legally binding Conventions, implemented through Protocols, addressing specific issues such as, *inter alia*, protected areas.



The Protocols are only framework documents, which rely on States Parties to implement their provisions in national legislation.

Under the Regional Seas Programme, multilateral agreements have been adopted for eight regions with the objective of protecting the marine environment. Additional Protocols dealing with specially protected marine areas have been concluded for some of them.

The **Mediterranean Action Plan (MAP)**, adopted in 1975 as a cooperative initiative undertaken by Countries bordering the Mediterranean Sea and the European Union, is the first plan to become a Regional Seas Programme under the United Nations Environment Programme (UN Environment). The **1976/1995 Convention for the Protection of the Marine Environment and Coastal Regions of the Mediterranean (Barcelona Convention)** has been established within this framework. MAP's goal has gradually included integrated coastal zone planning and management, biodiversity conservation and sustainable development as the key tools through which solutions are being sought.

From an institutional point of view of the role of the governing bodies, the UN Environment/MAP-Barcelona Convention is implemented through specific Protocols and Programmes, of which the implementation is coordinated by the MAP Coordinating Unit Barcelona Convention Secretariat supported by relevant MAP Components, namely the MED POL Programme and six Regional Activity Centres (RACs). The Contracting Parties – responsible for the implementation of the Barcelona Convention and its Protocols – have the support of the Secretariat of the Barcelona Convention entrusted to UNEP and its Coordinating Unit under the Unit's supervision of the MAP's Regional Activities Centres (RACs)⁷⁹.

The MAP Components contribute for the implementation of the relevant Protocols to the Barcelona Convention, in particular on the cross-cutting issues, supporting Contracting Parties with technical assistance and platforms for collaboration, and mobilization of financial resources, where appropriate, to undertake and successfully implement the outputs agreed in the relevant Protocols to the Barcelona Convention and the related Action Plans, including cooperation across the marine region concerned on issues of a transnational nature. They also periodically assess progress and lessons learned through the Mediterranean region as well as provide analyses of comparative practices and experiences, useful as a basis for the transboundary cooperation and for the many projects that they lead and coordinate on the cooperation and collaboration between Contracting Parties.

The MAP Coordinating Unit establishes and strengthens relations with other Regional Seas Programmes, the secretariats of the international conventions relevant to the region, the United Nations Commission on Sustainable Development, and the international financial institutions related to environment and sustainable development in the Mediterranean. As may known, the EU is a Contracting Party of the 80/MAP-Barcelona Convention, thus having a fundamental and privileged role in the implementation of the Barcelona System in a coherent way with the EU framework, also by encouraging cooperation tools.

Included in the definition of regional institutional cooperation structures active in the pilot area to support transnational collaboration in the fields relevant for MSP, a particular role is played both by REMPEC and SPA/RAC.

- The **Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC)**, administered by the International Maritime Organization (IMO) in cooperation with UN Environment, aims to contribute to preventing and reducing pollution from ships and combating pollution in case of emergency, assisting the Contracting Parties in meeting their obligations under the Barcelona Convention and the Prevention and Emergency Protocol as well as in implementing the Regional Strategy for Prevention of and Response to Marine Pollution from Ships, and also in mobilizing the regional and international assistance in case of an emergency under the Offshore Protocol.

⁷⁹ <http://web.unep.org/unepmap>



- Thus, the Centre plays a key role in the pilot area for assistance to issues and problems, if not emergencies, linked and connected with maritime traffic, and maritime activities in general (including offshore).
- The **Specially Protected Areas Regional Activity Centre (SPA/RAC)** aims to contribute to the protection and preservation and sustainable management of marine and coastal areas of particular natural and cultural value and threatened and endangered species of flora and fauna, including marine mammals, also through the implementation of the obligations under the Barcelona Convention, under the SPA/BD Protocol and under the relevant Action Plan.
- The **Priority Actions Programme Regional Activity Centre (PAP/RAC)** aims to contribute to sustainable development of coastal zones and sustainable use of their natural resources; provides assistance to Mediterranean Countries in the implementation of the Barcelona Convention, in meeting their obligations under the ICZM Protocol and the related Action Plan and in implementing the MSSD. Article 17 of the ICZM Protocol, calls for the Parties to define, with the assistance of the Centre, a common regional framework for integrated coastal zone management in the Mediterranean to be implemented by means of appropriate regional action plans and other operational instruments, as well as through their national strategies⁸⁰.

UN Environment/MAP-Barcelona Convention is first and foremost a governance framework, facilitating cooperation and decision-making in the Mediterranean region. UN Environment/MAP therefore contains in itself those elements that we have seen as belonging to the TMSP, i.e. the instrument of planning based on cooperation between transboundary countries bordering the same sea basin⁸¹.

In this context, particular relevance has assumed the ecosystem approach, which has become the guiding principle to all policy development undertaken under the auspices of the Barcelona Convention since 2008, when the Contracting Parties to the Barcelona Convention agreed to progressively implement the EcAp to the management of human activities, with the ultimate objective of achieving the Good Environmental Status (GES) of the Mediterranean Sea (taken by the EU MSFD).

Furthermore, in 2016 the Contracting Parties to the Barcelona Convention (COP19) adopted the **Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria (IMAP)**⁸², to be implemented between 2016 and 2021 to support the assessment of the ecological status of the Mediterranean Sea, so that management of human activities is based on sustainable use of the Mediterranean Sea ecosystems.

Particular importance assumes the **Ecological Objective on Biodiversity (EO1)**, which foresees that the Biological diversity is maintained or enhanced. The quality and occurrence of coastal and marine habitats and the distribution and abundance of coastal and marine species are in line with prevailing physiographic, hydrographic, geographic and climatic conditions. The related **Operational Objectives** include that: species distribution is maintained; population size of selected species is maintained; population condition of selected species is maintained; key coastal and marine habitats are not being lost.

The following MAP Barcelona Convention GES **Targets** are focused on **marine mammals**:

- Human activities that have the potential to exclude **marine mammals** from their natural habitat within their range area or to damage their habitat are regulated and controlled;
 - Conservation measures implemented for the zones of importance for **cetaceans**;
 - Fisheries management measures that strongly mitigate the risk of incidental taking of monk seals
-

⁸⁰ <http://web.unep.org/unepmap/who-we-are/institutional-framework/secretariat/map-components>

⁸¹ UNEP/MAP: State of the Mediterranean Marine and Coastal Environment, UNEP/MAP – Barcelona Convention, Athens, 2012.

⁸² See Decision IG.22/7.



and **cetaceans** during fishing operations are implemented;

- Populations recover toward natural levels (**marine mammals**);
- Decreasing trends in human induced mortality (**marine mammals**).

As regards **pollution from ships**⁸³, IMAP specifically addressed it under Ecological Objective 9 (Contaminants): *“Regarding acute pollution events, while Contracting Parties already have an existing monitoring obligation under Article 9 of the Prevention and Emergency Protocol, the efforts of which need to be strengthened, it is also foreseen that further analysis of the links in between acute pollution events and their effects on biota and the development of specific assessment criteria for this latter should occur”*. In addition to EO9, three more EOs have been identified by **REMPEC**⁸⁴ National Focal Points as potentially relevant with respect to pollution from ships under the **Prevention and Emergency Protocol** to the Barcelona Convention: EO2, non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystem; EO9, contaminants cause no significant impact on coastal and marine ecosystems and human health; EO10, marine and coastal litter does not adversely affect coastal and marine environment; and EO11, noise from human activities causes no significant impact on marine and coastal ecosystems⁸⁵. Furthermore, related to the Ecological Objective 10 “Marine and coastal litter do not adversely affect the coastal and marine environment”, the additional candidate common indicator 24 was identified on “Trends in the amount of litter ingested by or entangling marine organisms, **especially mammals**, marine birds and turtles”. Ingestion of and

⁸³ List of main relevant International Conventions dealing with:

Maritime Safety and Prevention of Pollution from Ships:

The International Convention on Load Lines, 1966 (LL, 1966);
The Protocol of 1988 relating to the International Convention on Load Lines (1966);
The International Convention for the Safety of Life at Sea, 1974 (SOLAS, 1974);
The International Convention for the Prevention of Pollution from Ships, 1973, as amended by the Protocols of 1978 and 1997 relating thereto (MARPOL) and its Annexes;
The International Convention on Standards of Training, Certification and Watch-keeping for Seafarers, 1978 as amended in 1995 (STCW, 1995);
The Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREG, 1972), as amended;
The International Convention on Tonnage Measurement of Ships, 1969 (TONNAGE, 1969);
The International Convention on the Control of Harmful Antifouling Systems on Ships (2001);
The ILO Merchant Shipping (Minimum Standards) Convention, 1976 (No. 147), and the Protocol of 1996 relating thereto.

Combating Pollution:

The International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990 (OPRC);
The Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances 2000 (OPRC-HNS Protocol);
The International Convention relating to Intervention on the High Seas in Cases of Oil Pollution Casualties (1969) (INTERVENTION 1969) and its Protocol relating to Intervention on the High Seas in Cases of Pollution by Substances other than Oil, 1973 (INTERVENTION PROTOCOL 1973);
The International Convention on Salvage, 1989 (SALVAGE, 1989);
The Nairobi International Convention on the Removal of Wrecks (2007).

Liability and Compensation for Pollution Damage:

The International Convention on Civil Liability for Oil Pollution Damage, 1992 (CLC, 1992);
The International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1992 (FUND, 1992);
The Protocol on the Establishment of a Supplementary Fund for Oil Pollution Damage (2003);
The International Convention for the Control and Management of Ship's Ballast Water and Sediments (2004);
The Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships (2009);
The 1996 London Protocol on Prevention of Pollution by Dumping of Wastes and Other Matter;
The ILO Merchant Shipping (Minimum Standards) Convention, 1976 (No. 147), and the Protocol of 1996 relating thereto;
The Protocol of 1996 to amend the Convention on Limitation of Liability for Maritime Claims (1976);
The International Convention on Civil Liability for Bunker Oil Pollution Damage (2001);
The 2010 Protocol to the International Convention on Liability and Compensation for Damage in Connexion with the Carriage of Hazardous and Noxious Substances by sea (1996).

Source: REMPEC/WG.41/INF.12

⁸⁴ In the UN Environment/MAP-Barcelona Convention context the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC) is the responsible Centre for the coordination of the activities related to the implementation of the Protocol concerning Cooperation in Preventing Pollution from Ships and, in Cases of Emergency, Combating Pollution of the Mediterranean Sea (“the 2002 Prevention and Emergency Protocol”) to the Barcelona Convention. The Centre is based in Malta and administered by the IMO in cooperation with UNEP/MAP.

⁸⁵ See REMPEC/WG.41/INF.12 “Consultancy Report for the development of a quality assurance programme for data reporting and collection, in accordance with Article 5 of the 2002 Prevention and Emergency Protocol, as well as for the development of the 2017 Quality Status Report (QSR2017) for the Mediterranean (English only)”.



entanglement in marine litter by marine mammals are considered by the EU MSFD TGML (Technical Group on Marine Litter) for further development.

Useful available knowledge about the Mediterranean environment's condition, in particular the major drivers and pressures affecting the sea and its coastal inhabitants, the current and prospective impacts of collective human activity, and emerging issues in coastal and marine management can be found on the latest Regional Assessment Report on the state of the Mediterranean marine and coastal environment, the Mediterranean Quality Status Report of 2017⁸⁶.

6.2 OTHER INTERNATIONAL AGREEMENTS, NETWORKS OR STRUCTURES OF MEMBER STATES'

COMPETENT AUTHORITIES: RAMOGE AND PELAGOS AGREEMENTS

In addition to the legislation of the European Union and, in particular, the "Habitats"⁸⁷ Directive with specific provisions applicable to cetaceans, the international environmental conventions of relevance to the protection of marine mammals have been ratified by the concerned member States, Italy and France, and by most of the Mediterranean Countries. In particular in this context it has to be mentioned, in addition to the Barcelona Convention and its Protocols and the Conventions on endangered species, (such as the Bonn Convention of migratory species of wild animals, the Bern Convention on the conservation of European wildlife and natural habitats, CITES, and the Agreement on conservation of cetaceans of the Black Sea, Mediterranean Sea and contiguous Atlantic Area-ACCOBAMS)⁸⁸, the Ramoge and Pelagos Agreements, both between Italy, France, and the Principality of Monaco.

In the framework of the Barcelona Convention and the related Mediterranean Action Plan, the 1976 **Agreement on the protection of the marine and coastal environment of an area of the Mediterranean Sea (RAMOGE) Agreement**, from the three States Parties: France/Provence-Alpes-Côte d'Azur, Principality of Monaco and Italy/Liguria Region) establishes a pilot area for the prevention and control of pollution of the marine environment, constituting an instrument of scientific, technical, legal and administrative cooperation with which the Parties adopt integrated management actions. In 1993, with the implementation of the RAMOGEPOL Plan, the RAMOGE Agreement extended its competences on the high seas, thus also including the scope of the Pelagos Agreement and, more recently, of the MSP Directive. In the EU framework, to which two of the three States Parties to the Agreement belong, in particular the Marine Strategy Framework Directive obliges Member States bordering the same maritime region to draw up "in close cooperation" plans in order to guarantee the "Good Environmental Status" of the respective sea basins, based on detailed assessments on the state of the marine environment, defining the actions to be undertaken and the objectives to be achieved.⁸⁹

The 1999 **Pelagos Agreement establishing the Sanctuary for Mediterranean Marine Mammals** aims *"to ensure a favourable conservation status for marine mammals by protecting them and their habitats from the direct and indirect negative impacts of human activities"* (Article 4 of the Agreement), and thus to create *"jointly coordinated initiatives to protect marine mammals and their habitats from all sources of disturbance caused by human activity: pollution, noise, accidental capture and injury, disruption, etc."*, which are also associated with natural causes (climatic changes, epidemics, etc.). To this end, the Parties are called to identify

⁸⁶ See the 2017 Mediterranean Quality Status Report <http://web.unep.org/unepmap/2017-mediterranean-quality-status-report>; the Initial Integrated Assessment of the Mediterranean Sea (UNEP/MAP 2012), the UNEP/MAP State of the Environment and Development in the Mediterranean Report 2009 (UNEP/MAP/BP/RAC 2009), the EEA-UNEP/MAP 2006 report Priority Issues in the Mediterranean Environment (EEA and UNEP 2006), the UNEP/MAP 2005 Report Transboundary Diagnostic Analysis for the Mediterranean Sea (UNEP/MAP/MED POL 2005), and the EEA-UNEP/MAP 1999 Report State and Pressures of the Marine and Coastal Mediterranean Environment (EEA and UNEP 1999). Prior reports on the state of marine and coastal environment in the Mediterranean were produced within the MAP system in 1996 and 1989 (UNEP/MAP/MED POL 1996 and UNEP/ MAP/MED POL/WHO/FAO 1989).

⁸⁷ Council Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora.

⁸⁸ See Chapter 6.

⁸⁹ <http://www.ramoge.org>



the threats posed to cetacean populations by these activities and taking appropriate measures to reduce them. The area is in fact subject to strong pressure from anthropic activities that result in serious impacts on the populations of marine mammals. Among others, these impacts are due to certain fishing techniques, prey depletion, increasing chemical and biological pollution, urbanization, collision with boats, as well as whale watching activities⁹⁰.

The Agreement covers an area of about 90,000 km² in the North-Western Mediterranean between Italy, France and the island of Sardinia, and includes Corsica and the Tuscan Archipelago.

The Sanctuary consists of maritime areas located in the inland waters and territorial seas of the French Republic, the Italian Republic and the Principality of Monaco, as well as the adjacent areas of high sea.

As already specified, in November 2001, the Sanctuary was included in the SPAMI list according to the requirements of the SPA/BD Protocol to the Barcelona Convention.

The portion of the Sanctuary included in the Italian territorial waters extends for about 25,000 km² and is included in the Italian Official List of Protected Areas (and identified as an “EUAP area”)⁹¹.

Under UNCLOS, the area in question consists partly of waters over which each Party exercises its sovereignty or jurisdiction.

Wildlife particularly protected (*also under the Italian Law No. 157/1992, Article 2*)

CLASS	SPECIES
(Marine) Mammals	Monk seal (<i>Monachus monachus</i>) All species of cetaceans (<i>Cetacea</i>)

Italy and **France** are EU Member States, the **Principality of Monaco** is part of the **EU** customs territory through an agreement with France, and it is administered as part of France. All three are Contracting Parties to the Barcelona Convention. At any rate, the Agreement (Article 7) specifies that in the Sanctuary the Parties comply with the international and European Community regulations.

The European Union exercises, for two States Parties (France and Italy), exclusive competence in the conservation and management of living marine aquatic resources and the related technical measures for the conservation of Mediterranean fishery resources are managed and regulated under the umbrella of the EU Common Fishery Policy (CFP).

The Parties are called to adopt national strategies aimed at the progressive suppression of toxic discharges into the Sanctuary, also through the implementation of the LBS Protocol and the Action Plans of the relevant Protocols of the Barcelona Convention. Article 14, in particular, provides for the competences of individual

⁹⁰ <https://www.sanctuaire-pelagos.org>

⁹¹ The Law No. 394/1991 on the “Framework Law on Protected Areas”, as the main reference for the establishment and management of Italian protected natural areas, establishes the Official List of Protected Areas (EUAP), in which the protected areas are registered. Article 36 identifies – in addition to the areas referred to in Article 31 of Law No. 979/1982 – the marine areas for the establishment of marine parks or marine reserves; among these areas is also included the “Alto Tirreno-Ligurian Sea Sanctuary of the Cetaceans”.



States, including ships⁹². In addition, the Parties invite the other States that carry out activities in the area of the Sanctuary to take measures similar to those provided for in the Agreement, taking into account the Action Plan adopted in the framework of the UN Environment/MAP-Barcelona Convention for the conservation of cetaceans in the Mediterranean and the ACCOBAMS Agreement or any other relevant treaty (Article 17).

While the Pelagos Sanctuary represents a unique example of transboundary conservation area in the Mediterranean, pressures on the eight regular resident cetacean species as well as the transient ones, have dramatically increased in recent decades with different origins: ship strikes, fishing bycatches⁹³, prey depletion, disturbance and stress (whale watching, commercial and leisure boats), underwater noise, chemical and biological pollution (including microplastics), and climate change affect survival, recruitment, reproductive success, mutation rates and may play a significant role in the partitioning of genetic variation among populations exposed to high and less extreme stress (Fossi et al., 2013)⁹⁴.

Currently, four main issues are challenging the management of the Pelagos Sanctuary for the conservation of marine mammals and their habitats (Notarbartolo di Sciara et al., 2008)⁹⁵: curbing illegal driftnet practices; ensuring that ongoing military exercises are not harmful to cetaceans; streamlining bureaucratic obstacles to effective management; and identifying clear ecosystem-level objectives.

The second issue is the use of the Pelagos area as a test zone for acoustic experiments through military exercises on both French and Italian sides. Collaboration to solve that issue is now underway within the scope of the ACCOBAMS work on the impact of submarine noise on cetaceans. In 2007, the Contracting Parties to ACCOBAMS have adopted Guidelines to address the impact of anthropogenic noise on marine mammals in the ACCOBAMS area. A status report of ACCOBAMS, however, found that no significant progress has been made to address the problem of marine noise, nor have there been any systematic attempts to coordinate industrial activities with marine mammal conservation initiatives (Notarbartolo di Sciara and Birkun 2010).

SPAMI periodic review

According to the latest periodic review of the SPAMIs for the Pelagos Sanctuary, as for threats from urbanisation, industrialization and pollution, the Sanctuary has particularly urbanized coastal zones subject to strong touristic pressures. Industrialisation of the coastal zone induces more pollutants, as well as acoustic and seismic disturbances linked to civil engineering works and exploitation of the continental shelf. Threats from marine traffic (international and between islands and continent) induce some risk of ship strikes, direct disturbances and acoustic pollution. Marine transport of petroleum and/or dangerous products induces a permanent threat to the ecosystem and to the Sanctuary's species. The development of sea routes could in time lead to new constraints related to the increase of the maritime traffic. Threats from pleasure boating and whale watching risk to disturb the animals directly and, in some cases, also by ship strikes.

Finally, fisheries activities, in particular bycatch and competition, have some impact on marine mammals and their habitat.

The following are the most important external threats that are of concern, evaluated individually:

⁹² Pelagos Sanctuary Agreement, article 14: "1. In the part of the Sanctuary situated in the waters that fall under its sovereignty or jurisdiction, each of the States Parties to this Agreement is competent to ensure the application of the provisions of the latter. 2. In the other parts of the Sanctuary, each of the States Parties shall be responsible for ensuring the application of the provisions of this Agreement to ships flying its flag and, within the limits provided for by the rules of international law, to ships flying the flag of Third States."

⁹³ Many fisheries catch fish other than the ones that they target: these unwanted fish are referred to as bycatch (Greenpeace).

⁹⁴ Fossi M.C. et al. 2013. The Pelagos Sanctuary for Mediterranean marine mammals: marine protected area or marine polluted area? The case study of the striped dolphin (*Stenella coeruleoalba*). Marine Pollution Bulletin 70 (2013) 64-72.

⁹⁵ Notarbartolo-di-Sciara G. et al. 2008. The Pelagos Sanctuary for Mediterranean marine mammals. Aquatic Conservation marine and Freshwater Ecosystems. 18: 367-391 (2008).



- All marine mammals are very seriously impacted by pollution.
- A serious threat as a global issue is registered for the reduction of fish stock, habitat loss, global warming and ship strikes (being one of the main anthropogenic cause of mortality of large cetaceans).
- All marine mammals, especially Cuvier's beaked whale, are impacted by acoustic threats that are increasing due to the constructions, navy activities and marine traffic.
- Another threat is given by stress and disturbance in particular from whale watching activities that are increasing.

No registered impacts from the scientific activities and low ones from natural diseases.

Bycatch threat has been reduced since the ban of the driftnets, but still not eliminated. In fact, in spite of bans imposed by the European Commission, the General Fisheries Commission for the Mediterranean and the International Commission for the Conservation of Atlantic Tuna, driftnets are still used in the Sanctuary, causing significant levels of cetacean mortality (Imbert et al., 2001)⁹⁶.

Depredation (interactions with fisheries) constitutes a very serious threat, especially for the bottlenose dolphins in Corsica and Sardinia.

According to the official website of the Pelagos Sanctuary⁹⁷, the Contracting Parties, at their 6th meeting (COP6, 2015), with Resolution 6.1 have adopted the Pelagos Sanctuary **management plan**, for the period 2016-2022, considering the previous one adopted during the second meeting of the Contracting Parties (Isola D'Elba, 2004). The management plan is divided into 4 parts:

- I. Knowledge of the ecosystem, species and activities;
- II. Prevention and mitigation of human impacts and pressures and management of emergency situations;
- III. Communication, awareness and involvement of the general public and stakeholders;
- IV. Governance of the Agreement.

The management plan is based on a functional perspective, the ecosystem approach, and the principle of continuous updating, taking into account anthropogenic and natural variable, in addition to actions implemented as part of other Agreements and international programmes; nevertheless, the functional and operative part of the area management plan is still lacking. In fact, it defines the activities that shall be prepared, adopted and implemented by the Parties and therefore it is not a proper management plan, as it does not include zoning, regulations for each zone, competencies and responsibilities, governing bodies, management programmes; it does not implement the planning of management activities, including protection and management measures and the relative prohibitions.

On the other hand, with the Work Programme adopted for the period 2018-2019, the Contracting Parties confirm their commitment to contribute to the implementation of the work programme activities, both nationally and tripartite. The Permanent Secretariat is called to continue its cooperation and to develop the activities set out in the work programme with the Secretaries of other relevant intergovernmental organizations, such as the RAMOGE, ACCOBAMS, SPA/RAC, GFCM Agreements, in consultation with the National Focal Points.

6.3 OTHER METHODS IN THE CONTEXT OF SEA-BASIN STRATEGIES

In the framework of the Cross-Border Cooperation Programme "Italy-France Maritime 2007/2013" joint projects have been implemented to support economic development in the area of cooperation. Hereafter,

⁹⁶ Imbert G., Gaertner J.C., Laubier L. 2001. Thonaille méditerranéenne. Suivi en mer de la campagne 2000. Rep. PACA 3340, Université Aix Marseille II, CNRS Centre d'Océanologie de Marseille.

⁹⁷ See footnote 53.



some example of cross-border projects (CBC programme) involving the Italian and France side of the **Corsica Channel**:

- INTERREG IV A Italy-France Maritime Cooperation Programme 2007/2013. Lead Partner Chamber of Commerce of Bastia and Haute Corse – Project ART2;
- INTERREG V A Italy-France Maritime Cooperation Programme 2014/2020. Lead Partner CIREM Economic Science Department of Cagliari University – Project GoSmartMED;
- INTERREG V A Italy-France Maritime Cooperation Programme 2014/2020. Lead Partner Chamber of Commerce of Ajaccio – Project Marittimo Tech;
- INTERREG V A Italy-France Maritime Cooperation Programme 2014/2020. Lead Partner Chamber of Commerce of Cagliari – Project ItinERA.

Furthermore, in the Corsica Channel, the Italian and French Governments have signed a Memorandum of Understanding in 2015, concerning the **regulation of international maritime traffic in the Channel**, in order to reduce the risk of accidents in an area characterized by a great environmental sensitivity and therefore to improve safety of navigation and the marine environment, providing enhanced monitoring to a better and quicker response in case of emergency.

For the **Strait of Bonifacio**, particularly are relevant:

- a Franco-Italian agreement on operational procedures for the **ship reporting system** in the Strait (Bonifacio Traffic VTS - vessel traffic services), signed on 3 June 1999;
- in the framework of the cross-boundary cooperation in the Strait, **the European Grouping of Territorial Cooperation (EGTC)** (along with the organization called “EGTC – PMIBB” by the Environment Office of Corsica and the National Park of La Maddalena Archipelago), which has been set up in order to promote joint management and protection of both natural and cultural wealth, to prevent natural and technological risks.

Furthermore, in the UN Environment/MAP-Barcelona Convention framework, another method in the context of sea-basin strategies utilised in the pilot area is the already mentioned **Coastal Area Management Programme (CAMP)**, based on the principles of sustainable development, integrated planning, and the management of Mediterranean coastal areas, as a collaborating Programme signed in 2007 between the Mediterranean Action Plan (MAP), the Italian national and local authorities, and institutions, and closed in 2017.

The proposal for activating the CAMP Italy project – prepared by the Italian Ministry of Environment, Land and Sea (IMELS), in collaboration with the concerned coastal local authorities (Regions), on the basis of the evaluation of natural features, anthropogenic and natural pressures, and governance tools in a sample of pilot areas – was submitted and formally approved by the Contracting Parties to the Barcelona Convention during COP 15 in 2008.

The main objective of the CAMP Italy has concerned the development and implementation of strategies and procedures for sustainable development of coastal areas, in particular by identifying and testing *ad hoc* methodologies and tools for the **Integrated Coastal Zone Management (ICZM)**, implementing the ICZM Protocol, in particularly significant pilot areas of Italy, including the present pilot area falling in the Tuscany and Sardinia Region. The project stands out from other CAMP Projects completed in other Mediterranean countries as being the first multi-area CAMP: it has covered five pilot areas falling within the territory of three coastal Regions (Emilia-Romagna, Sardinia and Tuscany). The activities of the CAMP Italy, incorporated within the regulatory framework of the Barcelona Convention and the European Union, have focused in particular on three Thematic Areas:



- The planning of land and marine coastal areas;
- The protection, safeguarding and recovery of coastal and marine habitats;
- The sustainability of social and economic pressure on coastal areas.

Two **instruments** have been implemented and tested on CAMP Italy activities:

- a **matrix for analysing LSI**, which sets out a standardised approach for identifying LSI in respect of an Individual Activity (or Project Activity), and which analyses elements such as the geographical reference area, the main ecosystem services, human activity/pressure and natural phenomena, and the main policy and planning tools. The matrix also requires a gap analysis of the activity to identify improved proposals for appropriate consideration of LSI for similar activities;
- a **tool for analysing the mapping of ecosystem services and related LSI, and evaluation of the impact and effects of planning and management activities for coastal zones**. The suggested approach has enabled identification of a **significance matrix**, which connects human activity with the impacts it has on ecosystem services and reciprocal interactions, in socio-economic and environmental sustainability terms. The matrix, therefore, enables identification of the most suitable management method to ensure ecosystem services continue, and also analysis of the influence the actions have on them.

The methods and tools proposed can be applied equally to any coastal zone management activity, whether already implemented, in the planning stage, or newly-developed; an *ex-post* application enables evaluation of how consistent a specific activity is with ICZM, MSP and LSI; *ex-ante* application enables consideration of an activity in terms of its ICZM, MSP and LSI elements. It is precisely this dual interpretation that makes it an extremely versatile and effective tool, and is therefore useful for a number of different applications, such as evaluating or planning coastal zone management projects.

7. PROPOSALS FOR THE MSP APPROACH IN THE PILOT AREA CONSIDERING THE APPROPRIATE MEASURES TO GUARANTEE A FAVOURABLE CONSERVATION STATUS OF MARINE MAMMALS

As a tool for planning and integrating different uses of the sea, MSP is rooted in pre-existing legislation, national and local structures and procedures. Legal requirements and operational procedures under international, EU and national law have a direct impact on how MSP can be framed and implemented. Moreover, the elaboration of MSP requires a comprehensive integration of all maritime sectors, which can include technical specificities for each of the concerned sectors. In most cases, the management of marine areas also involves different levels of public authorities, economic operators and sectors, as well as relevant stakeholders.

As already underlined, in this specific pilot case it is a matter to indicate and recommend how to proceed with the aforementioned cross-border cooperation and to identify the main sectors on which to focus such a cooperative process.

This chapter of the Report aims to examine the relationship between a possible TMSP cooperation in the pilot area in question and the planning tools in place as well as the current sectoral legislation.



7.1 PROTECTING MARINE MAMMALS, TOGETHER WITH THEIR HABITAT, FROM THE DIRECT OR INDIRECT NEGATIVE IMPACTS OF HUMAN ACTIVITIES, IN PARTICULAR IN THE TWO ECONOMIC SECTORS: MARITIME TRANSPORT (GOODS, PASSENGERS AND FERRIES) AND FISHING (TRAWL AND LONGLINE)

The Mediterranean biodiversity faces multiple anthropogenic pressures that affect its ecological status and peril its conservation. Impacts have been reported on the populations of different species, including marine mammals, notably cetaceans and, occasionally, monk seals.

The Pelagos Sanctuary thus represents a multinational entity with overlapping jurisdictions between France, Italy and Monaco, making its management a challenge where Pelagos Parties should examine their respective obligations and tools already established through other international agreements like the Barcelona Convention and ACCOBAMS.

The last challenge is related to the EcAp approach in the Mediterranean: defining ecosystem-level objectives that seek to extend conservation measures from protected species and their habitats to marine food-webs an ecosystem-wide processes. This supposes a robust multidisciplinary knowledge base that has still to be developed.

The Pelagos Sanctuary is thus a complex entity, being made of different ecosystems, including coastal areas and the high sea, each of them requiring specific management approach. The fact that these coastal areas include MPAs is noteworthy since, if well managed, they might contribute in term of good-management governance of the Sanctuary and in the frame of ACCOBAMS and the SPA/BD Protocol to the Barcelona Convention.

2017 Mediterranean Quality Status Report

From the Regional Assessment of the Mediterranean Marine and Coastal Environment, providing information on the status of the environment and description on the distance from EcAp targets, ecological objectives and Good Environmental Status (GES), the Quality Status Report (QSR) on Biodiversity gives more information about the marine mammals.

Data on distribution of marine mammals are usually collected during dedicated ship and aerial surveys, acoustic surveys, or opportunistically by whale watching operators, ferries, cruise ships, military ships.

Twelve species of marine mammals — one seal and 11 cetaceans — are regularly present in the Mediterranean Sea; all these 12 species belong to populations (or sub-populations, *sensu* IUCN) that are genetically distinct from their North Atlantic conspecifics. The Mediterranean monk seal (*Monachus monachus*) and the 11 cetacean species (fin whale, *Balaenoptera physalus*; sperm whale, *Physeter macrocephalus*; Cuvier's beaked whale, *Ziphius cavirostris*; short-beaked common dolphin, *Delphinus delphis*; long-finned pilot whale, *Globicephala melas*; Risso's dolphin, *Grampus griseus*; killerwhale, *Orcinus orca*; striped dolphin, *Stenella coeruleoalba*; rough-toothed dolphin, *Steno bredanensis*; common bottlenose dolphin, *Tursiops truncatus*; harbour porpoise, *Phocoena phocoena relicta*) face several threats, due to heavy anthropogenic pressures throughout the entire Mediterranean Basin.

The conservation status of marine mammals in the region is jeopardised by numerous human impacts, such as:

- deliberate killing (mainly due to interactions with fisheries), naval sonar, ship strikes, epizootics, fisheries bycatch, chemical pollution and ingestion of solid debris;
 - short-term habitat displacement as a consequence of naval exercises using sonars, seismic surveys, vessel disturbance and noise; and
 - long-term relocation caused by food depletion due to over fishing, coastal development and possibly
-



climate change.

Two of these species have very limited ranges: the harbour porpoise, possibly representing a small remnant population in the Aegean Sea, and the killer whale, present only as a small population of a few individuals in the Strait of Gibraltar.

Out of the 12 marine mammal species listed above, seven are listed under a Threat category on the IUCN's Red List, three are listed as Data Deficient and two need to be assessed.

Current knowledge about the presence, distribution, habitat use and preferences of Mediterranean marine mammals is limited and regionally biased, due to an unbalanced distribution of research effort during the last decades, mainly focused on specific areas of the Basin. Throughout the Mediterranean Sea, the areas with less information and data on presence, distribution and occurrence of marine mammals are the south-eastern portion of the basin, including the Levantine basin, and the North Africa coasts. In addition, the summer months are the most representative ones and very few information have been provided for the winter months, when conditions to conduct off-shore research campaigns are particularly hard due to meteorological adversity.

Marine mammals presence and distribution is mainly related to suitable habitats and availability of food resources; anthropogenic pressures, as well as climate change, may cause changes and shifts in the occurrence of marine mammals, with potential detrimental effects at the population levels. Accordingly, in order to enhance conservation effort and inform management purposes, it is crucial to obtain detailed and robust descriptions of species' range, movements and extent of geographical distribution, together with detailed information on the location of breeding and feeding areas.

Ongoing effort by ACCOBAMS is planning a synoptic region-wide survey, the so-called ACCOBAMS Survey Initiative, to assess presence and distribution and to estimate density and abundance of cetaceans in the summer of 2018. Concurrently, local scientists are working on the identification of Cetacean Critical Habitats (CCHs) and Important Marine Mammal Areas (IMMAs) in the entire Mediterranean Sea. A gap analysis is also conducted within the Mediterranean Sea, to provide an inventory of available data and to select areas where more information should be collected.

Within the **EcAp Ecological Objective 1** (*Biological diversity is maintained or enhanced. The quality and occurrence of coastal and marine habitats and the distribution and abundance of coastal and marine species are in line with prevailing physiographic, hydrographic, geographic and climatic conditions*) related to marine mammals, are to be considered:

- **Common Indicator 3 on species distributional range.** The aim of this indicator is to provide information about the geographical area where marine mammal species occur, and to determine the range of cetaceans and seals that are present in the Mediterranean waters. The distribution of a given marine mammal species is usually described by a map, describing the species presence, distribution and occurrence. Geographical Information Systems (GIS) are commonly used to graphically represent monitoring data and species distributional range maps.
- **Common Indicator 4 on population abundance of selected species.** This indicator aims at providing robust and quantitative indications on population abundance and density estimates for marine mammal species living in the Mediterranean Sea.
- **Common Indicator 5 on population demographic characteristics of marine mammals within the Mediterranean waters,** which aims to assess its conservation status by analysing demographic parameters. These data are particularly difficult to obtain for marine mammals, thus relying on demographic models, which imply several assumptions, which may be violated.

Source: 2017 Mediterranean Quality Status Report –
https://www.medqsr.org/sites/default/files/inline-files/2017MedQSR_Online_0.pdf

As seen, even if a management plan has been adopted since 2004 and updated in 2015, in practice the



Cetaceans Sanctuary lacks the functional and operative part of the area management plan. As it is known, the presence of the management plan is a *conditio sine qua non* for the existence of a marine protected area. Therefore, the adoption of MSP, which also deals with cross-border issues, could contribute to bridge this deficit and resolve itself as a useful operative tool also for the protection of marine resources present in the area and, in particular, for the protection and safeguard of marine mammals, as it is also provided for in the 1999 Agreement establishing the Pelagos Sanctuary.

Activities to be considered by the relevant States in agreement and in full cooperation

Within this pilot area of the project, and in this phase, the goal is not to give answers as to frame the fundamental questions, on the basis of which the TMSP should be structured. Therefore, the principal questions to be taken into account on the future analysis on the TMSP cooperation should be the following ones:

- To what extent cumulative impacts (across time and space) would be successfully managed?
- To what extent TMSP would have an impact on the sustainability of social and economic conditions?
- To what extent TMSP would have an impact on biodiversity, if would have been any change to the biodiversity in the concerned area attributable to the TMSP?
- How cross-border collaboration should contribute to ensuring a consistent and equitable use of marine space across-borders, so that resource use and rights are consistent across the borders?
- To what extent a successful cross-border sharing of good practices within the TMSP process should be achieved?
- What could be the main obstacles and key barriers to cross-border MSP collaboration and cooperation?
- How it should be implemented the stakeholder's involvement in designing and shaping the MSP process, including its cross-border elements: from the direct and substantial involvement, to the information of stakeholders of the development of the MSP even if without any contributors to its design; through their invitation to advance comments to be acted upon in some instances and, finally the active role of stakeholders in the planning process and significantly shaped the resulting plan?

It has already been underlined that transboundary MSP is unlikely to lead to a joint plan, but it should rather offer effective links between national MSP processes.

For establishing cooperation on MSP between neighbouring Countries, key elements that should form an integral part of the negotiations or cross-border cooperation within the transboundary MSP, to ensure that maritime spatial plans are coherent and coordinated, include:

- Knowledge and understanding of the legal framework of reference **and of the formal planning systems and process across borders**, fundamental to find the minimum requisites for a shared MSP agreement.
- **Identification of common interest's aspects** of Member States bordering the concerned marine region, in particular of a transnational nature, finding common ground or, in case of opposing objectives, how they can be resolved to contribute towards preventing or reducing conflicts between different uses in the broader marine ecosystem.
- **Evaluation of possible common approaches** for the management of maritime activities and marine conservation objectives between the bordering States.
- Analysis of **cooperation gaps** between different sectors.
- **Identification and consideration of existing institutional regional cooperation structures;**
- Analysis of the governance context, extended to the relevant **particularities of the** marine region whereabouts the national plan will operate, achieving coordination and exchange of information with the neighbouring Countries and the pertinent international bodies.



- Examination of legal **instruments embodying cross-border cooperation** in the area, such as sectoral area-based management tools (ABMTs) (e.g. fisheries closures), cross-sectoral ABMTs (e.g. marine protected areas), Transboundary Strategic Environmental Assessments and Environmental Impact Assessments (as both processes allow for consultations to be carried out when potential significant issues of a transboundary nature are identified through the evaluation process).
- Consideration of tools such as the **carrying capacity and the cumulative impact assessment**, that could indicate activities that may have transboundary effects of the neighbouring MSP plan or plans in the relevant marine zone. Therefore, consultation with the bordering State/s to coordinate their plans, in order to ensure that the collective pressure resulting from the cumulative and combined impact of all maritime activities remains in line with environmental requirements for Good Environmental Status (GES) set by the Marine Strategy Framework Directive⁹⁸.
- In particular, considering the **marine mammals protection**: adoption of recovery of undisturbed situation for marine mammals by reducing fishery in the framework of the ACCOBAMS and Pelagos Agreements; implementation of mitigating measures, including by-catch monitoring and research, preventing and reducing the harmful effects of underwater noise; assessment of plans for the construction of offshore wind farms for their negative cumulative effects on marine mammals (underwater noise), and their habitat, parallel addressed in the Offshore Protocol and the related Action Plan.
- **Production of knowledge at the regional sea level and the sharing of data and information**, through the collaboration and harmonization of data and information systems, in order to create a legitimate and solid knowledge base for joint planning processes at the regional sea level;
- Recognition of the relevance of the role of **public participation** and the correct application of the related process, adopting and implementing specific mechanisms for MSP's public participation, informing all the identified "interested parties", and consulting all the relevant identified "stakeholders, authorities, and the public concerned".
- Establishment of **dedicated engagement bodies** to facilitate discussion and exchanges between different parties, improving transparency and trust-building.
- Following the UN Environment/MAP-Barcelona Convention principles, the MSP in this particular area (including Pelagos Sanctuary) should be organised around the **11 Ecological Objectives**⁹⁹ (developed in synergy with the EU MSFD) agreed by the Contracting Parties to the Barcelona Convention as a common strategy for the application of the **Ecosystem Approach** to the management of human activities: biodiversity conservation, coastal dynamics, fisheries management, pollution reduction, marine litter and hydrography as part of an integrated analytical and implementation framework¹⁰⁰.

⁹⁸ The Marine Strategy Framework Directive (MSFD, 2008/56/EC) calls for a coherent approach within a marine region or sub-region covering EU Member States in the implementation of all necessary steps for the achievement of Good Environmental Status (GES). The MSFD requires Member States to cooperate and is promoting a cooperation with and through the Regional Seas Conventions and specifically the Barcelona Convention in the Mediterranean Region (MSFD (19)). Also the MSFD invites Third Countries with waters in the same marine region or sub-region as the Member States to participate in the process laid down in the Directive, thereby facilitating achievement of good environmental status in the marine region or sub-region concerned (MSFD paragraph 20).

The Five-Year Programme of UNEP/MAP-Barcelona Convention (2010-2014), adopted at the Meeting of the Contracting Parties (Marrakesh, 2009) considered the application of the ecosystem approach roadmap as the overarching priority cutting across its six thematic areas.

⁹⁹ In 2012, with Decision IG.20/4 the Contracting Parties to the Barcelona Convention have adopted 11 Ecological Objectives (and their respective common indicators) that relate to the following topics: Biodiversity (EO1); Non-indigenous species (EO2); Fisheries (EO3); Marine food webs (EO4); Eutrophication (EO5); Sea-floor integrity (EO6); Hydrography (EO7); Coast (EO8); Contaminants (EO9); Marine litter (EO10); and Noise (EO11).

¹⁰⁰ See the 2008 Decision IG.17/6 on "Implementation of the ecosystem approach to the management of human activities that may affect the Mediterranean marine and coastal environment" (UNEP(DEPI)/MED IG.17/10). The Contracting Parties to the Barcelona Convention committed to progressively apply EcAp to the management of human activities with the goal of effecting real change in the Mediterranean marine and coastal environment. Decision IG 17/6 also outlines a roadmap for the implementation of EcAp, consisting of several subsequent steps, such as the development of Ecological Objectives (EO), operational objectives and respective indicators, the development of GES descriptors and targets, monitoring programmes, and finally the necessary management measures and programmes to achieve GES; and the 2012 Decision IG.20/4.



- Prevision of a joint transboundary approach between neighbouring Countries on MSP, among others **building upon CAMP networks**.
- Identification of useful tools to build-up the TMSP process, such as the **European Grouping of Territorial Cooperation (EGTC)** and the related individuation and agreement of its main elements by the concerned Central governments, Regional and/or local authorities, bodies governed by public law and Associations as appropriate, in order to manage the cross-border cooperation. In fact, the EGTC is a specific EU substantive tool to facilitate cross-border, trans-national or inter-regional cooperation, enabling regional and local authorities from different Member States to cooperate more effectively, for example by allowing them to directly apply for and manage European funds. Its fundamental role is to organise and manage cross-border, trans-national or interregional cooperation measures, with or without EU financial support.
- In order to achieve greater protection of marine mammals in the Mediterranean, enhance the involvement of the **Pelagos Sanctuary** in the Mediterranean nature conservation networks and therefore of Protected Areas, providing for greater spreading of best practices, twinning and technical cooperation with other SPAMIs and more generally other MPAs in the framework of and with support from UN Environment/MAP Barcelona Convention and its SPA/RAC. Therefore, strengthen the protection of marine mammals also through a correct, concerted and extensive planning of marine spaces, based on the best available data and knowledge, with the **adoption of national MSPs** that, based on a specific consultation, cooperation and harmonisation, take into account this particular aspect. It should therefore be specifically agreed between the three Contracting Parties, through the above-mentioned cross-border cooperation process (TMSP), the collation and harmonization of the three national MSPs that provide a valuable planning tool and, ultimately, management tool of this particular area of the **Sanctuary Pelagos for the protection of marine mammals**, in particular with respect to the many anthropic activities that impact the area.

8. CONCLUSIONS

The adoption of a general plan for the management of all the maritime economic activities, taking into account the interactions and impacts of both natural and anthropic origin, can also be a useful tool for the protection of marine mammals and their habitat, since the EU MSP Directive is a legally binding instrument, transposed and implemented at the national level, establishing a framework for maritime spatial planning as a cross-cutting policy tool, based on the ecosystem approach (as referred to in Article 1(3) of Directive 2008/56/EC), enabling public authorities and stakeholders to apply a coordinated, integrated and transboundary approach. The MSP plans should consider the species protection implications, with the aim of ensuring that the collective pressure of all activities is kept within levels compatible with the achievement of good environmental status and that the capacity of marine ecosystems to respond to human-induced changes is not compromised, insofar in particular protecting endangered species such as the marine mammals through complex and all-inclusive management plans.

The MSP can therefore be considered as a complementary tool that is also useful for improving the protection of marine mammals, supporting both the implementation of the Pelagos Sanctuary and the Ramoge and ACCOBAMS Agreements, and the sustainable development of the Mediterranean through UN Environment/MAP-Barcelona Convention. We have seen that in the application of the MSP Directive in the present pilot case area the nodal question is not represented by the obligation of cooperation, as the countries involved – Italy and France – are both the EU Member States, the Contracting Parties to the Agreement establishing the Sanctuary for the Marine Mammals (Pelagos) and the two Agreements RAMOGE and ACCOBAMS, as well as the Contracting Parties to the Regional Seas Convention of the UNEP/MAP-Barcelona Convention, since an obligation to cooperate and collaborate clearly and substantially derives from the aforementioned legal instruments. The question that arises is about “**how**”, and in what terms the obligation of cooperation should be implemented.



The MSP is primarily a national activity. However, taking into consideration that ecosystems as well as pressures from human activities cannot be framed within natural boundaries, it becomes extremely important for Member States to perceive the instrument of a cross-border cooperation within the MSP as an *opinio juris sive necessitatis* or an opinion of law or necessity, believing that such action should be carried out as a legal obligation. It is clear that a coordination mechanism through the EU MSP Directive is in place to standardize policies and regulations across all sectors and parties involved, but there are still inconsistencies between their implementation.

Therefore, the cross-border collaboration still remains a major challenge. Pilot activities, testing different aspects of a transboundary collaboration are fundamental to lead on how the significant barriers as well as minor difficulties to cross-border collaboration should be resolved. In addition, the cross-border cooperation can be encouraged through the Regional Seas Conventions system that is the natural framework for a cross-border cooperation.

The starting point of any TMSP process should be an **official decision of the concerned countries to cooperate**, accompanied by the identification of the **responsible authorities** and bodies to be involved. Although this is particularly relevant for the formal TMSP process, pilot TMSP activities should follow the same approach.

The Tyrrhenian pilot case study aimed at exploring governance prerequisites necessary to be in place for the implementation of TMSP, which proved to be a rather **sensitive** task. Namely, as the pilot project failed to ensure from the beginning the consent of the responsible authorities on the specific **scope of work** and the **institution fully responsible** for the implementation of the cross-border activities, the scope of work has continuously been changed in order to accommodate different requirements from the members of the Steering Committee. This resulted in hampering participation and support from project partners and stakeholder consultation process, which means that the implementation of activities was mainly based on desk analysis.

Therefore, it can be proposed that any future TMSP activities should:

- ensure, prior to initiate TMSP, the **official decision of the concerned countries** regarding the implementation of activities;
- be led exclusively by **national authorities** of the concerned countries so to ensure that the activities are legitimate and fully supported by these authorities, and that they bring added value;
- envisage the involvement of **existing institutional regional cooperation structures**, such as the UN Environment/MAP-Barcelona Convention and its RACs, as a supporting partner and confirmed framework for facilitating cooperation.



ANNEX A: DATA AND INFORMATION ACQUIRED FROM COUNTRY FACT SHEETS

Taking into account the **Country fact sheets of Italy and France** – where a collation of information across the project area has been done to provide an overview of the area's characteristics (including marine environment; maritime activities; key sectoral and socio-economic trends and emerging pressures, legal issues, governance) – the following table shows information concerning the maritime activities in the area, in accordance with Commission Directive (EU) 2017/845 of 17 May 2017) **Annex III, Table 2b.**

Group	Sectors / Activities
Extraction of living resources	Fish and shellfish harvesting (professional, recreational)
	Fish and shellfish processing
	Marine plant harvesting
	Hunting and collecting for other purposes
Extraction of non-living resources	Extraction of oil and gas, including infrastructures
	Extraction of minerals (rock, metal ores, gravel, sand, shell)
	Extraction of salt
	Extraction of water
Cultivation of living resources	Aquaculture, including infrastructure
Transport	Transport infrastructure
	Shipping
	Shipbuilding
Physical restructuring of coastline or seabed	Land claim
	Coastal defense and flood protection
	Offshore structures (other than for oil/gas/renewables)
	Restructuring of seabed morphology, including dredging and depositing of materials



Production of energy	Renewable energy generation (wind, wave and tidal power), including infrastructure	
	Non-renewable energy generation, including infrastructure	
	Transmission of electricity and communications (cables)	
Tourism and leisure	Coastal tourism	Coastal tourism
		Beach-based activities
	Maritime tourism	Cruise tourism
		Sailing and nautical activities
Public sector	Defence/Military Areas	
	Research and Education	

In the Country fact sheet a first screening has been done, which includes the description of the transboundary issues and, in particular, transboundary interactions of the activity (cross-border activity, cross-border pressures, issues and opportunities, hotspots of interaction, shared resources), summarized hereinafter.

Extraction of living resources

ACTIVITY: Fish and shellfish harvesting (professional, recreational)

No transboundary interactions of the activities are in place, due to their typical local characteristic.

ACTIVITY: Marine plant harvesting

No transboundary interactions are in force for this activity. Several international projects tried to identify proper management issues of beached seagrass and avoid wrong practices, as well as detect possible uses of this resource as raw material and obtain economic benefit from a proper management solution of them.

Extraction of non-living resources

ACTIVITY : Extraction of non-living resources

Since 2012 it a technical table was launched between Italy and Malta for the study of possible joint exploration and development in a marine area subject of litigation.

Cultivation of living resources

ACTIVITY: Aquaculture, including infrastructure

No transboundary interactions of the activities are in place, due to their typical local characteristics. The different shape of the coastlines and their geomorphology has led to some national differentiation in the development of aquaculture activities, avoiding transboundary interactions.

Transport

ACTIVITY: Shipping



The most relevant transboundary interactions of shipping are related to operational, administrative and custom procedures – land and sea side – safety and security, taking into account international regulations and the policies and strategies of the EU. Italy is directly involved in a number of regional initiatives and projects, which includes:

- exchange of data and information related to safety and security at sea and the protection of maritime environment;
- a common platform, named “port management information system” (PMIS), implemented and made operational in the most important Italian ports to simplify and harmonize the administrative procedures applied to maritime transport by rationalizing and implementing electronic means for clearance of ships. PMIS is being enhanced further in order to act as National Maritime Single Window, complying with IMO FAL Committee requirements and the 2010/65/EU Directive;
- an integrated VTMS platform, in compliance with the rules set forth in the IMO international Conventions and EU Directives, which allows building of a global picture of the vessel traffic developing in the Mediterranean Basin, and is made available for use by the IMRCC and the Coast Guard stations operating along the Italian coast;
- the ground-based AIS network, which is fully operational and integrated in the VTMS.

Physical restructuring of coastline or seabed

ACTIVITY: Restructuring of seabed morphology, including dredging and depositing of materials

In the revised sources there aren't reference to transboundary impacts or pressures about coastal erosion. Some opportunities have been recognized in a view of development of macro-regional and Mediterranean Basin policies. The TNEC Guidelines identify as necessary the sharing and development of good practices, such as those started with MEDSANDCOAST in which a first bibliographic reconnaissance of the sand deposits in the Mediterranean was prepared.

Production of energy

ACTIVITY: Non-renewable energy generation, including infrastructure- LNG FACILITIES

Large-scale import/export infrastructure: Italy currently has 3 operational re-gasification terminals, 2 off-shore (one near Livorno) and 1 on-shore.

The transboundary interactions of the LNG sector are based on the coordination and alignment of the initiatives at European, national and local level, which will deliver a strong clustering effect and complementarity of the results, supporting both National Authorities and the EC in the full deployment of a cross-border and interoperable alternative fuels infrastructure and the adequate coverage of the TEN-T Network.

This approach will guarantee the cross-border continuity, including the maritime transport, setting up stable and reliably maritime LNG supply chain while diversifying energy routes and sources.

ACTIVITY: Transmission of electricity and communications (cables)

In 1967, the Sardinia – Corsica – Italian Mainland direct current interconnection (200kV – 200 MW), called SACOI, entered into operation, connecting the Codrongianos (Sardinia) converter stations with S. Dalmazio (middle Tuscany), in order to initially perform large energy transfers from the new Sardinia (Sulcis) coal power plants towards the Italian Mainland. This use almost immediately underwent some changes, actually allowing to compensate for production shortages in the island, both referring to load/production imbalance periods and to particular emergency conditions and to regulate frequency in AC Sardinian grid.

Cables connected to an Italian terminal station: cooperation between France and Italy (Sardinia, Corsica, Italy), for share energy facilities may help to reduce energy shortage and increase energy security.



Tourism and leisure

ACTIVITY: Maritime Tourism

Maritime tourism refers to sea-based activities such as boating, yachting, cruising, nautical sports as well as their land-based services (Ecorys, 2013). Maritime tourism can be divided in coastal, cruise and nautical tourism. It will probably bring new challenges and conflicts with other sectors in the future.

Relevant EU legislation, such as the Water Framework Directive and the Marine Strategy Framework Directive, require Member States to ensure good status of coastal and marine waters, a pre-requisite for tourism to prosper. ICZM and MSP help ensure sustainable and Green Infrastructure development through smart planning and cooperation between government, public and private partners, taking into account that the maritime tourism sector potentially impacts on the ecosystems and, in particular, of those of the Protected Areas; compete for space with shipping and passenger transport, fisheries sector and aquaculture developments along the coast; involves water demand, more waste and emissions from air, road and sea transport at peak periods, more risks of soil sealing and biodiversity degradation (from infrastructure developments), eutrophication and other pressures. In addition, the impacts of climate change exacerbate pressures on these areas and could reshape tourism's geographical and seasonal distribution.

ACTIVITY: Coastal Tourism and Beach-based activities

It is worth to mention the following areas of interventions for their relationship with MSP:

- the “Tuscany Landscape Plan”, which includes measures to protect the dunes and coastline and imposes limits on building permanent structures on beaches, in order to guarantee accessibility and use of the shores;
- the support for the national strategy for parks and protected areas, rural and inland areas for a full integration of these destinations into the national tourism supply;
- the ECST method and processes (European Charter for Sustainable Tourism in Protected Areas), including the tourist-cultural supply;
- the regional interventions and Tourism Districts, established by the Ministry of Cultural Heritage and Activities and Tourism;
- the initiative for the sustainable development of the blue economy in the western Mediterranean Region, which enhances a series of action of cooperation for promoting a sustainable and responsible tourism, promoting transnational natural, cultural and historical routes; endorsing brand-building of thematic tourist products and services; providing common quality standard and certification; promoting new tourism models and sea-land itineraries (developing top-end destinations connecting the port and the harbour city with the hinterland by creating a sea and land itinerary with thematic stopovers and new technologies); supporting tourism-fisheries and fisheries cultural heritage.

These actions aim to address tourist seasonality in a sustainable manner, to diversify products and destinations, to implement sustainable coastal tourism models based on marine coastal ecosystem and changed behaviour of residents and tourists.

Public Sector

ACTIVITY: Defence/Military Areas

The Italian Navy offers its significant participation in international co-operation activities involving other Mediterranean marinas.

Fishery related conflicts and synergies

Fishery activities are almost widespread along Italian Tyrrhenian coasts, with historical fishing harbours and medium-large fleets. Conflicts in fisheries arise usually when other activities are in competition for the



Co-funded by the European
Maritime and Fisheries Fund



resources or for space. Fish stocks in the whole Mediterranean Sea are generally fully exploited or overexploited. This condition is leading to heavy risks of collapse of the stocks, urging the needs of proper regulation of the exploitation of the resources and sustainability of the used gears. In particular, the occurrence of shared stocks between regional and international fleets in the Mediterranean Western Seas may lead to possible transboundary conflicts for fish resources (i.e. between Italian and French fleets in the north-western Tyrrhenian sea and at the sea borders with Corsica). This condition may lead to transboundary conflicts for fish resources both at inter-regional and international level, especially when common fishing grounds became overexploited and in absence of an adequate protection of recruitment and spawning areas of target species. The Code of Conduct for Responsible Fisheries (as formulated by FAO in 1995) in coherence with UNCLOS and accounting for the Declaration of Cancun (1992), the Rio Declaration (1992), the provisions of the Agenda 21 of UNCED, the 1992 FAO Technical Consultation on High Sea Fishing and the EU Common Fisheries Policy (CFP, 2014) further emphasizes the necessity, when in presence of shared stocks for coastal states to cooperate for fisheries research and management.



Tyrrhenian Case Study

PART C. Management focus: the Tuscan Archipelago

Deliverable Title	Tyrrhenian case study (1.3.6.2.) Management focus: the Tuscan Archipelago
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1 GENERAL OVERVIEW OF THE FOCUS AREA: TUSCAN ARCHIPELAGO

1.1 BOUNDARIES DESIGNATION CRITERIA [LINK WITH C.1.3.1.5]

The boundaries of the Tuscany focus area were defined in accordance with the main priorities identified to comply with planning objectives and based on the information highlighted through the Initial Assessment and the information collected on the Tyrrhenian Sea at early stages of the project. In general, the boundaries define the domain of analysis of the area, including the possible areas of management at different levels. According to UNESCO-IOC (1)¹⁰¹, two “types” of boundaries can be identified: “boundaries for analysis”, which are meant to include transboundary effects and to intercept external instances that might influence MSP in the case study; “boundaries of management”, on which planning proposals and implementation can be elaborated. The two types of boundaries can eventually coincide or the first can include smaller portions of areas defined as “boundaries for management”. The possible identification of focus areas will be driven by considerations in terms of intensity of uses in particularly crowded sub-areas and complexity in legal framework. The main aspects considered to identify the Tuscany focus area boundaries were: i) extension of maritime uses and activities; ii) ecological features; iii) maritime and terrestrial jurisdictional limits; iv) presence of spatial management measures (e.g. MPAs).

Boundaries of the focus area were defined to frame the planning phases (assessment, analysis, measures etc.) into a specific area for which each component can be analysed at a suitable level of resolution to match project objectives.

The focus area extent was selected to provide a representative area where conflictual and synergic interactions are found both between uses and between the environment and human activities.

Indeed, the Tuscany focus area extent covers an area where several maritime uses are carried out and are expected to be further developed in accordance to the socio-economic trends. This scenario is framed in a marine and coastal area with a high ecological value, hosting some representative examples of the most productive and biodiverse Mediterranean marine ecosystems.

Thus, this focus area represents a suitable example of an area where Ecosystem-Based MSP could consistently enhance the sustainable management of a highly valuable natural environment and the use of space and resources by a complex and interrelated set of socio-economic components.

The boundaries include an area highly important from an ecological perspective including key Mediterranean marine and coastal ecosystems and habitats (e.g. seagrass meadows, wetlands). Most of the islands of the Tuscan Archipelago (National Park) are included in the focus. In particular, the Elba Island is the first island of the archipelago in terms of extent and human population.

The focus area includes 226 km of coastline (including islands) and extends for an area of 8973 km² of which 39,4% (3532 km²) are part of the Italian territorial sea and 60,6% (5441 km²) are part of the Italian internal waters (Fig. 6).

¹⁰¹ Ehler, C. and Douvère, F. (2009) Marine spatial planning: a step-by-step approach. Paris, France, Unesco, 99pp. (IOC Manuals and Guides 53), (ICAM Dossier 6). DOI <http://dx.doi.org/10.25607/OBP-43>

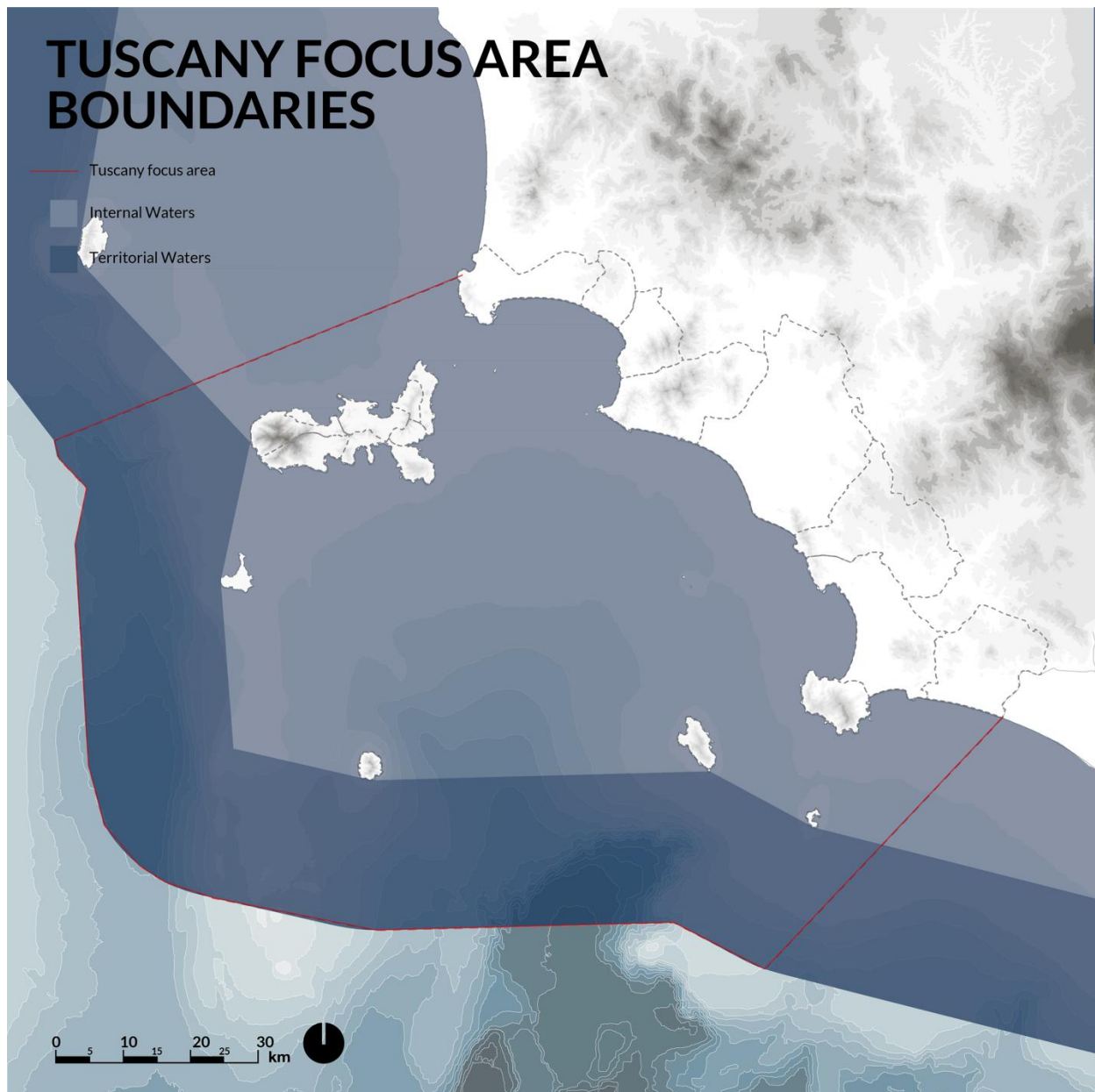


Figure 6. Main political boundaries relevant to the Tuscany CS, both seaward and landward.

Specifically based on what emerged on an initial analysis of the wider area, the Tuscany focus boundaries were defined for including the following significant features:

- Environmental features of high ecological value: seagrass meadows, important birds habitats, important pelagic habitats for megafauna species, spawning and nursery habitats of commercially relevant fish species and wetlands habitats;
- Socio-economic features: beaches for coastal tourism, aquaculture suitable areas and already allocated aquaculture facilities, important fishing ground for large and small scale fishery, industrial areas, ports, marinas;

A number of international, national and subnational (e.g. regional) agreements are in place to protect and sustainably manage this marine area through specific spatial measures (Fig. 7). Specially, the focus area is completely within the Pelagos Sanctuary, a conservation area established through an international agreement between Italy, Principality of Monaco and France, declared as a Specially Protected Area of Mediterranean Importance (SPAMI) under the Barcelona Convention and which is the largest area designated in the

Mediterranean for the conservation of large marine ecosystems, with focus on cetacean species¹⁰². The Pelagos represents the only protected area established through an international agreement in the Mediterranean. The transboundary nature of the agreement is a key aspect to enable the sustainable and harmonic management of the Pelagos Sanctuary and consequently of the entire Tuscany focus area. Thus, the focus area boundaries were also designated for including an area where key transboundary aspects need to be considered for its management (see chapter 1 related with the wide Case Study area).

Other types of designated areas, both marine and terrestrial, are enclosed within the Tuscany focus area limits. Under international legislation: Natura 2000 sites (European Union), Ramsar sites (Ramsar Convention), Cetacean Critical Habitats (ACCOBAMS), Ecologically or Biologically Significant Marine Areas (Convention on Biological Diversity), Biosphere Reserves (UNESCO); under national-subnational legislation: National Park (Italian Government), Regional Park (Tuscany Region), Provincial Park (Grosseto and Livorno Province).

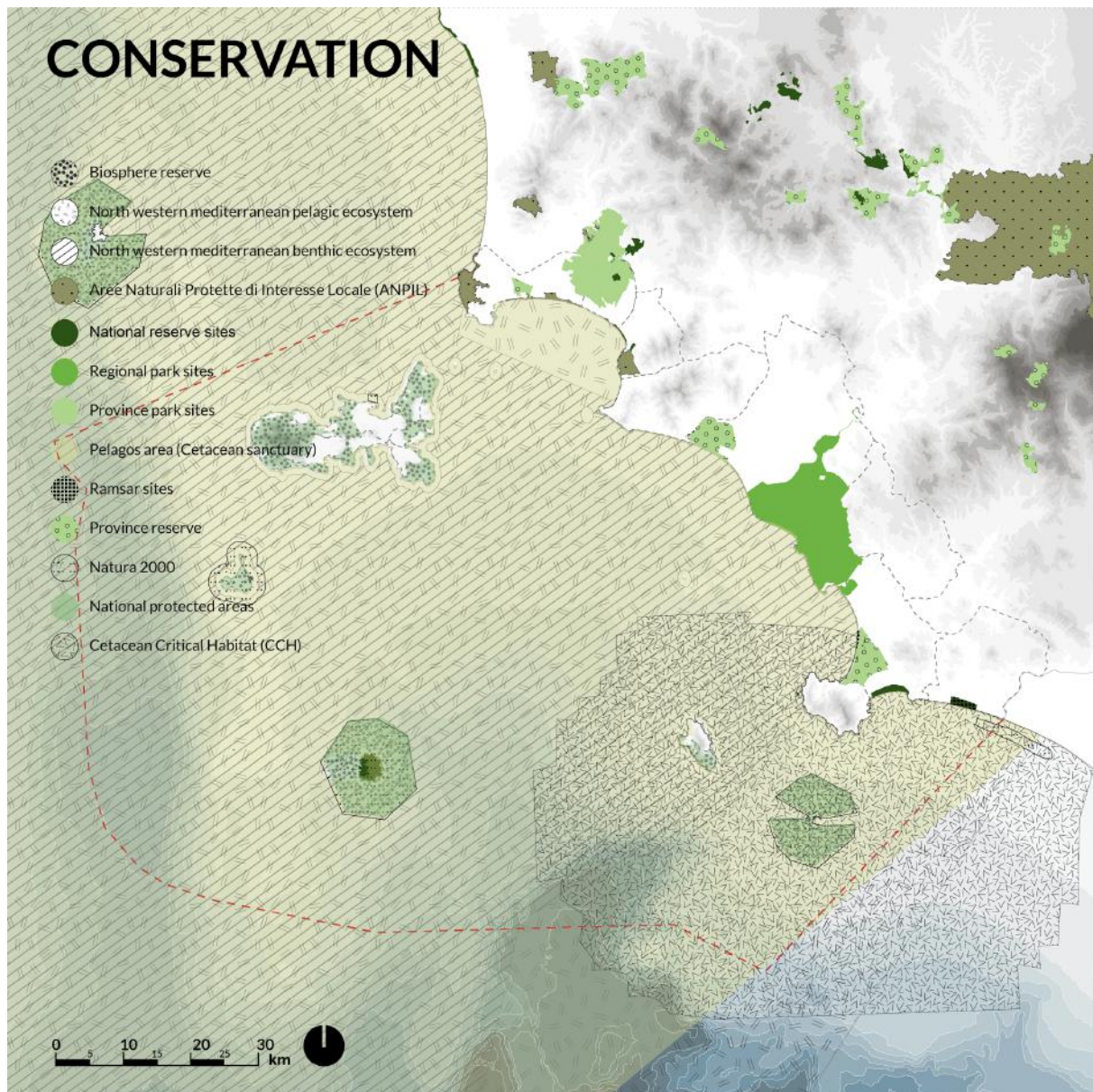


Figure 7. Main conservation areas identified within the Tuscany CS.

The designation of the focus area also considers the relationship between sea and land, thus the governance framework for the coastal area and the boundaries related to it were among the aspects contemplated for the focus area boundaries definition. Indeed, the Southern vertex of the focus area landward coincide with the

¹⁰² <http://www.rac-spa.org/spami>



Southern seaward limit of the Tuscany Region. Further the coastline facing the focus marine area includes two provinces and 18 coastal counties (Fig. 6).

In order to account for the cross-border nature of MSP, the boundaries have been conceived to define an indicative focus area which dynamically depend and interact with the activities and ecosystems found in neighbouring areas, outside the focus area boundaries. Thus such relationship and mutual interaction will be necessarily considered at the moment of developing the MSP exercise in the Tuscany focus.

1.2 ANALYSIS OF LEGAL/PLANNING STATUS [LINK WITH C.1.3.1.3]

1.2.1 Analysis regarding the possibility to extend the scope of the directive to Tuscany internal and coastal waters or parts thereof falling under a Member State's town and country planning

Directive 2014/89/EC, establishing a framework for maritime spatial planning, at article 2 (scope) provides that "this Directive shall apply to marine waters of Member States, without prejudice to other Union legislation. It shall not apply to coastal waters or parts thereof falling under a Member State's town and country planning, provided that this is communicated in its maritime spatial plans". Legislative Decree No 201/2016, implementing the directive, provides also that "the decree shall apply to marine waters of the Mediterranean Sea. It shall not apply to coastal waters or parts thereof falling under a Member State's town and country planning, provided that this is communicated in its maritime plans".

Therefore, the directive does not apply to coastal waters or parts thereof falling under a Member State's town and country planning, on the understanding that the management plan takes account of the urban planning, in order to ensure consistency between the respective provisions and to ensure that the planning process takes account of land-sea interactions.

The international legislation gives a definition of internal waters, which are those waters landward of the baseline which the breadth of the territorial sea is measures (art. 8, UN Convention on the Law of the Sea)¹⁰³. The European legislation, instead, does not specify a definition of internal water. The directive No 60/2000, at article 2, point 2, contains only the definition of inland water, which means "all standing or flowing water on the surface of the land, and all groundwater on the landward side of the baseline from which the breadth of territorial waters is measured" (directive 60/2000, article 2, point 2. So, there is a vagueness on what is meant by internal maritime waters, inland waters and coastal waters, which is necessary to clarify and which renders the legal framework confusing.

The scope of the directive (and of the legislative decree that implements the directive) seems to be clear. However, the exclusion concerning coastal and internal waters falling under a Member State's town and country planning, does not appear to be an absolute and imperative ban. After a careful and detailed analysis of the legislative intent of the directive, it emerges that the exclusion aims to ensure consistency between different provisions, i.e. between town and country planning and maritime spatial planning. The exclusion seems to avoid conflicts and contradictions between different plans, in order to ensure the coherence of the legal system. Therefore, it is possible to extend the scope of the directive to internal and coastal waters or parts thereof falling under a Member State's town and country planning, when there is not a plan which has yet been adopted or when the coherence between the different provisions is guaranteed.

It is a fact that the directive, as well as the legislative decree that implements it, requires coherence between marine and terrestrial strategies and plans. So, in drawing up the plan, the competent authorities should pay attention to the various existing provisions, in order to avoid the overlapping of different plans. Furthermore, the competent authority could regulate certain aspects that are not regulated by town or country planning regarding the coastal zone and the internal maritime waters, in an integrated and overcoming approach. To this day, there is not a coastal plan or an internal water plan which regulates the zone. Even if it is true that

¹⁰³ United Nations Convention on the Law of the Sea (UNCLOS)



there is not a legal provision to this effect, the competent authority might seriously consider the possibility to apply maritime spatial planning to internal waters. In so doing, it is possible to intervene in an area that requires a planning action (on the point, it is important to highlight that there is a gap because there is not a management plan concerning internal waters).

Indeed, an extensive implementation of the directive would be desirable in order to contribute to the achievement of many of the objectives pursued by European and national policies with maritime spatial planning, such as sustainable development of energy sectors at sea, of maritime transport, and of the fisheries and aquaculture sectors, conservation and protection of the environment and improvement of its quality status, including resilience to climate change impacts and promotion of sustainable tourism and the sustainable extraction of raw materials. All these objectives are also foreseen in internal waters within the planning framework; so, it may be useful to take the opportunity of maritime spatial planning to plan even the management of coastal and internal waters, because in so doing the objectives pursued by the directive could be achieved better and entirely through a holistic approach.

The findings raised by the report can be considered as an input and feedback for a ground-breaking application of maritime spatial planning to Tuscany internal waters and may also contribute to an integration of the different planning tools. Furthermore, the findings that emerged during the analysis phase of the MSP exercise may be overcome by a maritime spatial planning of internal waters, which could potentially become a neutral tool to arbitrate between conflicting or competing activities or interest. MSP takes into account many policy areas which are also involved to internal waters. Indeed, coastal and marine resource management can be criticized for being piecemeal approach. There is a little assessment of cumulative impacts in internal waters, as well as of the related responsible authorities. So, the application of the directive on internal water may ensure the sustainable management of coastal and marine areas, and a fair and equitable access to space as a key resource.

In Germany, for example, the Länder (municipality) were required to extend their spatial structure into their respective parts of the territorial sea (spatial plans for the territorial sea were adopted in 2006 and 2005). This innovative application of the terrestrial planning to the marine environment has led to the achievement of excellent management and planning results. One might therefore consider to do a similar thing, by integrating the different planning tools, and the study case may represent a good testing ground for this.

Maritime spatial planning is considered a fundamental tool in order to achieve the sustainable development of maritime and coastal regions. For these reasons, the use of MSP in internal and coastal waters can be considered. In support of this position, the Green Paper on Maritime Policy¹⁰⁴ identifies the increase in often competing activities on coasts and seas as a source of potential conflict that needs to be managed. This conflict can be managed by using the same planning tool for maritime, internal and coastal waters. So, as part of an overall management approach, spatial planning is seen as a potential aid in this regard. The planning has to take account of the policy, regulatory and planning framework, in order to optimize the use of resources and in compliance with economic, social and environmental sustainability. The integration between coastal planning (and more specifically, of some documents that have been adopted with regard to the coastal environment, such as the strategic plan of the coastal development or the working document of the recovery of the coastal area) and maritime spatial planning is not simple to achieve, but an integrated approach and an extensive use of maritime spatial planning may contribute to the establishment of a consistent system and a full implementation of the directive and of the European policy. It is also important to highlight the absence of a management plan related to Tuscany internal waters (and, more specifically, to the area examined by the study case), which needs to be addressed by the adoption of a planning tool and MSP may represent the required and needed planning tool.

In conclusion, even if it is true that the scope of the directive concerns marine waters and not marine internal and coastal waters when they are already planned, it can be considered possible (and useful) to apply maritime spatial planning to Tuscany internal waters, where no plans exist at the moment. This can also close



this gap and can contribute to the achievement of the objectives that are pursued by the directive and by the legislative decree, by complementing and improving the entire legal system.

1.2.2 Planning regime in the focus area

The area comprises the Port Authority System of the Northern Tyrrhenian Sea management area which includes within its coordinative interconnected framework the ports of Livorno, Capraia, Piombino, Rio Marina, Portoferraio, Cavo.¹⁰⁵ For what concerns fisheries the area is comprised in the FAO area 37.1.3 'Mediterranean and Black Sea – Western Subarea – Statistical Division Sardinia'.¹⁰⁶ According to the division adopted by the General Fishery Commission for the Mediterranean (GFCM), which is the regional fisheries management organization, the area belongs to the Geographical Sub Area (GSA) 9.¹⁰⁷ GSAs represent homogeneous units in terms of geography, fishing methods carried out inside them, and resources in their variable relations; GSA9 includes the stretches of sea in front of the Liguria, Tuscany and Lazio. The area is inside the "Pelagos Sanctuary for Mediterranean Marine Mammals", instituted in 1999 for the protection of marine environment, under an international Agreement between Italy, France and Principality of Monaco. In 2007 the Tuscany Region established the Tuscan Observatory for Biodiversity (sited in Capoliveri, Elba Island), which is an integrated system coordinated by the Regional Agency for Environmental Protection (ARPAT) and of support for the monitoring and conservation activities of cetaceans and sea turtles. There are no other instituted Marine Protected Areas to date, but there are two of forthcoming establishment: the "Arcipelago Toscano" (proceeding in progress) and "Monti dell'Uccellina - Formiche di Grosseto - Foce dell'Ombrone Talamone" (in startup phase). In 2007-2008 the terrestrial Zones of Special Protection (ZPS) of the Arcipelago Toscano were extended to the marine sector and were approved prohibitions and obligations valid for all ZPS, such as bans for fishing with trawl nets, dredgers, seines, and similar on seagrass meadows and on coralligenous and maerl beds, as per Reg. (EC) 1967/2006.

The key documents identified within a MSP perspective to regulate the planning of the area are:

- Pelagos International Agreement

The agreement was signed by Italy, France and the Principality of Monaco to establish the Pelagos Sanctuary, an area implemented for conservation of marine mammals' species. It includes a number of objectives and management measures to enhance transnational cooperation, monitor and preserve marine ecosystems and in particular cetaceans' species in accordance with the Barcelona Convention. Moreover, specific human activities are here regulated (i.e. whale watching and fishery).

- Port System Authority Plans (PRdSP)

The Plan refers to the ports of the Port System Authority of the Northern Tyrrhenian Sea (specifically the ports of Livorno, Piombino, Portoferraio, Rio Marina, Cavo and Capraia Isola).

The PRdSP defines the development objectives and systemic planning contents of Port Authorities and identifies and frames the areas targeted strictly for port and port-port functions, the port-city interaction areas and the last mile road and rail infrastructure connections with the individual port systems and the surrounding urban centers.

- Regional Development Plan, 2016-2020

The Regional Development Program (PRS) and in particular point 3 "Raising the competitiveness of the coast" is the guiding tool of regional policies, indicating the economic, social, cultural, territorial and environmental strategies of the Tuscany Region. It includes the analysis for the future prospects of the development of Coastal Tuscany; the potential for development is mainly represented by the tourist supply chain logistics and R & D activities; it addresses indications for the protection of the environment and the quality of the territory;

¹⁰⁵ <https://www.portaltotirreno.it/en/the-north-tyrrhenian-sea-ports-system-authority/>

¹⁰⁶ <https://mare.istc.cnr.it/fisheries/demo/area.xhtml?code=37&lang=en>

¹⁰⁷ <https://datacollection.jrc.ec.europa.eu/wordef/gfcm>



it considers strategic environmental intervention priorities consistent with the objectives of the Regional Environmental and Energy Plan (PAER); it also includes policies for soil protection, protection of water resources, coastal areas and coastal habitats, policies for the sea for the Elba and the Tuscan Archipelago; main targets of the PRS are to qualify regional continuity between the Archipelago and the mainland, innovate the fishing industry facilities with incentives, optimize health care, contrast erosion, protect the environment and promote interregional cooperation with the high Tyrrhenian area.

- Regional Environmental and Energetic Plan (PAER), 2013

The PAER is configured as the tool for environmental and energy planning of the Tuscany Region, and integrates the contents of the old PIER (Regional Energy Address Plan), the PRAA (Regional Plan of Environmental Action) and the Regional Program for Protected Areas. The macro-objective pursued by the PAER is the adoption of measures against climate change, risk prevention and the promotion of the green economy. Notably, the PAER includes specific sections for the following subjects: the regional strategy of biodiversity, the system of natural protected areas and other instruments for the conservation of biodiversity, the description of terrestrial and marine conservation targets, the knowledge framework of the terrestrial areas of the Tuscan Archipelago, the regional strategy on marine biodiversity, the specific objectives and conservation actions for marine biodiversity, multiannual program for the defense of the coast, topics concerning coastal erosion and nourishment, underwater sand deposits.

- Operational document for the recovery and assessment of the coastal strip, 2016.

It is based on 3 development guidelines: Implement integrated policies to support innovation and encourage convergence on sustainable models of resource use; Strengthen growth and cohesion of internal relations through metropolitan consolidation and connectivity; Protecting environmental quality, mitigating the impacts of human activities;

Actions for ports of national interest (i.e. Livorno Piombino and Marina di Carrara) and maritime activities in the area are indicated in the following plans:

- Tuscany Territorial Plans with further function of Landscape Plans

In the study area three different Territorial Plans insists which include all the coastal municipalities considered in the focus. The plans include in their masterplan, an integral part of the Territorial Address Plan, that attributes to the network of Tuscan ports a central role for the organization of the mobility of goods and people and takes as a strategic objective the development of the coastal logistics platform as a multi-sector economic system, a network of attractive urban realities, infrastructural poles with functions of international openness towards the sea and towards the great European metropolises and interconnected multi-modal connecting links.

The master plans define and identify the system of the Tuscan ports distinguishing the ports of regional, national and international interest of Livorno, Carrara and Piombino (seat of the Port Authority), the ports of regional and interregional interest, the ports and the areas for tourist landings. Moreover, they focus on the management of the natural landscape features of the municipalities involved, giving guidelines and objectives for sustainable development. The plans state at different levels the main criticalities and opportunities of the territory through the analysis of the ecosystem, social and urban characteristics of the area.

- Regional Forestry Agricultural Plan (PRAF).

It includes a section (Section B) specific for marine fishing and aquaculture with regulation and guidelines for these activities.

- Integrated regional infrastructure and mobility plan (PRIIM).

It focuses on the organization of transports, including Tuscany Port Network among its main focus.

- Plan of the Tuscan Archipelago National Park.

It includes specific sections on: quality of bathing areas, marine habitats of interest for conservation, critical examination of populations and biocenosis, present and potential disturbance factors to the marine environment.



- Other relevant documents of local interest.
Piombino Port Regulatory Plan, 2008;
Action Plan for Sustainable Energy of the Elba Island.

1.3 ENVIRONMENTAL CONDITIONS AND HUMAN USES [LINK WITH C.1.1.1 AND C 1.3.3]

ENVIRONMENTAL CONDITIONS

The Tuscany area is characterized by a high variability in terms of morphological and ecological features, with different habitats, environmental conditions and biological communities (Fig. 8-9).

Three main types of coast can be identified: low and sandy shores, high and rocky coasts, and the Archipelago's coasts that are mostly high and rocky. The continental shelf is wide and has a slight slope, mainly north of Elba Island, where it is extended for 35-40 km from the coastline, until the depth of about 150 m. Between Capraia and Gorgona islands, the shelf is crossed by the Elba's Canyon, and between Elba Island and the Argentario there is a unique basin.

The coastline and the marine space include intact natural ecosystems, as well as areas where the marine environment and its resources are exploited at sustainable level and other areas where industrial activities and different anthropic uses have strong impact on local ecosystems. Some areas of great ecological value in terms of biodiversity and landscape integrity are the Tuscany Archipelago and the Orbetello Lagoon. The Tuscany Archipelago includes well preserved ecosystems hosting several species with relevance for conservation, such as endemic species and endangered vertebrates. To protect and sustainably manage its heritage it was declared a National Park in 1996. The Orbetello lagoon is considered the most important lagoon in the context of the Tyrrhenian Sea, it is a key area for migratory bird species in particular in winter. It is designated as a SCI and a SPA under EU Habitat and Bird directives respectively, a Ramsar site under the Ramsar Convention and it was declared a protected area by WWF.¹⁰⁸

Nature conservation is managed at different administrative levels. The marine protected areas are managed by the Tuscan Archipelago National Park. Terrestrial coastal areas found in Tuscany include: Natural Protected Areas of Local Interest (ANPIL), Provincial Reserves, Regional Parks, National reserves.

The benthic populations of continental Tuscany and of the Tuscan Archipelago are various, both biocenosis of soft bottoms (detrital and muddy ones) and of hard bottoms are present, seagrass meadows are relevant along some coasts. The habitats of the area make it a hotspot of spawning and nursery grounds and of high density of recruits for a number of demersal commercially relevant species (e.g. hake - *Merluccius merluccius* and rose shrimp - *Parapenaeus longirostris*, which are tightly linked to the crinoid *Leptometra phalangium* facies, particularly abundant).

The Tuscan Archipelago focus falls within the Pelagos Sanctuary, which is a special marine protected area and is interested by the presence of numerous marine mammal species.

In 2017, the Regional Agency for environmental protection of Tuscany (ARPAT) reported the list of species of marine mammals mostly detected in the Tuscany marine area, namely: striped dolphins (*Stenella coeruleoalba*), bottlenose dolphins (*Tursiops truncatus*), fin whales (*Balaenoptera physalus*) and sperm whales (*Physeter macrocephalus*). Along the Tuscany coast and in Tuscan Archipelago there are some nesting sites where sea turtles reproduce.¹⁰⁹

¹⁰⁸ https://www.wwf.it/oasi/toscana/laguna_di_orbetello/laguna_di_orbetello__english_version_.cfm

¹⁰⁹ <http://www.arpat.toscana.it/documentazione/catalogo-pubblicazioni-arpat/lattivita-di-arpat-nel-monitoraggio-di-cetacei-tartarughe-e-grandi-pesci-cartilaginei>

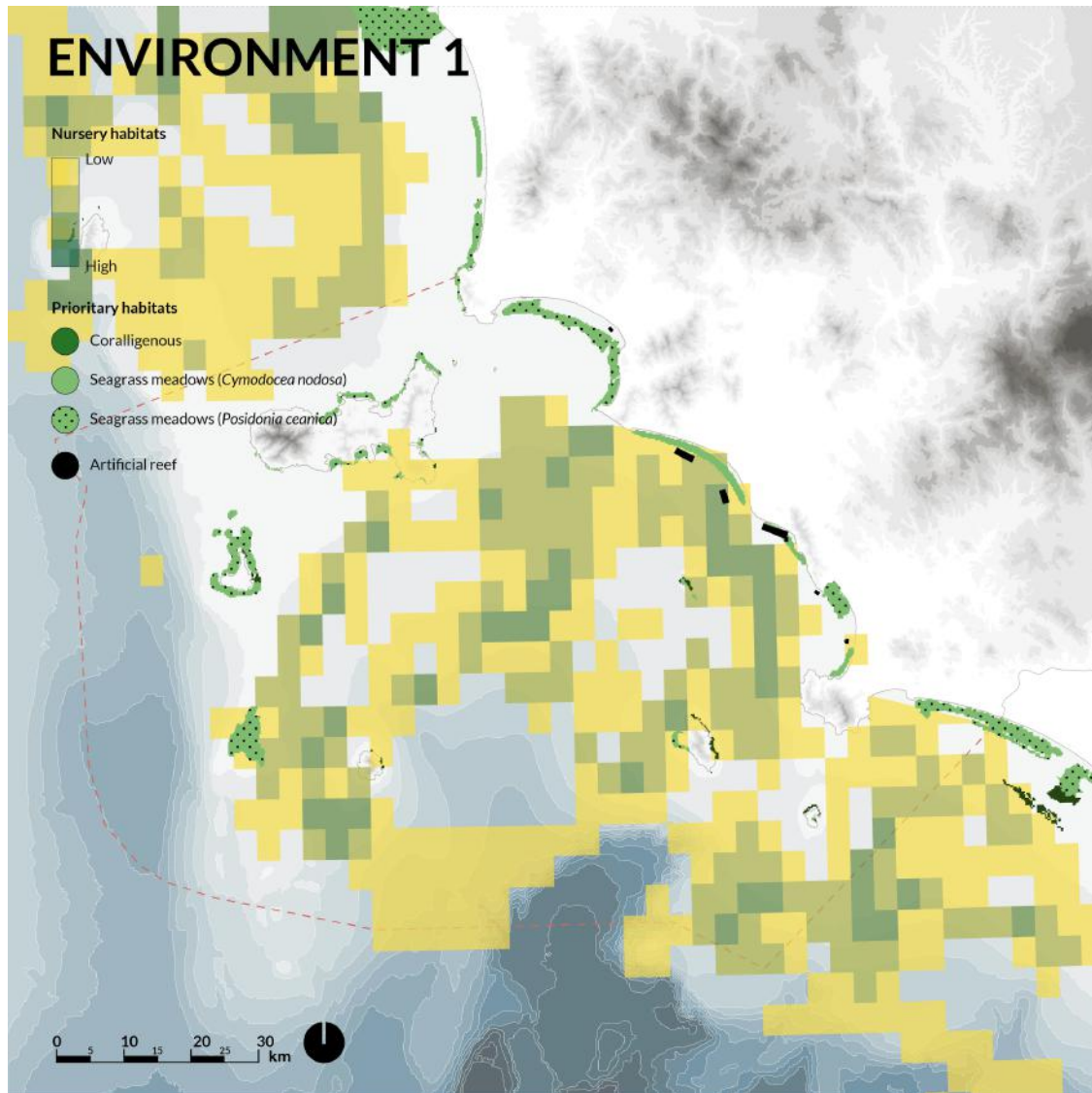


Figure 7. Main priority bottom habitats and habitats of nursery habitats identified within the Tuscany CS Area

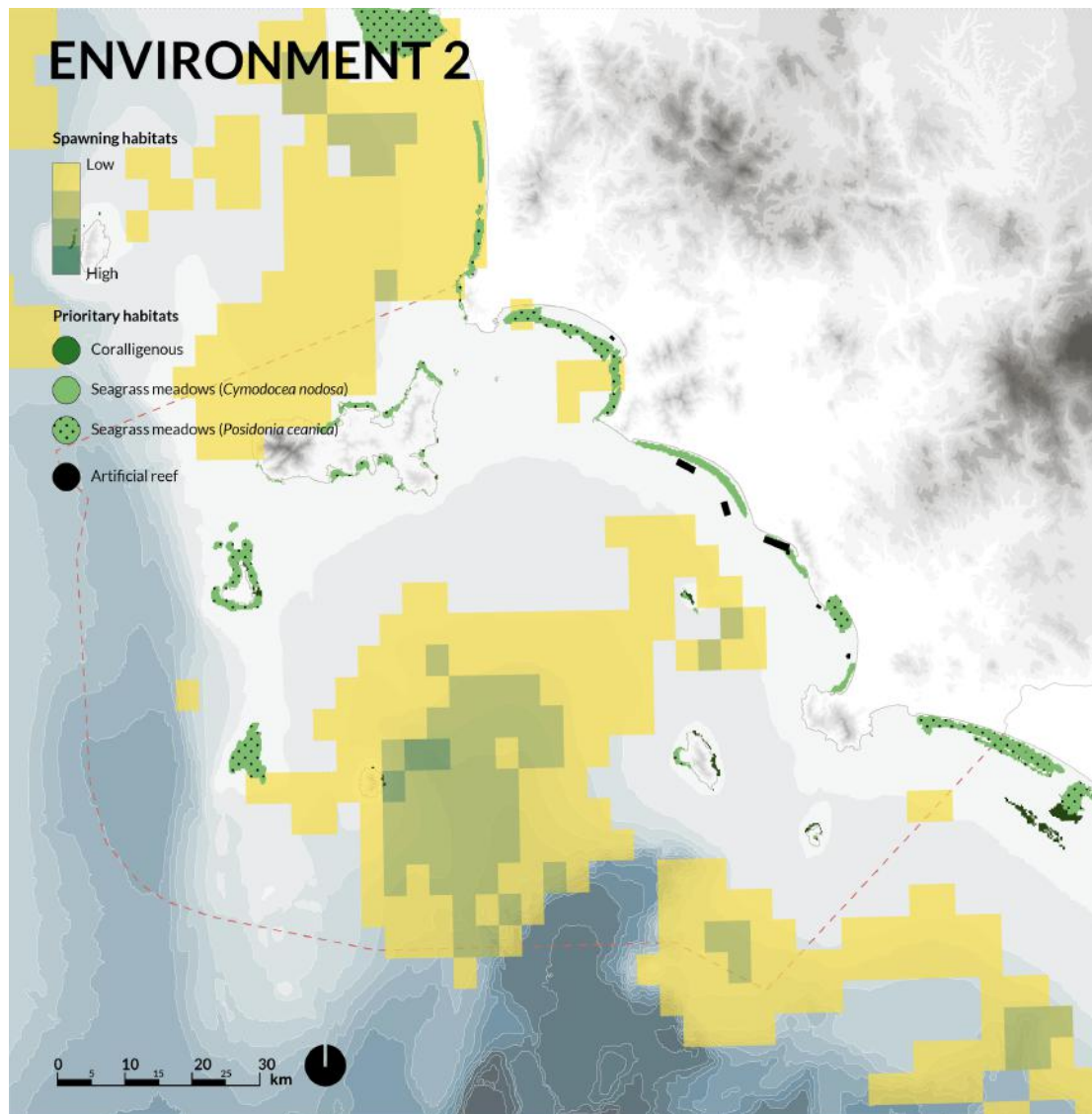


Figure 9. Main priority bottom habitats and hotspot of spawning habitats

HUMAN USES

Marine traffic

Marine traffic is particularly intense in the focus area which is crossed by commercial routes, mainly North-South oriented. Passenger vessels are also found in this area mainly in relation to transport of tourists within the Tuscany continental coast and the islands of the archipelago.

The harbour of Piombino represents an hotspot for marine traffic as it can be noted from the high density of shipping traffic in the area (Fig. 9). Considering passenger traffic between the Tuscan coast and the islands of the Tuscan Archipelago, there are different connections: ferries to the island of Elba leave from the port of Piombino and reach the ports of Portoferraio and Rio Marina and vice versa with crossings of approximately 60 and 40 minutes respectively. In the period from April to October, daily trips are numerous and cover the whole day.

A higher traffic density is expected in the next years, due to the increasing importance of the Short-Sea Shipping and of the Mediterranean economic exchanges. The marine traffic of small cruises is expected to increase in the study area too.¹¹⁰ Furthermore, as local objectives from the Port System Authority Plans there

¹¹⁰ Based on stakeholder consultation

is the need of improve regional continuity between the Tuscany Archipelago and the mainland and improve inter-regional connections with Northern Tyrrhenian.¹¹¹ All these factors will intensify the maritime traffic in the area.

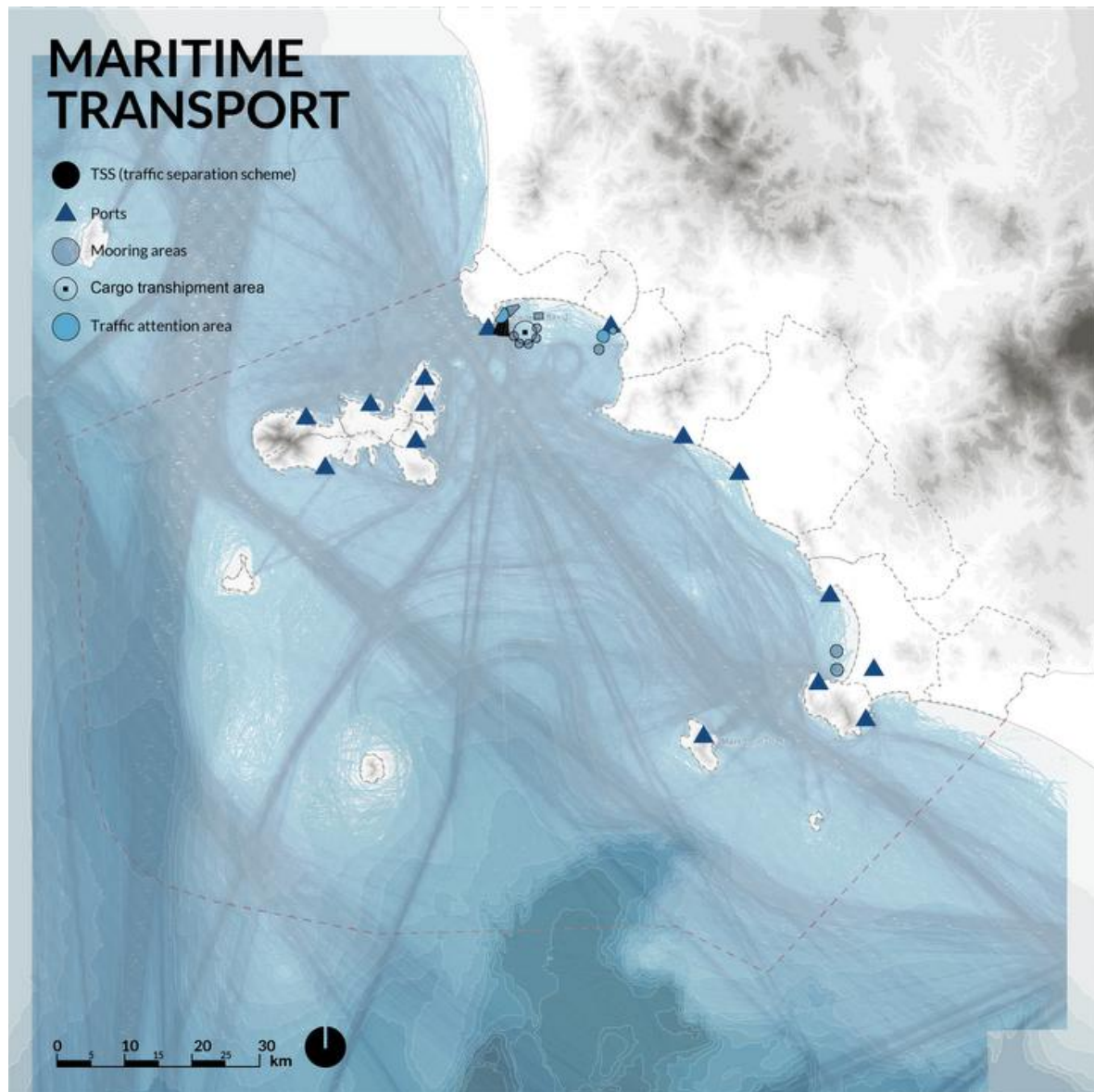


Figure 10. Main components relevant to marine traffic identified within the Tuscany CS Area.

Harbours, Marinas and Mooring areas

The Tuscany coast is heavily populated and disseminated with large and medium-sized coastal cities, industrial areas, ports of major commercial importance and marinas. Several ports and marinas are found in the CS area. Which is relevant both for commercial transport and for recreational, tourism boating.

Piombino is the main port within the CS area. It is in seventh place amongst Italian ports for the dry bulk sector. Another historic vocation of the port is closely linked to the ferry sector (Elba, Sardinia, and Corsica) given the high number of passengers (the fifth port in Italy), a consequence of the tourist development of the island of Elba and of the notable increase in ro/ro traffic to and from Sardinia.¹¹² In particular, 11000 ships per year pass through the harbour of Piombino, with a total movement of about 2.5-3 million passengers making Piombino the main tourist harbour of the Northern Tyrrhenian basin.¹¹³

¹¹¹ <https://www.portaltotirreno.it/piano-operativo-triennale-2018-2020/>

¹¹² <https://www.portaltotirreno.it/>

¹¹³ <https://www.portaltotirreno.it/i-porti/porto-di-livorno/le-statistiche/>



Trends in the area show a continuous expansion and a higher intensity of the activities already present in the area for the next period. First of all, the expansion of the port of Piombino (Fig. 10). Indeed, the Port Regulatory Plan targets the following priorities: infrastructure development (quays, open spaces, dock depths) and improvements to access in order better to satisfy in adequate way the requirements for goods movement coming from the territorial reference area of the port; rapid connections of the port with the Tyrrhenian corridor; the connection of the port with the railways to improve the capability of the industrial activities present; the construction of a tourist marina with the various necessary connections, car-parking and qualified services, as well as adequate room for the development of boatbuilding and repair yards for pleasure craft. In concrete terms, the Port Authority intends to bring the operational and competitive performance of the port up to date, taking the linear development of the quayside from 2,300 to 6,500 metres, the port area from 125,000 square metres to 1,100,000 and the depth of the dock basin to 15 metres.¹¹⁴ Specific mooring areas for large ships have been designated right in front of main areas of commercial interest, in particular the Piombino Port, the Bay of Follonica and between Orbetello and Santo Stefano Port (Fig. 10).

Extraction of non living resources

Suitable underwater areas for sand extraction were identified through previous studies within the CS area (Fig. 11). However, there is no registered activity of sand extraction from these underwater deposits. For what concerns water instead in Piombino water consumption and salinization can be considered notable. Indeed, from the 1970s to the present, the development of heavy industry and tourism (to a lesser degree also of intensive agriculture) along the coast has caused a progressive increase in water consumption. The water has not been obtained from surface sources like rivers since these are of a seasonal nature and their capacity varies greatly in the course of a year, with long periods of almost total dryness. Water has been obtained by digging wells into the deep water tables of the coastal plains. The decreased pressure of freshwater due to water consumption allowed the gradual infiltration of saltwater into the water table: infiltration started near the coastline has progressively advanced inland, affecting the water table utilized for agriculture and the wells of industries which had to obtain the water used from lengthy and expensive desalination processes.

¹¹⁴ <https://www.portaltotirreno.it/i-porti/porto-di-piombino/>

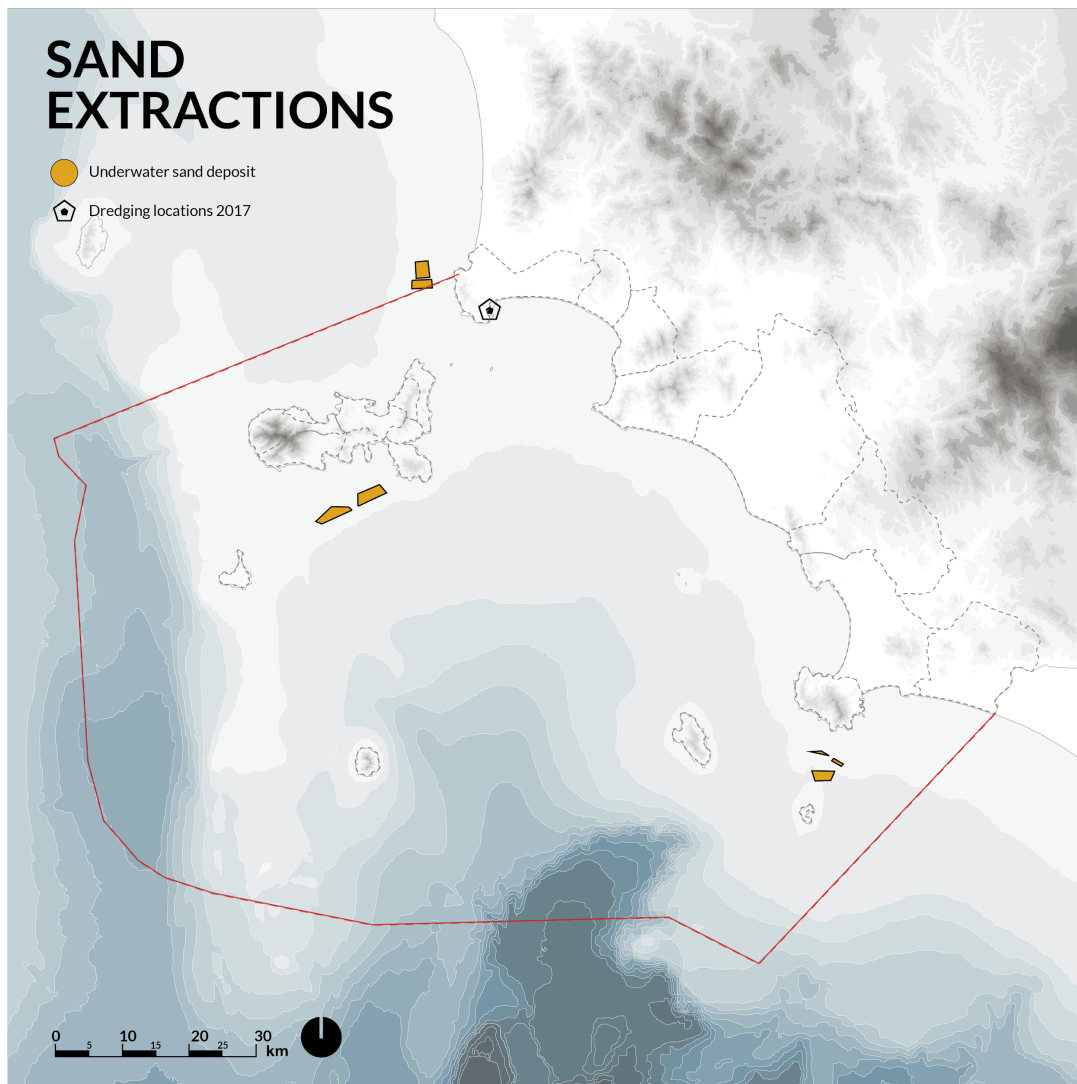


Figure 11. Sites of existing and potential sites of sand extraction

Aquaculture

Aquaculture is among the most relevant activities in the area from a socio-economic perspective and it is sparsely developed through the entire coastline (Fig. 12). Tuscan aquaculture is focused mainly on marine species, mostly gilthead sea bream and sea bass. Implants are all located in the provinces of Livorno and Grosseto, from UNIMAR data for the years 2009 and 2010, there are 21 implants, but only 14 resulted active.¹¹⁵ Of these, one carries out extensive farming, another consists in an area for the stabling of fish for repopulations, another only carries out hatchery activities, the other 11 are intensive farms (3 farm in cages and 8 in tank on land). The total production results over 3000 tons per year for a value of about 25 million euros. Shellfish aquaculture is also present in sheltered areas such as the Orbetello Lagoon.

Based on national trends, the demand of fish products is expected to increase. Still, while fisheries are in steady decline, aquaculture is expected to increase. Indeed at global level it is expected to produce over 60 percent of the fish destined for human consumption by 2030.¹¹⁶ Thus, numerous requests for aquaculture concessions have been submitted in the area and local stakeholders addressed that marine aquaculture is expected to expand both spatially and in production amount in the short term.

¹¹⁵ <http://www.unimar.it/it/publicazioni/>

¹¹⁶ FAO. Review of the state of world marine fishery resources. Rome, 2011

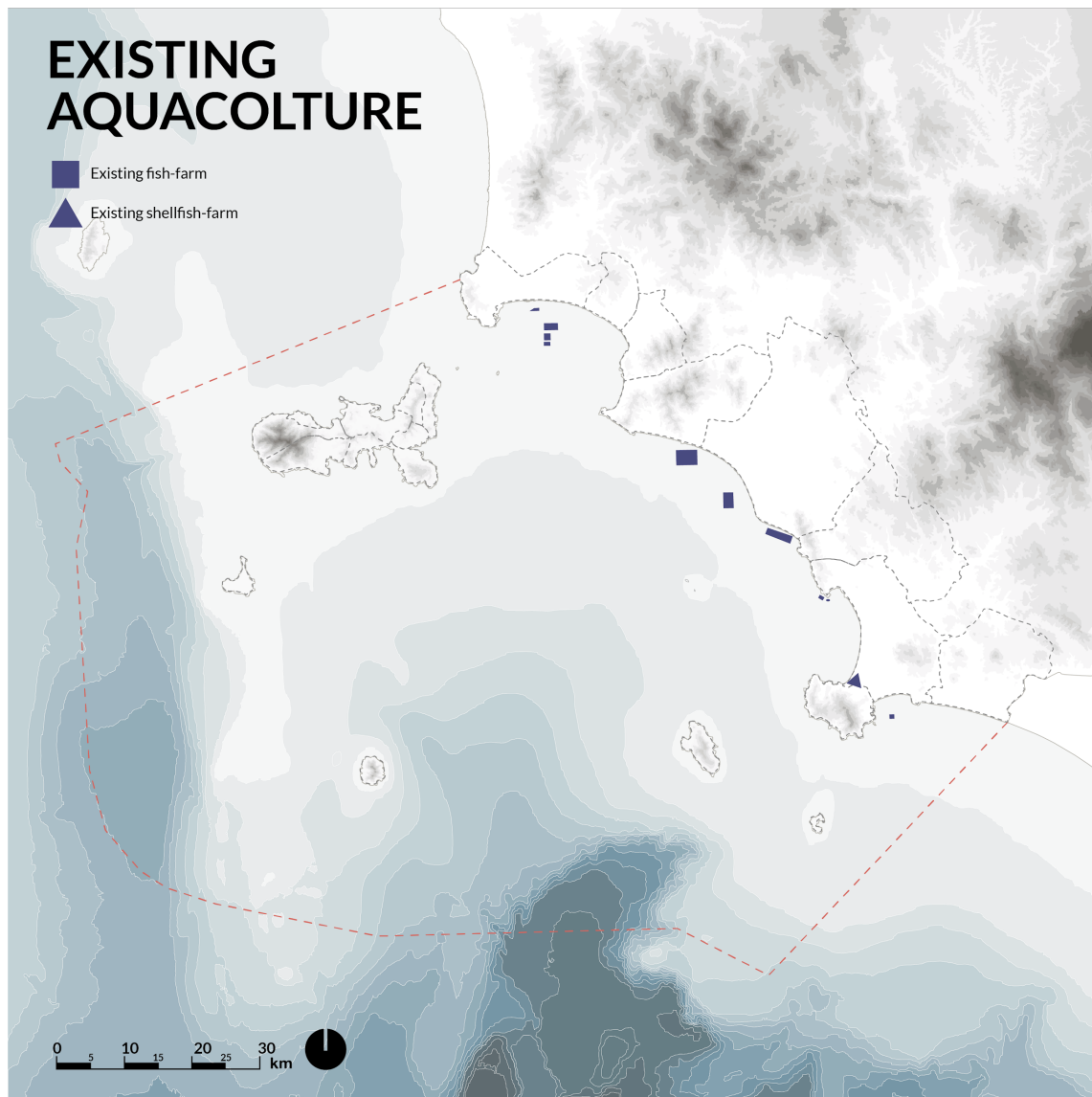


Figure 12. Existing aquaculture sites

Industrial sites

The main industrial site within the focus area is represented by Piombino Port. Piombino is a town of about 35,000 inhabitants and lies in front of the Elba Island and at the northern side of Maremma. The town has a long industrial history in fact while most Italian steel sites date back only to the post-war economic boom, in Piombino it started at the end of the nineteenth century (besides some traces of iron manufacture in the area have been dated before the Roman Empire). Piombino grew from being a small village with about 4,000 inhabitants devoted mainly to agriculture, fishery and handcraft in the late nineteenth century to having 20,000 inhabitants and being one of the most important centres of the national steel industry by 1911.¹¹⁷ For these reasons the current structure of the port of Piombino which accounts for the presence of the main activities in the area, is conditioned by the presence of the large steel working industries that were to develop during the last century in the areas surrounding the port. Piombino is in fact home to an important industrially productive district, where the companies present are controlled by some of the most important multinational groups in the world, such as Lucchini SpA (second largest steel plant in Italy).

The presence of the industrial site had numerous consequences from an environmental point of view. The industrial site and the municipality of Piombino in fact are a Site of National Interest for Contaminants - SIN (Fig. 13). An environmental bio monitoring was carried out to analyse the levels of heavy metals and polycyclic

¹¹⁷ Crouch, C., Le Galès, P., Trigilia, C., & Voelzkow, H. (2004). *Changing governance of local economies: Responses of European local production systems*. Oxford University Press on Demand.

aromatic hydrocarbons absorbed by mussels after drainage of marine sediments in the SIN area and results showed relatively high levels of contaminants.¹¹⁸

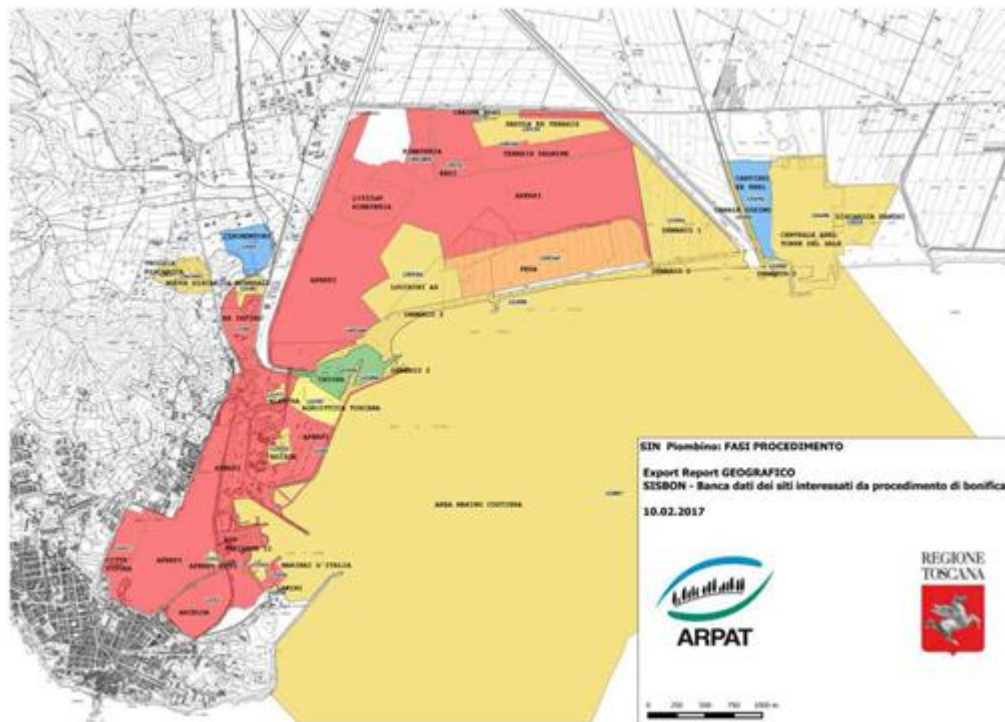


Figure 13. Map of the Site of National Interest for Contaminants (SIN) of Piombino.

Fishing

Fishing is a main activity through the entire focus area (Fig. 14). Due to the variety of habitats and consequently of resources, the marine professional fisheries are mostly multigear and multispecies, with a highly heterogeneous fleet widely dispersed along the coasts, which are dominated by small scale fishing vessels. This is one of the areas where artisanal fishing is more important, as explained by the average size of the vessels compared with the average size of the national fishing fleet (just over 8 tons vs. 13 tons). The most used fishing systems are passive, followed by purse-seines and trawling gears.¹¹⁹

Passive gears are used mainly near the coast, close to the base harbour, they mostly consist of various kinds of trammels and gillnets to catch different species depending on the season, such as mullets, breams, cuttlefish, striped prawns. Some larger vessels use gillnets to fish medium and large sized hakes. The major fishing activity is concentrated south of Elba Island, where the shelf is narrower and, in addition to small scale fishing, there are trawling fleets (Porto Santo Stefano, Porto Ercole, Castiglione della Pescaia) that can operate both in the shelf and in the slope, focusing the activity on rose shrimps, Norway lobsters and red shrimps.

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¹¹⁸ Bocchetti R, Fattorini D, Pisanelli B et al. Contaminant accumulation and biomarker responses in caged mussels, *Mytilus galloprovincialis*, to evaluate bioavailability and toxicological effects of remobilized chemicals during dredging and disposal operations in harbour areas. *Aquat Toxicol* 2008; 89: 257-66.

¹¹⁹ Ministero delle politiche agricole alimentari e forestali. Piano di Gestione Nazionale relative alle flotte di pesca per la cattura delle risorse demersali nell'ambito della GSA 9 (*Mar Ligure e Tirreno Centro-Settentrionale*)



small scale fishing, there are trawl fleets (Porto Santo Stefano, Porto Ercole, Castiglione della Pescaia) that can operate both in the shelf and in the slope, focusing the activity on rose shrimps, Norway lobsters and red shrimps.¹²⁰

In the area trawling activity carried out by vessels coming from other GSAs is not particularly relevant, while there are a number of purse-seiners that from other GSAs come to fish mainly small pelagics (anchovies and pilchards).

Tuscany is divided in four Maritime Compartments: Marina di Carrara, Viareggio, Livorno and Portoferraio. The CS Area is comprised in those of Livorno and Portoferraio. MIPAAF data from 2016 indicate that in these two Compartments are registered the 73% of the fishing vessels of the whole Tuscany in terms of number, with 341 (62%) and 60 (11%) units, respectively. Dividing the types of vessels in the two categories “trawlers” and “passive polyvalent”, the fleet registered in Livorno is mainly composed by passive polyvalent (n = 281), overwhelmingly represented by vessels with overall length between 6 and 12 meters (n = 208), trawlers are composed by small and medium vessels for the category, less than 24 meters of overall length. Portoferraio’s fishing fleet consists almost exclusively of passive polyvalent (n = 58), that have even in this case mainly an overall length comprised from 6 to 12 meters (n = 44), the only 2 trawlers are small vessels of overall length between 12 and 18 meters. Taking into account the total tonnage, the Maritime Compartments of Livorno and Portoferraio cover 78% of GT of the whole Tuscan fleet, with 3,033 (71%) and 285 (7%) GT, respectively.¹²¹

In GSA9, the capacity of trawling fleet in 12 years (data from 2004 to 2015) declines of about 20% both in number and in tonnage, while the passive polyvalent remain almost unchanged in number and increased of about 7% in tonnage. For both the systems in 2012 it was recorded a strong fall of day of fishing, but in the following years the values have been re-established on the previous values.¹²²

On the basis of biological indicators available at GSA level, the Sub Group on Mediterranean of the Scientific, Technical, Economic Committee for Fisheries (STECF-SGMED) and the Sub-Committee on Stock Assessment of the Scientific Advisory Committee of the General Fishery Commission for the Mediterranean (SCSA-GFCM) have produced the assessment on a series of commercial exploited species. Information on the statuses of the stocks is to date available for *Aristeomorpha foliacea*, *Aristeus antennatus*, *Engraulis encrasicolus*, *Galeus melastomus*, *Merluccius merluccius*, *Micromesistius potassou*, *Mullus barbatus*, *Mullus surmuletus*, *Nephros norvegicus*, *Pagellus erythrinus*, *Parapenaeus longirostris*, *Phycis blennioides*, *Raja asterias*, *Raja clavata*, *Sardina pilchardus*, *Scyllorhinus canicula*, *Squilla mantis*, and *Trisopterus minutus*. Among them, only *P. longirostris* resulted as sustainably fished, all the other species have been assessed in status of overfishing.¹²³

¹²⁴

The Management Plan for the period 2011-2016 provided some technical measures to be taken for the trawling and for the so called “other systems” in the GSA9.¹²⁵

For the trawling the main measures were Permanent cessation, Temporary cessation, Technical cessation, Fishing permits, Minimum landing sizes, Mesh size, Areas forbidden to trawling. Permanent cessation was realised through a program of decommission of fishing vessels to reduce by 5% the overall fishing capacity. The Temporary cessation consisted in a biological stop of 30 days in the period September-October, except for the vessels that fish on deep shrimps, for which the stop have to occur at the end of the season of the species. The Technical cessation prohibited trawling on Saturday, Sunday and holidays, and in the eight Fridays subsequent to the month of biological stop. Fishing permits were intended to each vessel authorized to trawl. Minimum landing sizes were referred to the Annex III of the Reg. (EC) 1967/2006. Mesh size changed from

¹²⁰ Ministero delle politiche agricole alimentari e forestali. Piano di Gestione Nazionale relative alle flotte di pesca per la cattura delle risorse demersali nell’ambito della GSA 9 (*Mar Ligure e Tirreno Centro-Settentrionale*)
Available at: http://www.agciagricol.it/wp-content/uploads/2018/04/PIANO_DI_GESTIONE_GSA09_DEFINITIVO-1.pdf

¹²¹ “The state of fishing and aquaculture in Italian seas” Ministry of Agricultural, Food and Forestry Policies, MIPAAF

¹²² FAO. Fishery and aquaculture county profiles. The Republic of Italy. 2015

¹²³ FAO. Fishery and aquaculture county profiles. The Republic of Italy. 2015

¹²⁴ Paper Report MSFD 15-10-2012 Available at: <http://cdr.eionet.europa.eu/it/eu/msfd8910/msfd4text/envuhgcp/>

¹²⁵ Programma Operativo FEAMP – Annex 3 Available at:
<https://www.politicheagricole.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/8752>



2010 from 40 mm rhomboid to 40 mm square, to avoid deformation and reduction of the selectivity. Areas forbidden to trawling were the areas within 3 nm from the coastline or within the isobath of 50 m, the areas where there are seagrass meadows, and the areas at depths over 1000 m.

For the “other systems” the main measures were Permanent cessation, Temporary cessation, Minimum landing sizes, Features of the gears. The first three measures were the same as those indicated for the trawling, except for times and methods of the biological stops. The Features of the gears are referred to the Reg. (EC) 1967/2006.

Furthermore, inside the GSA9 have been instituted two biological protection zones (ZTB, MIPAAF Decree 16 July 1998), one of which (50 kmq) is inside our focus area, off the coast of Argentario. Following the MIPAAF Decree 22 January 2009, in such areas trawling is allowed only in the period from July 1st to December 31st. Five new ZTBs were proposed, located in the nursery areas of the hake and other commercial species, two of them inside our focus area.

A new Management Plan for the period 2018-2019 encourages the implementation of such new ZTBs, extending the regulation also to other fishing systems. Maintaining the measures of the Plan 2011-2016, the decrease of the fishing effort will be obtained also by means of the reduction of the days of activity for all commercial fishing vessel type and all methods, 5% of reduction in 2019 respect to 2018 and 10% of reduction in 2020 respect to 2018.

Starting from 1° January 2017, the plan that provides the landing obligation for all species caught by means of demersal fishing system entered into force, as it is provided in Reg. EU n. 1380/2013, with the aim of improve the selectivity of the gears and reduce the fish activity in the nursery areas.¹²⁶

A traditional fishing activity of the area is that addressed to the catch of the transparent goby (*Aphia minuta*, in Italian “rossetto”), a small demersal species that assemble in big schools in shallow waters near the coast, where the bottom is sandy or muddy. Its catch necessarily needs the use of nets with smaller mesh (the “sciabica”, a particular kind of seine) that operate closer to the coast than what is established in the Reg. (CE) 1967/2006. Thus, due to the traditional and economic importance of such activity, and its demonstrated sustainability and low environmental impact, a derogation for GSA9 has been approved. In Tuscany the fishing on transparent goby is in good part concentrated in the focus area of this study.¹²⁷ For the region, the permission to use the “sciabica” for the fishing of the species is granted from November 1st to March 31st to about 40 vessels each year, which have to be less than 15 GT of tonnage and less than 120 kW of power. Such vessels are allowed to operate only in daylight time and for a maximum of 60 days each one during a season (from previous investigation, the mean days of transparent goby fishing are about 20 each season). The net can be 300 m maximum, with neutral buoyancy, and with mesh size of 3-5 mm, it can operate within 3 nm from the coastline, and it is prohibited to operate on seagrass meadows.¹²⁸

¹²⁶ Programma Operativo FEAMP – Annex 5

Available at: <https://www.politicheagricole.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/8752>

¹²⁷ Ministero delle politiche agricole alimentari e forestali. Piano di Gestione Nazionale per la pesca del rossetto (*Aphia minuta*) con la sciabica da natante nella GSA 9 in deroga all’art. 9 (dimensione minima delle maglie) e art. 13 (distanza dalla costa) del reg. CE n. 1967/2006 and Decreto Direttoriale 15 dicembre 2015

Available at: <https://www.politicheagricole.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/9567>

¹²⁸ Piano di Sviluppo Locale del Gruppo di Azione Costiera “Costa Toscana”

Available at: http://www.regione.toscana.it/documents/10180/11802128/Delibera_n.643_del_18-05-2015-Allegato-A.pdf/c8ca52ae-3624-4a73-a89a-67b6b76a0f15

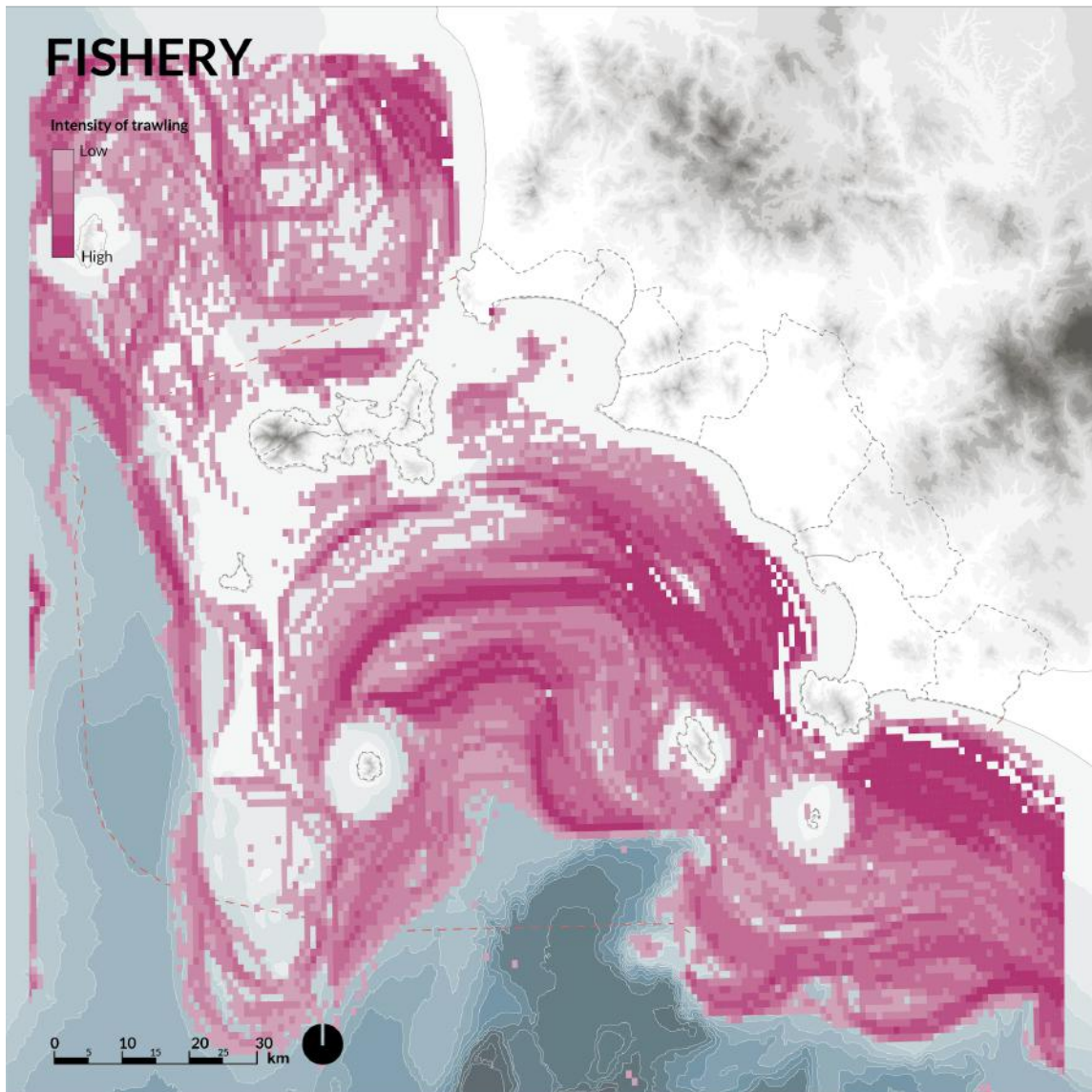


Figure 14. Fishing activity: trawling intensity

Pipelines and Cables

Pipelines and cables which extend from the coast are sparsely found through the entire focus area (Fig. 15). They are mainly related to the communication and services connections between the mainland and the islands of the Tuscan archipelago.

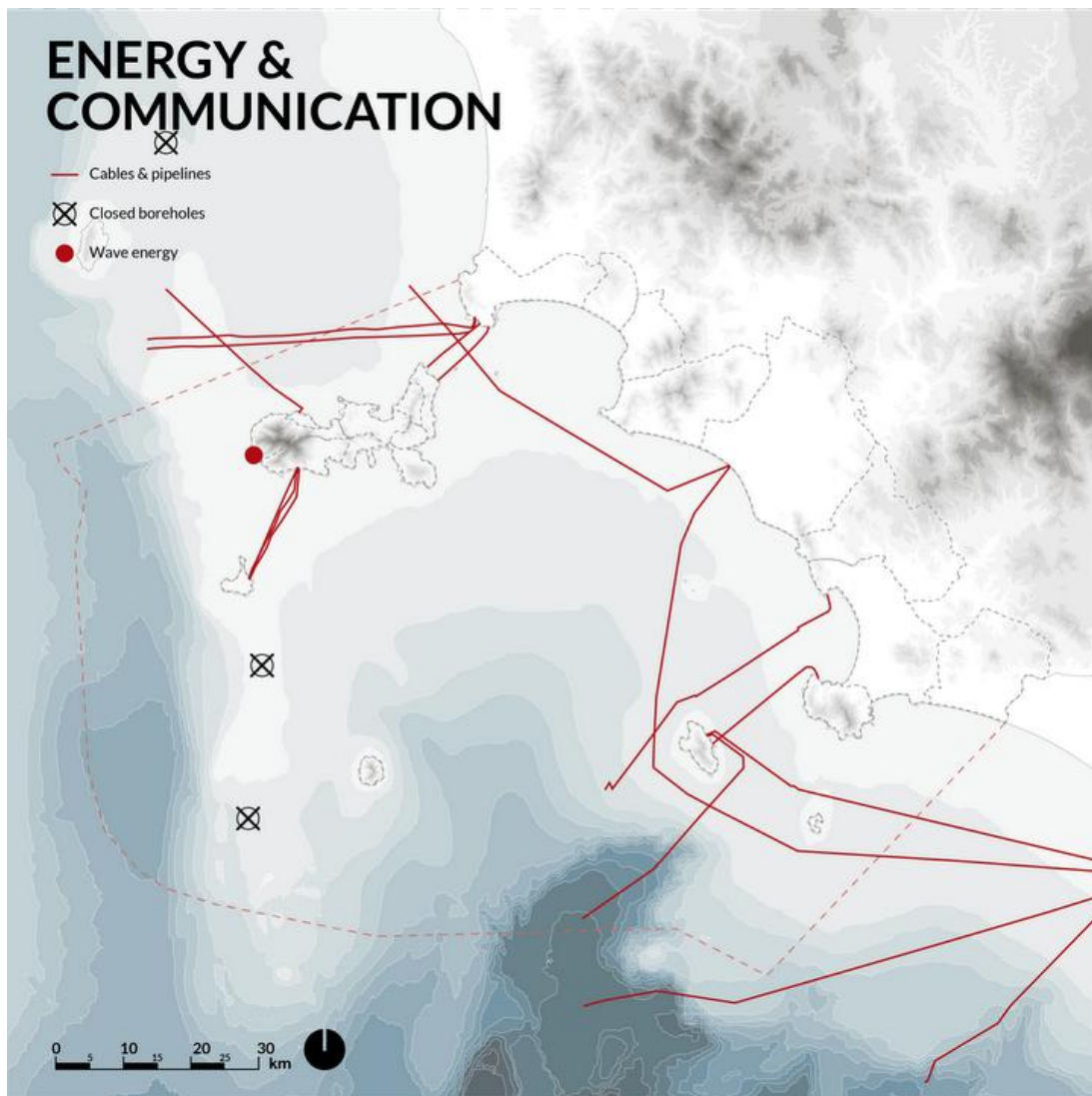


Figure 15. Energy and communication facilities identified within the Tuscany CS Area.

Coastal and maritime tourism

Coastal tourism is another important activity in the focus Area in terms of socio-economic relevance (Fig. 16). The Tuscany region and the Archipelago are areas highly frequented by tourists especially during the summer months. The natural and cultural heritage of the coast are indeed a main attraction for tourism. Generally, coastal destinations represent the majority share of tourism in the region, about 40% of the official ones and an even higher proportion of unofficial presences in homes.

Overall, in the fifteen-year period, the beach segment has experienced an increase in occupancy of around 11% due to heterogeneous dynamics between the various destinations and over time. At a first stage characterized by the holding and increase in attendance of Italians and the decrease of foreigners from traditional markets across the Alps has in fact followed a second period in which the new growth of foreigners has been counterbalanced by the decline of Italians to following the effects of the post-2008 crisis. The political instability and insecurity that characterized many of the competing destinations on the south and east bank of the Mediterranean have somehow mitigated the effects of the crisis, especially in recent years, favoring the growth of presences in these destinations.

The observation of the level of tourism development and the dynamics of the presence in different territorial contexts leads to a schematic but effective division between two subsystems: the more consolidated and less dynamic destinations represented by the North coast and the Tuscan Archipelago, the second destinations of more recent and impetuous development in the center-south are represented by the coastal strip south of Livorno, the Etruscan Coast and the coastal belt of Grosseto (Table 1).¹²⁹

¹²⁹ Piano strategico per lo sviluppo della Costa Toscana (2016 – 2020)



Table 1. Relevance of coastal tourism economy in the main coastal areas of Tuscany Region. Source: Piano strategico per lo sviluppo della Costa Toscana (2016 – 2020)

	North Coast	Etruscan Coast	Tuscan Archipelago	South Coast	Entire balnear system	Tuscany
Employees on tourism locative units (2013)	15,5 %	15,3 %	32,7 %	17,2 %	16,7 %	9,8 %
Employees on tourism locative units over total population (2013)	4,4 %	4,0 %	10,1 %	4,6 %	4,6 %	3,1 %
Tourism payoff 2008-2015	950	513	160	479	2,102	17,794

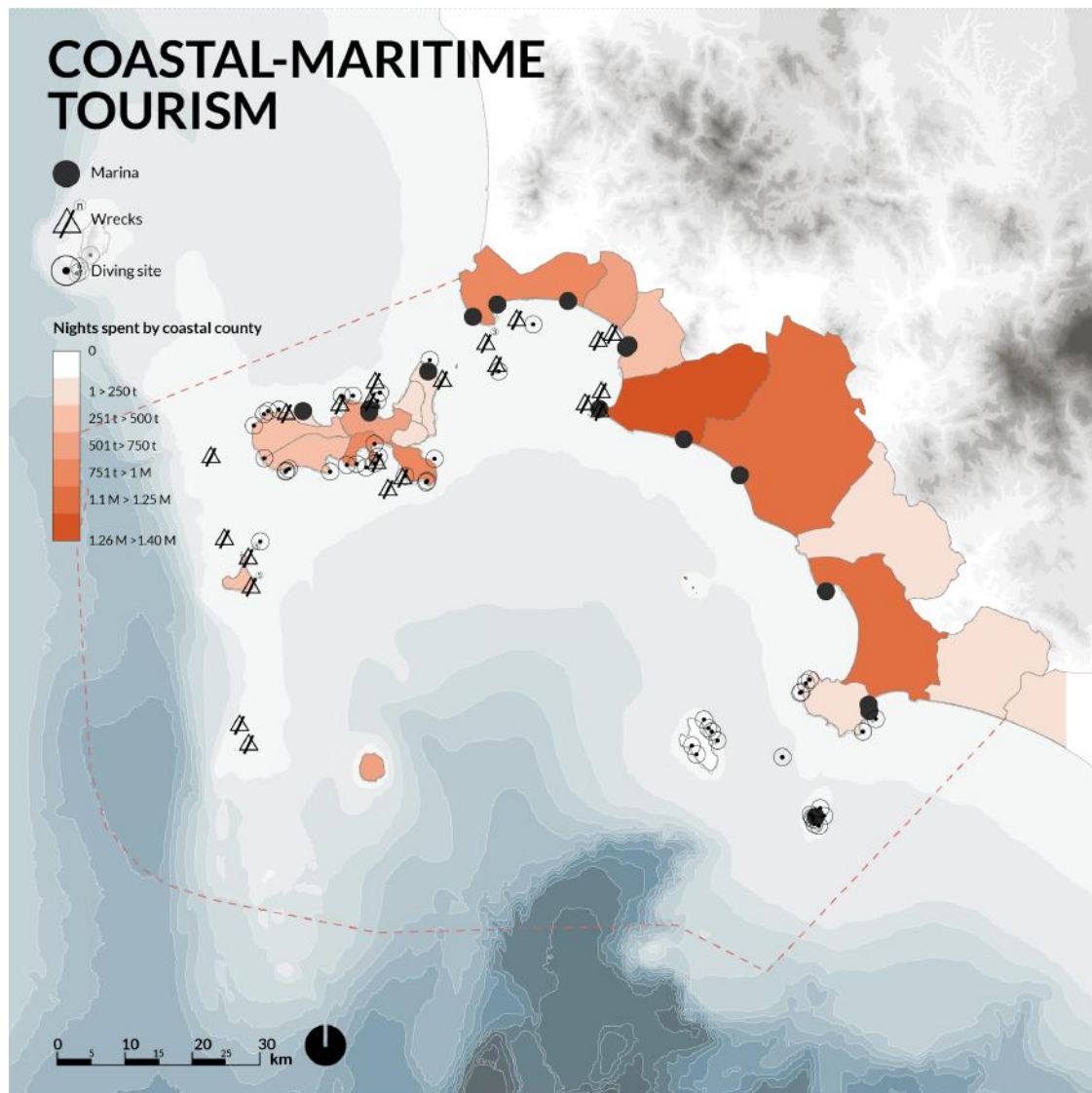


Figure 16. Coastal tourism indicators and main facilities identified within the Tuscany CS Area.

2. DEFINING A VISION AND IDENTIFYING MANAGEMENT OBJECTIVES FOR THE FOCUS AREA [LINK WITH C 1.3.2]

2.1 DECLARE A VISION

The area on which this MSP exercise is carried out is heavily anthropized and strongly interested by development trends related with several maritime sectors. The Tuscan Archipelago and the coast of the focus area include coastal and marine habitats of highly ecological relevance and value, and host marine species of priority concern. These environmental characteristics orient nature conservation and protection priorities in the area, while promoting its attractiveness that largely supports the present need and opportunity for growth and development. Planning the future development of each maritime uses and activities should be done ensuring the compatibility of all the decisions taken, and the plans should incorporate all the three pillars of sustainability: economy, society, environment. The vision thus foresees that socio-economic and conservation objectives in the area will be reached sustainably, avoiding incompatibilities and nature deterioration,



favouring synergy between environmental and socio-economic objectives, and answering to the needs and demands of the coastal and marine area involved.

2.2 STAKEHOLDER ENGAGEMENT [LINK WITH C.1.3.5]

The active participation and engagement of all relevant stakeholders, at both national and local level, is a critical element for the successful preparation and implementation of maritime spatial plans. MSP, in fact, relies on requests and objectives that belong to both national authorities as well as local actors, which present peculiar needs, contextualized within the framework of a specific coastal and marine area. Thus, multi-level stakeholders and actors can be regional and local authorities, economic entities from key maritime sectors, NGOs and civil society. The stakeholder consultation should cover all the different phases MSP process, starting from the production of the knowledge framework of the area subjected to the within the MSP process, ending with the phase of validation of the proposed portfolio of measures related with the plan.

The duration of the SIMWESTMED project, on the other end, did not allow for a large and comprehensive participatory process. Nevertheless, the project has undertaken a fruitful dialogue with key institutional stakeholders in order to identify the specific objectives and ongoing initiatives in the study areas and to address the proposed planning measures. In addition, SIMWESTMED benefited of the stakeholder dialogue and networking activities already undertaken in similar projects and initiatives (i.e. ADRIPLAN¹³⁰)

In the framework of the Tuscan Archipelago focus area, the stakeholder involvement process includes four steps, having in mind the 5 steps proposed in the deliverable C1.3.5 “Report on potential approaches for stakeholder engagement on MSP and the evaluation of the outcome of stakeholder involvement in the pilot areas”. For the above-mentioned reasons, the five steps were aggregated.

IDENTIFY AND MAP RELEVANT STAKEHOLDERS

A preliminary list of key stakeholders has been elaborated, which came from different maritime sectors. They have been divided into three broad categories: public institutions and relevant local authorities, economic entities of key sectors, civil society organizations (Tab. 2)

Table 2. Stakeholders involved in the consultation process.

STAKEHOLDER CATEGORY	ORGANISATION
Public Institutions and local authorities	Comune di Orbetello Toscana Region Provincia di Grosseto Capitaneria di Livorno Ufficio Circondariale Marittimo Porto S. Stefano Northern Tyrrhenian Sea Port Authority Consorzio Lamma INU National Institute of Urbanism

¹³⁰ Barbanti, A., Gissi, E., Musco, F., Sarretta, A., Appiotti, F., Bianchi, I., ... Campostrini, P. (2017). *Towards marine spatial planning implementation in the Adriatic and Ionian region. Marine Spatial Planning: Methodologies, Environmental Issues and Current Trends.*



Economic operators	CNA National Confederation of Crafts and Small and Medium Enterprises of Grosseto CN Talamone MIGE sas society Collegio Geometri di Grosseto Federalberghi Confartigianato Grosseto Giro di Boa sas, touristic society of Argentario PROED
Civil society organizations and projects	Projects: <ul style="list-style-type: none"> · COEXIST · MESMA · PERSEUS · MUSES · SIMWESTMED · RITMARE · PORTODIMARE

Starting from this preliminary list, the lead partner, in cooperation with all the national partners of the project, selected a first group of institutional stakeholders with relevant competences and role in maritime affairs. The lead partner established communication with this first group of stakeholders in order to inform them about the objectives of the project in relation to the national implementation process of the MSP Directive.

THE FIRST STAKEHOLDER WORKSHOP: “THE TUSCAN ARCHIPELAGO AND MARITIME SPATIAL PLANNING”

The first workshop has been held in Orbetello, on the 27 of March 2018.

In this first round of stakeholder involvement, the participants number was 44, included the Italian MSP competent authority, the Ministry of Infrastructures and Transport, and key institutional stakeholders

The meeting focused on three main objectives:

1. Identify objectives, priorities, conflicts and synergies in the Northern Adriatic area
2. Evaluate data and knowledge gaps in the study area for MSP purposes and the role of institutional stakeholders to fill in the gaps
3. Identify the relevant stakeholders to engage in the following steps of MSP process and the best methodologies for facilitating a participatory approach.

A case study fiche summarizing the knowledge available in study areas as well as actions and outputs foreseen has been prepared and shared with the participants.

The workshop was organized in two thematic round tables involving all participants. The first round-table addressed the national situation, the regional and local objectives, conflicts and challenges as well as the main initiatives and project ongoing in the area. The second round-table dealt with the data and information required for an MSP process and with the evaluation of relevant stakeholders to engage in the process.

A questionnaire has been elaborated and distributed during the workshop in order to collect stakeholders' priorities, to identify areas with high potential for maritime activities and areas with environmental vocation, to bring out criticalities and potential synergies among maritime uses, to obtain further contact of local stakeholders relevant for the MSP process in the area.

Workshop and questionnaire results have been used as a basis for the formulation of the MSP objectives for the case study areas (see par. 3.3). Inputs provided by the stakeholders have been also useful for identifying the critical issues in the area and part of the proposed portfolio of planning measures.

In addition, this first workshop has been very useful in order to establish contacts with local, regional and national stakeholders to assess data availability.

FIRST WORKSHOP RESULTS



Key MSP issues for the area stressed during the workshop:

- Presence of a fragmented management system in Italy that increase the difficulty of applying a multi-sectoral approach especially at the large spatial scale;
- Need of a clear future vision related with the real priorities, objectives and trends;
- Need of an integrated, multi-sectoral and holistic approach;
- Awareness about the fact that the marine environment is a three-dimensional system that need management plans more adaptive with respect the land-based systems;
- Need of a plan that consider and incorporate coastal and marine environments' conservation and protection;
- Relevance of land-sea interactions for land and marine plans integration and synergy;

Specific projects and objectives outlined by the local stakeholders were:

- High request of marine space for future uses, such as aquaculture sites, anchoring sites and submarine wine cellars;
- Potential conflicts between aquaculture (both related with present and future aquaculture sites) and tourism causing by the possible environmental degradation for aquaculture derived pollution;
- High touristic pressure on the port system in the area;
- Several abandoned sites along the coast of the area available for future uses especially for touristic ones;
- Need of protection and conservation of the valuable marine habitats and species that are present both along the coast, in the archipelago's islands, and in the sea;
- Need to conserve local traditions linked to the small scale fishery in the area.

Finally, the participants highlighted the importance and relevance of the SIMWESTMED Project and of the activities that are ongoing in its framework to activate the development of a concrete, sustainable and integrated blue growth in the area.

2.3 PLANNING OBJECTIVES ANALYSIS IN THE CASE STUDY [LINK WITH C.1.3.1.3 AND C.1.3.2]

The identification of the multilevel and multisectoral objectives, which reflect the needs and demands of the area and the expected trends, is imperative where the plan is on track of development and/or implementation, and it needs to be done at an early stage of the MSP process. The defined objectives drive the entire process orienting the plan proposal and underpinning its effectiveness.

The analysis of the existing national, international and European strategic documents highlights preferred future development trajectories as well as the objectives predisposed for the planning area. The vertical and multi-scale approach adopted in the analysis of the sectoral objectives and trends led to the identification of the priorities that are present in the focus area. Scaling down the analysis at the national level, sectoral objectives were even identified. After passing through the desk-analysis of the high-level objectives indicated in fundamental strategic documents, the local requests of the coastal and marine areas included in the focus area were collected and specified. The identification of the local objectives was mainly framed by the stakeholders' engagement activity that was carried out in Orbetello (see par. 3.2 above). Thus, the "Specific objectives" reported in the table refer to objectives directly related to spatial management, some of them having a spatial content and relevance that were considered and incorporated during the planning phase.

Main sectors were defined and recognized as pivotal for the case study area for their relevance in mobilizing interests and in eventually leading existing or potential conflicts in the area, which need to be managed and anticipated.

The results obtained from such analysis are the foundation for the subsequent phases of the case study.

Tab. 3. Matrix of relevant planning objectives within the Tuscany Case Study

Main sectors	Planning Objectives
Fishery	High-Level Objectives



	<p>WESTMED</p> <ul style="list-style-type: none"> Enhance maritime safety and assessment and response measures to marine pollution; Coordination of Vessel Traffic Services and traffic data sharing and developing a new generation of Decision Support System tools for emergency response. Optimize maritime data sharing across the two shores of the western Mediterranean region in order to improve situational awareness, ensure national funding is used effectively and improve cooperation on cross-border operations planning. Enhance sustainable consumption and production Promote strategies to ensure sustainable development of fisheries and coastal community. Enhance the production of harmonised and up-to-date marine and maritime data on areas such as investments, gross value added, employment, waste production and disposal, bathymetry, water quality and environmental monitoring. Ensure biodiversity and marine habitat conservation <p>BARCELONA CONVENTION</p> <ul style="list-style-type: none"> To prevent, reduce and control marine litter generation and its impact on the coastal and marine environment Sea-floor integrity is maintained, especially in priority benthic habitats Populations of selected commercially exploited fish and shellfish are within biologically safe limits, exhibiting a population age and size distribution that is indicative of a healthy stock Alterations to components of marine food webs caused by resource extraction or human induced environmental changes do not have long-term adverse effects on food web dynamics and related viability The sustainable use of natural resources is ensured, particularly with regard to water use <p>PELAGOS</p> <ul style="list-style-type: none"> Promote, after scientific evaluation, the adoption of rules concerning the use of new fishing systems that could cause the capture of marine mammals or endanger their food resources, taking into account the risk of loss or abandonment of fishing gear in sea
	<p>National Objectives</p>
	<p>General objectives</p> <ul style="list-style-type: none"> ¹³¹Reach sustainable fishing levels, exploiting stocks below the maximum sustainable yield (MSY) by 2020 Significant reduction in fishing capacity, reducing/eliminating the most destructive fishing practices Promote the role of small scale fisheries in the area, considering its important and peculiar socio- economic (and cultural) value for coastal communities, in synergy with ecotourism development. <p>Specific Objectives</p> <ul style="list-style-type: none"> ¹³²Zoning of fisheries to reduce overfishing of pelagic and demersal species, with particular attention to fishery in nursery areas and coordinated management of stocks. Eventually denying fishing activity in certain areas and establishing Biological Protection Zones with specific general (e.g. no trawling, larger mesh for set nets), métier based and seasonal (e.g. temporary fishing bans) measures. Monitoring of fishing effort and assisting the adoption of alternative (sustainable) fishing methods and métiers. Foster synergies between sustainable fishery cultural heritage and eco-tourism
	<p>Local/Case study Objectives</p> <p>General objectives</p> <ul style="list-style-type: none"> Ensure the exploitation of living aquatic resources in conditions that are sustainable from both an economic and a social point of view⁵ Recovery of commercial stocks within biological safety limits to 2020, in accordance with EU Reg. 1380/2013. ^{133 134} Conservation of the renewal capacity of commercial stocks;⁵ Improvement of the economic conditions of the workers in the sector;⁵ Maximizing employment opportunities in areas dependent on fishing.⁵ Maintenance of labour costs on the minimum guaranteed level of income.⁶ Maintenance of the current level of employment in FTE.⁶

¹³¹ European Maritime and Fisheries Fund - Operational Program for Italy (FEAMP), 2004-2015/ 2014-2020.

¹³² Programma Operativo FEAMP, MIPAAF <https://www.politicheagricole.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/8752>

¹³³ National Management Plan concerning fishing fleets for the capture of demersal resources under the GSA 9 (Ligurian Sea and Central-Northern Tyrrhenian Sea)

¹³⁴ Management Plan (ex art.24 del Reg. (CE) n.1198/2006 e art.19 del Reg. (CE) n.1967/2006) for the management of GSA 9 - Ligurian Sea and Central-Northern Tyrrhenian Sea.



	<ul style="list-style-type: none"> Modernization of the fishing sector facilities through incentives; (Piano Regionale di Sviluppo) <p>Specific objectives STAKEHOLDER OBJECTIVES</p> <ul style="list-style-type: none"> Preserve small scale fishery activity in the attempt to valorise their traditional-cultural value, identify and sustainably manage most important fishing ground for SSF.
Trends	<p>Increasing demand of fish products but fishery is decreasing drastically, with a foreseen further reduction in fishing capacity in terms of number of boats, of tonnage and engine power.¹³⁵</p> <p>Most commercial fishing stocks are fished above sustainable limits (overfishing)¹³⁶</p> <p>Intensity of trawling fishing and other types of fisheries consistently decreased in 2012 and has now increased again reaching the same levels of 2010²</p>

Aquaculture	High-Level Objectives
	<p>WESTMED</p> <ul style="list-style-type: none"> Support the effectiveness of marine clusters to contribute to creating innovation, jobs and growth Promoting marine bio-based innovative industries (from food and pharmaceuticals to energy) and services developing new concepts and solutions <p>BARCELONA CONVENTION</p> <ul style="list-style-type: none"> Human-induced eutrophication is prevented, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algal blooms, and oxygen deficiency in bottom waters To prevent, reduce and control marine litter generation and its impact on the coastal and marine environment Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystem
	National Objectives
	<p>⁷ General objectives</p> <ul style="list-style-type: none"> Improve productivity, quality and environmental sustainability of aquaculture through proper space planning for the development of new sites co-location with other activities and facilitation of permitting procedures Introduction of new species with high commercial values Strengthen technological development, innovation and knowledge transfer Enhancement of the competitiveness and viability of aquaculture enterprises Protection and restoration of aquatic biodiversity and the enhancement of ecosystems related to aquaculture and the promotion of resource-efficient aquaculture <p>Specific Objectives</p> <ul style="list-style-type: none"> Identification of new sites for the implementation of aquaculture Explore the potential for marine fish farming in the area
	Local/Case study Objectives
	<p>¹³⁷ General objectives</p> <ul style="list-style-type: none"> The protection of fisheries and natural resources The modernization of the production system The search for new opportunities for a better placing of the product on Market Improvement of the fisheries - aquaculture system through development and dissemination of innovations <p>Specific objectives STAKEHOLDER OBJECTIVES</p> <ul style="list-style-type: none"> Enhance the development of aquaculture techniques with low impact on coastal environment Allocate aquaculture in marine areas that are not relevant for traditional fisheries Avoid aquaculture impact on coastal tourism

¹³⁵ Programma nazionale triennale della pesca e dell'acquacoltura 2017-2019 (G.U. n. 63 – 16/03/2017) Programma Operativo FEAMP, MIPAAF <https://www.politicheagricole.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/8752>
D. Dirett. N. 6 del 20 settembre 2011: Adozione piani di gestione Piano di gestione (ex art.24 del Reg. (CE) n.1198/2006 e art.19 del Reg. (CE) n.1967/2006) GSA 17 Mar Adriatico Centro-Settentrionale – Altri sistemi

¹³⁶ National Management Plan concerning fishing fleets for the capture of demersal resources under the GSA 9 (Ligurian Sea and Central-Northern Tyrrhenian Sea)

¹³⁷



Trends	<p>¹³⁸In regard of aquaculture in terms of future trends, the market is expected to keep increase, with a foreseen average growth in the range of 4%/year, leading to more than doubling the market between 2010 and 2030, meaning that the target of 2 million tons/year will be reached and overcome</p> <p>STAKEHOLDERS Marine aquaculture is expected to expand both spatially and in production amount in the short term.</p>
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Maritime Transport	High-Level Objectives
	<p>WESTMED</p> <ul style="list-style-type: none"> • Enhance cooperation between member states from the two shores of the West Med • Optimize maritime data sharing across the two shores of the western Mediterranean region in order to improve situational awareness, ensure national funding is used effectively and improve cooperation on cross-border operations planning. • Support the effectiveness of marine clusters to contribute to creating innovation, jobs and growth • Enhance sustainable consumption and production (maritime transport, ports, maritime and coastal tourism, marine aquaculture) • Enhance the production of harmonised and up-to-date marine and maritime data on areas such as investments, gross value added, employment, waste production and disposal, bathymetry, water quality and environmental monitoring. <p>BARCELONA CONVENTION</p> <ul style="list-style-type: none"> • Contaminants cause no significant impact on coastal and marine ecosystems and human health • To prevent, reduce and control marine litter generation and its impact on the coastal and marine environment • Noise from human activities causes no significant impact on marine and coastal ecosystems • Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystem • The natural dynamics of coastal areas are maintained, and coastal ecosystems and landscapes are preserved • The sustainable development of coastal zones is facilitated by ensuring that the environment and landscapes are taken into account in harmony with economic, social and cultural development <p>PELAGOS</p> <ul style="list-style-type: none"> • Prevent and mitigate collision risks due to maritime traffic, sports and recreational activities through specific measures
	National Objectives
	<p>General objectives¹³⁹ (including European addresses)</p> <ul style="list-style-type: none"> • Simplifications and speeding up of administrative/bureaucratic procedures in order to reduce transit time and costs and optimize approval procedures and realization of works • Improve the efficiency of technical and nautical services (pilotage, etc) • Improvement of maritime and land accessibility through infrastructural interventions and through an upgrading of rail services. • Improve the quality and competitiveness of logistic services to guarantee a functional integration of the port systems with the dry port and with the logistics platform • Improving the infrastructural performance for any kind of traffic, from containers, to liquid and solid bulk, steel products, Ro-Ro/Ro-Pax, general and project cargo. Recovery and modernization of existing infrastructures (docks, terminals, seabed, etc) • Enhance the innovation through the diffusion of ITS for the management of port operations • Reduce the impact of ports on the environment at global and local scales promoting the use of technologies aimed at energy efficiency and environmental sustainability • Centralized and multiannual planning of financial resources to be allocated to infrastructure, giving priority to maintenance and enhancement of the existing assets and avoiding overcapacity (already existing in many port areas especially in container terminals). <p>¹⁴⁰Specific Objectives</p> <ul style="list-style-type: none"> • Improve accessibility of ports and marinas • Improving security of traffic management • Improve connectivity between ports and terrestrial infrastructures and transports facilities and networks in the future.

¹³⁸ Italian Strategic Plan for Aquaculture 2014-2020

¹³⁹ PIANO STRATEGICO NAZIONALE DELLA PORTUALITÀ E DELLA LOGISTICA

¹⁴⁰ PORT SYSTEM REGULATORY NATIONAL PLAN



	Local/Case study Objectives
	<p>General objectives</p> <ul style="list-style-type: none"> ¹⁴¹Improve regional continuity between the Tuscany Archipelago and the mainland; Improve inter-regional cooperation with high Tyrrhenian; Ensure interregional cooperation with the North Tyrrhenian area; (Piano Regionale di Sviluppo) <p>Specific Objectives</p> <p>STAKEHOLDER OBJECTIVES</p> <ul style="list-style-type: none"> Integrate the increased traffic of small cruises in the area of Monte Argentario-Orbetello Isola del Giglio in order to promote its sustainable development;
Trends	<p>¹⁴² A higher traffic density in the next years, due to the increasing importance of the Short-Sea Shipping and of the Mediterranean economic exchanges</p> <p>The traffic volume of non-containerized goods, including oil and other dangerous goods and liquefied natural gas (LNG), is also expected to increase significantly at the EU level but in Italy there is a decrease in LNG production, which is set to fall over the years, as the data for 2020 and 2030 also show a negative trend</p> <p>We can find estimate of increase in Ro-Ro traffic from the report</p> <p>STAKEHOLDERS</p> <p>The marine traffic of “small cruises is expected to increase”</p>

Coastal Defence and Flood protection and Restructuring of seabed morphology	High-Level Objectives
	<p>WESTMED</p> <ul style="list-style-type: none"> Enhance sustainable consumption and production (maritime transport, ports, maritime and coastal tourism, marine aquaculture) Ensure biodiversity and marine habitat conservation Promote strategies to ensure sustainable development of fisheries and coastal community. Ensure biodiversity and marine habitat conservation <p>BARCELONA CONVENTION</p> <ul style="list-style-type: none"> Biological diversity is maintained or enhanced. The quality and occurrence of coastal and marine habitats and the distribution and abundance of coastal and marine species are in line with prevailing physiographic, hydrographic, geographic, and climatic conditions The natural dynamics of coastal areas are maintained, and coastal ecosystems and landscapes are preserved New and emerging land-based pollution related problems are identified and tackled, as appropriate.
	National Objectives
	<p>General objectives</p> <ul style="list-style-type: none"> It is necessary to develop econometric models to evaluate the risk of coastal erosion that will enable coastal administrations to reach an assessment of the economic value of the beach to develop cost/benefit analysis in case of coastal-defences interventions.¹⁴³
	Local/Case study Objectives
	<p>¹⁴⁴General objectives</p> <ul style="list-style-type: none"> Promote the structuring of the internal relationships to the coastal area through consolidation of the metropolitan profile, external accessibility and digital connectivity. Implement integrated policies to support innovation, encouraging the convergence of productive specializations towards development models based on low environmental impact technologies, sustainable use

¹⁴¹ DEVELOPMENT REGIONAL PROGRAM Prs 2016-2020

¹⁴² WWF ITALIA, 2015. PROGETTO MEDITREND: TENDENZE DELLA BLUE GROWTH E DEI POTENZIALI IMPATTI AMBIENTALI E CONFLITTI NEI MARI ITALIANI – Rapporto Finale

¹⁴³ TNEC Guidelines pag.145

¹⁴⁴ Strategic plan for the development of the Tuscany Coast 2016 - 2020



	<p>of resources (materials, energy, territory), human capital and employment of highly qualified level.</p> <ul style="list-style-type: none"> Protecting the environmental quality and natural resources of the coastal area through actions to mitigate the effects of human activities, interventions on hydrogeological criticalities and coastal balances, as well as promoting the sustainable use of resources <p>Specific objectives</p> <ul style="list-style-type: none"> Process of integration and development of urban functions and sustainable mobility Development of port infrastructures of national interest and rail links Development of infrastructures for digital connectivity Support for industrial and production upgrading Connection between the research system and the production of knowledge and skills and the innovation processes of the production and economic system Relaunching the tourism economy and promoting models for sustainable use of the natural and cultural heritage of the coast system Environmental re-qualification of production areas and interventions aimed at mitigating the effects of human activities Interventions on the hydrogeological structure aimed at reducing hydraulic risk and actions aimed at protecting coastal environmental balances Energy efficiency measures and promotion of renewable energy Interventions for the promotion of the sustainable use of natural resources with a view to developing the circular economy <p>STAKEHOLDER OBJECTIVES</p> <ul style="list-style-type: none"> Mitigate and prevent coastal erosion and improve resilience of coastal areas.
Trends	<p>Surveys estimate 3,7 billion m³ of available sand deposits of which 930 million are useful for extraction. From estimates carried out at national level, it emerges that the overall requirement of nourishment sand is of around 10 M m³ / year, half of which attributable to permanent losses that need to be offset with external contributions.</p> <p>For obvious reasons of localization of sand deposits and for their intrinsically non-renewable nature, it emerges an unavoidable need of their strategic management.¹⁴⁵</p> <p>It will be necessary a national strategy that defines the standards for environmental protection, through appropriate dredging regulations that take into account the environmental impact, the cost of dredging activity, as well as the needs of the shipping sector.¹⁴⁶</p> <p>STAKEHOLDERS</p> <p>Erosion trend have been evidenced for some of the coastal stretches in the area.</p>

Oil & Gas production/ Energy	High-Level Objectives
	<p>WESTMED</p> <ul style="list-style-type: none"> Foster partnerships between research and industry across the two shores. Support the effectiveness of marine clusters to contribute to creating innovation, jobs and growth Enhance the production of harmonised and up-to-date marine and maritime data on areas such as investments, gross value added, employment, waste production and disposal, bathymetry, water quality and environmental monitoring. Ensure biodiversity and marine habitat conservation <p>BARCELONA CONVENTION</p> <ul style="list-style-type: none"> Contaminants cause no significant impact on coastal and marine ecosystems and human health Noise from human activities causes no significant impact on marine and coastal ecosystems To eliminate to the extent possible, prevent, reduce and control selected/regulated pollutant inputs, oil discharges and spills Alterations to components of marine food webs caused by resource extraction or human induced environmental changes do not have long-term adverse effects on food web dynamics and related viability Sea-floor integrity is maintained, especially in priority benthic habitats <p>PELAGOS</p> <ul style="list-style-type: none"> Apply the precautionary principle in case of prospection and extraction of hydrocarbons which can impact on

¹⁴⁵ TNEC Guidelines pag.297

¹⁴⁶ WWF ITALIA, 2015. PROGETTO MEDITERRANEA: TENDENZE DELLA BLUE GROWTH E DEI POTENZIALI IMPATTI AMBIENTALI E CONFLITTI NEI MARI ITALIANI – Rapporto Finale



	cetacean populations
	National Objectives
	<p>General objectives</p> <ul style="list-style-type: none"> • Improve national infrastructure flexibility with regard to supply sources, enhancing transport corridors and connecting infrastructures; • Manage fluctuations in gas flows and gas tips and diversify sources of supply; • Match European directive 1513/2015 purposes of promoting the transition to low carbon greenhouse gas emissions; • Promote the use of biomethane in transport and energy applications; • Increase security of supply and diversification of sources and allow a reduction in gas prices¹⁴⁷ • Maintain the contribution of the areas to the national energy policy, allowing the exploitation over time of the methane fields already authorized in a safe way for the environment • Promote the development of marine renewable energy sources • Supporting sustainable development and proper transboundary cooperation with adequate planning and effectual governance system • ¹⁴⁸Contrast climate change • Promote energy efficiency • Promote renewable energies
	<p>Local/Case study Objectives</p> <ul style="list-style-type: none"> • With regard to hydrocarbons prospection and exploration there's no evident declared objectives referred to the case study area. ^{17,19} • ^{19,149}Reduce greenhouse gases emissions by 20 % in 2020 • Promote the transition from the use of more impacting (i.e. oil) to less impacting types of non-renewable energies (i.e. methane) in the Region • Rationalize and reduce energy consumption • Increase the percentage of energy from thermal and electrical renewable energies to 16,5 % by 2020 for the entire Tuscany Region
Trends	<p>^{13, 14} For the year 2016, compared with the previous, hydrocarbon production decreased by -12.5%. Recently, Italy is promoting the development of new oil & gas resources, focusing on new themes in the field of research and development, even in the deep offshore context.</p> <p>^{12,150} Production of energy from renewable sources is expected to increase</p>

Coastal tourism	High-Level Objectives
	<p>WESTMED</p> <ul style="list-style-type: none"> • Enhance sustainable consumption and production (maritime transport, ports, maritime and coastal tourism, marine aquaculture) • Ensure biodiversity and marine habitat conservation • Promote strategies to ensure sustainable development of fisheries and coastal community <p>BARCELONA CONVENTION</p> <ul style="list-style-type: none"> • Human-induced eutrophication is prevented, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algal blooms, and oxygen deficiency in bottom waters • Contaminants cause no significant impact on coastal and marine ecosystems and human health • New and emerging land-based pollution related problems are identified and tackled, as appropriate • To prevent, reduce and control marine litter generation and its impact on the coastal and marine environment • Alterations to components of marine food webs caused by resource extraction or human induced environmental changes do not have long-term adverse effects on food web dynamics and related viability • The natural dynamics of coastal areas are maintained, and coastal ecosystems and landscapes are preserved • The sustainable development of coastal zones is facilitated by ensuring that the environment and landscapes are taken into account in harmony with economic, social and cultural development • The sustainable use of natural resources is ensured, particularly with regard to water use • To ensure sustainable use of natural resources, in particular water, in order to prevent their pollution and

¹⁴⁷ National Energy Strategy, 2017

¹⁴⁸ Regional Environmental and Energetic Plan (PAER), 2015

¹⁴⁹ Regional Energetic Plan (PIER), 2008

¹⁵⁰ Regional Energetic Plan (PIER), 2008



	degradation
	National Objectives
	²¹ General objectives <ul style="list-style-type: none"> • Innovating, specialising and integrating the country's amenities • Boost the tourism system's competitiveness • Development of an effective and innovative marketing • achieve efficient and participatory governance in the process of drafting and establishing the plan and tourism policies • Foster the development of sustainable coastal and maritime tourism • Improve quality for sustainable tourism offer • Diversification of the cruise and nautical sectors and enhancement of the yachting sector • Sustainable and thematic tourist routes, in synergy with productive activities, fostering Adriatic-Ionian cultural heritage
	Local/Case study Objectives
	¹⁵¹ General objectives <ul style="list-style-type: none"> • Create value through the knowledge and management of destinations • Improve attractiveness and competitiveness of the regional touristic offer Specific Objectives <ul style="list-style-type: none"> • Strengthen the tools for analyzing tourism demand and supply • Involve all those responsible for developing the Tourist Destination in a renewed model of consultation • Introduce programming tools to support a competitive and sustainable development • Communicate the Tuscany Lifestyle • Reduce the gap between desire and actually chosen destination • Safeguard the quality of the brand • Consolidate and improve the appeal of the regional tourism offer • Differentiate content • Definition of specific levels of information, analysis and use • Digitizing the tourism system and the regional tourism offer • Strengthen the digitization of promotion and marketing services • Consolidate Tuscany as a smart destination
Trends	¹⁵² The tourism sector is characterised by highly positive dynamics at international level. In line with the international scenario, the tourism sector in Italy continued to register positive results, and 2015 was the sixth consecutive year of growth of international arrivals, up 4.4% on 2014. This significant growth also continued into the early months of 2016 (+5% on average) and it is estimated that this trend will remain globally positive – around 4% on average – up to 2030 Hit and run tourism and sharing economy is increasing ¹⁵³ In the Tuscany coastal area there is high potential for the further development of tourism

Environmental Conservation	High-Level Objectives
	WESTMED <ul style="list-style-type: none"> • Ensure biodiversity and marine habitat conservation BARCELONA CONVENTION <ul style="list-style-type: none"> • Overall, all the strategic objectives of Barcelona Convention tackle the Environmental Conservation theme PELAGOS <ul style="list-style-type: none"> • Improve knowledge on the state of the ecosystem, the nature and importance of its degradation and impact on cetacean populations. • Prevention and mitigation of human impacts and pressures on cetaceans and management of emergency

¹⁵¹ Strategic Operational Document "Destinazione Toscana 2020" (Sustainable tourism development for the enhancement of identities and assets)

¹⁵² Strategic Tourism Plan (PST 2017-2022)

¹⁵³ STRATEGIC PLAN FOR THE DEVELOPMENT OF THE TUSCANY COAST



	<p>situations.</p> <ul style="list-style-type: none"> • Communication, awareness and involvement of the general public and stakeholders on the relevance of the Pelagos Sanctuary. • Improve the governance of the Pelagos Agreement by disseminating knowledge of the Agreement, stakeholder coordination, harmonization initiatives and the evaluation of their effectiveness.
	<p>National Objectives</p>
	<p>¹⁵⁴ General objectives</p> <ul style="list-style-type: none"> • By 2020, ensure the conservation of biodiversity, or the variety of living organisms, their genetic diversity and the ecological complexes of which they are part, and ensure the protection and restoration of ecosystem services in order to guarantee their key role for life on Earth and human well-being. • By 2020, substantially reduce the nationwide impact of climate change on biodiversity, by defining the proper measures to adapt to climate changes and mitigate their effects and increasing the resilience of natural and semi-natural ecosystems and habitats. • By 2020, integrate biodiversity conservation into economic and sectoral policies, also as potential for new employment opportunities and social development, while improving the understanding of the benefits from ecosystem services derived from biodiversity and the awareness of the costs of losing them, ² Safeguard and improve the conservation status of species and habitats in terrestrial and aquatic ecosystems • Halt the spreading of invasive alien species¹⁵⁵ • Increase terrestrial and maritime protected areas and ensure their effective management • Protect and restore genetic resources and natural ecosystems linked to farming, forestry and aquaculture • Mainstream natural capital accounting in planning, programming and national accounting. • Provide biological diverse and dynamic seas and prevent impacts on maritime and coastal environment • Halt soil consumption and combat desertification • Minimize pollutant loads in soils, water bodies and aquifers, considering the good ecological status of natural systems Implement integrated water resource management at all levels • Maximize water efficiency and adjust withdrawals to water scarcity • Minimize emissions and reduce air pollutants concentration • Ensure sustainable forest management and combat forest abandonment and degradation • Prevent anthropogenic and environmental risk and strengthen urban and territorial resilience • Guarantee high environmental performances of buildings, infrastructures and open spaces • Boost urban regeneration, ensure sustainable urban accessibility and mobility • Ensure ecosystems restoration and defragmentation, strengthen ecological urban-rural connections • Ensure the development of potential and the sustainable management of territories, landscapes and cultural heritage • Conservation of the capacity of renewal of commercial stocks <p>Specific Objectives</p> <ul style="list-style-type: none"> • Return of fishing activity by values compatible with levels of security of stocks, identified by Biological Limit Reference Points, and exploitation oriented towards the medium-long term sustainability, identified by Biological Target Reference Points.¹⁵⁶
	<p>Local/Case study Objectives</p>
	<p>General objectives</p> <ul style="list-style-type: none"> • Preserve terrestrial and marine biodiversity and promote the usability and sustainable management of protected areas • Integrated management of the coast and the sea <p>Specific Objectives</p> <ul style="list-style-type: none"> • ¹⁵⁷Regional target: Increase the surface and improve the management of Natura 2000 sites and Protected Areas, with particular reference to the marine ones • Preserve terrestrial and marine biodiversity and promote the usability and sustainable management of protected areas. • Manage the coastal strip and the sea in an integrated manner

¹⁵⁴ Italian National Biodiversity Strategy 2010-2020

¹⁵⁵ National Sustainable Development Strategy 2017-2030

¹⁵⁶ "The state of fishing and aquaculture in Italian seas" Ministry of Agricultural, Food and Forestry Policies, MIPAAF

¹⁵⁷ Regional Environmental and Energetic Plan (PAER), 2015



- Maintenance and recovery of hydraulic and hydrogeological equilibrium.

¹⁵⁸ Main species of interest for conservation within the study area:

Posidonia oceanica and ***Cymodocea nodosa***, are mentioned in the following directives/agreements:
Convention on the conservation of European wildlife and natural habitats (Bern Convention)

Annex I: strictly protected flora species

Barcelona Convention Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean (SPA/BD Protocol), Annex II

Balenoptera physalus, is mentioned in the following directives/agreements:

- EU Habitat Directive Annex IV
- Bern Convention Revised Annex I
- Bonn Convention annex I
- CITES Annex I
- SPA/BD Protocol Annex II
- ACCOBAMS

Stenella coeruleoalba, is mentioned in the following directives/agreements:

- EU Habitat Directive Annex IV
- Bern Convention Revised Annex I
- Bonn Convention annex I
- CITES Annex I
- SPA/BD Protocol Annex II
- ACCOBAMS
- (EU regulation of trade of fauna and flora)

Caretta caretta (Loggerhead sea turtle), Natura 2000 species code 1224. It is mentioned in the following directives/agreements:

- EU Habitat Directive Annex II and Annex IV
- Bern Convention Revised Annex I
- Bonn Convention annex I
- CITES Annex I
- SPA/BD Protocol Annex II

Tursiops truncatus (Common bottlenose dolphin), Natura 2000 species code 1349. It is mentioned in the following directives/agreements:

- EU Habitat Directive Annex IV
- Bern Convention Revised Annex I
- Bonn Convention annex I
- CITES Annex I
- SPA/BD Protocol Annex II
- ACCOBAMS

Physeter macrocephalus (Sperm whale), is mentioned in the following directives/agreements:

- EU Habitat Directive Annex IV
- Bern Convention Revised Annex I
- Bonn Convention annex I
- CITES Annex I
- SPA/BD Protocol Annex II
- ACCOBAMS

Ziphius cavirostris (ziphio), is mentioned in the following directives/agreements:

- EU Habitat Directive Annex IV
- Bern Convention Revised Annex I
- Bonn Convention annex I
- CITES Annex I
- SPA/BD Protocol Annex II
- ACCOBAMS

Corallium rubrum, is mentioned in the following directives/agreements:

¹⁵⁸ <https://eunis.eea.europa.eu/species.jsp>



	<p>Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora - consolidated version 01/01/2007 (EU Habitats Directive), Annex V</p>
Trends	<p>Regional target: Increase the surface and improve the management of Natura 2000 sites and Protected Areas, with particular reference to the marine ones.</p> <p>Reaching the Aichi target 11 of protecting at least the 10% of the Western Mediterranean Sea by 2020: Starting from the report ETC/ICM Technical Report 4/2017 Spatial Analysis of MPA Networks in Europe's Seas II, Volume A, 2017:</p> <p>In Western Mediterranean Sea:</p> <p>Increase in coverage of Natura 2000 sites since 2012 account for 7.2 % in the nearshore zone within 0-1 nm, 11,8% in Territorial Sea, 1,3% in offshore zones.</p> <p>Percentage increase (2012–2016) of MPAs in the Western Mediterranean accounted for nearshore, coastal waters amount to 7.4%, 12.5% in Territorial waters and 1.5 % in offshore waters</p> <p>In the Western Mediterranean MPA cover in the nearshore, territorial and offshore zones surpass the Aichi target by respectively 57,8%, 32,1%, 1,6% for each marine area.¹⁵⁹</p> <p>¹⁶⁰ Relevant ecosystems and species of the MSFD with negative population trend in the Study Area:</p> <p>The yelkouan shearwater (<i>Puffins Yelkouan</i>); The audouin's gull (<i>Larus audouinii</i>); Patella ferruginea</p> <p>Relevant ecosystems and species of the MSFD with increasing population trend in the Study Area:</p> <p>The scopoli's shearwater (<i>Colonnectris Diomedea</i>)</p> <p>Relevant ecosystems and species of the MSFD with unknown population trend in the Study area:</p> <p>Coralligenous; Maerl; Mediterranean shag (<i>Phalacrocorax aristotelis desmarestii</i>); Loggerhead sea turtle (<i>Caretta caretta</i>); bottlenose dolphin; striped dolphin; beaked whales; Fin whale (<i>Balaenoptera physalus</i>); <i>Pinna nobilis</i></p> <p><i>Posidonia Oceanica</i> meadows show stable trends with exception of areas of intense human activities (e.g. ports) where they are partially unstable;</p>

3. ANALYSIS PHASE

3.1 CONFLICTS SPATIAL ANALYSIS AND CRITICAL FOCUS

Based on the information collected and previously described on environmental habitats and components and human activities distribution and trends in the entire focus area, and following analysis phase, it was possible to identify a number of subareas defined as critical focuses (fig. 17). These focuses were addressed for including a complex framework of human activities, overlapped in their spatial extent, and/or generating pressures on local environmental components, thus representing potential hotspots where MSP can

¹⁵⁹ ETC/ICM Technical Report 4/2017 Spatial Analysis of MPA Networks in Europe's Seas II, Volume A, 2017

¹⁶⁰ SIMWESTMED, Initial Assessment

substantially contribute to reduce conflicts and foster synergies both between uses and between uses and environmental components. The land-sea interface space was considered and incorporated in the analysis.

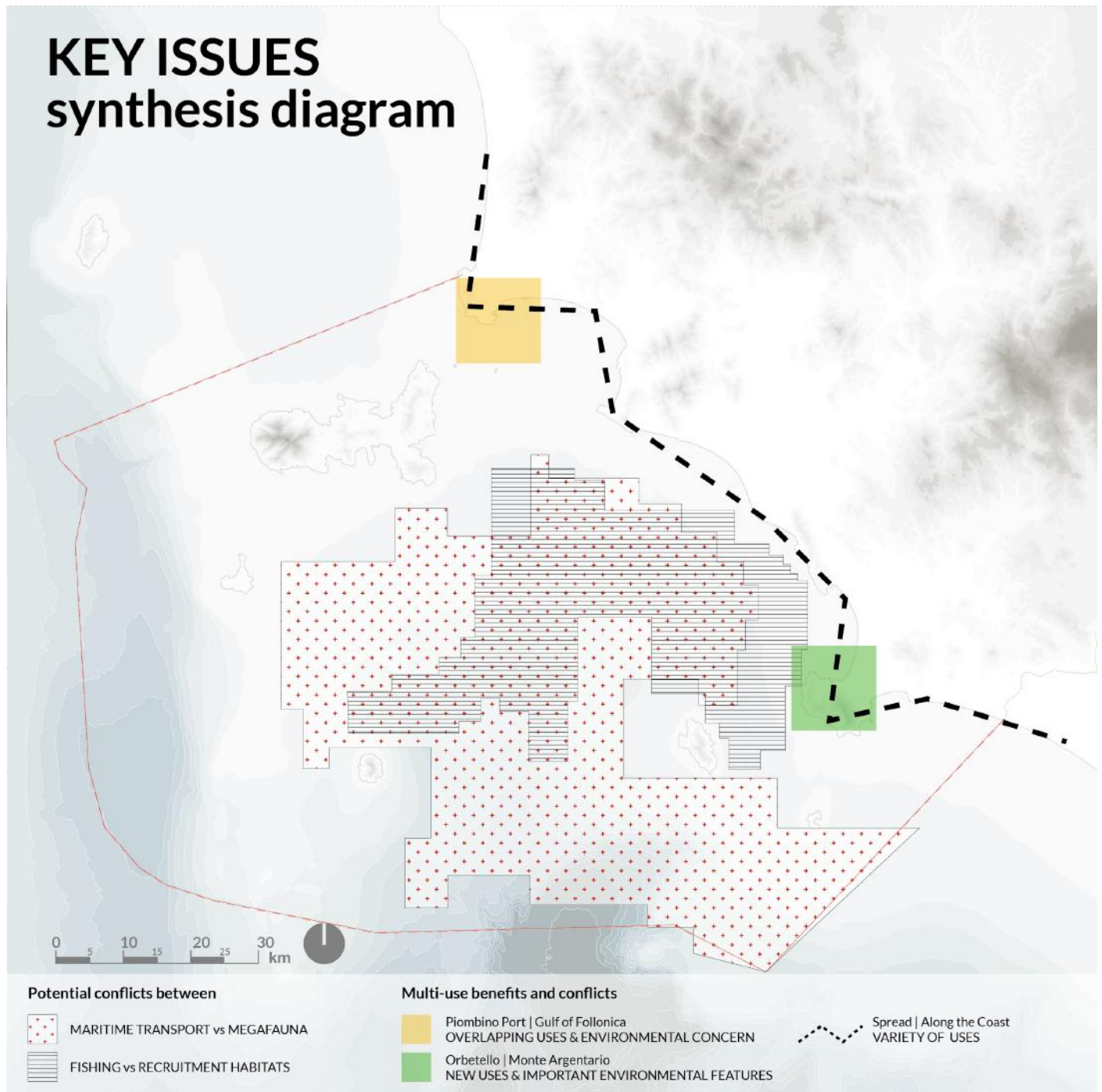


Figure 17. Critical focuses addressed within the CS Area

The identified critical foci are here below described. The analytical approach here proposed was developed on the base of the characteristics and planning needs recognized in the focus area, and for this reason it was addressed towards three main forcing themes, namely:

- Pelagic marine environment;
- Coastal area;
- Land sea interactions.

3.1.1 Pelagic marine environment

The pelagic marine environment encloses the environmental components and activities that distribute extensively through the marine area included within the Tuscany Study Focus (fig. 18).

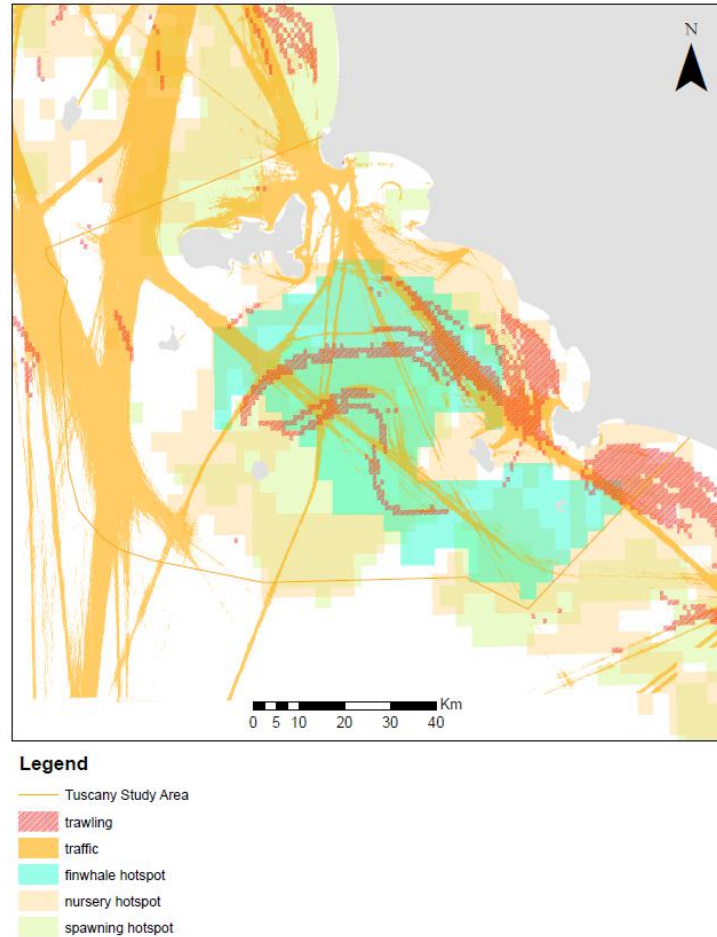


Figure 18. Activities and environmental components addressed in the analysis of the offshore waters

In this context, the environmental components identified as the most relevant are recruitment habitats (nursery and spawning grounds) of commercially relevant species and key habitats for large migratory animals (i.e. cetaceans) while the human activities developed at greatest intensity are marine traffic and fishing.

Main potential conflicts to be addressed in this context are represented by:

- impacts of fishing on recruitment habitats;
- impacts of marine traffic on large migratory animals.

3.1.1.1 Critical focus 1: Potential conflict between fishing and recruitment habitats

Environmental component	Sea use
Relevant commercial species spawning hotspots Relevant commercial species nursery hotspots	Fishing

The focus area includes important recruitment habitats where commercially representative demersal species spawn and spend the initial stages of their life cycle. Protection of recruitment hotspots of these species is

fundamental to ensure conservation of related bottom habitats and consequent long-term sustainability of fishing resources in the area.

The fishing activity carried out in this marine area includes non selective techniques highly impacting the seafloor and which represent a main threat to recruitment habitats. Among such techniques, benthic trawling is recognized as one of the main sources of disturbance on the seabed.

Thus, areas where trawling and recruitment hotspots overlap represent spots where fishery activity potentially impacts habitats of great ecological value (figure 19).



Figure 19. Overlap with recruitment hotspots and trawling.

For what concerns recruitment habitats distribution, spatial data on spawning and nursery hotspots of the following commercially relevant species were analyzed: *Illex coindetti*, *Eledone cirrosa*, *Merluccius merluccius*, *Galeus melastomus*, *Mullus barbatus*, *Nephrops norvegicus*, *Parapenaeus longirostris*. The spatial data on the recruitment habitats of these species were based on the data produced through a habitat suitability model developed in the framework of the MEDISEH project¹⁶¹.

For fishing, spatial data obtained from Bluehub project¹⁶² on trawling effort distribution obtained from the analysis of AIS data between September 2014 and September 2015 within the entire focus area were used. In the present analysis the identification of spawning and nursery hotspots was carried out separately in order to address differences in their spatio-temporal variability. Indeed, nursery hotspots typically show no relevant variability in their spatial distribution through the year while spawning have been found to reach seasonal peaks during specific months of the year depending from the species selected.

To address the spatial distribution of nursery hotspots data on nursery habitats distribution for each single selected species were elaborated to create a unique map of the distribution of the nursery hotspots of all species. Through this method, it was possible to identify areas where more than one species (up to 4 in a single area) found a suitable habitat for nursery (fig. 20).

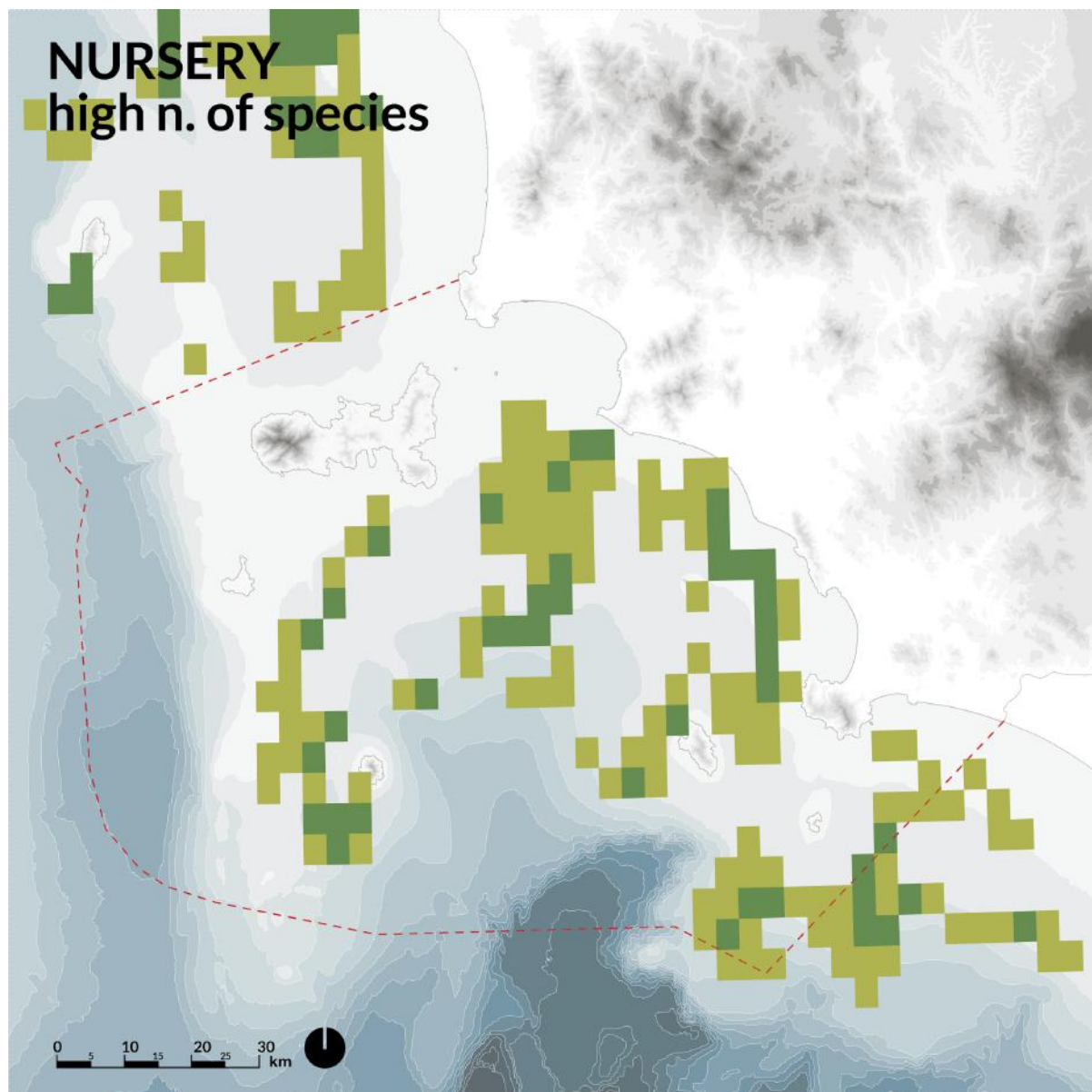


Figure 20. Nursery habitat hotspots identified within the Tuscany CS Area. In darker green are addressed the spots where a higher number of species are found to have suitable habitats for nursery.

- Colloca F., M. T. Spedicato, E. Massutí, Garofalo G., G. Tserpes, P. Sartor, A. Mannini, A. Ligas, G. Mastrantonio, B. Reale, C. Musumeci, I. Rossetti, M. Sartini, M. Sbrana, F. Grati, G. Scarcella, M. Iglesias, M. P. Tugores, F. Ordines, L. Gil de Sola, G. Lembo, I. Bitteto, M.T. Facchini, A. Martiradonna, W. Zupa, R. Carlucci, M.C. Follesa, P. Carbonara, A. Mastrantonio, Fiorentino F., Gristina M., Knittweis L., Mifsud R., Pace M.L., C. Piccinetti, C. Manfredi, G. Fabi, P. Polidori, L. Bolognini, R. De Marco, F. Domenichetti, R. Gramolini, V. Valavanis, E. Lefkaditou, K. Kapisir, A. Anastasopoulou and N.Nikolioudakis, 2013 Mapping of nursery and spawning grounds of demersal fish. Mediterranean Sensitive Habitats (MEDISEH) Final Report, DG MARE Specific Contract SI2.600741, Heraklion (Greece).

¹⁶² https://bluehub.jrc.ec.europa.eu/webgis_fish/

For what concerns the identification of spawning, this is more intense in specific periods of the year depending from the species considered, thus their management can be implemented through the adoption of adequate temporal measures.

With regard to the species selected spawning in the area was found to have the following seasonal peaks:

- *Illex coindetii* in June, September, October and November;¹⁶³
- *Eledone cirrhosa* in June, July and August;¹⁶⁴
- *Galeus melastomus* from February to September;¹⁶⁵
- *Mullus barbatus* from April to August;¹⁶⁶
- *Nephrops norvegicus* do not show seasonal spawning peaks;¹⁶⁷
- *Parapenaeus longirostris* in March, April, May, September and October;¹⁶⁸

In the present analysis, hotspots of spawning activities were identified for each single species considered (fig. 21).

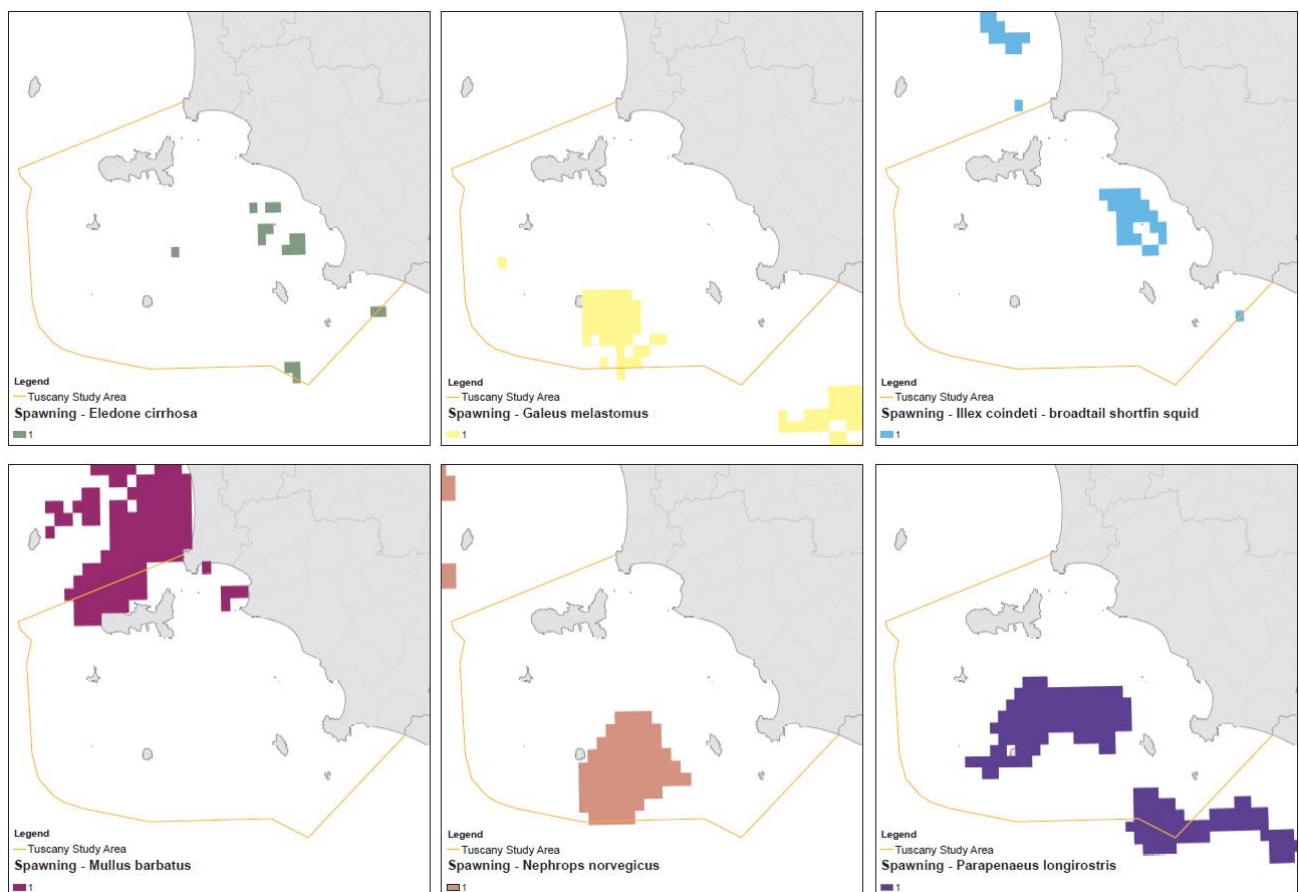


Figure 21. Spawning habitat hotspots identified within the Tuscany CS Area for each species selected.

¹⁶³ Ceriola, L., Ungaro, N. and Totedi, F. 2006. Some information on the biology of *Illex coindetii*

Verany, 1839 (Cephalopoda, Ommastrephidae) in the South-Western Adriatic Sea (Central Mediterranean). Fisheries Research, 82: 41-49

¹⁶⁴ Rjeibi, M., Ezzedine-Najai, S., Chemmam, B., & Missaoui, H. (2013). Reproductive biology of *Eledone cirrhosa* (Cephalopoda: Octopodidae) in the northern and eastern Tunisian Sea (Western and Central Mediterranean). *Malacologia*, 56, 69–84.

¹⁶⁵ <http://www.fishbase.org/summary/Galeus-melastomus.html>

¹⁶⁶ <http://www.fao.org/fishery/species/3208/en>

¹⁶⁷ <http://www.fao.org/fishery/species/2647/en>

¹⁶⁸ MORI, M., M. SBRANA & S. DERANIERI, 2000. Reproductive biology of female *Parapenaeus longirostris* (Crustacea, Decapoda, Penaeidae) in the northern Tyrrhenian Sea (western Mediterranean). *Atti Soc. Toscana. Sci. nat., Mem., (B)* 107:1-6.



3.1.1.2 Critical focus 2: - Potential conflicts between maritime transport and megafauna

Environmental component	Sea use
Large migratory species Pelagic ecosystems	Marine traffic

The protection of cetaceans is considered a priority in the focus area (see Chapter 1 of the Report). In this context, cetaceans and other megafaunal species (e.g. sea turtles) are threatened by the potential impacts and anthropogenic pressures generated by human activities, among which marine traffic is considered the most impacting one.¹⁶⁹

In 2017, ARPAT reported the list of species of marine mammals mostly detected in the Tuscany marine area (2) that are: striped dolphins *Stenella coeruleoalba*, bottlenose dolphins *Tursiops truncatus*, fin whales *Balaenoptera physalus* and sperm whales *Physeter macrocephalus*. ARPAT even listed the number of marine mammals found stranded along the Tuscany coast. Several of them fell within the focus area. The main causes of such mortality events were identified to be diseases due to pathogens' infections. Several cetaceans were not identified due to their conditions and deterioration state. Cetaceans stranded were observed mainly from October to March (62%) and the other 38% in the remaining part of the year. Many of such cetaceans were found to be poorly nourished.¹⁷⁰

Despite the absence of data on collisions between marine mammals and vessels in the focus marine area of the Tuscan Archipelago, the risk of similar events in the area is present and real. Stranded cetaceans rarely present visible signs of impact with vessels and those that are hit offshore usually sink and for this reason are no more visible. These dynamics complicate the possibility and capacity of monitor such events and this is the main cause of absence of evidences and data related to collisions between cetaceans and vessels. The average rate of mortal collisions in the Western Mediterranean is 1,43 animals per year. The standard ferry is the most involved in such events, followed by merchant ships, fast ferry and yacht. Collision events probability increases during summer months due to an increase in vessel traffic.^{171 172}

Both cetaceans and marine traffic are intrinsically highly dynamic in terms of spatio-temporal distribution which can undergo consistent changes at small temporal scale (e.g. weekly, monthly). Therefore to effectively reduce impacts of marine traffic on cetacean populations the dynamic fluctuation in their spatio-temporal distribution and mutual interaction should be carefully considered.

To address spatio-temporal variability of large migratory animals distribution and understand the potential interaction of this dynamic environmental component with marine traffic within the present analysis, fin whale was selected as target species (fig. 22).

¹⁶⁹ GIONHA Project "Indagine sugli impatti sui cetacei derivanti dalla pesca professionale con particolare attenzione alle popolazioni costiere di tursiopi (*Tursiops truncatus*) e dalle collisioni derivanti dalla navigazione commerciale o sportiva" 2011.

¹⁷⁰ Technical Report ARPAT "L'attività di ARPAT nel monitoraggio dei cetacei, delle tartarughe e dei grandi pesci cartilaginei" 2017.

¹⁷¹ ISPRA report "Analisi ed impatto della pesca in mare".

¹⁷² Conservazione dei cetacei in Italia. Inquadramento strategico. Notarbartolo di Sciara, 2010.

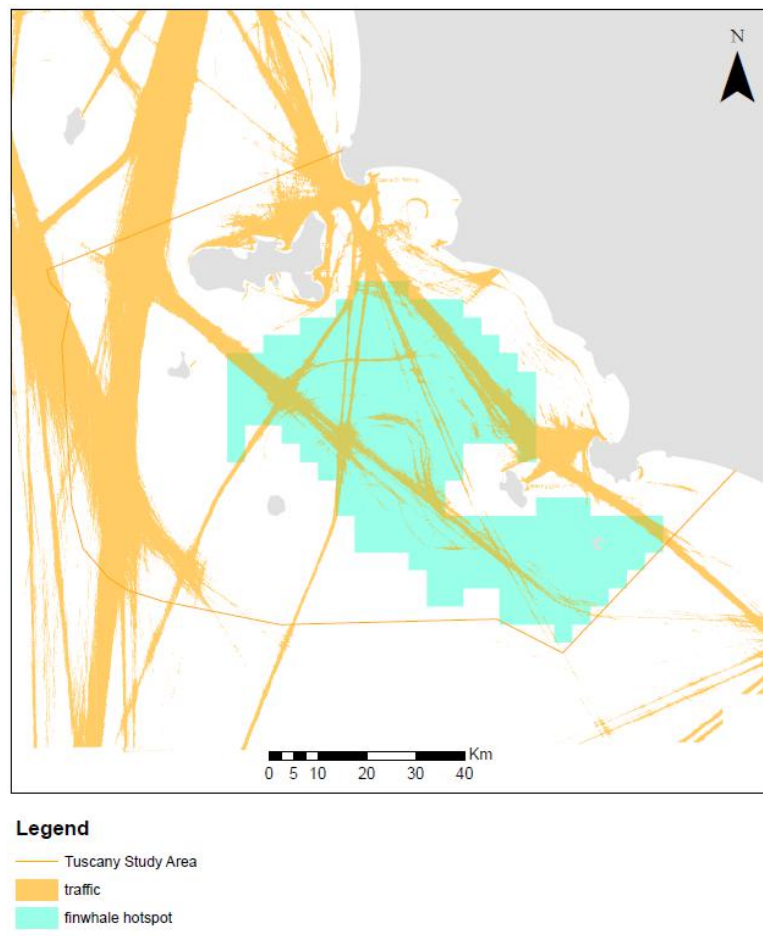


Figure 22. Overlap with fin whale distribution hotspot and the main traffic routes.

Fin whale (*Balaenoptera physalus*) is one of the cetacean species commonly found within the focus area.¹⁷³ Based on IUCN Criteria, its global population is considered as “endangered”,¹⁷⁴ while Mediterranean subpopulation is estimated to include around 3,500-5,000 individuals and is listed as “vulnerable” with a decreasing population trend.¹⁷⁵ It is a migratory species which distribution highly vary depending from temporal changes in environmental parameters.

To address its spatio-temporal variability, spatial data on monthly distribution of fin whale through a 19 years time series (between 1998 and 2016) within the focus area were obtained from the outputs of a habitat suitability model (EMIS-Database). Such model was designed to identify the probability of fin whale presence in a specific marine area for a specific month with a spatial resolution of 4 km². It is based on monthly values of three environmental variables with strong influence on fin whale preferential feeding habitat, namely: chlorophyll-a content (chl- a); Sea Surface Temperature (SST); water depth.¹⁷⁶

The average distribution of fin whales by month through a single year period of fin whale was obtained from the elaboration of the data of the entire 19 years time series used to develop the habitat suitability model.

Fin-whale spatial distribution data were overlapped with the main marine traffic routes obtained from the elaboration of AIS data collected for the entire year of 2017.

¹⁷³ Technical Report ARPAT “L’attività di ARPAT nel monitoraggio dei cetacei, delle tartarughe e dei grandi pesci cartilaginei” 2017.

¹⁷⁴ Reilly, S.B., Bannister, J.L., Best, P.B., Brown, M., Brownell Jr., R.L., Butterworth, D.S., Clapham, P.J., Cooke, J., Donovan, G.P., Urbán, J. & Zerbini, A.N. 2013. *Balaenoptera physalus*. *The IUCN Red List of Threatened Species* 2013: e.T2478A44210520. <http://dx.doi.org/10.2305/IUCN.UK.2013-1.RLTS.T2478A44210520.en>. Downloaded on 12 November 2018.

¹⁷⁵ Panigada, S. & Notarbartolo di Sciarra, G. 2012. *Balaenoptera physalus* Mediterranean subpopulation. *The IUCN Red List of Threatened Species* 2012: e.T16208224A17549588. <http://dx.doi.org/10.2305/IUCN.UK.2012.RLTS.T16208224A17549588.en>. Downloaded on 12 November 2018.

¹⁷⁶ Druon, J. N., Panigada, S., David, L., Gannier, A., Mayol, P., Arcangeli, A., Cañadas, A. Laran, S., Di Méglia, N., Gauffier, P. (2012). Potential feeding habitat of fin whales in the western Mediterranean Sea: An environmental niche model. *Marine Ecology Progress Series*, 464, 289–306. <https://doi.org/10.3354/meps09810>



The results of this analysis highlighted great variability of fin whale distribution which reflects high fluctuation of the interaction between marine traffic and this marine species within the focus area (fig. 23).

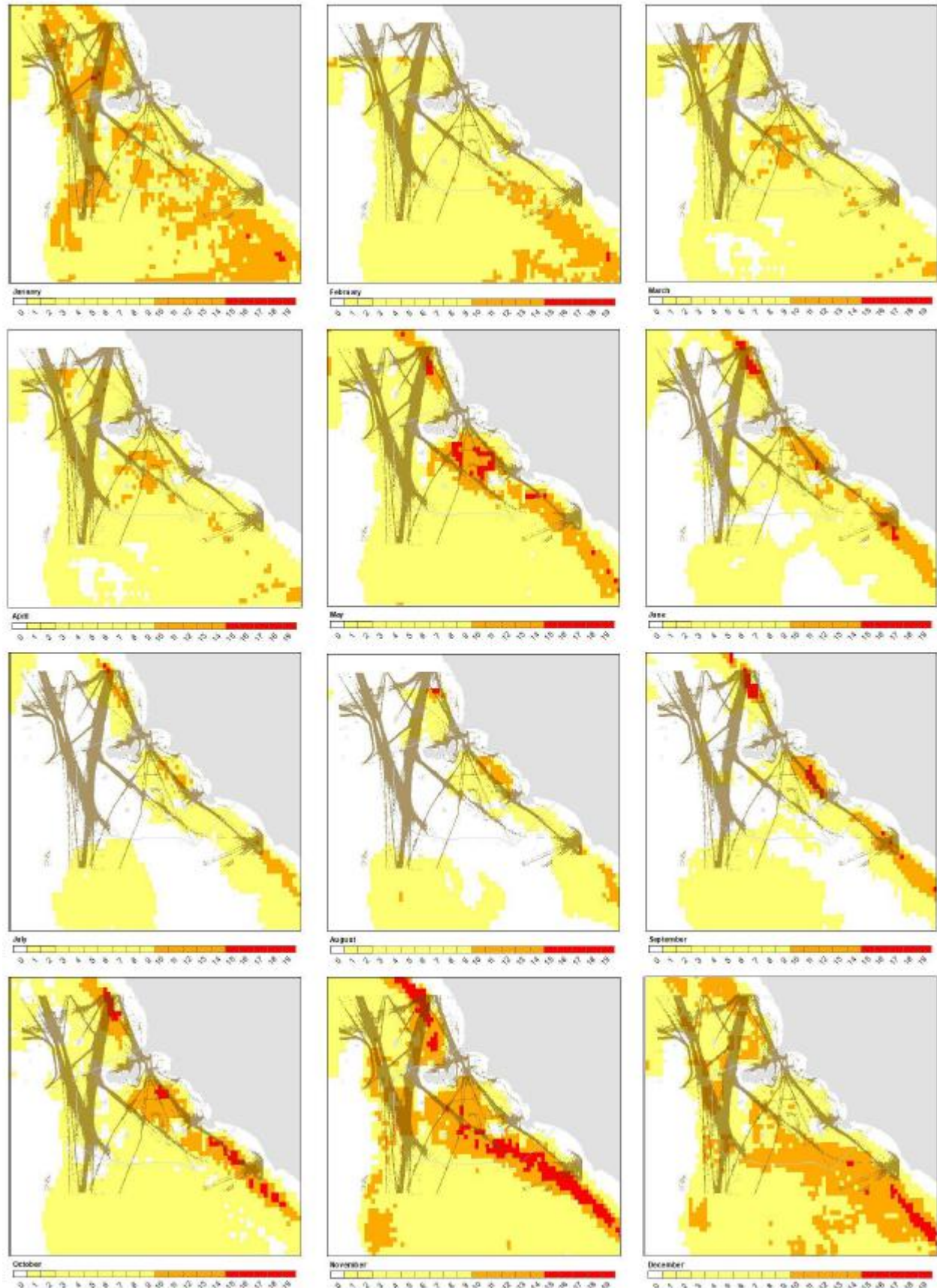


Figure 23. Changes in average monthly spatial distribution of fin whale density and its overlap with main traffic routes.

3.1.2 Coastal area

The coastal area includes all those activities and environmental components that are present between the coastal strip and the immediately adjacent and shallow coastal waters (fig. 24).

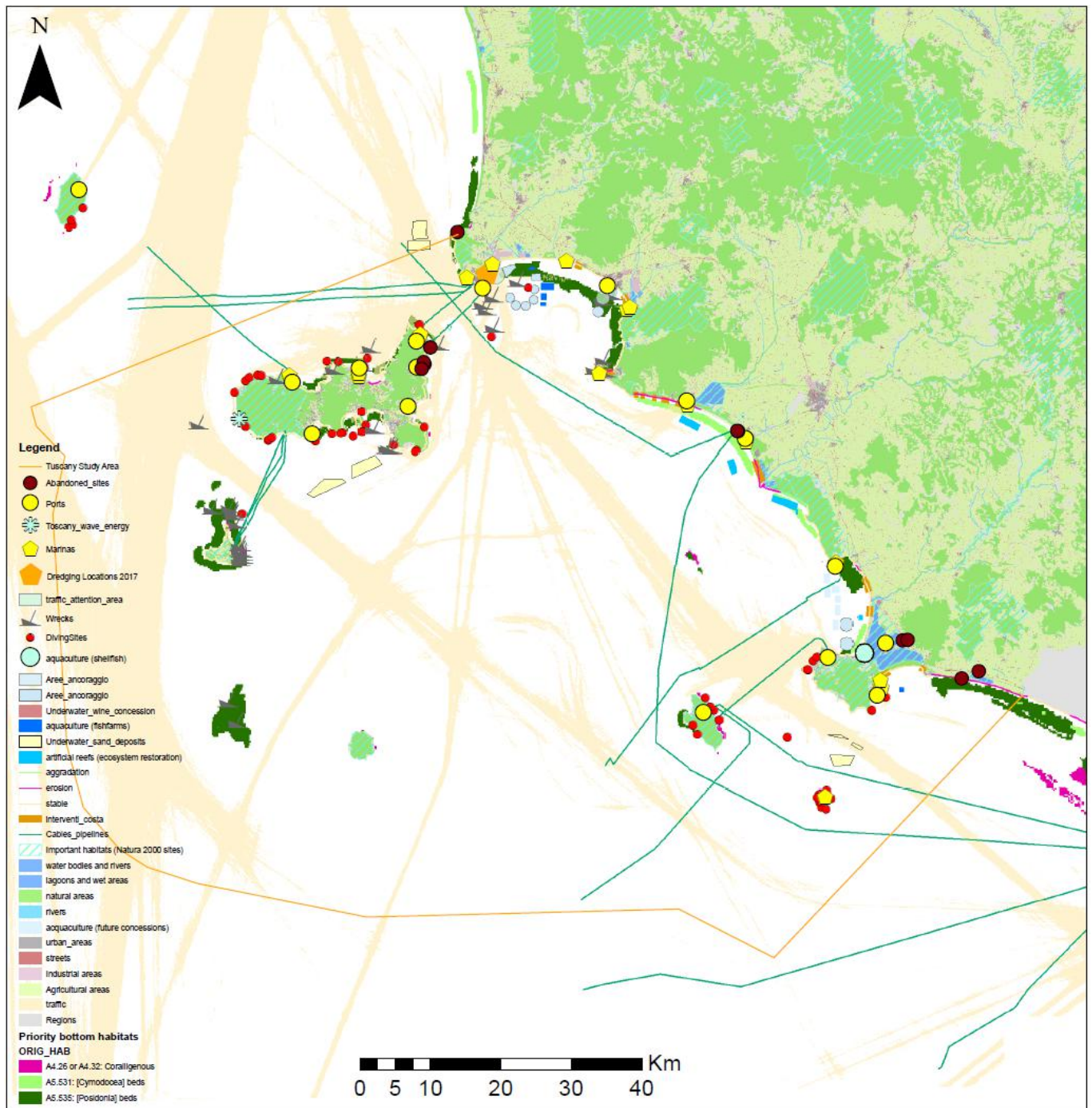


Figure 24. Activities and environmental components included in the analysis of the coastal area

In this context, the environmental components identified as the most relevant include priority coastal marine habitats (i.e. seagrass meadows and coralligenous), sea birds habitats and land-based natural areas (e.g lagoons and river mouths) while the human components of greater relevance are aquaculture facilities,



industrial sites, harbours and marinas, pipelines and cables, hotspots for coastal tourism, extraction sites of non living resources (e.g. sand extraction sites), wave energy production infrastructures, coastal urbanizations and dismissed infrastructures.

Main potential conflicts to be addressed in this context are represented by:

- negative interaction between human activities in congested areas;
- potential impact of human activities on coastal ecosystems;
- coastal erosion potentially aggravated by high human pressure on the coast;
- potential future competition for space between new uses.

3.1.2.1 Critical focus 3 - Piombino Port and the Gulf of Follonica: critical area for overlapping uses and environmental concern

Environmental component	Use
Seagrass meadows	High traffic density Mooring areas Sand extraction Aquaculture Industrial sites Harbours and Marinas Fishing Pipelines and Cables Coastal tourism Diving sites Wrecks

Piombino and the Gulf of Follonica are located in the northern part of the CS focus within the municipalities of Piombino and Follonica which are included within the Livorno and Grosseto provinces respectively. While Piombino is mainly a port and industrial area, the main commercial activity of the Gulf of Follonica is represented by coastal tourism.¹⁷⁷ The area surrounding the Piombino Port is highly congested by human activities. As a consequence, many of the uses that coexist in the area compete for a limited space, partially overlap, and thus creating a high risk for conflicts and accidents. Moreover, the density of uses in the area generates consistent pressures on local environment, with potential detrimental effects to its conservation state, thus affecting indirectly some economic activities which strictly depend on the good level of conservation of local natural heritage (e.g. coastal tourism and fishing). Priority coastal habitats (mainly seagrass meadows) are found through most of the Gulf of Follonica. In the area located outside the Piombino Port, which represents the main bottleneck for marine transport in the area, the traffic is regulated through mooring areas, traffic attention areas where no passage of vessels is allowed and traffic schemes.¹⁷⁸ The industrial activity and its related environmental impact are a main concern especially in relation to pollution.

¹⁷⁷ Crouch, C., Le Galès, P., Trigilia, C., & Voelzkow, H. (2004). *Changing governance of local economies: Responses of European local production systems*. Oxford University Press on Demand.

¹⁷⁸ <https://www.portaltotirreno.it/en/port-of-piombino/>

Thus as reported above (x.n. industrial sites) the area has been identified as SIN, which corresponds to an area where the control of pollution and decontamination are considered a priority at national level.¹⁷⁹

A site for sand extraction is also found inland on the coast, in the area surrounding the Piombino Port. Aquaculture facilities are displaced on the western part of the Gulf of Follonica. Shipwrecks and diving sites are also found in this area.

Within the Gulf of Follonica potential positive interactions between aquaculture and coastal tourism could be considered in order to foster their mutual sustainable development.

To spatially address potential conflicts, areas of overlap between human uses and between human uses and environmental components were highlighted (fig. 25).

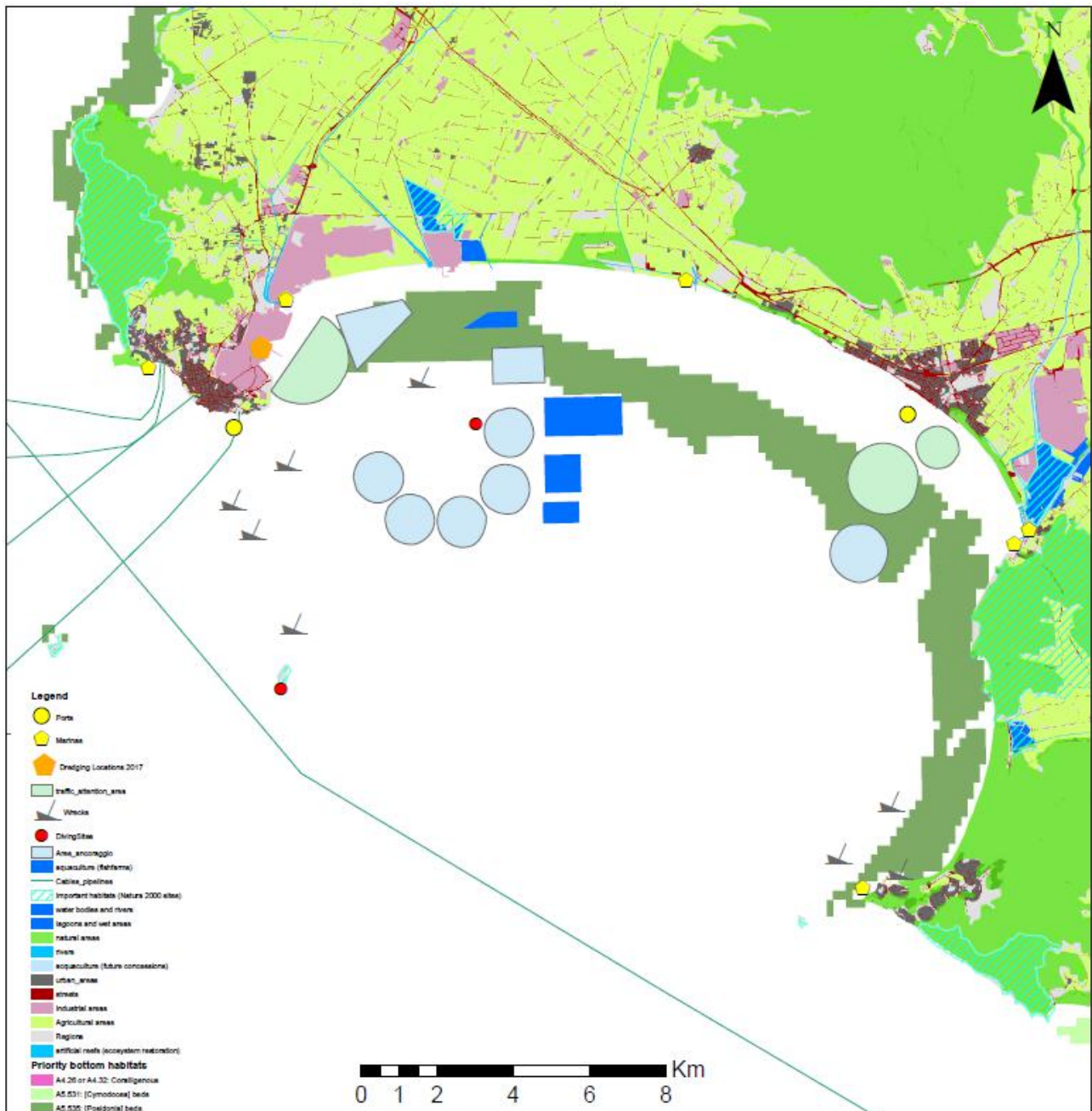


Figure 25. Piombino and the Gulf of Follonica. Main areas of overlap between incompatible human uses and between human uses and environmental components.

¹⁷⁹ Bocchetti R, Fattorini D, Pisanelli B et al. Contaminant accumulation and biomarker responses in caged mussels, *Mytilus galloprovincialis*, to evaluate bioavailability and toxicological effects of remobilized chemicals during dredging and disposal operations in harbour areas. *Aquat Toxicol* 2008; 89: 257-66.

ARPAT. *Analisi del rischio per l'area di Piombino e strategie di intervento*. Firenze 2000.

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3.1.2.2 Critical focus 4 - Orbetello and the Monte Argentario: critical area for multiple uses and increasing demand for new uses, with important environmental features

Environmental component	Sea use
Seagrass meadows Important bird habitats Cetaceans habitats	Aquaculture Small-scale fishery Anchoring areas Coastal tourism Other uses (i.e. underwater wine storage) Short traffic

Overview

The area is a representative example for the entire case study. Indeed, important environmental features coexist with human activities which are more commonly found through the entire Tuscany coast and within its coastal marine waters (fig. 26).

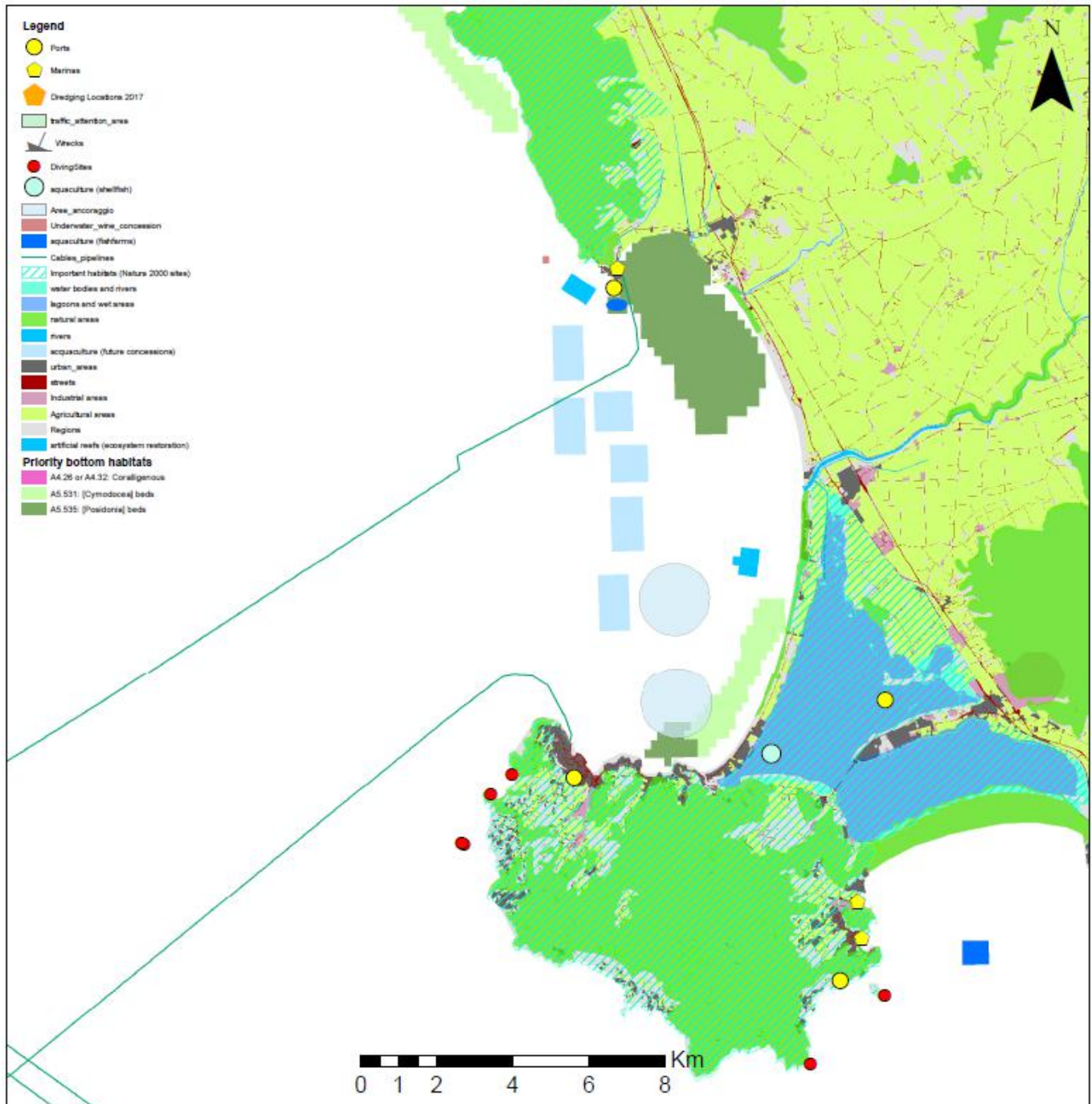


Figure 26. Orbetello and the Monte Argentario. Main areas of overlap between incompatible human uses and between human uses and environmental components.

The area has a high ecological value since important bottom habitats (i.e. seagrass meadows) are found in shallow coastal waters above 30 meters depth. Coastal and marine resources have a high socio-economic value and consequently attract different types of human activities which directly or indirectly depend on their exploitation.

Intensity of the activities in the area is subject to strong seasonality. This is mainly due to coastal tourism which considerably increases during summer season and influence the seasonal variability of local economy. The area includes the municipalities of Orbetello, Monte Argentario and Giglio, all part of the Grosseto Province. Orbetello municipality includes the omonymous city and lagoon. Monte Argentario is a municipality and a peninsula within two main towns, Porto Santo Stefano, facing north, and Porto Ercole facing south. The promontory of Monte Argentario stretches towards the Tyrrhenian Sea in correspondence of the two southernmost islands of the Tuscan Archipelago, Giglio and Giannutri. Giglio municipality includes the islands of Giglio and Giannutri. The Giglio island is separated by a 16 kilometres stretch of sea from the promontory of



Monte Argentario. Giglio Port, on the east coast, is the only landing place; it is connected by daily ship service with Porto Santo Stefano, on the mainland of Italy. Around Giglio there is a considerable fishing activity even if it is limited to small scale and artisanal fishing. The activity is not developed intensively but still represents an important socio-cultural element and a source of synergy with touristic activities. Both the islands of Giglio and Giannutri during the summer season, are reachable with a daily service line from Porto Santo Stefano while during the winter frequency of the connections is reduced. During the summer period numerous daily touristic connections are also available. The island of Giannutri, as well as Giglio Island, is under the protection of the Tuscan Archipelago National Park, further in Giannutri there are no hotels and camping is forbidden but it is possible to rent small private residences. The Giglio island has a great attractiveness for what concerns diving activities. The island of Giannutri too has considerable diving spots. Today most of the seabed around Giannutri has been declared as a protected area (where shipping, sailing and rowing, fishing, diving and bathing are forbidden) making difficult to find available diving spots.

The area presents important coralligenous structures and posidonia meadows (fig. 8-9).

In the area is notable the presence of underwater cultural heritage such as the two wrecks of the Anna Bianca and the Nasim (Giannutri).

In Giglio Island in the area surrounding the Concordia incident, big ships (cruise, bunkers etc.) are obliged to pass at least at 3 miles away from the coast.

Moreover, due to their high ecological value the Giannutri Island and its surrounding marine waters, as well as the Giglio Island terrestrial area with its surrounding islets are included within the National Park of the Tuscany Archipelago; both the Giglio Island and the Monte Argentario are included within the list of Natura 2000 areas since they have been declared Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) under the European Union Habitats Directive (92/43/EEC). The entire area is recognized as Cetacean Critical Habitat (CCH) by ACCOBAMS and an Important Bird Area (IBA) by BirdLife International (fig. 2).

The governance of the area, which includes exclusively internal waters, is organized through a complex and heterogeneous framework, including specific administrative units at different scales, from local to national: Municipalities, Provinces, Regions, National Govern. The focus area encloses the coastal waters of the Orbetello Municipality which is in charge to deliver and regulate spatial concessions for activities such as aquaculture and tourism.

A main potential conflict in the area is represented by the coexistence of coastal tourism with mariculture. Indeed, coastal aquaculture has a negative visual impact on the landscape due to its associated infrastructures (e.g. superficial cages) and can affect the quality of waters through the load of nutrients, two factors that negatively affect the quality of the touristic offer.¹⁸⁰

Competition for space between aquaculture and traditional fishery is another potential conflict. Indeed, some of the fishing grounds regularly exploited by local fishermen can become inaccessible due to the superimposition of aquaculture facilities.¹⁸¹

Other main concerns in the area are to be ascribed to the intensity of shipping traffic in its waters (fig. 10) which fluctuation is strictly related to the strong seasonality of the touristic activities.

One of the concerns of the last year was the capsizing of the Costa Concordia cruise ship off the coast of Giglio Island. Costa Concordia was officially declared a "constructive total loss" by the insurance company, and her salvage was "one of the biggest maritime salvage operations". The grounding of the ship on important habitats and the salvage operations had a strong environmental impact in the area. The amount of diesel fuel and lubricating oil on board was equal to a small bunker. In order to restore the ecosystem, 200 fan mussels (*Pinna nobilis*) were manually relocated to a nearby area to the Costa Concordia site.

Despite the decline of the fishing sector, small scale fishery sustainable development in the long-term is considered a priority in the attempt to valorise its traditional-cultural value. A new activity that is likely to be introduced in the area is the allocation on shallow coastal waters of submerged cages for wine storage. Its interactions with other activities and environmental components should be further investigated. It is worth noting that the delivery of concessions for underwater wine storage, it is not included among the activities

¹⁸⁰ Based on stakeholder consultation

¹⁸¹ Richiesta di Concessione Demaniale Marittima per specchio acqueo in loc. capo D'Uomo – Talamone per posizionamento cantina sommersa – parere urbanistico-territoriale.



regulated by the municipality and it can not be authorized by the municipal authority until the Municipal Regulation for management of the Maritime Property (Demanio Marittimo) will not be modified¹⁸².

Despite coexistence of aquaculture and coastal tourism in the area is considered the main conflict, an appropriate integrate planning and management of these activities can give rise to potential synergies. The development of ecotourism together with the development of sustainable aquaculture practices may in fact represent an effective pathway to support the coexistence of these two human activities. Traditional fishery may also be considered for possible synergies in the area by for example enhancing the development of sustainable fishing tourism.

Trends in the area evidence an increasing of the shipping traffic following national scale trends. The touristic demand in the area is also expected to increase. Consulted stakeholders addressed the expected development of mini-cruise activities in the area.

Local stakeholders have addressed among their objectives the enhancement of aquaculture techniques with low impact on coastal environment and the allocation of new aquaculture facilities in marine areas that are not relevant for traditional fisheries in order to avoid impacts on coastal tourism.

3.1.2.3 Critical focus 5 - Multi-use benefits and conflicts: tourism, aquaculture, environmental protection and management of coastal erosion.

Environmental component	Sea use
Seagrass meadows Coralligenous Sea birds' habitat Coastal lagoons Rivers Land-based natural areas (forests)	Small-scale fishing Aquaculture Coastal tourism

Overview

This critical issue extends for the entire coastal strip of the study area. At the basis of the present critical focus there is the need to limit coastal erosion while preserving underwater and terrestrial coastal ecosystems in balance with tourism activities. The entire coastal area is characterized by the presence of coastal tourism and important natural habitats. The coastal erosion in Tuscany coast is influenced in different ways by the following features: sedimentary input from rivers, coastal currents, underwater ecosystems and anthropic coastal infrastructures. Most of the coastal strip extension is formed by sandy beaches interrupted by rocky promontories and river mouths. Healthy ecosystems represent a key element to stabilize sediments on the coast. At the same time coastal tourism depends from the quality of the sandy beaches and the well-preserved coastline with its natural amenities which are among the main tourism attractions.¹⁸³ Thus, a correct management of coastal ecosystems and the development of tourism in harmony with the environment are fundamental both to buffer the coastal erosion and to ensure environmental and socio-economic sustainability of coastal tourism in the long term.

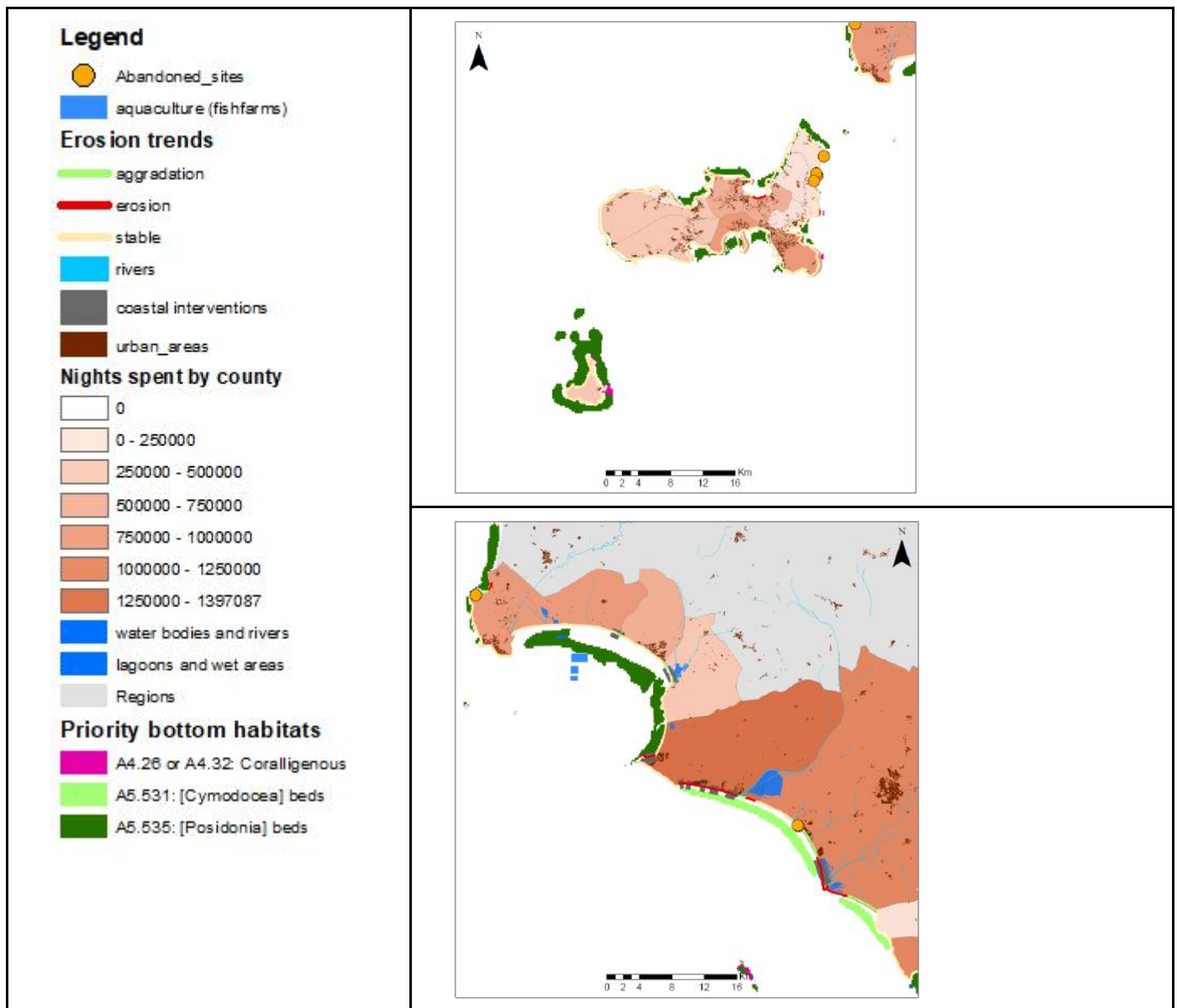
The interventions to protect the critical stretches of the coast are indicated in the DGR 433/2016 and include in particular the recovery, rebalancing and nourishment of the beach of many coastal segments (Massa, Bocca d'Arno, Vada, San Vincenzo, Baratti, Follonica, Scarlino, Punta Ala, Castiglione della Pescaia) and the Island of Elba. The same Decree also reserves particular attention to the mouths of the rivers and to some ditches, watercourses that have a significant relevance to the problem of erosion. In this framework there are also interventions aimed at achieving the ecosystem balance of the Orbetello lagoon, which was subjected to water temperature increase, of the Lake Massaciucoli and, more generally, the entire park of Migliarino, San Rossore and Massaciucoli.

¹⁸² Based on stakeholder consultation

¹⁸³ Piano strategico per lo sviluppo della Costa Toscana (2016 – 2020)



¹⁸⁴ All the study area is enclosed in internal waters. It also comprehends wet areas within the coastline (e.g. Orbetello Lagoon) very important for their high ecological and socioeconomic value (fig. 27).



¹⁸⁴ ISPRA, 2009 "Convegno SOS dune. Stato, problemi, interventi, gestione."

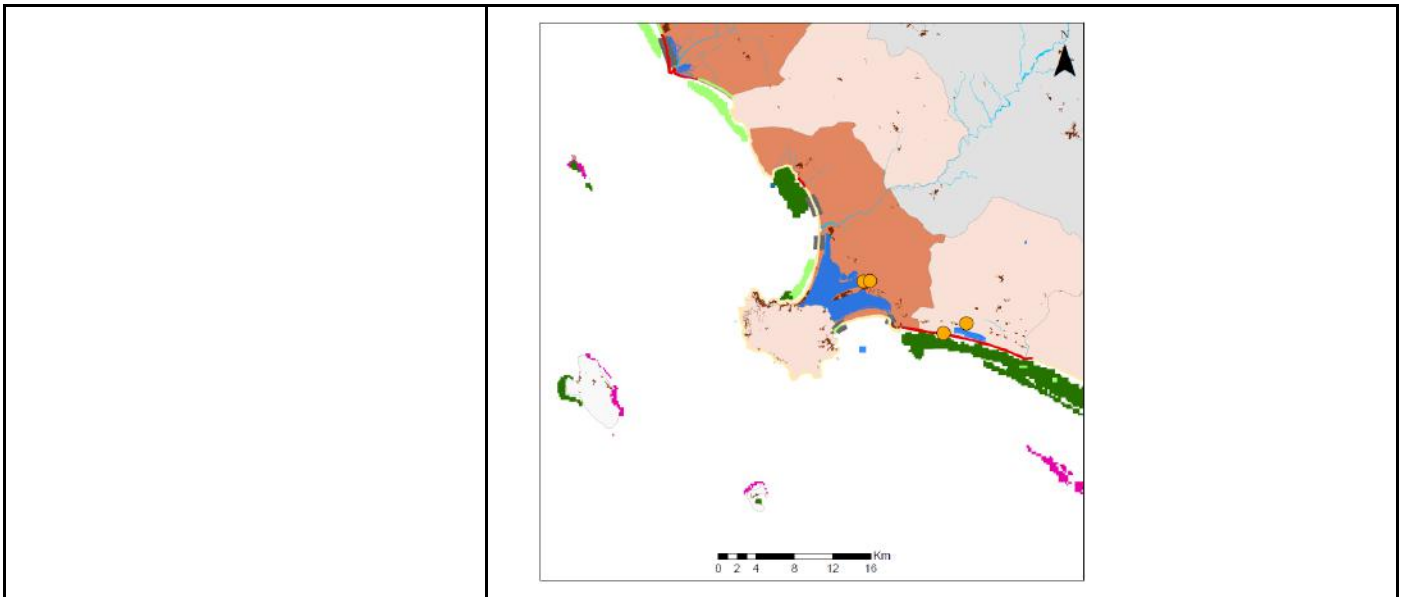


Figure 27. Overview of the human and environmental components relevant to the management of the coast.

In the entire Tuscany coast a negative erosion trend was detected through about half of the coastline (in ten years 147,000 m² of beach were lost¹⁸⁵).

For trends related to coastal tourism refer to chapter 2.3 activity “coastal tourism”.

A main issue along the entire coastline concerns the potential impacts of human activities and related drivers of environmental pressures on coastal ecosystems, in particular seagrass meadows. Seagrass meadows characterized by both *Posidonia oceanica* and *Cymodocea nodosa*, which are habitats of priority concerns for their ecological value and for their importance in terms of nature protection and conservation, are widely present along the coast of the focus area. These habitats are fundamental for the environmental quality of the littoral zone thanks to their ability of protecting the coast from the erosion phenomena and for hosting a high biodiversity¹⁸⁶. Seagrass meadows represent nursery and spawning habitats for numerous species, are source of oxygen and food for the associated communities, and represent optimal indicators for marine environment quality monitoring. Their presence and good state play in synergy with several activities such as small scale fishery and tourism. For this reason, they need attention, as well as their role in protecting the coast from the widespread erosion process present in the focus area need to be favoured. Among the main factors affecting seagrass meadows, changes in sedimentary fluxes, excessive inputs of organic matter and inputs of contaminants due to the increased anthropic pressure along the coast, anchoring, fish farming, laying of submarine cables, and trawling activity are recognized¹⁸⁷. Once the seagrasses are impacted and eventually destroyed their recovery, if still possible, is very slow. Restoration activity of such habitats is not a common practice yet, but it should be considered in the plan as valuable and potentially effective measure to include for both ripristine and conservation goals. In Tuscany, restoration activity of *Posidonia oceanica* has been already carried out in 90's in Baia di Cavo, in the county of Rio Marina (Isola d'Elba¹⁸⁸). The suitable sites for attempting seagrass restoration need to be evaluated and chosen on the base of established principles. These are: 1) the restoring site must have been already occupied by seagrasses in the past, 2) the causes that provoked seagrass disappearance have to cease, 3) the restoration activity has to be carried out in close proximity of wide seagrass meadows, 4) the restoration activity should be anticipated by an experimental restoration activity followed by a monitoring program of three months to test its efficacy.¹⁸⁹

¹⁸⁵ Piano strategico per lo sviluppo della Costa Toscana (2016 – 2020)

¹⁸⁶ Tunesi, L. “La prateria di *Posidonia oceanica*: habitat emblematico per la protezione e la conservazione dell’ambiente marino in Mediterraneo.” Workshop Roma, 13 Giugno 2014.

¹⁸⁷ Tunesi, L. “La prateria di *Posidonia oceanica*: habitat emblematico per la protezione e la conservazione dell’ambiente marino in Mediterraneo.” Workshop Roma, 13 Giugno 2014.

¹⁸⁸ ISPRA, 2009 “Convegno SOS dune. Stato, problemi, interventi, gestione.”

¹⁸⁹ Boudouresque C. F., Bernard G., Bonhomme P., Charbonnel E., Diviacco G., Meinesz A., Pergent G., Pergent-Martini C., Ruitton S., Tunesi, L. 2012. Protection and conservation of *Posidonia oceanica* meadows. RAMOGE and RAC/SPA publisher, Tunis: 1-202.



Some singularities on the coast which can represent an opportunity for future sustainable development of the coast are represented by some punctual abandoned sites (fig. 27). These areas should be further investigated for having the potential to become spots for coastal tourism as well as for conservation purpose. Indeed, abandoned sites are often areas where no human uses are developed at present time and can represent an opportunity to valorize an area by developing from “ground floor” eco-compatible activities through minor economic investments.

For what concerns tourism in the Tuscany coastal area there is high potential for the further development of tourism promoting eco-tourism in harmony with local traditions (e.g. artisanal fishery) and the environment in order to avoid development of mass tourism activities and related infrastructures which may increase erosion of the coastline and environmental pressures.

Main steps to further analyse this issue were identified:

- Analyze the coastal morphology, the sedimentation process and the coastal erosion phenomena in the area considering questions such as where the main sources of sediment are, how does it distribute (north to south/south to north), which are the main coastal features obstructing sediment transportation, which operations have been made to mitigate coastal erosion, which operations are expected to be implemented. This step allows to understand which can be the best planning options to mitigate coastal erosion.
- Analyze the estate of coastal ecosystems their trends and potential threats also in relation to the previously identified coastal interventions, including those planned for erosion mitigation. This step allows to understand which coastal interventions can be implemented without impacting the coastal environment (i.e. ecosystem approach).
- Further analyze the coastal tourism future trends, the priority of this sector and how it could be planned in harmony with the local environment. Identify possible strategies for sustainable ecotourism development enhancing synergies with other sectors (e.g. fishery and aquaculture). Coastal tourism is highly seasonal. Investigate on temporal trends of coastal tourism and their seasonal effects on the coastal environment and other socio-economic activities. This step allows to identify which can be the best planning options to enhance the development of sustainable coastal tourism.

3.2 LAND SEA INTERACTIONS

Land and sea are intrinsically connected via multiple, complex social-ecological interactions.¹⁹⁰ These interactions are important components of local ecology and represent major factors influencing people's livelihoods and wellbeing. Connections between land and marine ecosystems occurs through transport vectors, which can be both natural and artificial, and the direction of influence is mainly, although not exclusively, from land to sea.¹⁹¹ Indeed, all the activities that are carried out at land can alter the flow of material, energy or organisms, and affect the marine biota through impacts on ecological processes. Currently the concept of land-sea interactions is not yet well agreed, and its declination and analysis can be really broad and for the moment are not yet defined. In this report an exercise of land-sea interaction analysis was developed, starting from the knowledge acquired of the studied focus area. The analysis was carried out with the support of thematic maps built on the acquired information that helped us to perceive and observe the investigated area and the potential land-sea processes both of environmental and human nature. Mapping is a fundamental support tool highly effective in both communicating and analyzing the knowledge possessed of an area as well as in suggesting potential results and solutions especially in multi-sectoral contexts. We tried to enlarge the spatial scale of the analysis on land side, being aware of the absence of a definite terrestrial

¹⁹⁰

- Alvarez-Romero, J. G., Pressey, R. L., Ban, N. C., Vance-Borland, K., Willer, C., Klein, C. J., & Gaines, S. D. (2011). Integrated land-sea conservation planning: the missing links. *Annual Review of Ecology, Evolution, and Systematics*, 42, 381-409.

- Makino, A., Beger, M., Klein, C. J., Jupiter, S. D., & Possingham, H. P. (2013). Integrated planning for land-sea ecosystem connectivity to protect coral reefs. *Biological Conservation*, 165, 35-42.

- Stoms, D. M., Davis, F. W., Andelman, S. J., Carr, M. H., Gaines, S. D., Halpern, B. S., ... & Tallis, H. (2005). Integrated coastal reserve planning: making the land-sea connection. *Frontiers in Ecology and the Environment*, 3(8), 429-436.

¹⁹¹ Stoms, D. M., Davis, F. W., Andelman, S. J., Carr, M. H., Gaines, S. D., Halpern, B. S., ... & Tallis, H. (2005). Integrated coastal reserve planning: making the land-sea connection. *Frontiers in Ecology and the Environment*, 3(8), 429-436.

boundary and putting forward an explorative approach to cope with such lack. Thus, some land activities and infrastructures were better included in the analysis, looking for the potential multiple interactions, both positive and negative, among them and between them and the marine environment and sea space (Fig. 28, 29, 30). Within the non-well defined LSI framework, our approach aims at exploring the land-sea interface, putting the basis for the implementation of an LSI methodological framework in the context of MSP, thus paving the way to the operational integration of land and sea planning regimes. The more relevant aspects that should be better explored for the effective management of LSI interactions and of the dynamics that influence them in the focus area are here below determined.

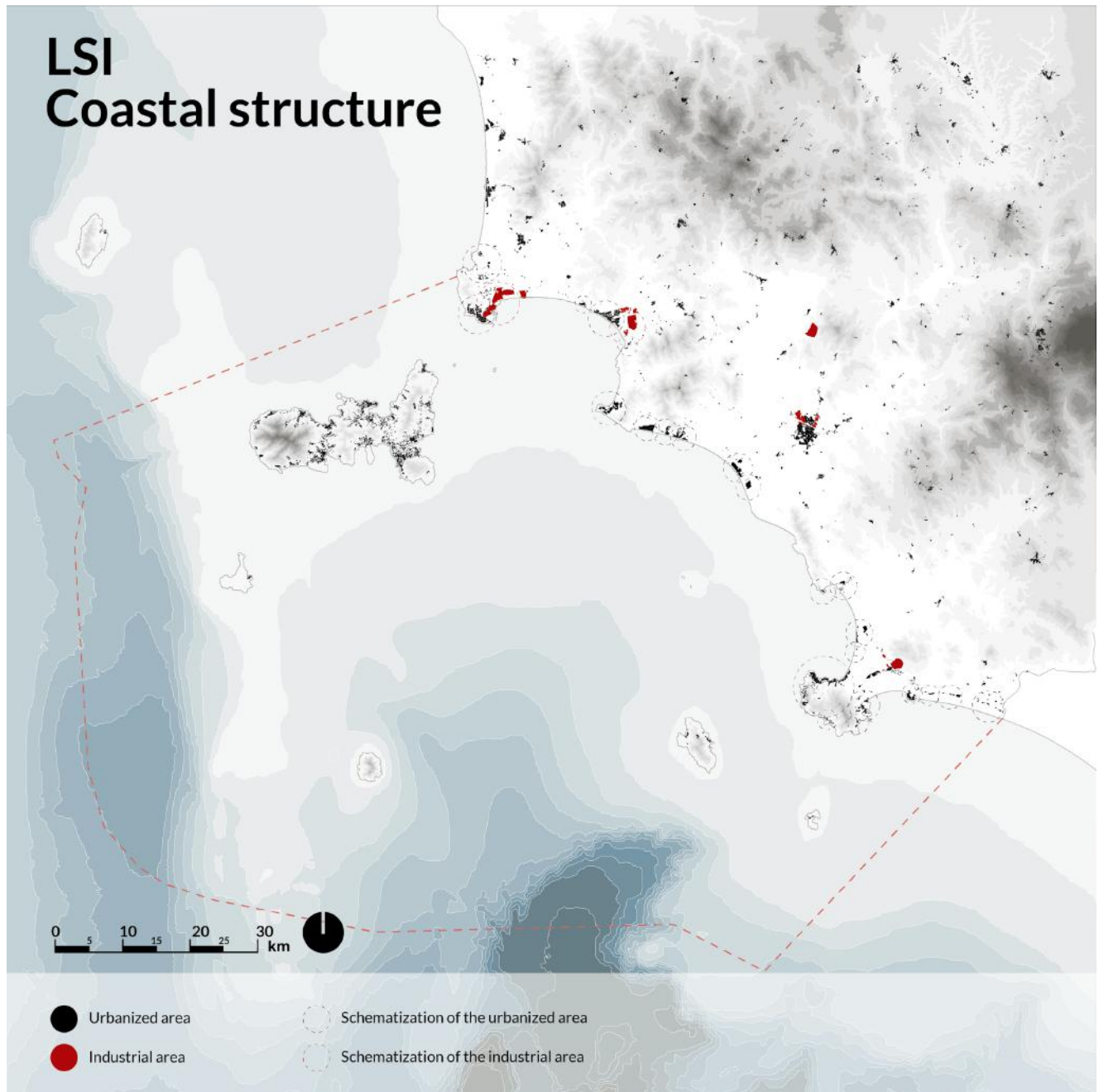


Figure 28. Main coastal structures present along the coast of the case study focus.

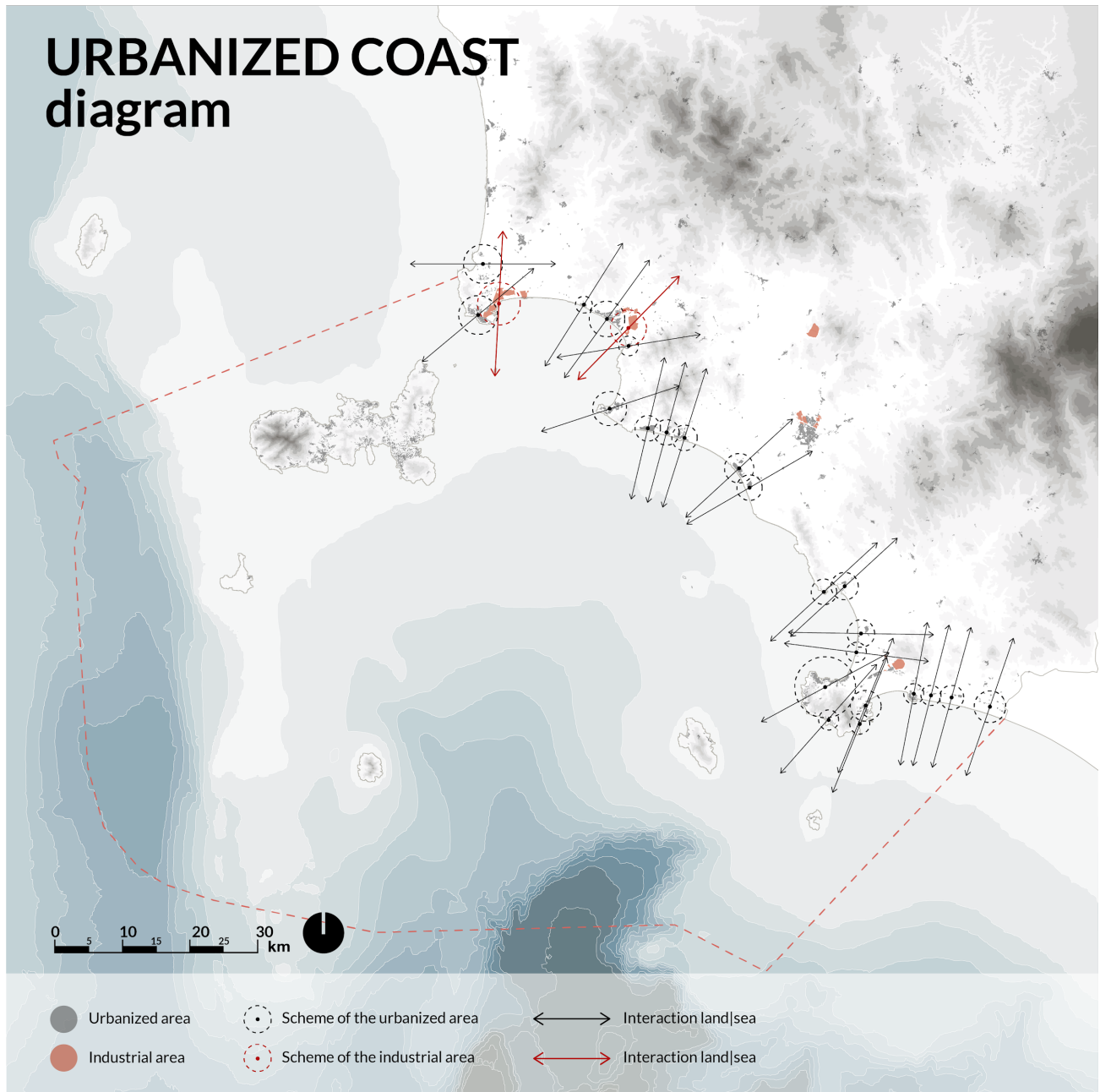


Figure 29. Diagram of the possible potential interactions of the urbanized coastal edge

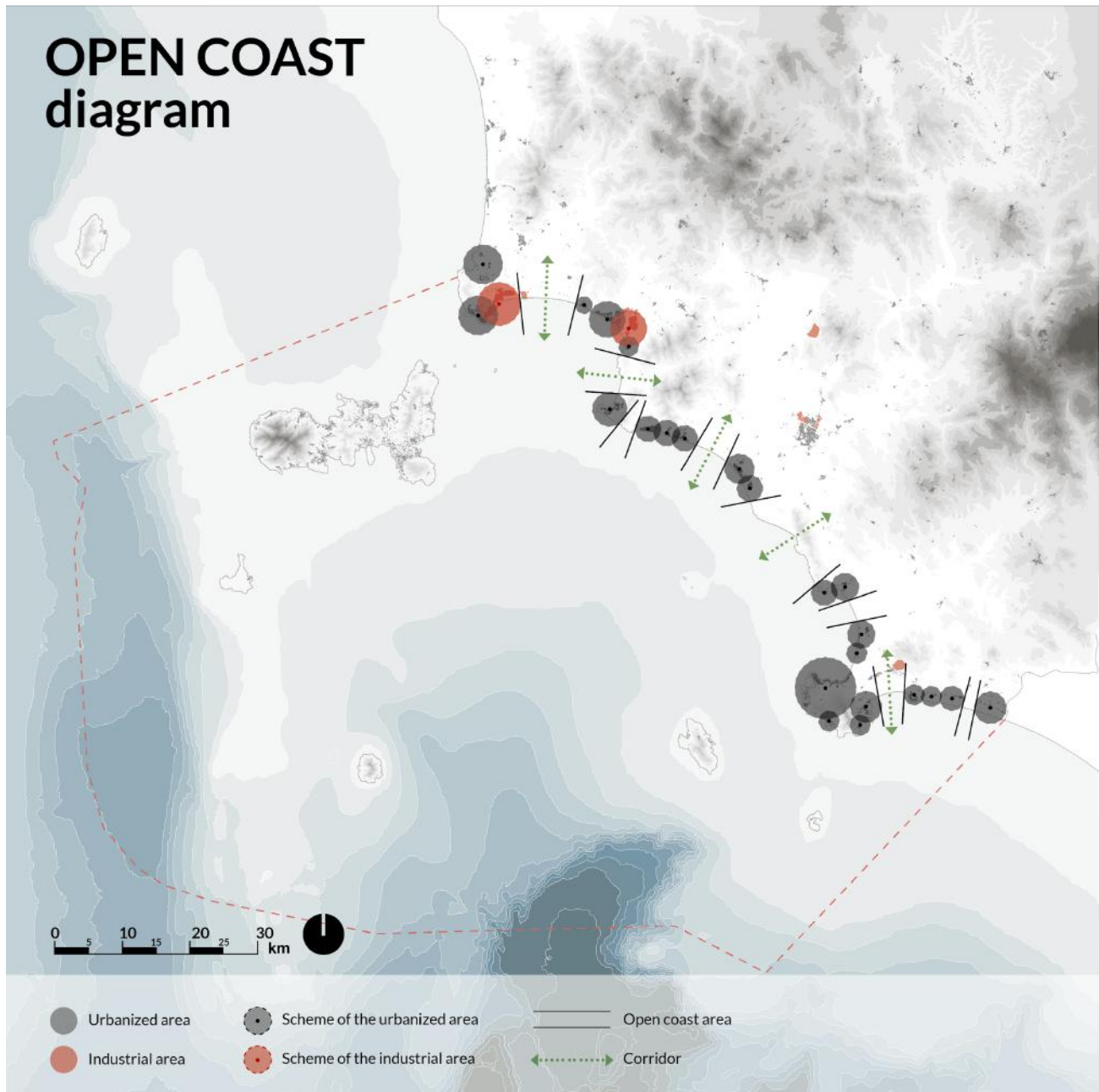


Figure 30. Diagram of the structure of the coastal area interspersed with more natural areas and with urban agglomerates

3.2.1 Maritime transport and accessibility

The focus area presents different aspects of LSI related to maritime transports and accessibility to the coast. Indeed, shipping, fishing, sailing and movement of passengers have related port infrastructures and inland direct connectivity. After all, areas on the coast have historically been settlement areas due to the proximity of fishing grounds and a good connection with other areas in the Mediterranean and with the islands of the archipelago. From the perspective of shipping, it is not just about the different ports but also the connections with the hinterland and an important characteristic is represented by the national and transnational connectivity aspect of this activity. Moreover, maritime transport in the area, as in all the Mediterranean basin, has grown during the past decades and its expected to continue to increase in the coming years. Fundamental is to ensure a good connectivity both at sea and on land to favour and support such increasing



trend. The actual level of maritime traffic congestion and the expected increasing intensity of the activity in the area may lead to environmental impacts (e.g. marine litter, water pollution, introduction of non-indigenous species, hydrographical changes, underwater noise, oil spills from possible accidents) and influence directly development activities.

In the area LSI of maritime transport can be mainly ascribed to the movements of goods and passengers between the mainland ports and the islands. In relation with maritime transport, LSI can be spatialized around the area of the port of Piombino mainly for what concerns commercial purposes, and around the other minor ports in the area mainly for touristic purposes. The hinterland interconnectivity of the transport system represents an important exchange of goods and materials between land and sea realms.

The identification of the transportation corridors and hotspots can facilitate the assessment and the valorization of these networks and junctions. Considering the temporal dimension of this interaction it does not present great fluctuations since the shipping activities are almost always constant as well as the transport infrastructures.

Here below, fig. 31 shows the main land-based transport connectivity hotspots from a commercial and touristic point of view. The main connection between land and sea in transport are evidenced and the main transport network are also highlighted (fig. 32).

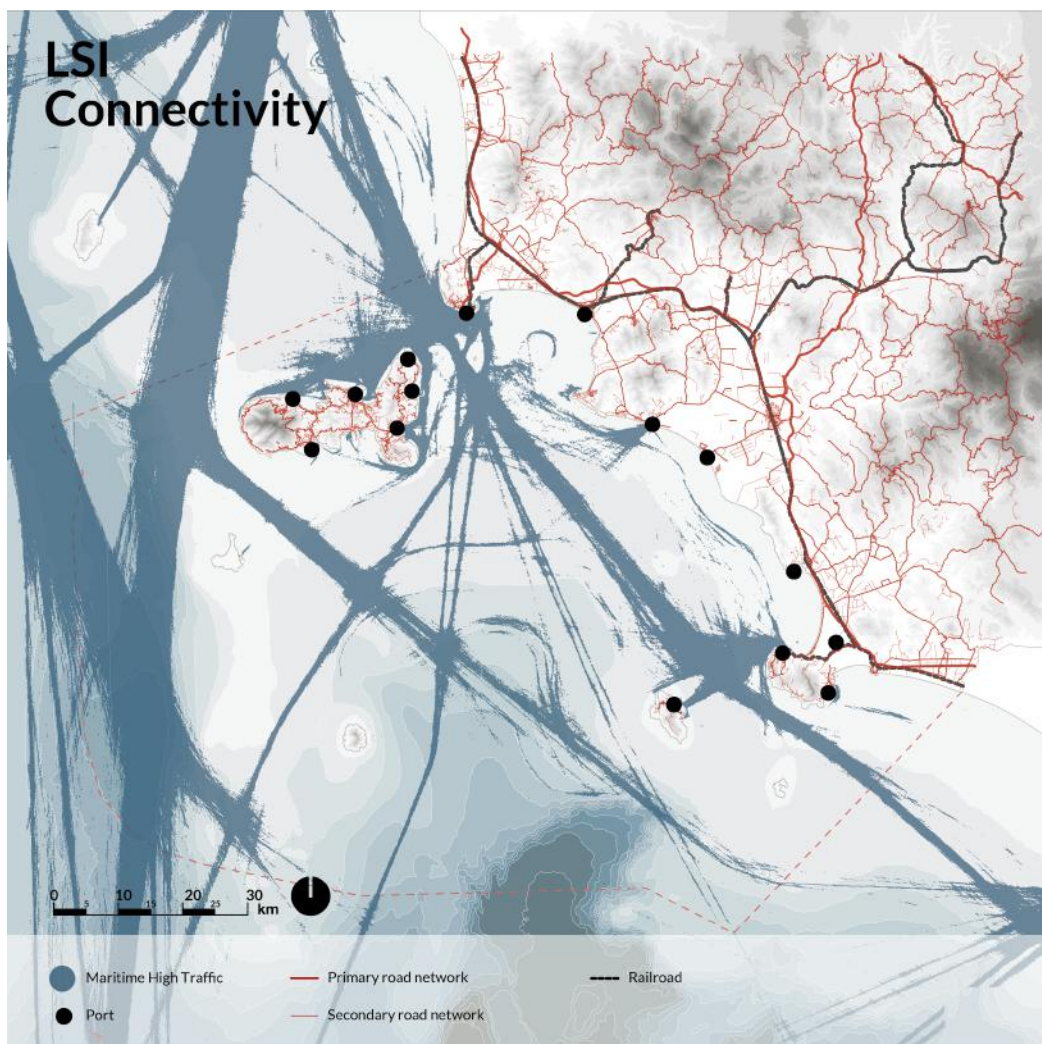


Figure 31. Main land-based transport connectivity hotspots

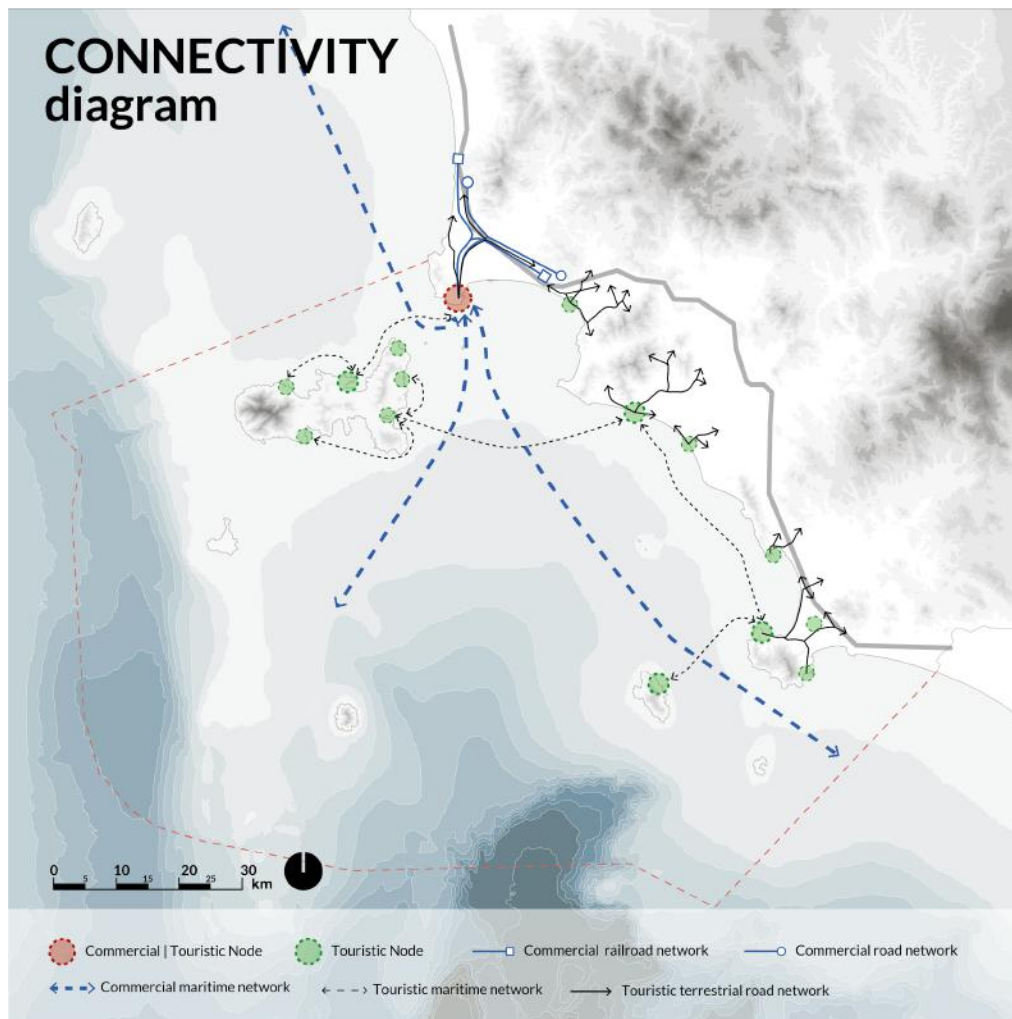


Figure 32. Main connections and transport network in the land-sea interface

3.2.2 Potential ecological fragmentation and environmental conservation

This focus area is an area where conservation both on land and sea space is highly supported and promoted through the presence of several areas and sites of protection interest and the Archipelago. Despite marine and land systems present definite and evident differences from the environmental point of view, marine conservation finds its foundation in terrestrial conservation planning. Nevertheless, land and marine realms are not yet incorporated within a common systematic conservation planning framework despite the recognized importance of the ecological connectivity between these two domains.¹⁹² The identification of ecological corridors can favour the valorization of the relations between land, coastal and marine environments, and it can be of high support in restoring and preserving the environment in its entirety. The incorporation and valorization of ecological connectivity in systematic conservation planning, even considering the land-sea continuum, can be a key approach to reach environmental objectives in the focus area. The here carried out analysis explored the potential barriers to such connectivity between land and sea priority habitats and conservation areas due to the presence of road and rail infrastructures on land as well as main traffic lines at sea (fig. 33 and fig. 34).

¹⁹² Alvarez-Romero, J. G., Pressey, R. L., Ban, N. C., Vance-Borland, K., Willer, C., Klein, C. J., & Gaines, S. D. (2011). Integrated land-sea conservation planning: the missing links. *Annual Review of Ecology, Evolution, and Systematics*, 42, 381-409.

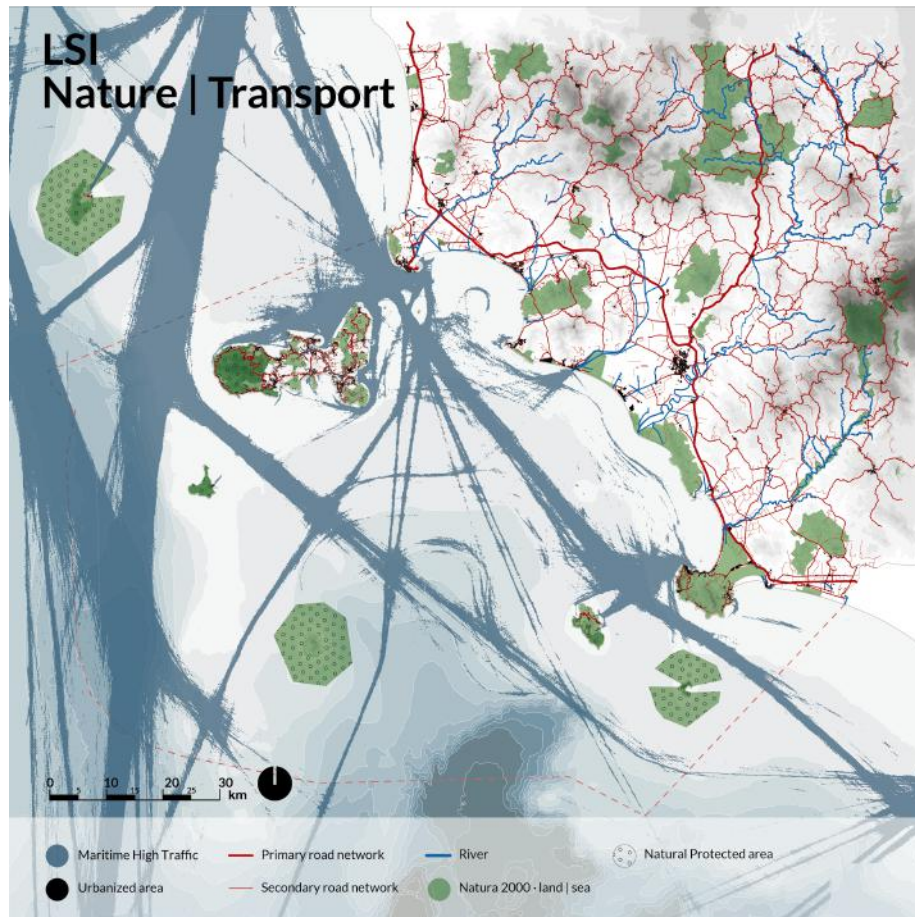


Figure 33. Transport network both on land and sea surrounding nature conservation areas.

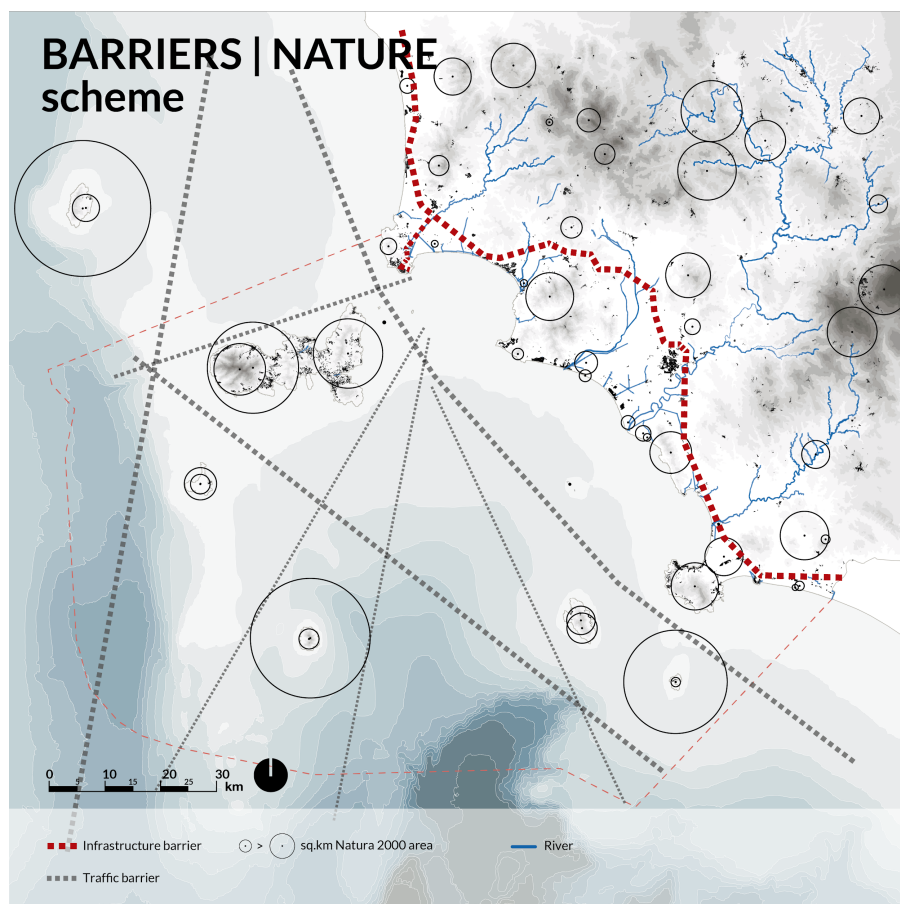


Figure 34. Scheme representing potential barriers to environmental connectivity.

Fundamental is the potential contribution that seagrass meadows give to the coastal erosion process that affect the coast of the focus area. Despite several interventions made along the coast to balance such process, the negative coastal erosion trend is still present (fig. 35, 36). Seagrass conservation, as priority habitats, as well as restoration activity should be considered not only for the the good quality state of the marine and coastal environment, but also to cope with such erosion trend.

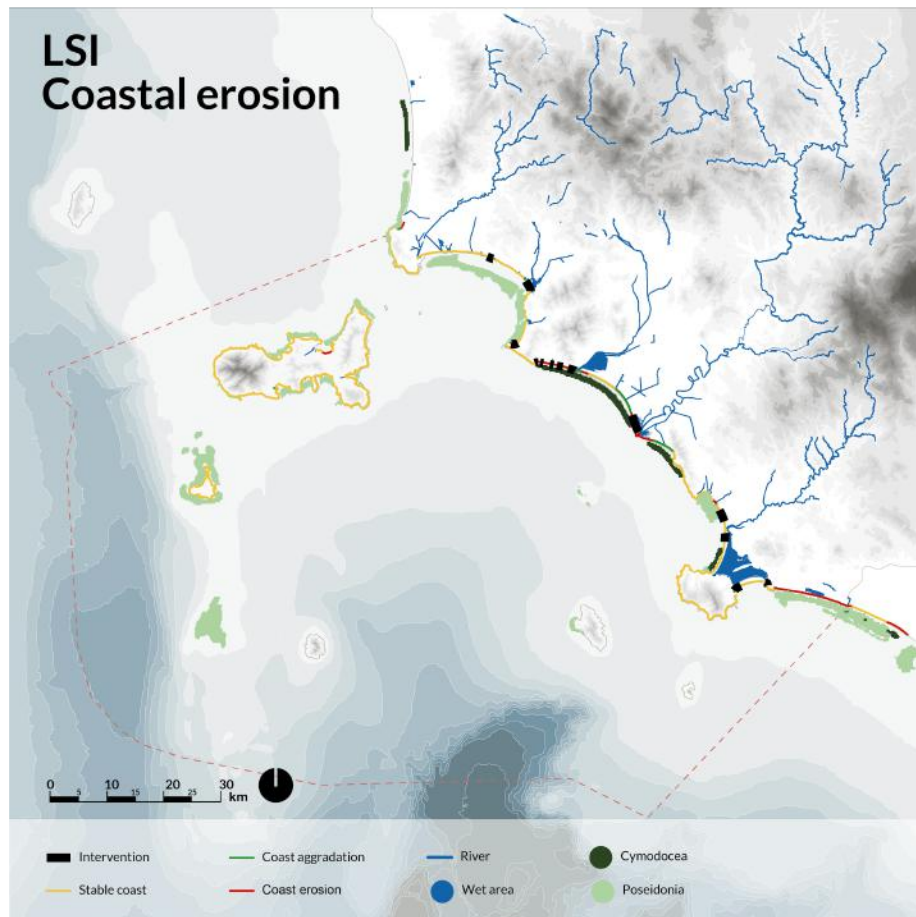


Figure 35. Trends of coastal erosion along the coast of the focus area. Seagrass meadows distribution and artificial interventions are highlighted.

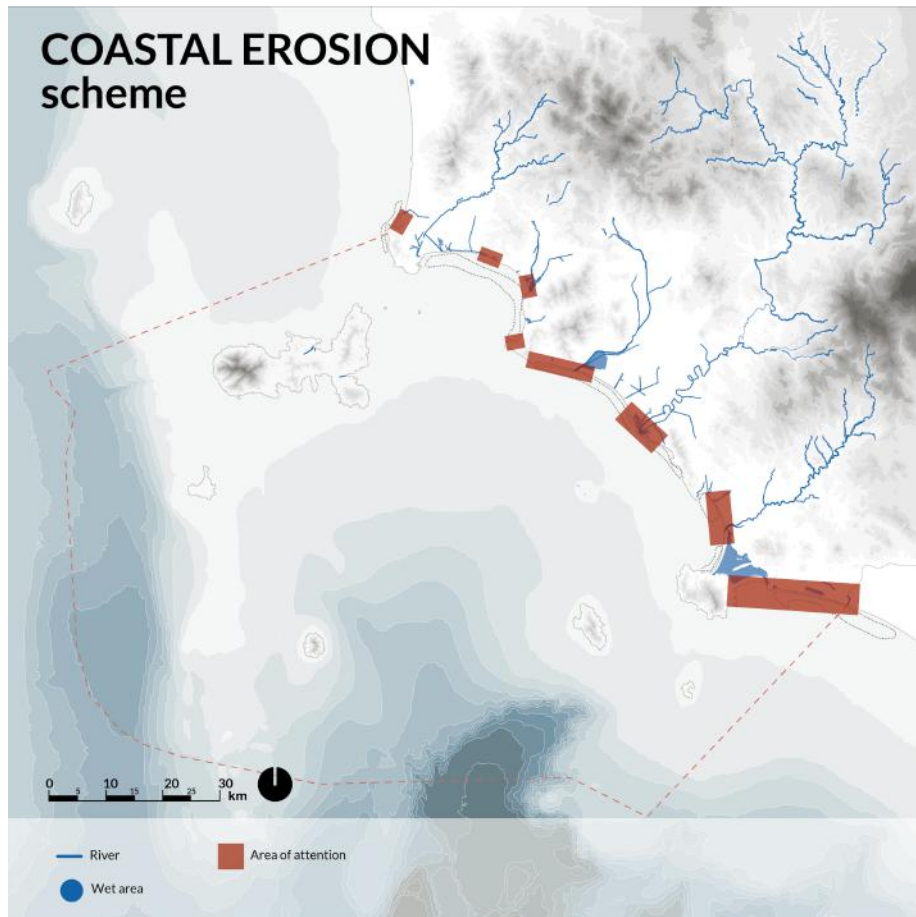


Figure 36. Scheme highlighting hotspot areas of coastal erosions along the coastline of the focus area

3.2.3 Land-based coastal activities: threats and sustainability

The tourism activity has been identified as one of the pivotal uses in the focus area in socio-economic terms. Tourism activities are widely distributed along the coast and it is expected to grow further in the near future. Coastal tourism sector is recognized as one of the main source of pollution and debris that can highly affect the marine environment, as well as one of the main sectors that can be impacted by the poor environmental quality due to pollution and accumulation of debris and litter in the marine and coastal areas.¹⁹³ Moreover, land-based activities can indirectly affect the tourism sector through the discharge of contaminants and pollutants that are brought within the sea space by rivers crossing the land domain. Such interaction can lead to habitat loss and hypoxia/anoxia phenomena in the sea, causing environmental and natural resources depletion. As a cascading effect, such degradation negatively affects maritime activities other than tourism. Aquaculture activity, in fact, lose lot of their efficiency when water quality is poor. Agricultural fields as well as industries and urban centres are diffuse in the focus area. The entity with which such activities affect the coastal and marine environment is not determined yet, due to the absence of a defined terrestrial boundary to be taken as a reference in determining the original source of such interaction. The LSI analysis highlighted the main interactions crossing the land-sea interface identifying main hotspots (fig. 37, 38).

¹⁹³ Islam, M. S., & Tanaka, M. (2004). Impacts of pollution on coastal and marine ecosystems including coastal and marine fisheries and approach for management: a review and synthesis. *Marine pollution bulletin*, 48(7-8), 624-649.

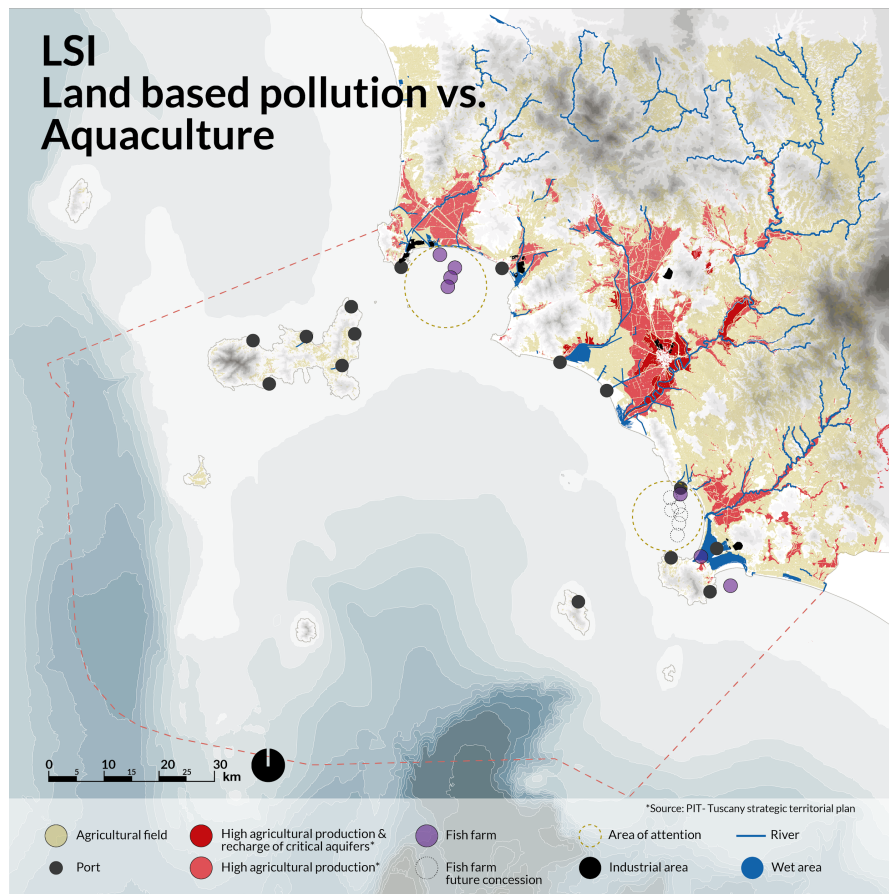


Figure 37. Negative influence of land-based activities towards aquaculture sites.

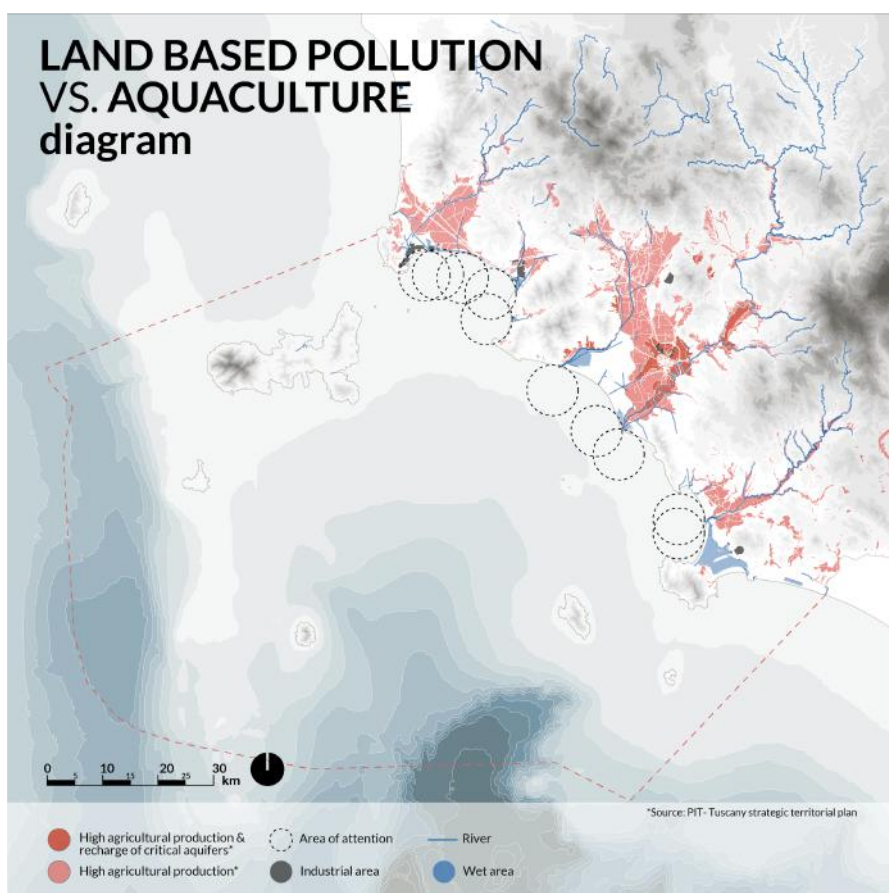


Figure 38. Diagram of main hotspot of land-based activities and aquaculture sites interactions.



Land-based activities can also be in synergy with nature and all the services that nature can offer. This focus area includes natural areas of great value for tourist activities both on land and at sea (fig. 39, 40). The environmental framework surrounding all the touristic activities that are carried out in the focus area is full of environmental valuable components and the potential for the development of a more and more sustainable tourism, in synergy with nature and all its components, is strong and real in all the focus area. Multiple interconnections in a dense potential network are shown in fig. 41.

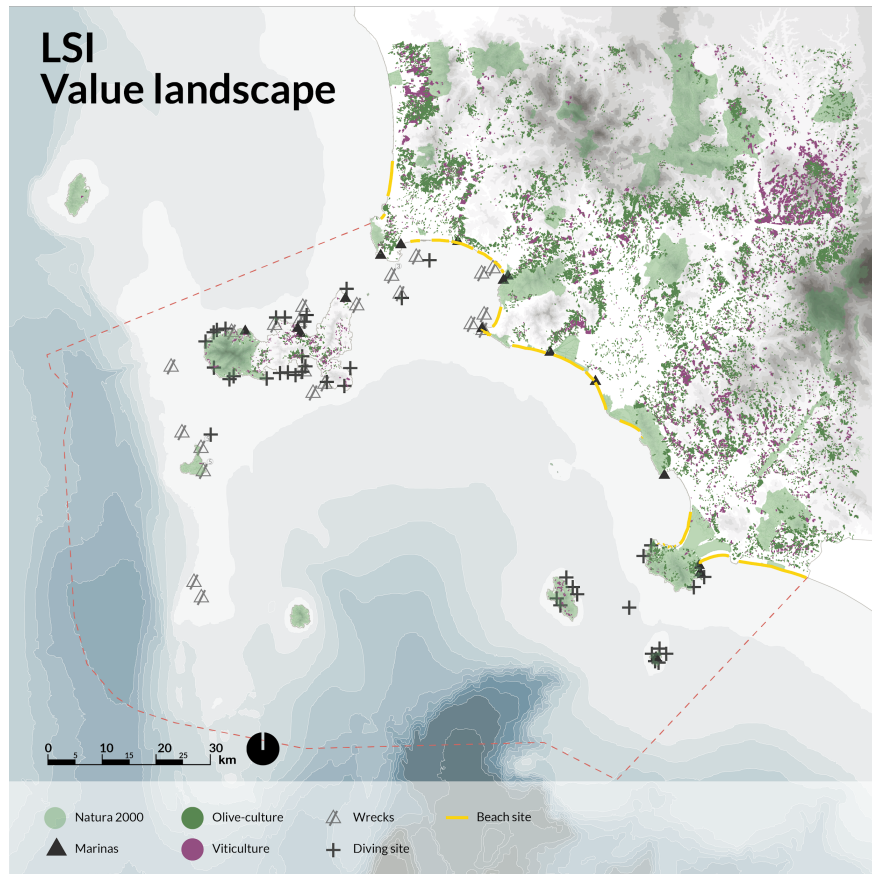


Figure 39. Tourism-based activities in the focus area.

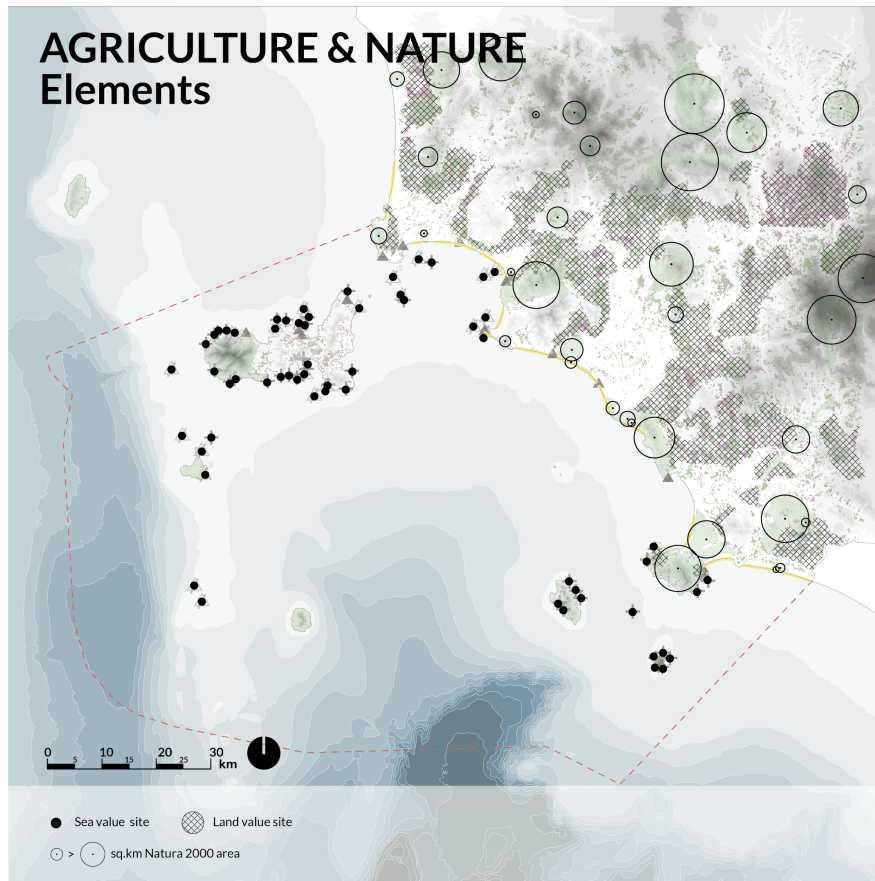


Figure 40. Valuable environmental components and sites both in land and at sea

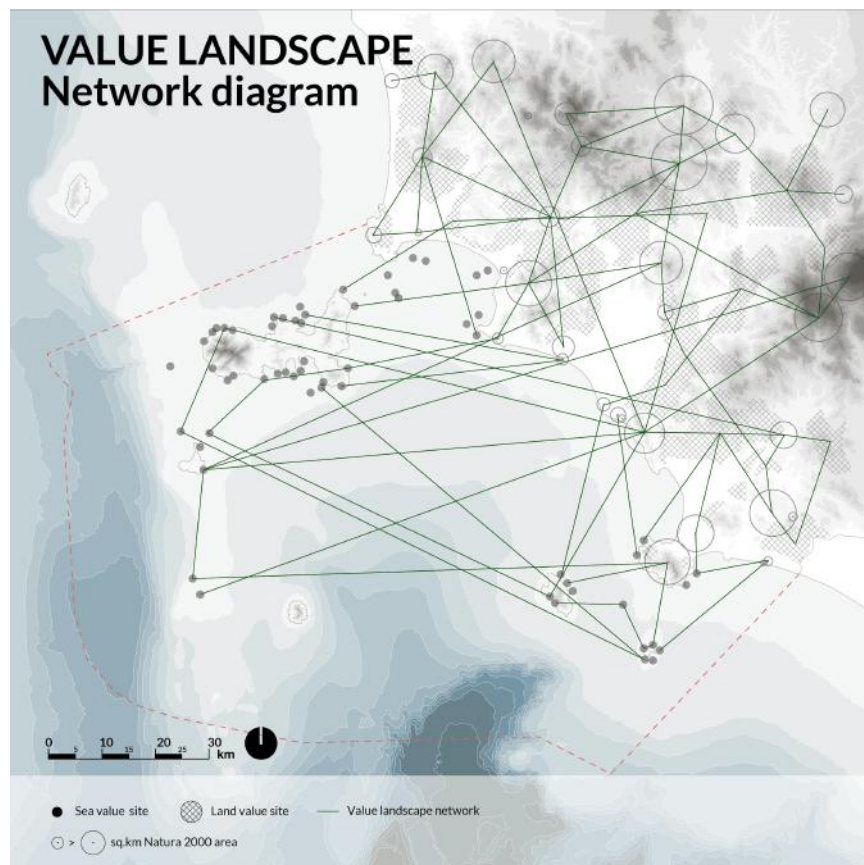


Figure 41. Network of interconnections between nature and tourist activities



4. PLANNING PHASE

4.1 STRATEGIC PLANNING PROPOSAL

The planning proposal is meant to respond to the general objectives of the MSP initiative in the case study area, which are 1) to manage, anticipate, and avoid potential conflicts emerging between human uses, and 2) to control, reduce, avoid potential conflicts between human uses and the marine environment. As specific planning objectives, the proposal answers to the need of addressing the requests and instances of the local communities and economic actors, that have been involved in the planning process through the stakeholder engagement activity delivered within the SIMWESTMED project.

The planning proposal is composed of a series of measures that answer specifically to the critical issues identified in the previous phase (section 3.1) which reflects on conflicts, synergies, and potential overlapping of existing uses, and future trends of development, and potential conflicts with priorities for environmental conservation (habitats and species). The planning strategy is built on the integration of a series of measures of multiple typology, as following: i) spatial measures, related to the zoning of potential vocations for some areas according to potential uses; in some cases the zoning can be permanent or temporary, in order to promote a dynamic ocean management according to the different conservation priorities and seasonality; ii) management measures, related to the implementation of activities of management, communication, or lifelong learning for specific sectors/actors; iii) monitoring measures, related to the need of improving knowledge on specific areas or functionalities of the marine environment in relation to specific planning and management concerns. The planning measures have been proposed also in relation to the the considerations and analysis of the land-sea interactions (section 3.2).

The planning proposal here below represents an initial planning strategy that should be subjected to the discussion with the competent authorities, the multiple stakeholders and decision makers involved and sharing an interest in the case study area.

In the next section, the planning measures are reported and discussed.

4.2 MEASURES AND ZONING

4.2.1 Measures

The measures described below (tab. 3) have been defined with the purpose to integrate them in this planning proposal exercise. They represent the best possible measures identified on the base of the available knowledge that we gathered and have of the focus area, with the scope to overcome the critical issues highlighted within the analysis phase through the reduction of conflicts and enhancement of synergies. Measure proposal identified were divided between two separate categories: spatial measures and non-spatial measures. Spatial measures involve all those measures that directly affect the spatial extent of a single use or activity within the space of the CS area. Non-spatial measures involve all those measures that affect the way a single use or activity interact with other human or environmental components. A specific governance analysis has been carried out to identify and highlight the synergies between the proposed planning measures and the multi-level governance and policy objectives. See Annex *“Governance analysis: Synergies between proposed planning measures and multi-level governance and policy”*.



Table 4. Measures identified to enhance effective management of the planning area

Spatial measures	Non-spatial measures
<ul style="list-style-type: none"> - Definition of periods and areas to be avoided in order to reduce disturbances on cetaceans;* - Identification of alternative navigation routes that do not overlap with key cetacean habitats;* - Identify specific areas where risk of conflicts is lower, for allocation of new activities expected to be established in the area, in particular aquaculture; - Assign additional areas for anchoring and mooring buoys; - Avoid allocation of aquaculture facilities and wine cellars above areas with more productive ecosystems (e.g. spawning/nursery areas, seagrass meadows); - Avoid allocation of aquaculture facilities and wine cellars above main fishing grounds; - Protection of nursery and spawning hotspot areas through permanent/temporal closure to fishing activities with potential impacts on such areas (e.g. trawling); - Designation of no-take zones in correspondence of priority habitats; - Prohibit anchoring in coastal areas over priority bottom habitats (e.g. seagrass meadows); - Avoid construction of artificial infrastructures (e.g. long docks) that can alter coastal currents dynamics by reducing longshore drift of sediments on the coast; - Avoid the establishment of aquaculture facilities which can negatively impact on the coastal landscape and environmental quality of marine waters; 	<ul style="list-style-type: none"> - Implementation of updated and integrated data portals on maritime uses, activities and environmental components in the area.* - Further investigation on maritime traffic pressures on cetaceans to calculate probability of cetaceans collisions with ships.* - Interviews with fishermen and creation of obligatory logbooks to register information on by-catch events.* - Monitor presence of contaminants (e.g. heavy metals) in marine waters and sediments and decontaminate highly polluted areas (e.g. Piombino SIN); - Monitor estate of marine waters with regard to organic pollution and marine litter; - Monitor nutrients input and dispersion from aquaculture facilities; - Monitor the ecological integrity of main spawning and nursery habitats; - Monitor the conservation estate of priority habitats and keystone species for conservation in order to detect eventual population trends; - Monitor coastal erosion; - Monitor environmental impact on coastal ecosystems derived from aquaculture activities; - Promote the requalification of abandoned sites and infrastructures on the coast for the development of new sustainable activities (e.g. ecotourism); - Decrease vessels' speed during months of higher concentration of cetaceans;* - Enhance the transition to energy sources with lower impact on the environment (e.g. LNG) for local maritime means of transport (e.g. ferries for tourism displacement); - Promote awareness among stakeholders and citizens on key aspects for sustainable management and development of the coastal zone (e.g. awareness on the key role of seagrass meadows to mitigate coastal erosion); - Promote synergies between coastal tourism and aquaculture sector; - Promote and enhance extensive over intensive aquaculture; promote integrated aquaculture; - Promote ecotourism development through integration with local traditions, in synergy with fishery and aquaculture sector (fishing tourism) and in harmony with ecosystems long-term sustainable management; - Investigation on possible strategies to reduce negative interactions between fishing sector and cetaceans, in particular dolphins (e.g. through the introduction of new deterrent devices on fishing gears); - Identification of further suitable areas for restoration of priority habitats; - Integrate at the most Intermunicipal Plans (PIT) with the measures and planning proposals at sea in order to have coherence between the land and sea planning.



4.2.2 Zoning proposal

The following zoning proposal (fig. 42) was designed in the attempt to frame within an appropriate spatial dimension all the measures addressed for the Tuscany focus area. With this purpose, key areas, defined as strategic planning focuses, where appropriate measures should be implemented and further analysis should be carried out to avoid conflicts, enhance synergies and promote the sustainable management of natural resources were identified.

The strategic planning focuses identified can be ascribed to the following categories:

- Operative plan focuses;
- Coastal priority habitats;
- Cetacean monitoring areas and related attention areas for traffic;
- spawning habitat hotspots;
- nursery habitat hotspots.





Figure 42. Zoning proposal

Operative plan focus of Piombino

This strategic planning focus (fig. 43) includes a coastal area where the zoning of the activities developed should be defined at a finer scale to address existing and potential conflicts between uses and between uses and the environment and to ensure sustainable development of the activities in a multi-use context.



Figure 43. Zoning proposal. Strategic planning focus: Operative plan focus of Piombino

Operative plan focus of Orbetello

This strategic planning focus (fig. 44) includes a coastal area where the zoning of the activities developed should be defined at a finer scale to address existing and potential conflicts between uses and between uses and the environment. A main objective to enhance effective planning of this focus should aim at the identification of vocational areas for aquaculture in spots where this activity would not negatively impact on priority coastal ecosystems and coastal tourism which is one of the main socio-economic resources.

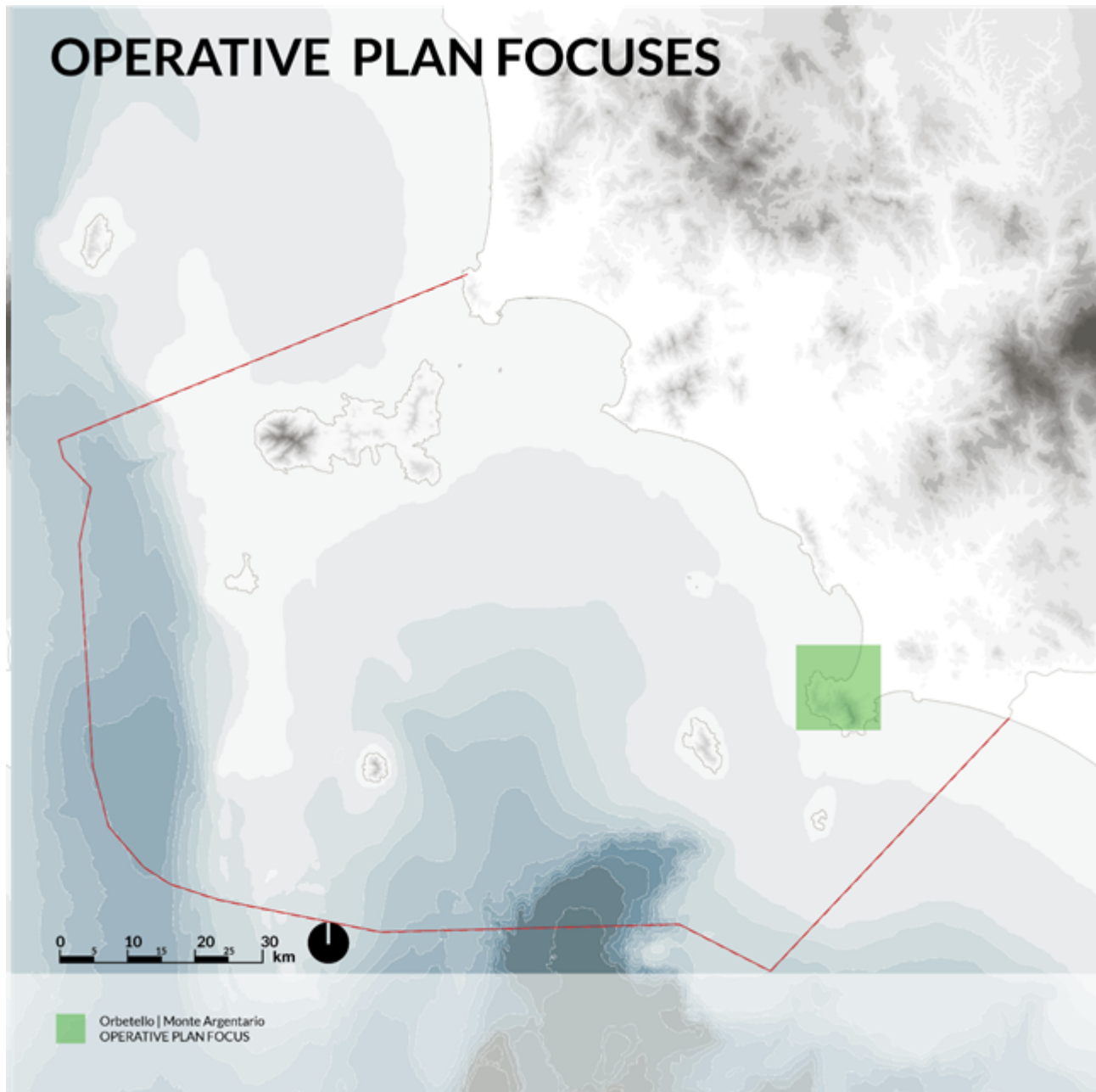


Figure 44. Zoning proposal. Strategic planning focus: Operative plan focus of Orbetello

Coastal priority habitats

Within this category of strategic planning focuses the areas found presenting coastal priority habitats (i.e. seagrass meadows and coralligenous) were enclosed (fig. 45), and where specific measures to enhance their protection were addressed. The prohibition of boats anchoring and aquaculture facilities allocation above coastal priority habitats was considered for all areas identified. Where coastal priority habitats were found to be distributed in front of land based coastal Natura 2000 habitats it was suggested to extend the Natura 2000 sites seaward, in order to preserve ecological connectivity between terrestrial and marine areas and their

habitats. Where abandoned sites were identified within coastal Natura 2000 areas it was suggested the requalification of the abandoned infrastructure as a vocational space for ecotourism. In the specific case of the Giglio Island which is partially included within the Tuscan Archipelago National Park it was suggested to extend the boundaries of its protection seaward by establishing a new MPA aimed at the protection of its coastal priority habitats and related biodiversity.

In one exceptional case, a priority habitat (i.e. *Posidonia oceanica* meadows) addressed as coastal, was found to distribute in an offshore shallow bank located between the Pianosa and Montecristo Island.

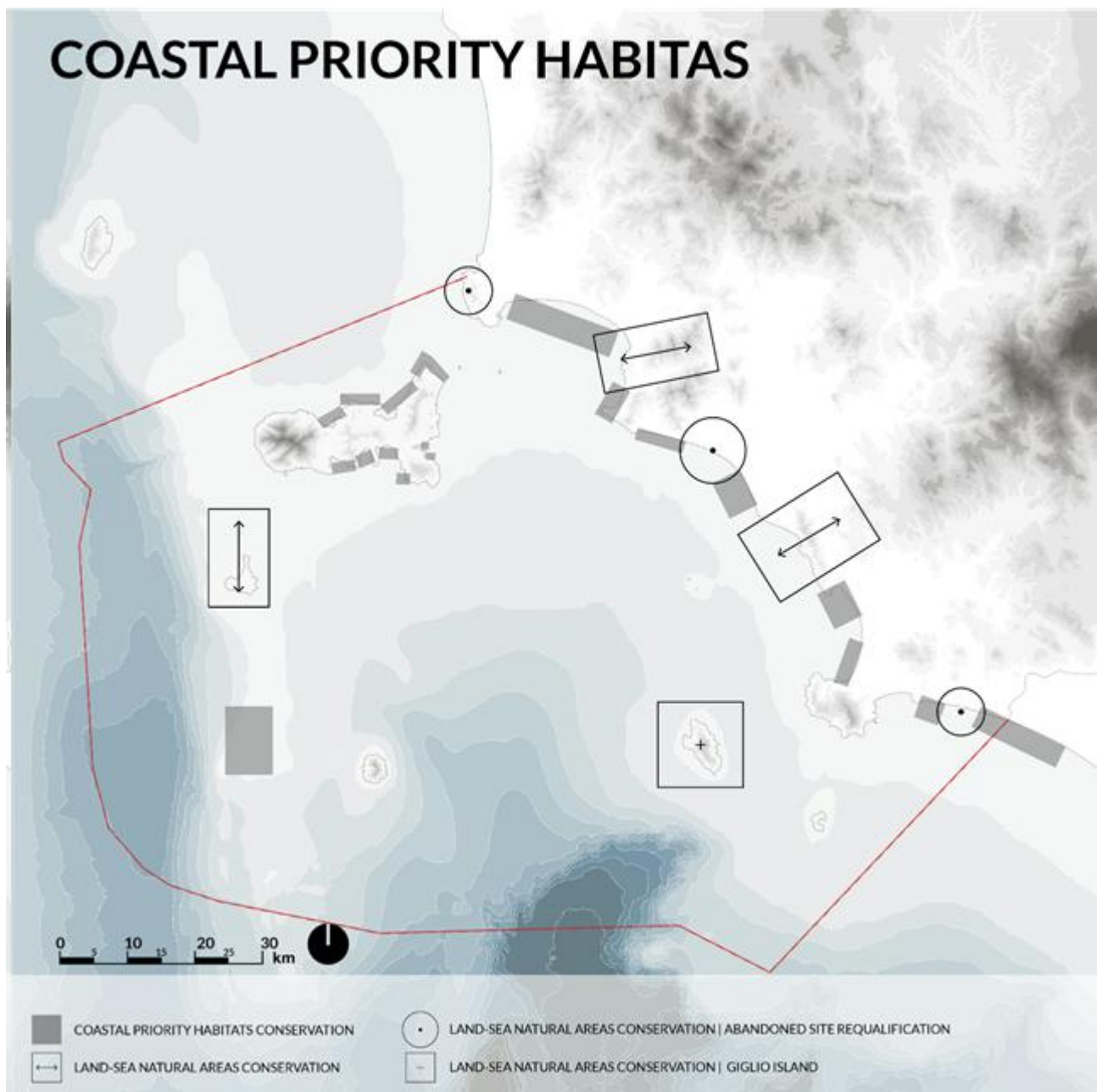


Figure 45. Zoning proposal. Strategic planning focus: Coastal priority habitat

Cetacean monitoring areas and related attention areas for traffic

Through the analysis of monthly distribution of fin whale, it was possible to identify specific offshore areas where this target species is found with higher probability depending from the period of the year. Based on its dynamic distribution three monitoring areas were identified in total. These areas cover different extensions depending from the months considered (fig. 46). The implementation of a monitoring strategy of fin whale is



suggested within these areas to further enhance the conservation of this species through the adoption of appropriate conservation measures, Dynamic Ocean Management (DOM) among the others. Where main traffic routes overlap with the cetacean monitoring areas, two attention areas for traffic in which appropriate measures should be adopted to avoid impacts of marine transport on cetaceans (e.g. vessels speed reduction) were designated. One of the two identified attention areas is closer to the coast and it has been designated for being adopted on every month of the year while the other was located on an area which is more distant from the coast and it should be adopted only in months when was found to overlap areas where fin whale presence is highly probable, namely: January, February, March, April, May, October, November, December.

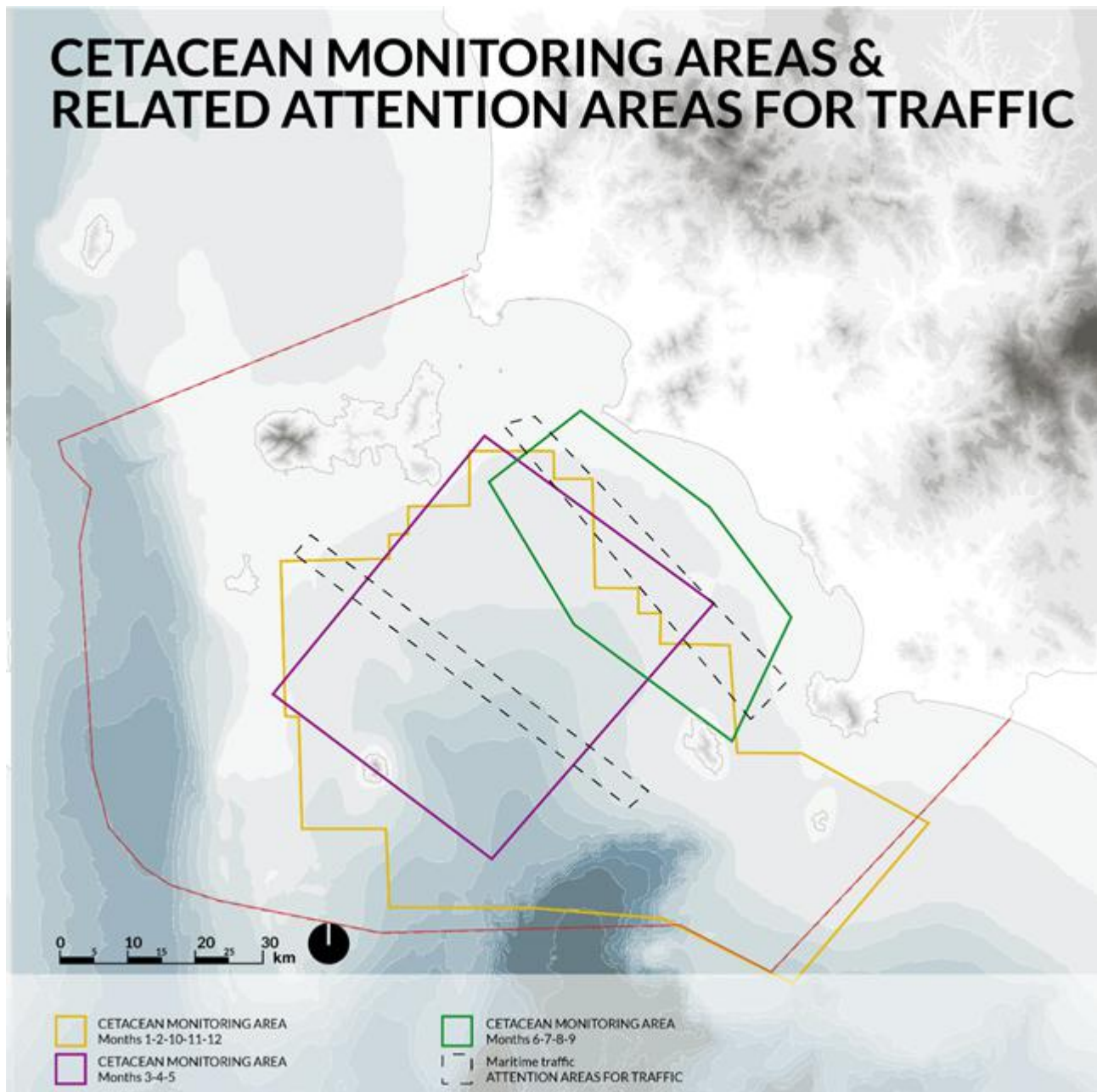


Figure 46. Zoning proposal. Strategic planning focus: Cetacean monitoring areas and related attention areas for traffic

Nursery habitat hotspots

Nursery habitat hotspots correspond to areas where nursery habitats of at least three of the commercially relevant species considered in the analysis overlap (fig. 47). Specific measures to adequately manage the effects of fishing activity within these areas should be considered. Restriction to fishery (e.g. limit to the number of fishing permits, banning of specific fishing gears) should be carefully considered within these areas.



Implementation of ZTBs as well as FRAs in this areas could also be considered to ensure their adequate management.

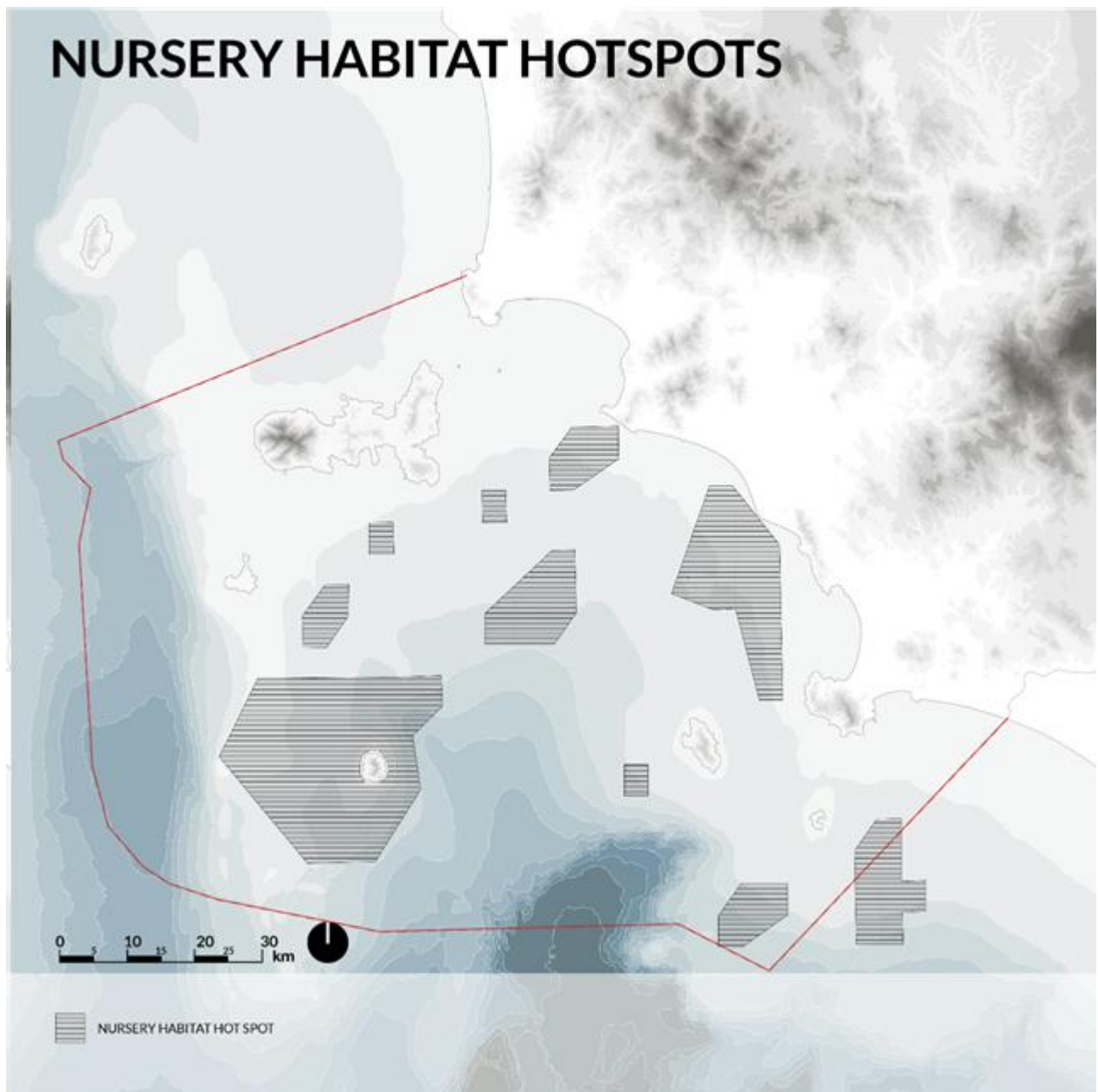


Figure 47. Zoning proposal. Strategic planning focus: Nursery habitat hotspots

Spawning habitat hotspots

Spawning habitat hotspots correspond to areas where spawning activity of the commercially relevant species considered in the analysis was found. As for nursery habitat hotspots specific measures to limit fishing impact on species and ecosystems found in these areas should be considered. Since spawning activity of selected species is typically seasonal, the measures identified were thought to be implemented in consideration of their temporality for the months of the year in which spawning activity of target species was addressed in each specific area (fig. 48).

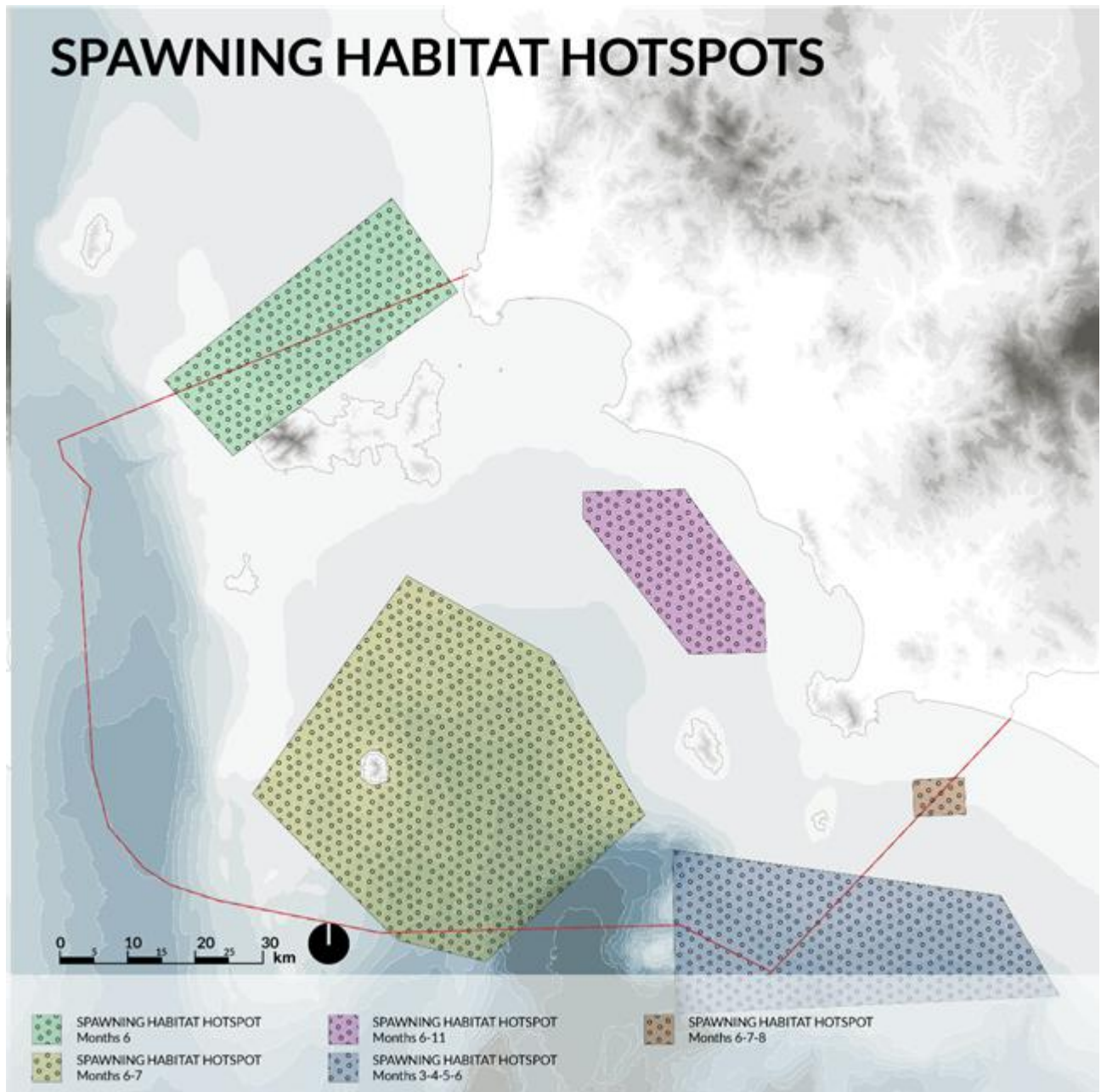


Figure 48. Zoning proposal. Strategic planning focus: Spawning habitat hotspots



ANNEX - GOVERNANCE ANALYSIS

Governance analysis: Synergies between proposed planning measures and multi-level governance and policy

Maritime transport

The importance of a monitoring system of vessels traffic, and consequently a control of their speed, noise and quantity, has been argued by international, European and national authority.

It has been reported that the intensive maritime transport implies a various array of pressures on the environment and ships and port emissions, risk of accidents, underwater noise and the introduction of alien species through ballast water discharged. The intensive maritime transport may also have some negative consequences to maritime safety; for this reason, a monitoring system can also guarantee the safety people. In order to prevent or reduce these pressures and fight against the negative impacts that generate, it is desirable to take specific measures. The measures that we want to propose have an international, European and national legal basis.

At an international level, the SOLAS Convention aimed at the introduction of a system of monitoring of traffic ships, in order to achieve safety of life at sea, safety of navigation, protection of the marine environment, ports and installations offshore. The International Maritime Organization, adopting the Resolution A.857(20), on 27 November 1987, introduced the Guidelines for vessel Traffic Services. IMO argued that the reduction of vessels speed can reduce the pollution. IMO's action also aimed at a gradual reduction of air pollution from ships in the Mediterranean Sea and this can be achieved by limiting vessels quantity and speed. IMO adopted internationally recognized rules and standards for shipping and maritime transport, such as traffic separation schemes.

European Union action also aimed at monitoring maritime traffic, in order to achieve certain objectives, such as environmental protection, by limiting vessel quantity, speed and noise and by introducing a traffic separation scheme. Directive 2002/59/EC sets up a vessel traffic monitoring and information exchange system; this seeks to enhance maritime safety, port and maritime security, environmental protection and pollution preparedness.

It also permits the exchange and sharing of additional information, facilitating efficient maritime traffic and transport. European Union also established a European Maritime Safety Agency, in order to enhance safety and prevent pollution in maritime transport (Regulation No 1406/2002) and a Community vessel traffic monitoring and information system, introduced by directive 2009/17/EC. The EU's policy led to the adoption of an integrated maritime surveillance (COM(2009)538 final, Towards the integration of maritime surveillance: a common information sharing environment for the EU maritime domain), in order to generate a situational awareness of activities at sea impacting on maritime safety and security, border control, the marine environment, fisheries control, trade and economic interests of the European Union, as well as general law enforcement and defence so as to facilitate sound decision making.

In order to implement the objectives planned at international and European level, Italy also adopted a set of rules. On the one hand, Italy introduced a vessel traffic system. On the other hand, the Ministry of Transport and Infrastructure, in consultation with the ministry of environment, land and sea, adopted the implementing provisions concerning the Vessel Traffic Service.

Vessel traffic monitoring systems are linked to the legal concept of maritime safety, including safety, security and sustainable development. The purpose of monitoring systems is to prevent and reduce risk of accidents and hazards for motivation, human life and environment.

The measures we want to propose, such as the limitation of vessels quantity, speed and noise, in particularly sensitive areas and on the base of real-time data produced, the establishment of a continuous traffic separation scheme and the integration of transboundary VTS data, are supported by international conventions and by European policy, which aims at enhancing maritime safety and environmental protection (which can be reached by adopting such measures).

At a national level, it has been introduced a monitoring system and it has been adopted a general transport and logistic plan, which aims at monitoring maritime traffic.

It has been signed an agreement between Piombino Port Authority and Tuscany in 2012, in order to monitor ferries route and to have an update of maritime traffic. The Region and the Port Authority want to reinforce the monitoring of maritime traffic. The measures proposed (i.e. slow down the vessel's speed during summer months) may be proposed to Piombino Port Authority (in collaboration with the Region) which may examine the measure, taking into account all the specificities of the case.

The measures may be proposed to the VTSL (peripheral maritime bureau), established at a local level in order to interact directly with the maritime traffic and to carry out the functions of a VST centre.



In conclusion, a modern system of maritime traffic control can be implemented by compliance with international, EU and national legislation and specific measures can be proposed and adopted by the competent authority in order to achieve the objectives that are pursued by different legislative levels.

Measures	Competent Authority
<p>Limitation of vessels quantity, vessel speed and in sensitive areas, increased monitoring of the activity in sensitive areas.</p> <p>Limitation of vessel speed and noise in particularly sensitive areas and on the base of real-time data produced.</p>	<p>European level</p> <p>European Maritime Safety Agency (the Agency), established by regulation (EC) No 1406/2002, for the purpose of ensuring a high, uniform and effective level of maritime safety, maritime security, prevention of, and response to, pollution caused by ships as well as response to marine pollution caused by oil and gas installations.</p> <p>National level</p> <p>D.P.C.M. No 72, 11 February 2014- Rules of internal organization of the Ministry of Transport and Infrastructures.</p> <p>More specifically, the general commanding of port authorities.</p> <p>Article 13-Tasks and functions- Port authorities play an important role in the monitoring of the vessel traffic. The general command of the port authorities shall perform the functions of the Ministry in a decentralised manner (more specifically, performs its function in the maritime traffic control, the supervision of the maritime safety, the coordination of the different activities, the supervision and monitoring of the safety of ships and of ports).</p> <p>More specifically: Vessel Traffic Service, related to the Ministry of Infrastructure and Transport- Port authority.</p> <p>The coast guard is the competent authority concerning VST; more specifically, coast guard aimed at supervising and monitoring the situation. Operational management implemented at a central level by port authority and coast guard.</p> <p>At a decentralized level: maritime bureau, venues of VST.</p> <p>First level: VTSC – Central among the Ministry of Infrastructures and Transport. Operation Centre of port authorities.</p> <p>Second level: VTSA – Maritime Directorates (M.R.S.C.), Maritime Rescue Sub Center, established to supervise the maritime zone and to interface with VTSC.</p> <p>Third level: VTSL – local level, among the peripheral maritime bureau, established to interact directly with the maritime traffic and to carry out the functions of a VST centre.</p> <p>Tuscany</p> <p>Piombino Port Authority.</p> <p>Coast Guard.</p> <p>ARPAT.</p>
Law	
<p>International level</p> <p>International Convention for the Safety of Life at Sea (SOLAS), 1974, adoption November 1074, entry into force may 1980. One of the aims of the Convention is the introduction of a system of monitoring of traffic ships, in order to achieve safety of life at sea, safety of navigation, protection of the marine environment, ports and off-shore installations.</p> <p>SOLAS regulation V/8-2- Vessel traffic services (VTS) contribute to safety of life at sea, safety and efficiency of navigation and protection of the marine environment, adjacent shore areas, work sites and offshore installations from possible adverse effects of maritime traffic.</p> <p>Resolution A.857(20), adopted on 27 November 1987, of the International Maritime Organisation, Guidelines for vessel Traffic Services.</p> <p>According with SOLAS regulation V/8-2, define the principles and general operational provisions for the operation of a vessel traffic service (VTS) and participating vessels. The purpose of the VTS is to improve the safety and efficiency of navigation and the safety of life at sea and the protection of the marine environment and/or the adjacent shore area, worksites and offshore</p>	



installations from possible adverse effects of maritime traffic.

Resolution MSC.139(76) (adopted on 5 December 2002)- Mandatory ship reporting systems.

The international maritime organization (IMO) claims that the reduction of vessels speed can reduce the pollution, in the frame of the reducing of air pollution from ships in the Mediterranean Sea.

IMO established also internationally recognized rules and standards for shipping and maritime transport, such as traffic separation schemes.

European level

Directive 2002/59/EC of the European Parliament and of the Council EU, maritime information and exchange system, incorporated into the package Erika II.

The directive sets up a vessel traffic monitoring and information exchange system. This seeks to enhance maritime safety, port and maritime security, environmental protection and pollution preparedness. It also permits the exchange and sharing of additional information facilitating efficient maritime traffic and transport. The directive should provide to monitoring of ships entering in the area of mandatory ship reporting systems, ensure the use of automatic identification systems (AIS) and ship's routing systems, monitor the compliance of ships with VTS and ensure that ships calling at a port of Member state are fitted with a Voyage Data Recorder (VDR) system.

Directive 2002/84/EC of the European Parliament and of the Council, amending the Directives on maritime safety and the prevention of pollution from ships.

Regulation (EC) No 1406/2002, establishing a European Maritime Safety Agency, in order to enhance safety and prevent pollution in maritime transport.

COM(2007)575 final-An integrated Maritime Policy for the European Union.

SEC(2007)1278, Commission staff working document, accompanying document to COM(2007)575 final.

Directive 2009/17/EC of the European Parliament and of the Council, amending Directive 2002/59/EC, establishing a Community vessel traffic monitoring and information system.

COM(2009)538 final, Towards the integration of maritime surveillance: A common information sharing environment for the EU maritime domain. Point 1: (...) The aim of integrated maritime surveillance is to generate a situational awareness of activities at sea impacting on maritime safety and security, border control, the marine environment, fisheries control, trade and economic interests of the European Union as well as general law enforcement and defence so as to facilitate sound decision making.

Directive 2014/100/EU of the Commission, amending Directive 2002/59/EC of the European Parliament and of the Council establishing a Community vessel traffic monitoring and information system.

Directive 2010/65/EU of the European Parliament and of the Council, on reporting formalities for ships arriving in and/or departing from ports of the Member States and repealing Directive 2002/6/EC. The purpose of this directive is to simplify and harmonise the administrative procedures applied to maritime transport by making the electronic transmission of information standard and by rationalising reporting formalities. The directive wants to simplify and harmonize the administrative procedures applied to maritime transport by making the electronic transmission of information standard and by rationalizing reporting formalities.

COM(2011) 144 final, White Paper, Roadmap to a Single European Transport Area – Towards a competitive and resource efficient transport system.

Regulation (EU) No 1315/2013, of 11 December 2013 on Union guidelines for the development of the trans-European transport network and repealing Decision No 661/2010/EU.

Section 4: Maritime transport infrastructure and motorways of the sea- Article 21 Motorways of the sea: 1. Motorways of the sea, representing as they do the maritime dimension of the trans-European transport network, shall contribute towards the achievement of a European maritime transport space without barriers. They shall consist of short-sea routes, ports, associated maritime infrastructure and equipment, and facilities as well as simplified administrative formalities enabling short-sea shipping or sea-river services to operate between at least two ports, including hinterland connections.

EU Ports Regulation 2017/352 of the European Parliament and of the council of 15 February 2017, establishing a framework for the provision of port services and common rules on the financial transparency of ports. The aim of regulation is to "level the playing field" in the sector, and create a climate more conducive to efficient public and private investments.

National level

Law No 51, 7 March 2001, Measures aimed at the protection of maritime pollution from hydrocarbon maritime transport and at the control of maritime traffic.

More specifically, with reference to the operational management of VST, it is provided that the Ministry of infrastructures and transport, in coordination with the Ministry of Environment, Land and Sea, may adopt some decrees in order to lay down some provisions related to VST and the peripheral and central structures may adopt the operational management of the VTS.

General transport and logistic plan (PGTL), approved by the decision of the council of ministers and by DPR on 14 march



2001. The plan gives importance to port and maritime safety.

Ministerial Decree (DM), on 28 January 2004, Measures aimed at the implementation of a control system of the marine traffic (VST). Vessel traffic monitoring systems are linked to the legal concept of maritime safety, including safety, security and sustainable development. The purpose of monitoring systems is to prevent and reduce risk of accidents and hazards for motivation, human life and environment.

Legislative Decree No. 196, 19 August 2005 and subsequent amendments, implementing Directive n. 2002/59/EC, in order to ensure an efficient and safe maritime traffic, to prevent accidents or dangerous situations at sea. The legislative decree aims at the establishment of a monitoring system for maritime traffic and at the exchange of information in order to ensure safety and efficiency of maritime traffic. The decree aims also to respond better in the event of a further incident or if a dangerous situation at sea will occur.

Legislative Decree No 4, 7 January 2016, implementing directive 2014/100/EU which established a Community vessel traffic monitoring and information system.

Regional Level- Tuscany

The architecture of the VTMS system is organized into three hierarchical levels: central, regional and local.

The purpose of the VTMS is to improve the safety and efficiency of maritime traffic, improving the response of the authorities in case of accidents or potentially dangerous situations at sea, including search and rescue operations, and contributing to a better prevention and detection pollution caused by ships.

Agreement signed between Piombino Port Authority and Tuscany in 2012, in order to monitor ferries route and to have an update of maritime traffic. The Region and the Port Authority want to reinforce the monitoring of maritime traffic.

The port Authority plays an important role in the monitoring of the maritime traffic.

The Region of Tuscany, port authorities and the municipalities of Livorno, Piombino and Monte Argentario signed an agreement which provides the installations of 4 radar (in support of the VTS and of the surveillance and monitoring activities). The Lamma Consortium shall participate to this agreement, by providing meteorological and oceanographic data, as well as ARPAT

AIS - Automatic Identification System is a short-range coastal monitoring system, used by the VTS for the ship's identification and tracking, through the exchange of data with the other ships and with the VTS or AIS surrounding stations.

Energy sector, and more specifically, enhance shift to more sustainable and “cleaner” energy sources (e.g. LNG) use among vessels for local transport.

The promotion of alternative fuels is affirmed by international, European and national legislation. High level instruments are relevant in the definition of the main drivers for adoption of LNG as an alternative fuel.

At an international level, the promotion of alternative fuel has been affirmed by many provisions (IGF code, SOLAS/STCW, MARPOL- Annex VI). More specifically, Annex VI of MARPOL Convention, lays down the criteria and the conditions for the prevention of air pollution from ships, for the control and the global reduction of emission and in some marine areas (emission control areas). In the same direction goes also the European action (EU Sulphur Directive, Alternative Fuel Infrastructure Directive). The increased awareness related to the need to reduce air pollution brings the EU to develop a legislation aimed at ensuring the continuous performance of the maritime transport sector and its contribution towards achieving resource efficient transport system. The use of LNG has the potential to reduce environmental impacts, and hence support the EU's sustainability objective. In its Communication of 3 March 2010 entitled “Europe 2020: A strategy for smart, sustainable and inclusive growth”, the Commission aims at enhancing competitiveness and energy security by a more efficient use of resources and energy. The Commission's White Paper of 28 March 2011 entitled “Roadmap to a Single European Transport Area- Towards a Competitive and Resource Efficient Transport System” also called for a reduction in the dependence of transport on oil, and proposed a reduction of 60 % in greenhouse gas emissions from transport by 2050. The Deployment of alternative fuels infrastructure directive provides that a core network of refuelling points for LNG at maritime and inland ports should be available at least by the end of 2025 and 2030, respectively. Italy implemented the directive by the adoption of Legislative Decree No 257/2016. EU also adopted the Sulphur Directive (Directive 2016/802/EU) and its relevance in the context of LNG as fuel comes in the terms of article 8, according to which “member states shall allow the use of emission abatement methods by ships of all flags in their ports, territorial seas, exclusive economic zones and pollution control zones, as an alternative to using marine fuels”. Member States shall allow the use of emission abatement methods (EAMs) by ships of all flags in their ports, territorial seas, exclusive economic zones and pollution control zones, as an alternative to using marine fuels. Being an alternative fuel, LNG is eligible to be considered an Emission Abatement Method, and its use should be allowed in ships of all flags in ports, territorial seas and economic exclusive zones of the EU.



Italy implemented directive 2014/94/EU by adopting legislative decree No 257/2016, which contains, at Chapter I, dispositions concerning LNG infrastructures. Furthermore, in order to reduce the dependence on oil and mitigate the environmental impact in the transport sector, the decree lays down minimum standards for the construction of alternative fuels infrastructures. It is also approved the national strategic framework, which has, among its objectives, the achievement of alternative fuels infrastructure. More specifically, at section C, first subsection, it is provided LNG supply for maritime and internal transport, for road transport and for other uses. Port authorities play an important role in the implementation of international and European action on the use of LNG as an alternative fuel, and more specifically, on the development of the sector linked to availability, storage and primary and secondary distribution of LNG.

In conclusion, the use of LNG as an alternative fuel needs to be achieved by means of an array of policy initiatives, including the development of a sustainable alternative fuels strategy as well as of the appropriate infrastructures. Indeed, the use of LNG is one of the ways that the maritime industry may adopt in order to meet the limits increasingly restrictive, imposed by international, European and national legislation, of pollutant and harmful emissions to air. The here proposed measure, concerning the investments of LNG transformation, is linked to international, European and national actions for the reduction of air pollution and may be a useful tool in order to achieve the objective pursued by the different legislations. This is also strengthened by the development of international, European and national legislation.

In Tuscany it may be detected that the presence of certain pre-existing conditions, such as the presence of energetic coastal infrastructures, port authorities and economic operators that are interested and actives on the subject, the biogas installations may represent a facilitator of the development of regional LNG production, especially not fossil fuel. The article 13, Regional law No 39/2005, is devoted to the authorization procedure for the production of electricity from renewable sources. The Region adopts a regional environmental energy plan energetic regional environmental, some dispositions implementing the plan and the monitoring and the assessment plan. The regional plan promotes the importance of renewable energy and Most recently, it has been approved the Resolution No 47, 15 March 2017, which contains the regional development programme 2016-2020. The objective No 3 aims at the improvement of the energy efficiency by 20% and at the production of energy coming from renewable sources.

Measure	Competent Authority
<p>Enhance shift to more sustainable and “cleaner” energy sources (e.g. LNG) use among vessels for local transport (e.g. ferries for tourism).</p>	<p>European level</p> <p>European Maritime Safety Agency (EMSA), in accordance with the DG move of the European Commission, Member States and the representatives of the shipping industry in the European sustainable shipping forum context.</p> <p>EMSA guidance on LNG Bunkering to Port Authorities and Administrations. The main role of ports in the development of LNG bunkering facilities. The port authorities have to pay attention to the application and implementation of ANNEX VI of MARPOL Convention and directive 2014/94/EU, in order to assess the consequences and the impact on the port sector, arising from the implementation of these important provisions.</p> <p>Port authorities have to optimise the use of instruments at their disposal in order to adopt adequate infrastructures for storage facilities and LNG facilities, and have to support the port sector and the companies which operates in the sector.</p> <p>National level</p> <p>ARERA- The Italian Regulatory Authority for Energy, Networks and the Environment (Autorità di Regolazione per Energia Reti e Ambiente, ARERA) is an independent body created under Italian Law No 481 of 14 November 1995 for the purposes of protecting consumer interests and promoting the competition, efficiency and distribution of services with adequate levels of quality, through regulatory and control activities. Initially limited to electricity and natural gas, the Authority's scope of action has been extended by means of some regulatory interventions.</p> <p>Functions: For the energy sectors, it establishes the tariffs for the use of infrastructures and guarantees equal access for operators; encourages the rational use of energy, especially with regard to the dissemination of energy efficiency and the adoption of measures for sustainable development.</p> <p>Tuscany competent authority</p> <p>Article 3, Regional Law No 39/2005- The Region is the competent authority in the energy sector. The Region has to promote the research, innovation and development of the technologies and the programmes.</p>



Law

International level

IGF Code: International Code of Safety for Ships Using Gases or Other Low-Flashpoint Fuel. Following the adoption by MSC86 (June 2009) of the Interim Guidelines on safety for natural gas-fuelled engine installations in ships (resolution MSC.285(86)), MSC 87 approved the expansion of the scope of the work on development of provisions for gas-fuelled ships to include ships fuelled by low-flashpoint liquid fuels.

IGC Code: International Code for the construction and equipment of ships carrying liquefied gases in bulk. Construction, equipment and operation of ships carrying liquefied gases in bulk.

MARPOL Convention, Annex VI: a progressive reduction globally in emissions of SO_x, NO_x and particulate matter and the introduction of emission control areas (ECAs) to reduce emissions of those air pollutants further in designated sea areas. This reduction can be achieved by using LNG.

European level

Directive 2009/73/EC, concerning common rules for the internal market in natural gas and repealing Directive 2003/55/EC. Point 26: Member States should take concrete measures to assist the wider use of biogas and gas from biomass, the producers of which should be granted non-discriminatory access to the gas system, provided that such access is compatible with the relevant technical rules and safety standards on an ongoing basis.

Recital No 26 Member States should take concrete measures to assist the wider use of biogas and gas from biomass, the producers of which should be granted non-discriminatory access to the gas system, provided that such access is compatible with the relevant technical rules and safety standards on an ongoing basis.

Article 1- This Directive establishes common rules for the transmission, distribution, supply and storage of natural gas. (...) The rules established by this Directive for natural gas, including LNG, shall also apply in a non-discriminatory way to biogas and gas from biomass or other types of gas in so far as such gases can technically and safely be injected into, and transported through, the natural gas system.

Directive 2009/28/EC of the European Parliament and of the Council on the promotion of the use of energy from renewable sources.

COM(2010)2020 final, Europe 2020: A strategy for smart, sustainable and inclusive growth. The Commission aims at enhancing competitiveness and energy security by a more efficient use of resources and energy.

Directive 2011/92/EU, 13 December 2011, on the assessment of the effects of certain public and private projects on the environment.

Directive 2014/94/EC on the deployment of alternative fuels infrastructures, part of the EU Clean Power for Transport package, which established a comprehensive set of requirement for an internal-modal development of an alternative fuel infrastructure. Development of an alternative fuel infrastructure throughout the TEN-T Core Network, including LNG for waterborne applications.

Article 1. This Directive establishes a common framework of measures for the deployment of alternative fuels infrastructure in the Union in order to minimise dependence on oil and to mitigate the environmental impact of transport. This Directive sets out minimum requirements for the building-up of alternative fuels infrastructure, including recharging points for electric vehicles and refuelling points for natural gas (LNG and CNG) and hydrogen, to be implemented by means of Member States' national policy frameworks, as well as common technical specifications for such recharging and refuelling points, and user information requirements. Article 3: Each Member State shall adopt a national policy framework for the development of the market as regards alternative fuels in the transport sector and the deployment of the relevant infrastructure. Ports can set rules by themselves, addressing specific operational aspects and their specific context.

COM(2016), 49 final, on an EU strategy for liquefied natural gas and gas storage. Point a) Exploiting the full potential of LNG and storage in the internal market; b. completing the internal gas market: commercial, legal and regulatory aspects; making the EU an attractive market for LNG. LNG has the potential in some cases to reduce environmental impacts, and hence support the EU's sustainability objective.

Action points: a) Building on the proposed revision of the Gas Security of Supply Regulation, the Commission calls on Member States to optimise the effectiveness and efficiency of the use of storage across borders through regional preventive action and emergency plans; and b) The Commission invites Member States to take action in the context of these plans to facilitate the availability of and access to storage on a wider regional level; c) The Commission calls on Member States ensure full implementation of Directive 2014/94/EU on alternative fuels, including the establishment of LNG refuelling points across the TEN-T corridors and at maritime and inland ports.

COM(2016)501 final- A European Strategy for Low-Emission Mobility- The EU will create enabling conditions and provide strong incentives for low-emission mobility. The actions announced in this communication are part of a holistic approach requiring the long-term engagement of all stakeholders, including Member States, which will have to do their part according



to their responsibilities.

EU Sulphur Directive EC Directive 2016/802/EU relating to a reduction in the sulphur content of certain liquid fuels (codifying Council Directive 1999/32/EC as regards the sulphur content of marine fuels, as amended by Directive 2012/33/EU). Limitation of sulphur content in certain fuels, with obligations on EU Member States, affecting EU flag ships and foreign flag ships visiting EU ports.

Article 8, according to which Member States shall allow the use of emission abatement methods (EAMs) by ships of all flags in their ports, territorial seas, exclusive economic zones and pollution control zones, as an alternative to using marine fuels

COM(2017) 34 final- The role of waste-to-energy in the circular economy

EU Ports Regulation 2017/352, of the European Parliament and of the Council of 15 February 2017, establishing a framework for the provision of port services and common rules on the financial transparency of ports. EU Regulation establishing a framework for the provision of port service, and common rules for transparency and on port services. LNG bunkering is within the scope and applicability of this regulation, either inside the port area or on the waterway access to the port.

Guidance on LNG Bunkering to Port Authorities and Administrations. The EMSA Guidance applies to Port Authorities/Administrations (PAAs) when involved in LNG Bunkering within their areas of port jurisdiction, either during the exploratory and planning phases or, at later stages of development, already in the context of actual LNG Bunkering operations. 2.1 LNG as Fuel. **Trans-European Networks-Transport (TEN-T) have to adopt LNG refuelling points by 2025.**

National level

Legislative Decree No 164, 23 May 2000, provisions for the internal market in natural gas.

Article 2: Definitions, letter p) "LNG facility": a facility used for the liquefaction of natural gas or the importation, offloading and re-gasification of LNG.

Legislative Decree No 28, 3 March 2011, implementing directive 2009/28/CE on the promotion of the use of energy from renewable sources, and, more specifically, article 20, Connection of the biomethane production plants to the natural gas network; article 21: promotion of the biomethane which is injected to the natural gas network.

Ministerial Decree, 21 January 2011, grant of the concession of underground natural gas storage.

Decision No 210/2015/R/gas, with which the Regulatory Authority for Electricity, Gas and water system has established the directives concerning the placing on the market of biomethane in the transport networks and the distribution of natural gas.

Decisions from the Regulatory Authority for Electricity, Gas and water system No 46/2015/R/gas and No 204/2016/R/gas, concerning biomethane quality.

Legislative Decree No 257, 16 December 2016, implementing directive 2014/94/EU.

Chapter I- Provisions concerning LNG infrastructures, article 9- Dispositions concerning storage and transport infrastructures of LNG of national interest.

In order to reduce the dependence on oil and mitigate the environmental impact in the transport sector, the decree lays down minimum standards for the construction of alternative fuels infrastructures, including the recharging points for the electric vehicles and refuelling point of liquefied and compressed natural gas, hydrogen and liquefied petroleum gas.

Article 3: it has been approved the national strategic framework. One of its objectives is the achievement of alternative fuels infrastructure.

Article 6- Provisions for the supply of natural gas for the transport. Paragraph 2: By 31 December 2030, in the inland ports, it has to be assured the deployment of the refueling points for LNG, in order to ensure the maritime navigation supplied by LN In the TEN-T Core Network (Regulation EU No 1315/2013, identifies, for Italy 14 core ports: Genova, La Spezia, Livorno, Napoli, Gioia Tauro, Taranto, Bari, Ancona, Ravenna, Venezia, Trieste, Palermo, Cagliari, Augusta).

Annex III of the legislative decree contains the National strategic framework on the use of LNG.

Section C: natural gas supply for the transport and for other uses.

First subsection: LNG supply for maritime and internal transport, for road transport and for other uses.

Point 5.8: use of LNG as a marine fuel. The international community is promoting the use of LNG for the maritime transport

Point 5.10: creation of a distribution network for LNG in the maritime and port sector.

The National Strategic framework aims at the identification of the national objectives related to the infrastructural development and the promotion of the policies concerning the use of alternative fuels, such as LNG.

Decree 2 March 2018, adopted by the Ministry of economic development, in coordination with the Ministry of Environment, Land and Sea and the Ministry of Agriculture, food and forestry- Promotion the use of biomethane and of the other biofuels in the transport sector.

More specifically: Art. 6 - Promotion of the biomethane injected to the natural gas network devoted to the transport. Article 7- Promotion of the use of biofuels other than biomethane.



Project “Venice LNG facility”, approved and financed by the European Commission.
Cooperation agreement for the LNG development signed in Sardegna. The objective is to promote the marine bunkering, i.e. the LNG marine refuelling.
Regional law (Sardegna) No 16, 1997, support for biofuels, such as GNL, as an innovative and eco-friendly fuel.

Tuscany

Regional Law No 39, 24 February 2005, Provisions regarding energy.

Article 2 - Purpose, letter e) promotion of renewable sources. Article 5, paragraph 1: the energy planning is composed by: regional and environmental energy plan (PAER), the implementing acts of the PAER and the monitoring and assessment document.

The article 13 is devoted to the authorization procedure for the production of electricity from renewable sources (detailed permit granting process).

Chapter IV- Rationalization of energy production and consumption, energy saving and action aimed at the environmental compensation.

Title of the aid scheme or the name of company receiving individual aid Regional Economic Development Plan- Article 22, paragraph 2, financial incentives.

Regional Law No 11, 21 March 2011, Provisions regarding the installations of renewable energy production, which carry out some adjustment to law No 39/2005.

Decree of the regional government No 152/2014, with which it is approved the agreement on the energy efficiency and the development of renewable energies, signed between the Region and the Tuscany Energy Cooperative Society (CET, S.c.r.l.).

Regional and environmental energy plan (established by Regional Law No 14/2007), adopted in 2015, which contains some provisions related to a sustainable management of the resources. It contains some of the following objectives: promotion of energy efficiency and of the renewable energies, increase the proportion of energy from renewable sources. Rationalisation of energy consumption.

Regional Law No 13, 23 February 2016, Provisions relating to energy. The Region is the competent authority in the energy sector, previously performed by the Province.

Resolution No 47, 15 March 2017, Regional development programme (2016-2020) - Objective No 3 aims at the improvement of the energy efficiency by 20% and at the production of energy coming from renewable sources.

Marine aquaculture

Aquaculture may affect significantly the environment if not properly regulated and monitored. For this reason, it was considered necessary to intervene and adopt some provisions relating to aquaculture activities.

The international community gives importance to aquaculture activity. At international level, the resolution CFCM/36/2012/1 -on guidelines on allocated zones for aquaculture (AZA)- provides that contracting Parties and Cooperating non-contracting Parties of the GFCM, shall include in their national marine spatial planning strategy of aquaculture development and management schemes for the identification and allocation of specific zones reserved for aquaculture activities. The selection of the areas which will be used for aquaculture has an important role in ensuring the sustainable development of this activity. Zones to be allocated to aquaculture activities shall be classified as “areas suitable for aquaculture activities”, “areas unsuitable for aquaculture activities” and “areas for aquaculture activities with particular regulation and/or restriction”. AZAs, once established, shall be based on legal and regulatory provisions integrated into the national legislation or other adequate national administration level and on inter-ministerial coordination in order to ensure their effective implementation. The ICZM Protocol also contains some provisions related to aquaculture activities, such for example the regulation of aquaculture, by controlling the use of inputs and waste treatment. The CCFR (FAO, 1995), at article 9, defines responsible aquaculture and the principles for an aquaculture to be sustainable. The key notion is a sustainable aquaculture, which has to protect the environment.

Some environmental impacts of aquaculture, (e.g. nutrient and organic matter enrichment, contamination by hazardous substances), are also specifically addressed in EU legislation.

At European legislation, aquaculture has an important role and it is strictly related to fishery and biodiversity. In the Biodiversity action Plan for fisheries (COM(2001)0162), at point 5 (Aquaculture), are contained some guidelines referred to aquaculture activities. Therefore, the EU promotes a strategy for the sustainable development of European aquaculture. The aquaculture activity is related to EUSAIR, and more specifically, to Blue Growth Pillar, which requires that aquaculture has to be sustainable, in order to promote economic growth.



The Regulation (EU) No 1380/2013, at article 34, provides the promotion of sustainable aquaculture, reaffirming a number of principles. The keys points are the following: a) the promotion of the competitiveness of EU aquaculture production; b) the establishment of conditions for sustainable growth of aquaculture; c) the improvement of the sector's image and governance, by better implementation of EU legislation, reducing the administrative burden, d) the ensuring of proper stakeholder participation and appropriate information to the public, e) the ensuring of an adequate monitoring of the aquaculture sector; f) the integration of aquaculture activities into marine, coastal and inland spatial planning. In 2013 EU adopted the Strategic Guidelines for the sustainable development of EU aquaculture, composed by the following points: 3.1. Simplify administrative procedures; 3.2. Securing sustainable development and growth of aquaculture through coordinated spatial planning; 3.3. Enhancing the competitiveness of EU aquaculture. The Member States have to support business growth through adequate allocation of the funds given by EU to aquaculture (proposition of the CMO and EMFF), to support educational programmes covering the needs of the aquaculture sector. The EU provides also the adoption of a Multiannual national strategic for the promotion of a sustainable aquaculture. Regulation (EU) No 508/2014, at article 48, contains a detailed list concerning the productive investments in aquaculture.

The European Maritime and Fisheries Fund, with reference to the operational programme for Italy (2014-2020), identifies certain objectives, such as the strengthen of institutional capacity and the simplification of administrative procedures; the ensuring of the development and the sustainable growth of aquaculture by a coordinated spatial planning and the potential increase of the sites, the promotion of the competitiveness of aquaculture; d) to promote fair competition for operators, exploiting competitive advantages.

The national legislations also introduced some measures related to aquaculture activities. The national legislations provide that, in order to exercise aquaculture activities, it is necessary the granting of an authorization, which has to respect the environment and the landscape and in accordance with the planning acts, adopted by local and national authority, in order to ensure a sustainable use of marine resources. The ministerial decree No 79, 14 February 2013 (and ministerial decree 2017), for example, contains the discipline of the procedure for the release and the renewal of the authorization of aquaculture facilities located to a distance longer than one kilometer from the coast.

It has also been adopted the strategic national aquaculture plan, which is an instrument of rule for aquaculture activities planning and has been written and adopted by the Italian Ministry of Agriculture, Food and Forestry Policies, supported by scientists and representatives from the Regions.

The plan identifies four macro objectives: to reinforce and simplify the administrative procedures, to assure the development and the sustainable growth of aquaculture by a coordinated planning and an increase of the sites; to promote competitiveness of aquaculture; to promote the conditions of a fair competition for the operators and to improve the organization of the market of aquaculture products.

Italy adopted also a three-year national fisheries and aquaculture programme (2017-2019). The programme provides, at point. 5.2, some measures related to aquaculture. Furthermore, the plan provides for the reduction of the various conflicts between fishery, tourism and other activities and aquaculture.

Another important disposition that is necessary to highlight is the agreement signed between the Ministry of Agriculture, Forestry and Tourism and ISPRA (Istituto superiore per la protezione e la ricerca ambientale), approved by the ministerial Decree 27341/ 2016, in order to support administration for the implementation of national and European programme related to fishery and aquaculture. At regional level, the Regions adopted laws and some decisions of the regional government related to aquaculture activity.

Regional law No 66/2005 contains some provisions for aquaculture development. At article 19-*bis* it is regulated the aquaculture in the territorial sea. The article provides that for the exercise of aquaculture activity it is required an administrative measure (the SCIA). The competent authority has to verify the presence of the property concession (the competent authority may prohibit the issue of aquaculture concessions over important fishing grounds). The Region adopted the rural development plan (2016-2020), which is an official guideline. The Region promotes the reduction of environment impacts caused by aquaculture activities, the improvement of products quality and their exploitation, the compatibility of economic development and environment balance through the development of local action resources. The Region promotes the identification of areas for aquaculture activities, the monitoring aimed at the improvement of the production. The region aims at the improvement of the competitiveness of aquaculture facilities.

Measures	Competent authority
Promote the development of extensive over intensive aquaculture techniques.	<p>European level</p> <p>General fisheries commission for the Mediterranean (GFCM). Regional body for fishery in the Mediterranean. The GFCM has been supporting the sustainable development of aquaculture and the responsible management of marine, brackish and inland aquaculture in the area of application, in a way that is consistent with an ecosystem approach to aquaculture and that takes into account</p>



Assess nutrients input on coastal waters from aquaculture facilities.

Prohibit the issue of aquaculture concessions over important fishing grounds.

the specific regional, subregional and local characteristics.

National level

Ministry of Agriculture, Forestry and tourism.

Port Authorities, bodies of the Italian Ministry of Infrastructure and Transport, are competent authorities for administrative and technical monitoring and controlling of marine fisheries, and are operationally subordinate to the the MiPPAF.

Italian Aquaculture Platform, (ITAQUA), set up at the Ministry of Agricultural and Forestry policies. The platform is shall be managed by the Directorate-General for fisheries and aquaculture.

Central advisory committee (legislative decree No 154, 26 May 2004).

Local advisory committees.

Stakeholders: Associazione piscicoltori italiani. API aims at the protection, development and consolidations of all fish farming activities, both in inland waters and in marine/brackish waters. it therefore promotes all economic, scientific, technological, insurance, professional, union and legal activities necessary to achieve this objective. API's interest in science is expressed through collaboration with various scientific institutes to increase the knowledge available to fish farms. The association promotes research and studies aimed at solving specific technical problems, in collaboration with competent public bodies and research institutes, and also cooperates with the media. It also has close and permanent relationships with the regional, national and European institutions, both public and private.

Tuscany Competent authority

Law No 66/2005- Article 3- The municipalities perform the administrative functions in the field of sea aquaculture.

Article 4, regional Law No 66/2005, (l'Agenzia regionale per lo sviluppo e l'innovazione nel settore agricolo forestale, ARSIA) provides that the agency monitors and identifies the need of the aquaculture sector (especially development and innovation needs), in order to allow the preparation of the regional aquaculture development programme.

Fishery and aquaculture district (article 10). The district favours dialogue and interaction between public and private entities, promotes the coordination between the various policies of the government of the land and the sea, in order to enhance the available resources, etc.

The regional government gives financial aid to the measures proposed in order to reinforce the management of the resources.

Law

International level

Oslo-Paris Convention (OSPAR).

The Bern Convention is a binding international legal instrument in the field of nature conservation.

Code of conduct for responsible fisheries, article 9: Aquaculture development. Article 9 of CCRF (FAO; 1995) defines responsible aquaculture and the principles for an aquaculture to be sustainable.

Resolution CFCM/36/2012/1 on guidelines on allocated zones for aquaculture (AZA) - Contracting Parties and Cooperating non-contracting Parties of the GFCM (hereafter referred to as CPCs) shall include in their national marine spatial planning strategy of aquaculture development and management schemes for the identification and allocation of specific zones reserved for aquaculture activities.

Zones to be allocated to aquaculture activities shall be classified, inter alia, as, "areas suitable for aquaculture activities", "areas unsuitable for aquaculture activities" and "areas for aquaculture activities with particular regulation and/or restriction"; guidelines shall be developed to this end; (...)

7. AZAs, once established, shall be based on legal and regulatory provisions integrated into the national legislation or other



adequate national administration level and on inter- ministerial coordination in order to ensure their effective implementation. (...) 8. For every AZA, an allowable zone of effect of aquaculture activities could be defined in the close vicinity of each farm. Such zone shall be accompanied by a Environmental Monitoring Programme. (...) 9. The Environmental Monitoring Programme shall be flexible and adaptable, taking into account scale (time and space) approach, and monitoring shall be mandatory.

The ICZM Protocol is the seventh Protocol in the framework of the Barcelona Convention.

Article 9: economic activities- The parties agree (c) Aquaculture: (i) to take into account the need to protect aquaculture and shellfish areas in development projects; (ii) to regulate aquaculture by controlling the use of inputs and waste treatment.

European level

Directive 2000/60/EC of the European Council and of the Council, establishing a framework for Community action in the field of water policy.

COM(2001)0162 final, Biodiversity Action plan for fisheries, point 5 Aquaculture.

95. The main precautionary measures with respect to aquaculture concern: guidelines for aquaculture outputs which encompass chemical, physical and biological criteria; guidelines on use, containment and transport of farmed organisms; the integration of aquaculture into catchment and coastal area management as one of several sectoral users of natural resources; utilization of thorough EIA procedures governing location of farming operations; increasing the efficiency of resource use and productivity in general at the farm level, thus reducing potential effects; assessment of impact.

96. Actions are required to reduce localised problems (such as the anoxic layer on the sea bed which can cause locally severe reduction in biodiversity) and promoting measures to reduce to a minimum the use of veterinary medicinal products in aquaculture (taking account of animal welfare considerations).

COM(2002)0511, A strategy for the sustainable development of European aquaculture, by: creating long term secure employment, in particular in fisheries dependent areas, assuring the availability to consumers of products that are healthy, safe and of good quality, as well as promoting high animal health and welfare standards, ensuring an environmentally sound industry and a market development, taking into account marketing and information Governance and environmental aspects.

Regulation(EC) No 762/2008, on the submission by Member States of statistics on aquaculture and repealing Council Regulation (EC) No 788/96. Article 1 - Obligations of the Member States Member States shall submit to the Commission statistics on all the aquaculture activities conducted in freshwater and salt waters on their territory.

COM(2009)162, Building a sustainable future for aquaculture. A new impetus for the Strategy for the Sustainable development of European Aquaculture.

The key points are: a) The promoting competitiveness of EU aquaculture production: by promoting research and technological development, promoting the development of maritime spatial planning and Integrated Coastal Zone Management, as identified in the framework of the new EU Maritime Policy, enabling the aquaculture business to cope with market demands, promoting aquaculture development in its international dimension; b) the establishment of the conditions for sustainable growth of aquaculture: ensuring compatibility between aquaculture and the environment, shaping a high-performance aquatic animal-farming industry, ensuring consumer health protection and recognising the health benefit of aquatic food; c) the improvement of the sector's image and governance, by better implementation of EU legislation, reducing the administrative burden, ensuring proper stakeholder participation and appropriate information to the public, d) the ensuring of an adequate monitoring of the aquaculture sector.

Council Regulation (EC) No 1224/2009, establishing a Community control system for ensuring compliance with the rules of the common fisheries policy

COM(2012) 494 final, Blue Growth opportunities for marine and maritime sustainable growth, point 5.2 Lack of available maritime space for aquaculture activities, competition in the global market and administrative constraints in particular concerning licensing procedures are amongst the challenges to growth. Sustainable aquaculture must also consider potential impacts on wild fish stocks and water quality. (...) The Commission proposes to promote aquaculture through an open method of coordination based on non- binding strategic guidelines, multiannual national strategic plans and the exchange of best practice

Regulation (EU) No 1380/2013 of the European Parliament and of the Council of 11 December 2013 on the Common Fisheries Policy

Article 34: Promoting sustainable aquaculture: by a) improving the competitiveness of the aquaculture industry and supporting its development and innovation; b) reducing the administrative burden and making the implementation of Union law more efficient and responsive to the needs of stakeholders; c) encouraging economic activity; d) diversifying and improving the quality of life in coastal and inland areas; e) integrating aquaculture activities into maritime, coastal and inland spatial planning.

COM(2013) 229 final, Strategic Guidelines for the sustainable development of EU aquaculture. Point 3. Strategic guidelines for the sustainable development of EU aquaculture. The guidelines are the following: 3.1. Simplify administrative procedures; 3.2. Securing sustainable development and growth of aquaculture through coordinated spatial planning; 3.3. Enhancing the competitiveness of EU aquaculture. Target for the Member States: To make full use of the proposed CMO and EMFF to support business growth through adequate allocation of funds to aquaculture including for production and marketing plans and to improve the links between R&D and the industry (especially SMEs). To support educational & vocational programmes covering



the needs of the aquaculture sector.

Point 4. A new governance to support EU aquaculture- 4.1. Multiannual national strategic plan for the promotion of sustainable aquaculture.

Regulation (EU) No 508/2014 of 15 May 2014 on the European Maritime and Fisheries Fund and repealing Council Regulations (EC) No 2328/2003, (EC) No 861/2006, (EC) No 1198/2006 and (EC) No 791/2007 and Regulation (EU) No 1255/2011 of the European Parliament and of the Council.

Article 48: Productive investments in aquaculture (detailed list).

COM(2014) 254 final/2- Innovation in the blue economy: realising the potential of our seas and oceans for jobs and growth.

National level

Legislative Decree No 112, 31 March 1998 - Delegation of the administrative functions to the State and the local authorities, article 105 - Functions delegated to the regions and the local authorities (granting of the authorization in the territorial sea and the maritime state property for aquacultural activities).

Legislative Decree No 226, 18 May 2001, Modernization of fishery and aquaculture sector.

Article 1- General Principles- paragraph - Policies related to fishery and aquaculture look to the principles of a) sustainability and responsibility towards the environment and the consumers b) promote the use of techniques that ensure a proper, of quality and environmental friendly productions.

Legislative Decree No 154, 26 May 2004, modernization of fishery and aquaculture sector.

Legislative Decree No 148, 4 August 2008, implementing directive 2006/88/EC, on animal health requirements for aquaculture animals and products thereof, and on the prevention and control of certain diseases in aquatic animals.

Legislative Decree No 4/2012, reorganization of the fisheries and aquaculture rules and policies.

Ministerial Decree No 79, 14 February 2013, Provisions related to the release and the renewal of the authorization for the aquaculture facilities located to a distance longer than one kilometer from the coast.

The authorization is granted respecting the environment and the landscape, the economic value of the maritime and coastal zones, in order to achieve the objectives of the integrated maritime policy and to reduce the conflicts between the stakeholders, in accordance with the national and local planning, which aims to achieve sustainable exploitation of the marine resources

National plan for the development of aquaculture, 2014-2020. It is a tool which aims at the programming aimed at the planning of the aquaculture activity for the years 2016 to 2020. Its objective is to develop the aquaculture activity in the national sea in order to promote the increase of the economy, the employment and the social benefits. The Plan meets the needs of the aquaculture European policies and shall pursue the objectives of innovation and *"intelligent and sustainable"* growth, pursued by the Europe 2020 strategy and the Blue Growth.

Four macro-objectives: a) to strengthen institutional capacity and to simplify administrative procedures; b) to ensure the development and the sustainable growth of aquaculture by a coordinated spatial planning and to ensure the potential increase of the sites; c) to promote the competitiveness of aquaculture; d) to promote fair competition for operators, exploiting competitive advantages.

Three-year national fisheries and aquaculture programme 2017-2019. Point 5.2 - Sustainable development of aquaculture "(...) the plan reduces the various conflicts between fishery and aquaculture".

European Maritime and Fisheries Fund- Operational programme for Italy (2014-2020).

Agreement signed between the Ministry of Agriculture, Forestry and tourism and ISPRA, approved by the ministerial Decree 27341/ 2016, in order to support administration in the implementation of national and European programme related to fishery and aquaculture.

Directorial Decree of the Ministry of Agriculture, Food and Forestry policy, No 21355, 3 November 2017, which implements the decree No 79, 14 February 2013, Provisions related to the release and the renewal of the authorization for the aquaculture facilities located to a distance longer than one kilometer from the coast.

Tuscany

Regional development plan (Law No 1/2015, article 7, paragraph 3) approved by the regional council with the resolution No



47/2017.

Regional Law No 66/2005, article 5, paragraph 5: definition of sea aquaculture.

With the Law No 66/2005, the provinces, for the first time, are interested to a fishing planning, and may adopt some measures in this sector.

Regional Law No 66/2005, article 19-bis: for the aquaculture activities it is necessary to present the SCIA to the competent SUAP. With the SCIA, the entrepreneur states the possession of the property concession for the installations of the aquaculture facilities (here, it is possible to assess the application of the following measures: prohibition of the issue of aquaculture concessions over important fishing grounds).

19-ter: Granting of the territorial sea for aquaculture facilities.

Regional agricultural plan (PRAF) (adopted on the basis of Regional Law No 1/2006, article 2) - Official guidelines. The actions are in line with the strategy and the objectives affirmed by the national planning and by the national biological strategic plan (PSN), which identifies the actions of the European Fisheries Fund (Reg. EC No 1198/2006).

Section B: Sea fishing and aquaculture- to implement a policy to boost the regional development and to promote the environmental and economic sustainability.

Point B.1. 1. Modernization of aquaculture facilities, by using call for tenders, in accordance with the guidelines identified by the regional administration.

Point B.2.1. Diversification of fishing activities, by promoting fishing tourism.

Biodiversity and conservation

The importance of the conservation of living resources of the seas and biodiversity has been affirmed by international, European and national legislations. The conservation and the protection of the marine environment is a complex issue that required a broad and multidimensional approach.

At international level, there are many provisions related to biodiversity and marine protection. Bern Convention is a binding international convention in the field of nature conservation. Agenda 21, at chapter 17, provides that coastal states have to undertake measures in order to maintain biological diversity and productivity of marine species and habitats under national jurisdiction. A pillar of biodiversity is the Convention on Biological diversity, (more specifically, the Jakarta Mandate of Marine and Coastal biodiversity), which aims at the conservation of marine biological diversity and environment and a sustainable use of its components. The SPA/BD Protocol is the Mediterranean's main tool for implementing the 1992 Convention on Biological Diversity, as regards the in situ sustainable management of coastal and marine biodiversity. It has also been adopted a strategic action programme for the conservation of biological Diversity in the Mediterranean Region, which identifies a number of actions which shall be taken (there are many other provisions, such as the agreement on the conservation of cetaceans of the black Sea, Mediterranean Sea and contiguous Atlantic area (ACCOBAMS), the Protocol on integrated coastal zone management (ICZM) or the "Carta di Siracusa on Biodiversity").

The European action considers that biodiversity and conservation is connected to sea environmental and fishery protection. Actions related to biodiversity have been placed into the fishery policy (The conservation of biodiversity has been implemented to the fishery policy). An important directive in this respect is the directive 92/43/EEC of 21 May 1992, on the conservation of natural habitats and of wild fauna and flora. At article 2 it is provided that Directive shall be to contribute towards ensuring bio-diversity through the conservation of natural habitats and of wild fauna and flora in the European territory of the Member States to which the Treaty applies. The Habitats directive obliges EU Member States to take the necessary measures to establish a system of strict protection of all cetaceans present in European waters. Regulation (EC) No 338/97, on the protection of species of wild fauna and flora, which aims at the protection of species of wild fauna and flora and the guarantee of their conservation by regulating trade. All cetaceans are listed in Appendices I and II. The EU promotes also a biodiversity action plan in the areas of Conservation of Natural Resources, Agriculture, Fisheries, and Development and Economic Co-operation. Member States, by pursuing the objectives of the biodiversity strategy, will integrate the value of ecosystem services into policymaking. The EU policy aims at halting the loss of biodiversity, by safeguarding the EU's most important habitats and species and by restoring biodiversity and ecosystem services in the wider EU marine environment (COM(2006)216 final). The marine component of the Natura 2000 network will be an integral component of the overall Natura 2000 European ecological network. Conservation and biodiversity are also strictly linked to Water Framework directive, to Marine Strategy Framework Directive and, at least, to Maritime spatial planning directive. The protection of marine environment and the transnational terrestrial habitats and biodiversity are included to the third pillar of EUSAIR, i.e. to the environmental quality.

At a national level, Law No 979, 31 December 1982, which contains some provisions concerning sea defense, provides the possibility to create some marine reserves. In the same direction goes also the law No 394, 6 December 1991, contains the main principles concerning establishment and the management of the protected natural areas. Its aim is to protect



habitats and species and added to establish parks (article 2), composed by terrestrial, fluvial and marine areas. Italy implemented the ACCOBAMS Convention with the law No 27/2005, which contains, in the Annex II, some provisions related to habitat protection, management of interaction human-cetacean and the adoption of a conservation plan.

Legislative decree No 190, 13 October 2010, implementing directive 2008/56/EC, at article 1 (objectives), provides that the national legislation has to reinforce the conservation of the marine environment, by extending and integrating the protected marine areas. Italy has also adopted the national strategy for biodiversity (2011-2020), which identifies some measures and objectives that have to be pursued by national, regional and local authorities. The regions, in turn, have adopted some measures for the conservation of natural habitat and flora and fauna (for example Emilia-Romagna has adopted the decision of the regional government No 1191, 30 July 2007, related to the adoption of the directive which contains the criteria of identification, conservation, management and monitoring of Special areas of conservation and Special Protection Areas).

The measures proposed are necessary to pursue the numerous objectives that are pursued by international, European and national legislation. For example, the adoption of a monitoring programme, by which are collected biological monitoring data, is a useful and necessary tool which permits to monitor the situation and to achieve protection of the biodiversity.

For example, the measures aimed at the reduction of by-catch mortality of cetaceans and sea turtles are supported by the ACCOBAMS agreement, the Barcelona Convention, the European and national legislation, GFCM (General Fisheries Commission for the Mediterranean) and the AdriaMed (Scientific Cooperation which support the responsible fishery in the Adriatic Sea). The measures aimed at the reduction of collision between vessels and cetaceans are supported by ACCOBAMS agreement, the Barcelona Convention the Habitat directive and the agreement by which it has been created Pelagos Sanctuary.

Tuscany is alert to biodiversity and wants to apply the directives and the international conventions for the protection of marine biodiversity and habitat (CITES, Bonn, Berna, Habitat directive). Law No 30/2015 contains the provisions for the conservation and the exploitation of the natural and environmental regional heritage. The law promotes the conservation and the exploitation of the natural and environmental heritage, which plays an important role for the present and future generations and which has to be assured the sustainability of the uses and the conditions of the reproductions. The law establishes, at article 11, the functions of the Tuscany Biodiversity observatory, which shall carry out the official guidelines of the Ministry of Environment, Land and Sea and the regional strategy for biodiversity contained in the regional plans (detailed objectives).

In Tuscany it has also been established the cetaceans observatory, which is a coordination point for the studies and the activities related to marine biodiversity and the conservation of cetaceans. Tuscany also adopted some regional planning in the field of protection of biodiversity and marine environmental (for example, article 12, Regional planning. Working document for the conservation and the development of the natural heritage). An important document is the regional development programme and the regional environmental and energetic plan which aimed at the achievement of the protection, exploitation and conservation of the environmental and natural resources. The measures proposed comply with the regional action in the field of biodiversity conservation.

Measures	Competent Authority
<p>Implementati on of data portals where present and past collision events are registered.</p> <p>Calculation of percentage of probability of collisions and risks.</p> <p>Acoustic system on the nets to discourage the cetaceans to approach the fishing</p>	<p>International level</p> <p>The International Union for Conservation of Nature (IUCN; officially International Union for Conservation of Nature and Natural Resources) is an international organization working in the field of nature conservation and sustainable use of natural resources.</p> <p>The International Commission for the Conservation of Atlantic Tunas (ICCAT).</p> <p>EAAM: European Association for Aquatic Mammals.</p> <p>ECS: European Cetacean Society (Associazione Europea per i Cetacei).</p> <p>AdriaMed (Scientific Cooperation which support the responsible fishery in the Adriatic Sea).</p> <p>International whaling commission.</p> <p>National level</p> <p>Ministry of Environment, Land and Sea.</p>



instruments.	<p>The D.P.R. No 178, 27 March 2001, which contains some provisions related to the Ministry of Environment, Land and Sea organization, shall assign to the Direction for the Sea defense the tasks related to the protection of the marine biodiversity and the endangered marine life.</p> <p>CITES Scientific Committee shall perform the functions of a National Scientific Authority. CITES is the scientific national authority and it is established at the Ministry of Environment, land and Sea (composed by 18 members).</p> <p>National Observatory for Biodiversity, with the aim to provide the necessary scientific and technical support to the joint committee (composed by the representatives of the central government and by representatives of the Regions and the autonomous provinces).</p> <p>Joint Committee for the biodiversity, which is composed by the representatives of the central government, the Regions and the autonomous provinces. The Committee is supported by the National observatory for biodiversity.</p> <p>The “tavolo di consultazione” is composed by the major environment, economic and productive associations and shall ensure the involvement of the different stakeholders.</p> <p>The standing conference of the State, the Regions and the provinces is the competent authority for the adoption of political decision related to the Strategy, by concluding some agreements and understandings.</p> <p>Monitoring of biodiversity and assessment of the strategy’s implementation. The national strategy for biodiversity provides the elaboration of a report on the effectiveness and the implementation of the strategy. It has been established a list of 10 status indicators, which represents and values the biodiversity in Italy and 30 indicators for the evaluation of the effectiveness of the actions adopted for the achievement of the objectives of the strategy.</p> <p>Tuscany Competent authority</p> <p>The Region is the competent authority.</p> <p>Law No 30/2015 establishes (article 11) the functions of the Tuscany biodiversity observatory, which shall carry out the official guidelines of the Ministry of Environment, Land and Sea and the regional strategy for biodiversity contained in the regional plans (detailed objectives). Its functions are the collect, the coordination and the exchange of data and informations collected with the competent authorities.</p> <p>The observatory shall cooperate with the regional technical “Consulta” for the protected areas and for biodiversity and, where necessary, with the scientific committees of the regional parks and the cetaceans observatory.</p> <p>Article 9 Law No 30/2015, establishes the regional technical “Consulta” for the protected areas and for biodiversity. It is the technical support body of the regional council.</p> <p>Tuscany is alert to biodiversity and wants to apply the directives and the international conventions for the protection of marine biodiversity and habitat (CITES, Bonn, Berna, Habitat directive).</p> <p>Cetaceans Observatory: it is a coordination point for the studies and the activities related to marine biodiversity and the conservation of cetaceans.</p> <p>Regional agency for the protection of environment (ARPAT)- Maritime sector.</p>
Law	
<p>International level</p> <p>International Convention for the Prevention of Pollution of the Sea by Oil (OILPOL), signed in 1954 and updated in 1973.</p> <p>Convention on Fishing and Conservation of the Living Resource of the High Seas, 1958. Article 2: “conservation of the living resources of the high seas” means the aggregate of the measures rendering possible the optimum sustainable yield from those resources so as to secure a maximum supply of food and other marine products.</p> <p>The United Nations Environment Programme (UNEP), adopted during the United Nations Conference on the Human Environment held in Stockholm (1972), is the leading global environmental authority that sets the global environmental</p>	



agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations system and serves as an authoritative advocate for the global environment.

Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972, the London Convention for short, is one of the first global conventions to protect the marine environment from human activities and has been in force since 1975.

Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean, adopted at Barcelona on 16 February 1976.

RAMOGE agreement, signed by Principality of Monaco, France and Italy in 1976, in order to protect and preserve the marine environment. It was conceived by a sub-regional implementation of the Barcelona Convention.

Bern Convention on the Conservation of European Wildlife and Natural Habitats, also known as the Bern Convention, is a binding international legal instrument in the field of Nature Conservation. The Convention was open for signature on 19 September 1979 and came into force on 1 June 1982.

Montego Bay Convention, signed on 10 December 1982 (UNCLOS), the most important Convention on the law of the sea.

The United Nations Agreement for the implementation of the provisions of the United Nations Convention on the Law of the Sea, 10 December 1982.

The Agreement elaborates on the fundamental principle, established in the Convention, that States should cooperate to ensure conservation and promote the objective of the optimum utilization of fisheries resources both within and beyond the exclusive economic zone.

Agenda 21, Chapter 17. It provided that coastal states undertake measures to maintain biological diversity and productivity of marine species and habitats under national jurisdiction. These measures might include surveys of marine biodiversity, inventories of endangered and management of protected areas and support of scientific research and dissemination of its results.

Convention on Biological diversity, signed in Nairobi on may 1992 and entered into force on 29 December 1993.

Article 1: The objectives of this Convention, to be pursued in accordance with its relevant provisions, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits.

Article 2: "Biological diversity" means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.

It has 3 main objectives: a) the conservation of biological diversity, b) the sustainable use of the components of biological diversity, c) the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

At their second conference of parties in Jakarta in 1995, the Parties agreed on a programme of action for implementing the Biodiversity Convention with the respect to marine and coastal biodiversity. This programme is referred to as the Jakarta Mandate of Marine and Coastal Biodiversity, or The Jakarta Mandate. It's a check-list of actions that the parties should take to fulfil their obligations under the biodiversity convention in marine and coastal environments.

Integrated marine and coastal area management (ICAM), approaches for implementing the Convention on biological diversity. The programme of work on marine and coastal biodiversity under the Convention on Biological Diversity aims to assist the implementation of the Convention at the national, regional and global levels.

Barcelona Convention, adopted in 1995. Mains objectives: to ensure sustainable management of natural marine and coastal resources; to protect the natural and cultural heritage (...).

UNESCO Convention on the protection of the underwater cultural heritage, 2001.

Coastal Area Management Programme (CAMP) is oriented at the implementation of practical coastal management projects in selected Mediterranean coastal areas, applying Integrated Coastal Zone Management (ICZM) as a major tool.

The SPA/BD Protocol is the Mediterranean's main tool for implementing the 1992 Convention on Biological Diversity, as regards the in situ sustainable management of coastal and marine biodiversity.

Strategic Plan for Biodiversity 2011-2020. This Plan provides an overarching framework on biodiversity, not only for the biodiversity-related conventions, but for the entire United Nations system and all other partners engaged in biodiversity management and policy development.

La biodiversità ed i servizi ecosistemici, capitale naturale del nostro paese, devono essere conservati, valutati e, per quanto possibile, ripristinati, per il loro valore intrinseco e perché possano continuare a sostenere in modo durevole la prosperità economica ed il benessere umano nonostante i profondi cambiamenti in atto a livello globale e locale.

Strategic Action Programme for the conservation of Biological Diversity (SAP BIO) in the Mediterranean Region (2003).

The strategic actions aim to: a) protecting species and habitats, b) improving knowledge about marine and coastal biodiversity, c) reducing negative impacts on biological diversity, d) promoting sector-based policies that encourage biodiversity (tourism, agriculture, etc.), e) adopting institutional and legal measures, f) coordinating the biodiversity activities of the MAP centres.



Convention on International Trade in Endangered Species of Wild Fauna and Flora, also known as the Washington Convention (CITES) is a multilateral treaty to protect endangered plants and animals.

International Convention for the regulation of whaling, signed in Washington, D.C., on 2 December 1946.

The agreement on the conservation of cetaceans of the black Sea, Mediterranean Sea and contiguous Atlantic area (ACCOBAMS); it's a legal conservation tool based on cooperation. Its purpose is to reduce threats to cetaceans notably by improving current knowledge on these animals.

The Nairobi International Convention on the removal of wrecks is a treaty of the International Maritime Organization (IMO) adopted in 2007. Its aim is to establish uniform rules for the prompt and effective removal of shipwrecks located in the exclusive economic zone (EEZ) of a state that may be hazardous to navigation or to the environment (signed by Italy on 23 September 2008).

Protocol on integrated coastal zone management (ICZM) in the Mediterranean, adopted on 21 January 2008, in Madrid, Spain. It has not yet been ratified by Italy.

The "Carta di Siracusa on Biodiversity" is a political document agreed at the G8 Environmental Ministers Meeting, adopted on April 2009.

The Carta is structured as follows: biodiversity and climate; biodiversity, economy and business, governance of biodiversity, science, research and policy. The safeguard of biodiversity is a fundamental element of policies for sustainable development.

Recommendation GFCM/36/2012/3 on fisheries management measures for conservation of sharks and rays in the GFCM area, which aims at the protection of coastal shark.

Documento Rio+ 2012: The future we want. Point 91. We welcome the Nagoya Protocol adopted at the tenth meeting of the Conference of the Parties to the Convention on Biodiversity. We support mainstreaming of biodiversity and ecosystem services in policies and decision-making processes at international, regional and national levels, and encourage investments in natural capital through appropriate incentives and policies, which support a sustainable and equitable use of biological diversity and ecosystems.

European level

There are two main areas concerned: sea environmental protection and fishery protection. Actions linked to biodiversity have been placed into the fishery policy. (The conservation of biodiversity has been implemented to the common fisheries policy).

Council directive, 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.

Article 2: The aim of this Directive shall be to contribute towards ensuring bio-diversity through the conservation of natural habitats and of wild fauna and flora in the European territory of the Member States to which the Treaty applies. The Habitats directive obliges EU Member States to take the necessary measures to establish a system of strict protection of all cetaceans present in European waters.

Annex I: Natural habitat types of community interest whose conservation requires the designation of special areas of conservation; annex II: Animal and plant species of community interest whose conservation requires the designation of special areas of conservation; annex III: Criteria for selecting sites eligible for identification as sites of community importance and designation as special areas of conservation; annex IV: Animal and plant species of community interest in need of strict protection (all cetaceans are listed in annex IV).

Council Regulation (EC) No 338/97, of 9 December 1996, on the protection of species of wild fauna and flora by regulating trade therein. All cetaceans are listed in Appendices I and II.

Protocol concerning specially protected areas and biological diversity in the Mediterranean, 1999. Article 4: The objectives of specially protected areas are: (a) to safeguard representative types of coastal and marine ecosystems of adequate size to ensure their long-term viability and to maintain their biological diversity; (b) to safeguard habitats which are in danger of disappearing in their natural area of distribution in the Mediterranean or which have a reduced natural area of distribution as a consequence of their regression or on account of their intrinsically restricted area (...).

Directive 2000/60/EC, establishing a framework for Community action in the field of water policy.

The purpose of the Directive is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater which: (a) prevents further deterioration and protects and enhances the status of aquatic ecosystems and, with regard to their water needs, terrestrial ecosystems and wetlands directly depending on the aquatic ecosystems; (b) promotes sustainable water use based on a long-term protection of available water resources (...).

COM(2001) 0162 final, Biodiversity Action Plans in the areas of Conservation of Natural Resources, Agriculture, Fisheries, and Development and Economic Co-operation. Point 18. The Biodiversity Action Plan on Conservation of Natural Resources aims to ensure that existing and planned environmental legislation and instruments are used to their full potential in order to achieve the relevant objectives of the Biodiversity Strategy.

Council recommendation of 30 May 2002, concerning the implementation of Integrated Coastal Zone Management in Europe.



Council Regulation No 812/2004 of 26 April 2004, laying down measures concerning incidental catches of cetaceans in fisheries and amending Regulation (EC) No 88/98.

Point 4: Some acoustic devices have been developed to deter cetaceans from fishing gear, and have proven successful in reducing by-catch of cetacean species in static net fisheries. The use of such devices should therefore be required in areas and fisheries with known or foreseeable high levels of by-catch of small cetaceans, and taking into account the cost/efficiency of such requirement. It is also necessary to establish the technical specifications for the efficiency of the acoustic deterrent devices to be used in such fisheries (...).

COM(2005)504 final, Thematic Strategy on the Protection and Conservation of the Marine Environment.

COM(2006) 216 final I- Halting the loss of biodiversity by 2010- and beyond. Sustaining ecosystem services for human well-being. Objectives: To safeguard the EU's most important habitats and species. To conserve and restore biodiversity and ecosystem services in the wider EU marine environment (...).

Protocol on Integrated Coastal Zone Management in the Mediterranean "(...) the biological wealth and the natural dynamics and functioning of the intertidal area and the complementary and interdependent nature of the marine part and the land part forming a single entity shall be taken particularly into account; the ecosystems approach to coastal planning and management shall be applied so as to ensure the sustainable development of coastal zones (...)"

Commission Regulation (EC) No 865/2006 of 4 May 2006, laying down detailed rules concerning the implementation of Council Regulation (EC) No 338/97 on the protection of species of wild fauna and flora by regulating trade therein.

Council Regulation (EC) No 1967/2006 of 21 December 2006, concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea, amending Regulation (EEC) No 2847/93 and repealing Regulation (EC) No 1626/94.

This Regulation shall apply: (a) to the conservation, management and exploitation of living aquatic resources where such activities are pursued (...).

COM(2007) 308 final, Report to the European Parliament and the Council: An evaluation of Integrated Coastal Zone Management (ICZM) in Europe.

COM(2007) 575 final, An Integrated Maritime Policy for the European Union (IMP "Blue Book") and the action plan SEC(2007) 1278, Commission staff working document, Accompanying document to the COM(2007) 575 final, An Integrated Maritime Policy for the European Union.

Commission communication adopted on may 2007, Guidelines for the establishment of the Natura 2000 network in the marine environment. Application of the Habitats and Birds Directives. "Nature and biodiversity" are one of the priority themes for European actions.

Directive 2008/56/EC establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive).

Article 1: Marine strategies shall be developed and implemented in order to (...) b) prevent and reduce inputs in the marine environment, with a view to phasing out pollution as defined in Article 3(8), so as to ensure that there are no significant impacts on or risks to marine biodiversity, marine ecosystems, human health or legitimate uses of the sea. 3. Marine strategies shall apply an ecosystem-based approach to the management of human activities, ensuring that the collective pressure of such activities is kept within levels compatible with the achievement of good environmental status and that the capacity of marine ecosystems to respond to human-induced changes is not compromised, while enabling the sustainable use of marine goods and services by present and future generations.

Directive 2008/105/EC on environmental quality standards in the field of water policy, amending and subsequently repealing Council Directives 82/176/EEC, 83/513/EEC, 84/156/EEC, 84/491/EEC, 86/280/EEC and amending Directive 2000/60/EC of the European Parliament and of the Council.

COM(2008) 534 final, A European Strategy for Marine and Maritime Research. A coherent European Research. Area framework in support of a sustainable use of oceans and seas.

Protocol on Integrated Coastal Zone Management in the Mediterranean (2009).

Decision of the Council 2009/89/EC of 4 December 2008, signed the Protocol on Integrated Coastal Zone Management in the Mediterranean to the Barcelona Convention.

COM(2009) 40 final, On a European Community Action Plan for the Conservation and Management of Sharks.

Council decision 2010/631/EU, concerning the conclusion, on behalf of the European Union, of the Protocol on Integrated Coastal Zone Management in the Mediterranean to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean.

COM(2011)244, Our life insurance, our natural capital: an EU biodiversity strategy to 2020. Very important document.

3.1. Conserving and restoring nature - The full implementation of the Birds and Habitats Directives (i.e. reaching favourable conservation status of all habitats and species of European importance and adequate populations of naturally occurring wild bird species) is critical to preventing further loss and restoring biodiversity in the EU; 3.3. Ensuring the sustainability of agriculture, forestry and fisheries; 3.4 Combating invasive alien species; 3.5 addressing the global biodiversity crisis; 3.6.



Contributions from other environmental policies and initiatives.

COM(2011) 571, final Roadmap to a Resource Efficient Europe, point 4.2. Biodiversity. Member States will work towards the objectives of the Biodiversity Strategy by integrating the value of ecosystem services into policymaking (continuous).

Commission Regulation (EU) No 791/2012, of 23 August 2012, amending, as regards certain provisions relating to the trade in species of wild fauna and flora, Regulation (EC) No 865/2006 laying down detailed rules for the implementation of Council Regulation (EC) No 338/97.

Commission implementing Regulation (EU) No 792/2012, of 23 August 2012, laying down rules for the design of permits, certificates and other documents provided for in Council Regulation (EC) No 338/97 on the protection of species of wild fauna and flora by regulating trade therein and amending Commission Regulation (EC) No 865/2006.

Directive 2013/39/EU amending directives 2000/60/EC and 2008/105/EC as regards priority substances in the field of water policy.

Regulation (EU) No 1380/2013, on the Common Fisheries Policy. The Common Fisheries Policy (CFP) shall cover: (a) the conservation of marine biological resources and the management of fisheries and fleets exploiting such resources (...). The CFP shall ensure that fishing and aquaculture activities are environmentally sustainable in the long-term and are managed in a way that is consistent with the objectives of achieving economic, social and employment benefits, and of contributing to the availability of food supplies.

Commission Regulation (EU) No 1320/2014 of 1 December 2014, amending Council Regulation (EC) No 338/97 on the protection of species of wild fauna and flora by regulating trade therein.

Regulation (EU) No 597/2014 of 16 April 2014, amending Council Regulation (EC) No 812/2004 laying down measures concerning incidental catches of cetaceans in fisheries.

Commission Regulation (EU) 2015/870 of 5 June 2015 amending, as regards the trade in species of wild fauna and flora, Regulation (EC) No 865/2006 laying down detailed rules concerning the implementation of Council Regulation (EC) No 338/97.

Commission implementing regulation (EU) 2015/57, of 15 January 2015, amending Implementing Regulation (EU) No 792/2012 as regards the rules for the design of permits, certificates and other documents provided for in Council Regulation (EC) No 338/97 on the protection of species of wild fauna and flora by regulating trade therein and in Commission Regulation (EC) No 865/2006 laying down detailed rules concerning the implementation of Council Regulation (EC) No 338/97.

Commission implementing regulation (EU) 2017/1915 of 19 October 2017, prohibiting the introduction into the Union of specimens of certain species of wild fauna and flora.

Commission Regulation (EU) 2017/160 of 20 January 2017, amending Council Regulation (EC) No 338/97 on the protection of species of wild fauna and flora by regulating trade therein.

National level

Law No 979, 31 December 1982, provisions concerning sea defense.

Article 25: establishment of marine reserves which have an interest for the natural, biochemical and physical characteristics, with particular regard to the marine flora (in accordance with the article it has been established the marine reserve Miramare in the gulf of Trieste (Decree 12 November 1986).

Law No 394, 6 December 1991, which contains the main principles concerning the establishment and the management of the protected natural areas. Its aim is to protect habitats and species and added to establish parks (article 2), composed by terrestrial, fluvial and marine areas.

Presidential Decree No 1639, 2 October 1968, implementing regulation of law No 963, 14 July 1965, regulation of maritime fisheries.

Biological protection area, established by the Presidential Decree No 1639, 2 October 1968 (article 98).

Law No 150 of 7 February 1992, penalising the offences related to the implementation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora in Italy, amended by Law No 59 of 1993, by Law No 426 of 1998 and by the Legislative Decree No 275/2001.

Decrees of the Ministry for the Environment of 19 April 1996 and 26 April 2001 listing all the species (dangerous live animals) whose introduction into the national territory is forbidden.

Presidential Decree No 357, 8 September 1997, implementing directive 92/43/ECC, on the conservation of natural habitats and of wild fauna and flora, amended by Presidential Decree No 120/2003.

Legislative Decree No 275, 18 May 2001, Reorganization of the penalty system concerning protected fauna and flora species, amending Law 150/1992.



Decree No 469, 6 December 2001, adopted by the Ministry of Environment, Land and Sea, which contains measures concerning captivity of dolphins belonging to the species *Tursiops Truncatus* (implementing article 17, paragraph 6 of the Law No 93, 23 March 2001).

Law No 27, 10 May 2005, implementing ACCOBAMS convention. In the Annex II it is planned the adoption of a conservation plan that interests the following fields: adoption and implementation of the national legislation; assessment and management of the interaction between man and cetaceans; protection of the habitats; research and continuing oversight.

Law No 61, 8 February 2006, establishment of an ecological protection zone beyond the outer limits of the territorial sea. In application of the Montego Bay Convention, there is the possibility to establish ecological protection zones.

Decree No 184 of 17 October 2007, adopted by the Ministry of Environment, land and sea, laying down "uniform minimum criteria in order to identify conservation measures concerning Special areas of conservation (ZSC) and Special Protection Areas (ZPS)".

2030 Agenda for sustainable development in Europe and the report "Financing the future". On February 2017, it has been adopted the action programme No 53.

Objective 14- Conservation and permanent use of the oceans, the seas and the marine resources for a sustainable development. Point 14.2: By 2020, it is important to manage in a sustainable way and to protect the marine and coastal ecosystem, in order to avoid adverse impacts, by reinforcing their resilience and act for their restoration in order to protect the marine environment.

Objective 15: To protect, to restore and to encourage a sustainable use of the ecosystem, point 3: biodiversity.

National strategy for biodiversity (2011-2020), adopted by the ministry of environment, land and sea. More specifically, point 7: marine environment. Letter j) to reduce the by-catch impact on the species included in the habitat directive and in the red list IUCN (cetaceans, sea turtles and elasmobranchs); k) to ensure the coastal protection of the nesting sites of the sea turtles (*Caretta caretta*), sea birds (Berta greater, Berta minor, Maragone dal ciuffo, etc.).

Legislative Decree No 190, 13 October 2010, implementing directive 2008/56/EC. Article 1- Marine strategies, letter d) provides that the national legislation has to reinforce the conservation of the marine environment, by extending and integrating the protected marine areas.

Agreement 10 July 2014, between the standing conference of the State, the Regions and the autonomous provinces- Guidelines for the recovery, rescue, custody and management of the sea turtles for the purpose of rehabilitation.

Tuscany

Regional Law No 30, 19 March 2015, Provisions for the conservation and the exploitation of the natural and environmental regional heritage.

The law contains some provisions for the conservation, the exploitation and the promotion of the natural and environmental heritage, which plays an important role for the present and future generations and which has to be assured the sustainability of the uses and the conditions of the reproductions.

Article 12: Regional planning. Working document for the conservation and the development of the natural heritage.

Regional government Decree No 1075, 5 December 2011, National strategy for the biodiversity. It has been approved the memorandum of understanding between the Ministry of Environment, Land and Sea, the regions and the autonomous provinces for the start of the activities of the biodiversity regional observatories.

Adoption of some dispositions, which create sites of Community importance (DCR No 1, 28 January 2014, DGR No 1006, 18 November 2014, DCR No 27, 26 April 2017). Update of the list of the Natura 2000 network.

Regional and environmental energy plan (established by Regional Law No 14/2007), adopted in 2015. Environmental and energetic programming instrument, which aimed at the achievement of the protection, exploitation and conservation of the environmental and natural resources. Objective No 2: protect and enhance the territorial resources, the nature and the biodiversity.

Regional document of economy and finance, approved by DCR No 79/2016. It is the essential tool for the annual planning of government activities, updating and declining the regional objectives and the priorities of the Regional development programme.

Decree of the regional Government No 328, 3 April 2018, approved the second working document (DOA-PNAT).

For the marine biodiversity: there have been approved the criteria for the notice Go Green Sea 2018 for the information campaign for cetaceans and sea turtles.



Tourism sector

Tourism plays an important and central role for the economy. Though, the development of tourism has negative impacts on the local environment. So, the conservation of natural resources and the sustainable development of communities will depend on the way the tourism industry and activity evolve and is managed.

World Travel and Tourism Council (WTTC), World Trade Organization (WTO) and Earth Council adopted “Agenda 21 for the tourism: towards sustainable development” (1995), which promotes sustainable tourism development. Chapter 28 of Agenda 21 binds local authorities to implement at a local level the commitments made towards sustainable development by the international community. Local communities have to implement a sustainable development strategy and an action programme. In the same way, the Rimini Charter for sustainable and competitive tourism (2001) affirmed the importance to assure a sustainable tourism. Therefore, the Global Sustainable Tourism Council has identified the global sustainable tourism criteria, which are global baseline standards for sustainability in travel and tourism. In this framework, four pillars have been defined: sustainable management, socioeconomic impacts, cultural impacts, environmental impacts.

In “*The future we want*” (Rio+ Document, 2012) sustainable tourism is defined by paragraph 130 as a significant contributor “*to the three dimensions of sustainable development*”. Member States recognize “*the need to support sustainable tourism activities and relevant capacity-building that promote environmental awareness, conserve and protect the environment, respect wildlife, flora, biodiversity, ecosystems and cultural diversity, and improve the welfare and livelihoods of local communities*”. Paragraph 131 provides that Member States have to “*encourage the promotion of investment in sustainable tourism, including eco-tourism and cultural tourism, which may include creating small and medium sized enterprises and facilitating access to finance, including through microcredit initiatives for the poor, indigenous peoples and local communities in areas with high eco-tourism potential*”. The concept of sustainable tourism plays a key role nowadays.

At European level, it is important to highlight that one of the EUSAIR pillar is sustainable tourism, and more specifically the diversified tourism offer and sustainable and responsible tourism management. The sustainability of tourism must be in line with the overall orientation for sustainable development defined for the EU in the European Sustainable Development Strategy (SDS). EU also established the Tourism Sustainability Group (TSG).

EU identifies numerous challenges proper to the tourism sector that will have to be addressed. These mainly include “*sustainable conservation and management of natural and cultural resources, minimising resource use and pollution at tourism destinations including the production of waste, managing change in the interests of the well-being of the community, reducing the seasonality of demand, addressing the environmental impact of transport linked to tourism (...)*”. The importance of sustainable tourism is reaffirmed in “Blue Growth”. Tourism sector shows the need to reconcile development and environment. The promotion of sustainable growth of maritime and coastal activities and the sustainable use of coastal and marine resources, with which tourism is strictly interconnected, has been reaffirmed by the Integrated Coastal Zone Management (ICZM).

The Commission invites also the industry and other stakeholders to: a) develop and promote ecotourism and other sustainable tourism products; b) implement water efficiency measures included in the Water Blueprint; c) actively participate in projects that reduce waste, emissions, marine litter, natural resource use and in water and waste recovery / recycling.

The national legislation adopted the framework law on tourism, No. 135, of 9 march 2001, related to the national reform on tourism. Then, it has been adopted the prime ministerial decree (DPCM) of 13 September 2002, on the transposition of the agreement between State, Regions and autonomous provinces for the harmonization, enhancement and development of the tourist sector. Article 1 established numerous principles (such as the exploitation of environmental resources, cultural goods and local traditions), in order to achieve a sustainable tourism development. An important disposition is the tourism code, adopted by the legislative decree No 79, which implements directive 2008/122/EC. It has also been adopted the tourism strategic plan 2017-2022, which contains some innovative solutions for a sustainable tourism.

Regional Law No 86/2016, contains some provisions related to tourism sector. At article 1 it is provided that the Region promotes the strategic role of the tourism for the sustainable economic development, the promotion and the improvement of the territory and the identification of measures and tools useful to tourism policy, by identifying the objectives for the improvement and the development of Tuscany tourism sector.

The implementing regulation No 47/R, adopted on August 2018, lies at the heart the protection of natural resource of the coastal environment.

Economic and touristic promotion plan, 2018 highlight the importance to promote the attractiveness of the Region, by promoting a sustainable tourism and a cooperation between the different stakeholders (regional, public and private). It is necessary to adopt an integrated approach. It is important to take into account all the findings that emerged during the report. The development of the coastline, the disorder of the dune system, the degradation of the water resource and the alteration of maritime environment represent obligatory elements that should be taken into account by planning instruments. The measures proposed are in line with regional action on tourism. The Region promotes a strategic tourism, which has to take into account the other activities that are developed in the area, such as aquaculture activities and the



local traditions and ecosystems. More specifically, the differentiation of tourism offer, including fishing tourism within the small-scale fishery sector, is contained in article 17-bis of law No 66/2005, which contains some technical provisions related to recreational fishing.

Measures	Competent authority
<p>Promote coastal and marine ecotourism, differentiation of tourism offer including fishing tourism within the small-scale fishery sector.</p> <p>Promote synergies between coastal tourism and aquaculture sector.</p> <p>Promote sustainable coastal ecotourism integrated with local traditions and ecosystems.</p>	<p>Ministry of Culture and Tourism.</p> <p>The department of development and competitiveness, established with the Decree No 262, 3 October 2006, is the competent body which supports the government on the tourism policies (more specifically, the article 55 of the code of tourism contains the role and the functions of the department).</p> <p>The Ministry of the regional affairs, the tourism and the sport is empowered to carry out the duties related to the coordination, guiding and monitoring functions</p> <p>National agency of tourism established by presidential decree No 207, 6 April 2006.</p> <p>The national tourism agency has been established with the law No 80, 14 May 2005 (ENIT). ENIT adopts some measures for the promotion of tourism in Italy and for the support of the tourism products of Italy at an european and international level.</p> <p>Presidential Decree No 207, 6 April 2006, Regulation establishing the organisation of the National agency of tourism. It has been attributed to the President of the Council of Ministers, or to a delegated body, the competences in terms of tourism.</p> <p>Standing committee for the promotion of tourism.</p> <p>Competent authority Tuscany</p> <p>The Region is the competent authority. Regional Law No 86/2016, at articles 4, identifies all the functions of the Region in the tourism sector, such as the programming of the policies for a sustainable and competitive development of tourism and the innovation of regional touristic offer (etc.). the law identifies all the areas of responsibility of the Region.</p> <p>The regional agency of touristic promotion, established with the law No 22, 4 March 2016, which collaborates with the Region for the promotion of tourism.</p>
Law	
<p>International level</p> <p>World Travel and Tourism Council (WTTC), World Trade Organization (WTO) and Earth Council adopted “Agenda 21 for the tourism: towards sustainable development” (1995).</p> <p>The United Nations Commission on Sustainable Development approved the Resolution Tourism and Agenda 21. Chapter 28 of Agenda 21 binds local authorities to implementing at a local level the commitments made towards sustainable development by the international community. Approach through which a local community defines a sustainable development strategy and an action programme to be implemented.</p> <p>Global code of Ethics for Tourism (1999): it is a set of principles designed to guide key-players in tourism development, which aims to help maximise the sector’s benefits while minimising its potentially negative impact on the environment, cultural and heritage and societies across the globe.</p> <p>The Rimini Charter for sustainable and competitive tourism (2001).</p> <p>The Global Sustainable Tourism Council has identified the global sustainable tourism criteria, which are global baseline standards for sustainability in travel and tourism. Four pillars: sustainable management, socioeconomic impacts, cultural impacts, environmental impacts (including consumption of resources, reducing pollution, and conserving biodiversity and landscapes).</p> <p>European Level</p> <p>The Charter of European Sustainable cities and towns towards sustainability (Aalborg Charter, 1994) is an urban environment sustainability initiative. Point I. 14: Administrative instruments and for urban management for the implementation of a sustainable development.</p>	



The use the political and technical instruments and tools available for an ecosystem approach to urban management. We shall take advantage of a wide range of instruments including those for collecting and processing environmental data; environmental planning; regulatory, economic, and communication instruments such as directives, taxes and fees; and mechanisms for awareness raising including public participation.

The EU Strategy for the Adriatic and Ionian Region (EUSAIR) is a macro-regional strategy adopted by the European Commission and endorsed by the European Council in 2014. One of his pillar is sustainable tourism, more specifically diversified tourism offer and sustainable and responsible tourism management.

COM(2003) 716 final, Basic orientations for the sustainability of European tourism. The sustainability of tourism must be in line with the overall orientation for sustainable development defined for the EU in the European Sustainable Development Strategy (SDS). Subsequent to the Communication, it has been established the Tourism Sustainability Group (TSG).

COM(2007) 621 final, Agenda for a sustainable and competitive European tourism. There are a lot of challenges proper to the tourism sector that will have to be addressed. These mainly include "sustainable conservation and management of natural and cultural resources, minimising resource use and pollution at tourism destinations including the production of waste, managing change in the interests of the well-being of the community, reducing the seasonality of demand, addressing the environmental impact of transport linked to tourism (...)".

COM(2010) 352 final, Europe, the world's No 1 tourist destination - A new political framework for tourism in Europe. Tourism is a sector which needs to reconcile development and environment.

COM(2012) 494 final, Blue Growth opportunities for marine and maritime sustainable growth, point 5.3 Maritime, coastal and cruise tourism: A healthy environment is fundamental to any form of 'blue' tourism and favours the growth potential of new forms of tourism. High quality bathing waters and pristine coastal and marine habitats have a high recreation value.

Decision No 1386/2013/EU of the European Parliament and of the Council on a General Union Environment Action Programme to 2020 'Living well, within the limits of our planet'.

Priority objective 8: To enhance the sustainability of the Union's cities.

COM(2014) 86 final, A European Strategy for more Growth and Jobs in Coastal and Maritime Tourism.

Tourism depends on a healthy environment and the sustainable use of natural capital. (...) EU legislation such as the Water Framework and Marine Strategy Framework Directives require Member States to ensure good status of coastal and marine waters, a pre-requisite for tourism to prosper. Point 3.3.- Strengthening sustainability- The Commission invites Member States, regions, industry and other stakeholders to: - Implement the Integrated Coastal Management Recommendation and Protocol; Develop guidelines on minimising impacts on biodiversity and enhancing benefits of recreation and tourism in protected areas; Develop climate change adaptation in coastal areas; Improve resource efficiency, waste and pollution prevention and management in tourist areas and by operators; Promote Eco-Management and Audit Scheme and implement Best Environmental Management Practices and Green Infrastructure approaches; Promote the use of shore-side electricity and provision of port facilities; Promote water efficiency measures included in the Water Blueprint.

The Commission invites the industry and other stakeholders to: - Develop and promote ecotourism and other sustainable tourism products; Implement water efficiency measures included in the Water Blueprint; Actively participate in projects that reduce waste, emissions, marine litter, natural resource use and in water and waste recovery / recycling.

Implementing the point 14. (The Commission will develop an online guide with an overview of the main funding opportunities available for the sector (particularly SMEs), it has been published a "Guide on EU Funding for the Tourism Sector" (This Annex provides more examples of funded projects in maritime and coastal tourism, with greater details, as announced in the above-mentioned Strategy). Tourism sectors shows the need to reconcile development and environment.

The Integrated Coastal Zone Management (ICZM) is a European programme which promote the sustainable growth of maritime and coastal activities and the sustainable use of coastal and marine resources.

National level

Prime ministerial decree (DPCM) of 13 September 2002, on the transposition of the agreement between state, regions and autonomous provinces for harmonization, enhancement and development of the tourist sector.

Article 1 establishes a lot of principles (such as exploitation of environmental resources, cultural goods and local traditions) in order to achieve a sustainable tourism development.

Memorandum of Understanding signed between the Public Administration and the Innovation and the secretary of state for the "Creation of the national tourism portal", 15 January 2009.

Legislative decree No 79, adopted on 23 May 2011(tourism code), implementing directive 2008/122/EC.

Tourism strategic plan 2017-2022, which contains innovative solutions for a sustainable tourism.

The ministerial decree (21 October 2013) shall transfer the human and financial resources of the Prime Minister to the Ministry of culture and tourism.



Decree Law No 83, 31 May 2015, Measures aimed at the relaunch of tourism. Conversion Law No 106/2014, of the Decree Law aimed at the relaunch of tourism.

Tuscany

Regional Law No 86, 20 December 2016, Consolidated text of the laws on the regional tourism sector.

Article 1, paragraph 2, letter a) the Region promotes the strategic role of the tourism for the sustainable economic development, the promotion and the improvement of the territory and the identification of measures and tools necessary for the tourism policies, by identifying the objectives for the improvement and the development of Tuscany tourism sector.

Regulation No 47/R, 7 August 2018, implementing regional law No 86, 20 December 2016. The Regulation lies at the heart the protection of natural resource of the coastal environment. Operational strategy document "Tuscany destination 2020".

Economic and touristic promotion plan, 2018. The regional government approved the "integrated document of touristic promotion and communication. It is a plan that contains all the activities.

It promotes the coordination between all the activities and the stakeholders involved in the touristic promotion and communication, by ensuring a coherent and effective action. The document contains the strategic elements contained in the development regional plan. The document promotes the coordination between the different activities involved in the area and the speed circulation of the information.

The first section contains some provisions related to regional touristic promotion and communication; the second section is consecrated to specific activities. Tuscany wants to promote the attractiveness of the Region and highlight the importance of the cooperation between the different stakeholders (regional, public and private). Only an integrated approach can help to achieve the development of a sustainable tourism.

Project: Tuscany Touristic, Sustainable and competitive, it is an important project for the development of regional tourism, in harmony with the conservation of natural resources, the cultural identity and for the improvement for the quality of life for residents.

Marine litter

The problem of marine litter has gained importance in the last years because it poses a complex and multi-dimensional challenge with significant implications for the marine and coastal environment and for human activities.

The issue of marine litter got strengthened with the entering into force of the Barcelona convention LBS Protocol (2008) and the Integrated Coastal Zone Management (ICZM) Protocol in 2011, and with the coming into effect in 2009 of the Mediterranean Sea as a Special Area (under Annex V of the International Convention for the Prevention of Pollution from Ships (MARPOL).

The European Union, by the adoption of the directive on port facilities for ship-generated waste (2000/59/EC) and cargo residues, introduced the obligation to adopt a waste reception and handling plan. Then, it was adopted the Marine Strategy Framework Directive (MSFD), the environmental pillar of the European integrated maritime policy, which requires European Member States to monitor marine litter and implement a programme of measures to reduce its occurrence, in order to achieve or maintain good environmental status (GES) in the marine environment by 2020 (and beyond). Marine litter is listed as the tenth of 11 qualitative descriptors for determining a GES, which states that the properties and quantities of marine litter do not cause harm to the coastal and marine environment. The EU has a wide range of initiatives on land-based waste management, which could have a significant impact on the amount of waste in the marine environment. For example, the Packaging and Packaging Waste Directive outlines a range of requirements to reduce the impact of packaging waste on the environment. It contains provisions on the prevention of packaging waste, on the re-use of packaging and on the recovery and recycling of packaging waste. Other initiatives include the Waste Framework Directive, the Landfill Directive and the Urban Waste Water Directive.

In this international and European frame, national policy has also a crucial and important role. The main sources of coastal litter are linked to aquaculture activity, tourism activities, coastal urban centers, which are regulated by national and regional provisions. At national level, it can be detected that Italy has not a policy related specifically to marine litter. The national legislation has policies for the management of coastal solid but the enforcement of the policies is weak mostly because of the poor coordination between different national and local administrations dealing with solid waste issue. For this reason, it is strongly required a strategy in order to assist coastal local authorities to improve the management of marine litter, by limiting the different sources of waste, in order to prevent the introduction of litter into the marine environment (litter is present on the beaches, floating in the water and on the sea bed). It is also required the development of a public awareness and education campaign on the management of marine litter with the overall objective to contribute to the protection of the environment and the sustainable development of the Mediterranean.



In order to implement the European action, Italy adopted a programme of measures by DCPM 10 October 2017. The DCPM introduced some measures related to the reduction of marine litter. More specifically, the programme provides the planning and the realization of (a) measures aimed at improving the management of waste generated by fisheries and aquaculture, included decommissioned gears, facilitating the reuse, recycling and recovery; (b) measures aimed at the regularization of waste disposal in marine waters; (c) measures aimed at reducing ballast water; (d) green economy measures concerning cleaning of sea bed. In addition to this, it is gradually emerging the importance of public awareness and education in the fight against marine litter. All these measures are in keeping with the regional plan for the marine litter management in the Mediterranean. Italy also introduced some monitoring programmes concerning waste disposal on the seabed. Furthermore, the national provisions are trying to adopt some measures concerning litter mitigating, removing and a behavior changing (education campaigns, economic/incentive tools).

The adoption of the here proposed measures may improve the quality of marine and coastal environment, in accordance with international, European and national provisions, which recognize the importance of dealing with the problem of marine litter. In conclusion, a variety of instruments at international, regional and national levels have been developed in order to fight against marine litter. The actions aimed at the reducing the marine litter, which is controlled and eliminated to the maximum practicable extent through regional and national activities. Marine litter could be prevented and controlled through an effective collaboration of education and outreach programmes, strong regulations and policies, effective enforcement, and adequate support infrastructures. The enhancement of public awareness and education plays also a very important role in the marine litter management and it is important that all the levels cooperate with each other in fighting this problem.

Measure	Competent Authority
<p>Measures aimed at the reduction of marine litter.</p>	<p>International level</p> <p>UNEP/IOC Guidelines on Surveying and Monitoring of Marine Litter developed, in cooperation with the intergovernmental Oceanographic Commission (IOC), guidelines on surveying and monitoring of marine litter in order to provide a long-term platform for scientific monitoring.</p> <p>The activities related to ML prevention are mainly in charge to the General Direction for Waste and Pollution of the IMELS.</p> <p>National level</p> <p>The activities related to ML revival action at sea, monitoring, outreach fall under the responsibility of the General Direction for Nature and Sea protection of the Italian Ministry of Environment Land and Sea.</p> <p>The ministry of Environment Land and Sea has been established by law No 349, of 8 July 1986, and it is the competent authority for the implementation of the marine strategy.</p> <p>Competent authorities for the application of the measures: Ministry of environment, land and sea; Ministry of Agriculture, regional authorities and port authorities.</p> <p>Supervision and Control</p> <p>Port authorities - Surveillance and prevention of the marine's water pollution from hydrocarbons and other harmful substances. The ministry of transport shall cooperate with port authorities in order to reinforce the control activity.</p> <p>The monitoring activity, provided for in article 11, subparagraph 3-bis, legislative decree No 190/2010, has been given by the Ministry of Environment, Land and Sea to the regional environment agencies, under the Convention signed in 2014.</p> <p>The regions, under the framework agreement signed in 2014 with the Ministry of Environment, Land and Sea, play an advisory role in order to approve (monitoring plans) the work done by the Agencies.</p> <p>The agencies, through 3 conventions signed between the MELS and the three cluster lead aid agencies of the subregions (Mediterranean, Adriatic and Ionian Sea), have to carry out the activity (operational activity programme).</p> <p>The coordination of the monitoring activities is assigned to the Coordination Commission</p>



	<p>(consisting of the MELS, the Regions and the three subregions) and to a “cabina regia” (consisting of three representatives of the MELS and two representatives for each subregion). The technical support is given by ISPRA, CNR and other research institutes.</p> <p>For the Adriatic subregion, ARPAE (Emilia Romagna Region)-oceanographic structure Daphne, composed by 7 agencies, has been appointed as the cluster lead aid agency.</p> <p>Awareness-raising activities: the stakeholders are the tour and bathing operators, operators related to the maritime transport, aquaculture and fishery. It is important to enhance the role of the fishermen.</p> <p>The ARERA (the Italian Regulatory Authority for Energy, Networks and Environment) is an independent body. Law No 205 of 27 December 2017 allocated to the Authority regulatory and control functions over the waste cycle, including sorted, urban and related waste.</p> <p>Tuscany</p> <p>ARPAT.</p>
Law	
<p>International level</p> <p>International Convention for the Prevention of Pollution of the Sea by the Sea by Oil (Oilpol convention, 1954).</p> <p>International Convention on Civil Liability for Oil Pollution Damage, 1969. This Convention shall apply exclusively to pollution damage caused on the territory including the territorial sea of a Contracting State and to preventive measures taken to prevent or minimize such damage.</p> <p>Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972, the London Convention for short, is one of the first global conventions to protect the marine environment from human activities and has been in force since 1975.</p> <p>International Convention for the Prevention of Pollution from Ships (MARPOL), adopted on 2 November 1973 at IMO; modified by London Convention TSPP (Tanker safety pollution prevention). MARPOL has been updated by amendments through the years. Annex I: Regulations for the Prevention of Pollution by oil. Annex III: Prevention of Pollution by Harmful Substances carried by Sea in Packaged form. Annex IV: Prevention of pollution by sewage from ships. Annex V: Prevention of pollution by garbage from ships.</p> <p>Barcelona Convention for the Protection of the Marine Environment and the coastal region of the Mediterranean adopted in 1995. Its aims are to prevent, reduce and control marine litter generation and its impact on the coastal and marine environment.</p> <p>United Nations Convention on the Law of the Sea, Montego Bay, 10 December 1982, Part XII “Protection and Preservation of the Marine Environment”.</p> <p>Basel Convention on the control of transboundary movements of hazardous wastes and their disposal (1989, global).</p> <p>International Convention on Oil Pollution Preparedness, Response and Co-operation (OPCR), 1990, in order to establish measures for dealing with pollution incidents, either nationally or in cooperation with other countries. A Protocol to the OPCR relating to hazardous and noxious substances (OPRC-HNS Protocol) was adopted in 2000.</p> <p>United Nations Convention on the Law of the Sea (UNCLOS), entered into force in 1994. Articles 192–237 of Part XII are dedicated to the protection and preservation of the marine environment. While the provisions do not explicitly refer to marine litter, they place a general obligation on states to protect and preserve the marine environment, which can be used in the context of marine litter regulation</p> <p>Protocol for the Protection of the Mediterranean Sea against Pollution from Land-Based Sources, 1996, entered into force in 2008. The Protocol recognizes the importance of dealing with the problem of marine litter. The Annex I of the amended Protocol defines marine litter as “any persistent manufactured or processed solid material which is discarded, disposed of, or abandoned in the marine and coastal environment”.</p> <p>In 2007, OSPAR published Guidelines for the implementation of Fishing for Litter (FFL) projects in the OSPAR area. FFL has two main aims: the physical removal of marine litter from the seabed and to raise awareness within the fishing industry that it is not acceptable to throw litter overboard.</p> <p>Nairobi International Convention on the Removal of Wrecks is a 2007 treaty of the International Maritime Organization (IMO). His aim is to establish uniform rules for the prompt and effective removal of shipwrecks located in the exclusive economic zone</p>	



(EEZ) of a state that may be hazardous to navigation or to the environment.

UNEP/MAP was the first ever Regional Sea Programme to develop a regional plan on the management of marine litter in 2013.

The Global Partnership on Marine Litter (GPML) was launched in June 2012 at Rio + 20 in Brazil. The GPML, besides being supportive of the Global Partnership on Waste Management, seeks to protect human health and the global environment by the reduction and management of marine litter as its main goal, through several specific objectives.

Decision IG.20/10- Adoption of the Strategic Framework for Marine Litter management (Paris, February 2012). The document analyses the problem and proposed a number of activities that would help in approaching in a systematic way the problem of marine litter. Most important points: The main findings of the assessment; Public awareness and education; Towards a new strategy for the proper management of marine litter in the Mediterranean.

Objective one: Enhance the proper implementation of existing legislation dealing with municipal solid waste, as well as sea based solid waste, by building or further developing legal and institutional capacity in local and port authorities, and other institutional stakeholders, to manage marine litter within an integrated coastal zone management framework;

Objective two: Reduce, in view to eliminate, marine litter generated “in situ” (on beaches) with emphasis on plastics and smoking related marine litter;

Objective three: Influence environmental attitudes and behavior of residents and tourists of coastal areas in the Mediterranean Region with regards to marine litter;

Objective four: Follow the trends of marine litter generation and distribution through the establishment of a monitoring programme for marine litter in the Mediterranean Sea, based on the ecosystem approach;

Objective five: Assess lost and abandoned fishing gear and identify and implement counter measures against biological damage.

Objective six: Establish synergies with on-going and planned initiatives in the Mediterranean Region as they relate to waste and marine litter. In fact, this objective aims at ensuring coherence and coordination of scattered activities undertaken by various stakeholders under all previous objectives.

Regional Plan for the marine litter management in the Mediterranean, in order to prevent and eliminate pollution (UNEP(DEPI)/MED WG. 379/5, 28 may 2013).

With this plan, the Mediterranean region is pioneering the adoption of legally binding measures on marine litter. With this plan, Mediterranean countries will be able to elaborate nation policies and action plans on pollution control and prevention that will contribute to addressing one of the most difficult environmental issues in the Mediterranean Sea.

The main objectives of the Regional Plan are to: (a) Prevent and reduce to the minimum marine litter pollution in the Mediterranean and its impact on ecosystem services, habitats, species in particular the endangered species public health and safety; (b) Remove to the extent possible already existent marine litter; (c) Enhance knowledge on marine litter; and (d) Achieve that the management of marine litter in the Mediterranean is performed in accordance with accepted international standards and approaches as well as those of relevant regional organizations and as appropriate in harmony with programmes and measures applied in other sea.

More specifically: 3.1 Objective one: Enhance the proper implementation of existing regional legislation dealing with municipal solid waste, as well as sea based solid waste, by building or further developing institutional and legal capacity in local and port authorities and other institutional stakeholders to manage marine litter within an integrated coastal zone management framework 3.2 Objective two: Reduce in view to eliminate marine litter generated “in situ (on beaches) with emphasis on plastic and smoking related marine litter; 3.3 Objective three: Influence environmental attitudes and behaviour of residents and tourists of coastal areas in the Mediterranean Region with regards to marine litter; 3.4 Objective four: Establish a monitoring programme for marine litter in the Mediterranean Sea based on the ecosystem approach; 3.5 Objective five: Assess lost and abandoned fishing gear and formulate and implement countermeasures against biological damage; 3.6 Objective six: Establish synergies with on-going and planned initiatives in the Mediterranean Region as they relate to marine litter.

Article 10: Removing existing marine litter and its environmentally sound disposal. (b) Implement National Marine Litter Cleanup Campaigns on a regular basis; (d) Apply as appropriate Adopt-a-Beach or similar practices and enhance public participation role with regard to marine litter management; (e) Apply Fishing for Litter in an environmentally sound manner, based on agreed guidelines and best practice, in consultation with the competent international and regional organizations and in partnership with fishermen and ensure adequate collection, sorting, recycling and/or environmentally sound disposal of the fished litter (...).

Article 16 - Enhancement of public awareness and education, paragraph 1- Due to the nature of the marine litter management issue enhancement of public awareness and education is a very important component of the marine litter management.

Article 17 - Major groups and stakeholder participation- For the effective implementation of the Regional Plan, the Contracting Parties shall ensure appropriate involvement of various stakeholders including local authorities, civil society, private sector (producers, garbage collection and treatment companies, etc.) and other stakeholders as appropriate to implement the measures provided for in the Regional Plan and other measures as appropriate: (a) Regional, National and local authorities; (b) Maritime sector; (c) Tourism sector; (d) Fisheries and aquaculture; (e) Industry; and (f) Civil society.

Resolution on marine litter and microplastics, UNEP/EA.3/L.20, December 2017.



The UNEP developed, in cooperation with the intergovernmental Oceanographic Commission (IOC), guidelines on surveying and monitoring of marine litter in order to provide a long-term platform for scientific monitoring.

The Global Partnership on Marine Litter (GPML) was launched in June 2012 at Rio + 20 in Brazil. The GPML, besides being supportive of the Global Partnership on Waste Management, seeks to protect human health and the global environment by the reduction and management of marine litter as its main goal, through several specific objectives.

Decision IG.20/10 at the 17th Meeting of the Contracting Parties of the Barcelona Convention (Paris, February 2012) entitled “Adoption of the Strategic Framework for Marine Litter management”. This Strategic Framework analysis the problem and is proposing quite a number of activities that would help in approaching in a systematic way the problem of marine litter.

The 2030 Agenda for sustainable, adopted by resolution A/RES/70/1. 2030 composed by 17 sustainable development goals. Goal No 14- Conserve and sustainably use the oceans, seas and marine resources for sustainable development. Point 14.1 By 2025, prevent and significantly reduce marine pollution of all kinds, in particular from land-based activities, including marine debris and nutrient pollution.

European level

Initiatives on land-based waste management, which could have a significant impact on the amount of waste in the marine environment.

Directive 94/62/EC, 20 December 1994, on packaging and packaging waste. The directive outlines a range of requirements to reduce the impact of packaging waste on the environment. It contains provisions on the prevention of packaging waste, on the re-use of packaging and on the recovery and recycling of packaging waste.

Directive 2000/59/EC on port reception facilities for ship-generated waste and cargo residues, as amended by directive 2015/2087/EU.

Member States are obliged to ensure the availability of PRFs to meet the needs of ships, ports to develop and implement a waste reception and handling plan, a reporting requirement for the master of a ship regarding the delivery of waste, implementation of a cost-recovery system, and establishment of an enforcement scheme.

Article 4: Member states shall ensure the availability of port receptions facilities adequate to meet the needs of the ships normally using the port without causing undue delay to ships. Article 5: Waste reception and handling plans- 1. An appropriate waste reception and handling plan shall be developed and implemented for each port.

Directive 2005/35/EC on ship-source pollution and on the introduction of penalties for infringements.

Directive 2009/123/EC, of 21 October 2009 amending directive 2005/35/EC on ship-source pollution and on the introduction of penalties for infringements.

Directive 2008/56/EC (MSFD, Marine Strategy Framework Directive), which introduced some measures aimed at reducing waste generated from fishery and aquaculture activities, including discarded fishing gear, encouraging its reuse, recycling and recovery.

The Marine Strategy Framework Directive (MSFD) requires European Member States to monitor marine litter and implement programmes of measures to reduce its occurrence. MSFD requires EU Member States to ensure that, by 2020, “properties and quantities of marine litter do not cause harm to the coastal and marine environment”.

Annex I - Qualitative descriptors for determining good environmental status (10) Properties and quantities of marine litter do not cause harm to the coastal and marine environment.

Directive 2008/98/EC, of the European Parliament and of the Council, on waste and repealing certain Directives.

Article 1: This Directive lays down measures to protect the environment and human health by preventing or reducing the adverse impacts of the generation and management of waste and by reducing overall impacts of resource use and improving the efficiency of such use.

Decision No 1386/2013/EU of the European Parliament and of the Council of 20 November 2013, on a General Union Environment Action Programme to 2020 “Living well, within the limits of our planet”. The 7th Environment Action Programme calls for the development of an EU-wide “quantitative reduction headline target for marine litter, supported by source-based measures and taking into account marine strategies established by Member States”.

COM(2014)0398 final/2, towards a circular economy: a zero waste Programme for Europe.

Regulation (EU) No 508/2014 of 15 May 2014 on the European Maritime and Fisheries Fund.

COM(2015)614 final, - An EU action plan for the Circular Economy. Point 3.3. Waste management plays a central role in the circular economy. The Circular Economy Package sets a target for reducing by 30% beach litter and lost fishing gear until 2020.

Directive 2015/2087/EU, amending annex II to directive 2000/59/EC of the European Parliament and the Council on port reception facilities for ship-generated waste and cargo residues.

Directive 2016/802/EU of the European Parliament and of the Council relating to a reduction in the sulphur content of certain liquid fuels, in particular to progressively reduce the maximum sulphur content of fuels for use maritime transport (from the current 3.5% to 0.5% by January 2020) (articles 5,6,7,8).



COM/2017/848, laying down criteria and methodological standards on good environmental status of marine waters and specifications and standardised methods for monitoring and assessment, and repealing Decision 2010/477/EU. The Communication provides details for the assessment of litter in the environment.

COM(2018) 33 final, Proposal for a Directive of the European Parliament and of the Council, on port reception facilities for the delivery of waste from ships, repealing Directive 2000/59/EC and amending Directive 2009/16/EC and Directive 2010/65/EU. The Commission presented its proposal for amending the Port Reception Facilities Directive, aiming, inter alia, to reduce marine litter from ships, including fishing vessels and recreational craft.

COM/2018/28 final -A European Strategy for Plastics in a Circular Economy - aims to address the challenges caused by plastic throughout its value chain, by taking into account its entire life cycle (DG ENV & DG GROW, 2017) in order to progress toward a European Circular Economy (European Commission, 2017).

Marelitt Baltic project: the focus of this project is to reduce the impact of marine litter in the form of derelict fishing gear.

Report Top Marine Beach Litter Items in Europe.

Guidance on Monitoring of Marine Litter in European Seas.

National level

Law No 976, 1982, Provisions for sea defence. It's related to maritime spatial planning and to environmental marine protection.

Legislative Decree No 182/2003, implementing directive 2000/56/EC, in order to reduce the discharges into the sea, the waste and the cargo waste.

Legislative Decree No 152/2006, part IV; it isn't related to marine litter (only waste in general), but it can have some effects on the production and the management of marine litter.

Legislative Decree No 190, 13 October 2010, implementing directive 2008/56/CE.

Article 1, paragraph 2, letter e), aimed at the removal of marine environmental pollution.

Article 1 - Monitoring Programme in order to assure a good environmental status (GES).

Article 12 - Programme of measures- The ministry of Environment, Land and Sea, with the assistance of the committee, shall draw up one or more programme of measures in order to achieve a good environmental status.

Decree 17 October 2014, devising a strategy for marine environment, in order to achieve and maintain a good environmental state by 2020.

On December 2014, MELS has concluded an agreement with the coastal regions for the implementation of the monitoring programme, pursuant to article 11, legislative decree No 190/2010.

Law No 221, 28 December 2015, (Environmental provisions in order to promote the green economy and to contain the overuse of natural resources- Collegato Ambientale), which introduced provisions aimed at the regulation and the promotion of litter removal from the seabed of marine protected areas, which in Italy are 29.

More specifically, article 27, Cleaning of the sea-bed. The Ministry of Environment, Land and Sea, in coordination with the Ministry of Transport and Infrastructures and using the port authorities, shall identify the maritime ports in which to start the grouping and management operations of waste produced by fishery, aquaculture, tourism, management of marine protected areas and shall conclude programme agreements with environmental and touristic associations, fish companies, the management bodies of the marine protected areas and port authorities

The Ministry of Environment, Land and Sea is preparing the arrangements for the collection and disposal of waste accumulated on the seabed of some ports. These arrangements will involve port authorities, the competent agencies of the protected marine areas, the municipalities, the environmental organization, the local fishery organization and scuba diving organization. The objective is to identify an integrated system for the collection and the management of waste removed by the seabed.

Ministerial Decree February 2015 (Ministry of ELS) Determination of the indications linked to environmental finish line and of monitoring programmes (former article 10,11 and 12 legislative decree No 190/2010).

Programme No 3- Fishery - sub-programme 3.7- Monitoring of Marine litter deposited on the seabed. The Ministry of ELS and the 15 coastal regions signed 3 memorandum of understanding for the investigative activities on the loss-making sectors emerged by the initial assessment.

Downstream of the agreement with the Regions, the MELS signed 3 Conventions with the lead Regional Environmental Protection Agencies (ARPA), one for each sub-region as identified by directive 2008/56/EU, in order to carry out activities organized under 9 operational modules.



Programme of measures (planned by article 12, subparagraph 3, legislative decree No 190/2010) approved by DCPM 10 October 2017, related to the strategy of the marine environment.

Measure No 10: Measures concerning the reduction of marine litter. Planning and realization of measures aimed at improving the management of waste generated by fisheries and aquaculture, included decommissioned gears, facilitating the reuse, recycling and the recovery.

a) measures aimed at the regularization of waste disposal in marine waters; b) measures aimed at reducing ballast water; c) green economy measures concerning cleaning of sea bed.

Life ghost: in order to reduce abandoned, lost or discarded fishing gears.

Tuscany

Deliberation of the regional council No 94, 18 November 2014, regional waste management plan, with later amendments, which contains the measures aimed at the protection of the environment and the human health, through an efficient waste management.

Regional development programme (PRS) 2016-2020, approved by the resolution No 47, 15 March 2017 by the regional government.

Decision No 10 February 2015, which approved the environmental and energetic regional plan (PAER).

More specifically the section of the PAER "Promoting climate change adaptation, prevention and management of the risks", contains some measures aimed at a) the conservation of terrestrial and marine biodiversity and the promotion of a sustainable use of the protected areas; b) the integrated coastal and marine zone management; c) the reduction of waste, by promoting the recovery and reuse. It is also important to rehabilitate the polluted sites.

Regional project No 2/2016 "Sea, Elba and Tuscan archipelago policies", which promotes the integrity of the marine ecosystem and protect the quality of the marine environment.

Memorandum of understanding for the project "Tuscany Fishing for Litter - Arcipelago Pulito", signed between Tuscany Region, the Ministry of Environment, Land and Sea, Unicoop Florence, legambiente, port authority of the North Tyrrhenian Sea, Labromare, port authorities- Coast Guard- maritime Directorates of Tuscany, REVET and Cft, The agreement will allow the fishermen of Tuscany to collect plastic waste of marine water and bring them to the port and to use them for the recycling.

Decision of the regional government No 18063, 18 September 2018, with which the Region undertakes to set up a coordination table with certain stakeholders for the adoption of some measures aimed at the fight against marine litter in the Arno (by waste collection, transport, recovery and reuse).

Fishery

The fishery management has an international, European and national dimension.

At international level, there are some provisions which aimed at the promotion and the supporting of responsible conservation of fisheries resources and fisheries management and development by the national policies, such for example the UN Convention on the Law of the Sea, which provides that coastal State may "adopt law and regulations relating to (...) d) the conservation of the living resources of the sea, f) the preservation of the environment of the coastal State. In the same direction goes also the Code of Conduct for Responsible Fisheries, adopted in 1995, which deals also with aquaculture development, integration of fisheries into coastal area management. The code is not binding, but it represents a guidance to States, fishing entities, governmental and non-governmental organization. Another important convention is the Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem, adopted in 2001; at point 2 it is emphasised the need to adopt a management plan with incentives that encourage responsible fisheries and sustainable use of marine ecosystems, including mechanisms for reducing excessive fishing efforts to sustainable levels, monitoring the by-catch and discards of fishery and reducing adverse impacts of fishing practices on habitat and biological diversity.

The EU also gives importance to the Common Fisheries Policy. The principal objectives of CFP are the conservation and management of fishery resources, financial assistance to the fisheries sector and aquaculture. It raises issues concerning the management of natural resources, the impact of fishing on the wider marine environment.

The management of fisheries is intrinsically linked to the regulation of the impact of human activities on fish, in order to ensure that stocks of fish are maintained at levels that will sustain their continued exploitation as a resource indefinitely, an aim that is stressed by the FAO. This may require various measures to be taken and the measures proposed may perfectly help to achieve these objectives that are pursued.

Therefore, fishery is an important sector for Blue Growth in the Adriatic Region. More specifically, the social, cultural and economic contribution of fisheries is very important at a national, regional and local level. The fishery sector is a traditional sector important for maritime spatial planning, on a social and economic point of view. The measures proposed will promote and guarantee a greater sustainability of the fishery activity, preserving stocks and habitats, and to promote the trend already on-going towards small-scale fishery.



The Commission published the Action Plan for the conservation and sustainable exploitation of Mediterranean fisheries in October 2002. The plan had various elements, such as the facilitating management of fishery, a reduction in capacity and fishing effort, a change of the methods of fishing in order to conserve resources and protect the environment and the improvement of control and enforcement.

Council Regulation (EC) 1100/2007 introduced measures to rebuild stocks of European eel and envisaged a Management Plan being sent to the European Commission by each Member State.

An important document adopted by EU is the Regulation (EU) No 1380/2013 (Mediterranean Regulation), on the Common Fisheries Policy, which provides that Member States “in order to preserve the ecosystem, may adopt measures aimed at the conservation of the marine environment, measures, by the territorial sea, with limitations or bans concerning the fishery activity, for certain zones or periods. So, the measures we want to propose, may be supported by this provision. Regulation 1967/2006 provides that Member States must adopt management plan for fisheries using certain kinds of gear within its territorial sea. The regulation provides also the creation of fishing protected areas. These areas are “areas within which all or certain fishing activities are temporarily or permanently banned or restricted in order to improve the exploitation and conservation of living aquatic resources or the protection of marine ecosystems” (the measures proposed have an European basis). The Mediterranean Regulation contains some rules linked to the management measures and obligations, which intended to protect sensitive areas and habitats from fishing activities, and technical measures concerning the number, dimension and selectivity of the fishing gears. Member States have to adopt rules through long-term management plans for fisheries in their territorial waters. The EU adopted also some financial measures for the implementation of the CFP, for the supporting of the sustainable development of fisheries and the implementation of the Integrated Maritime Policy (Regulation (EU) No 508/2014).

The national legislation has also adopted some provisions in order to regulate and monitor fishing activities. Legislative Decree No 4/2012 (measures for the reorganization of fishery and aquaculture sector) at article 10, provides that “in order to protect biological resources and to prevent and discourage illegal fishing, it’s forbidden to fish in areas prohibited by European and national legislation, to hold, transport and trade in areas and prohibited by European and national legislation, to fish quantity exceeding that laid down in European and national legislation”.

It has also been approved the three-year national fisheries and aquaculture programme (2017-2019). It is the only planning tool concerning the aquatic production of Italian agricultural and food policy, and it provides, at point 5 (objectives and instruments), the sustainable development of fisheries, by reducing the fleet capacities, by containing the fish capture, by implementing the technical measures laid down in Regulation (EC) No 1967/2006, and by implementing the national and local management plan (concerning fish capture).

The directorial decree for sea fisheries and aquaculture established 8 management national plan for the trawling fleets, which regulates the activity and aims at the reduction of the fleets. Its aims are the recovery of fish stocks within biological limits by 2020 and the reduction of fishing capacity, implemented through a vessel decommissioning. The plan, for the years 2018-2020, provides for a reduction of fishing days. At regional level, there has been adopted numerous provisions.

Moreover, Regional law No 7, 3 January 2005, contains some provisions related to the management of fish stocks and regulation of inland fishing. The activity of inland fishing has to respect the preservation of the ecosystem. It is also adopted a regional plan for inland fishing and the competent authority which approved the plan is the regional council (there are a lot of detailed provisions related to the plan). The Region is the competent authority for the preparation and the monitoring of the plan and she cooperates with ARPAT and shall also cooperate with research institutes and the university. It has also been adopted the Regulation No 6/R, 7 February 2018, which implements the law No 7/2005. There are some provisions related to the fishing periods (article 5) or to the catch limits (article 6).

Measures	Competent authority
<p>Establish no take zones for fishery over areas of underwater habitat restoration (i.e. artificial reefs).</p> <p>Promote fishing tourism within the small-scale fishery sector.</p>	<p>European level</p> <p>General Fisheries Commission for the Mediterranean (GFCM)- the mandate of the GFCM is to ensure the sustainability of fisheries activities through the adoption of adequate management measures. The Commission may adopt some recommendations for the conservation of the marine resources and the management of the fishery and plays an important governance role on the fisheries policy in the region.</p> <p>The Regulation CE No 199/2008 establish a community framework for the collection, the management and the use of data collected related to the common fisheries policy. The Commission, with the decision No 93/2010, adopts a community programme for the collection, the management and the use of the data collected. The national programme contains the procedures and the methods which have to be used for the collection and the</p>



analysis of the data.

National level

Ministry of Agriculture, Forestry and tourism.
Department of the competition policies and the food quality and fishery and, more specifically, the Directorate-General for fisheries and aquaculture.

Fishery district of the North Adriatic.

Port Authorities (bodies closely linked to the Ministry for infrastructures and transport) play an important role in the management of the fisheries sector.
It is important to have a dialogue with the Region and the port authorities, in order to collaborate with each other.

Central advisory committee on fisheries and aquaculture, composed by some members in order to pursue the administrative functions.

Control activities

Ministry of Agriculture and Forestry- Directorate General of sea fishing and aquaculture (it is the competent authority in accordance with the article 5, paragraph 5 of the Regulation EC No 1224/2009, which coordinates the control activities).

Advisory Committee for fisheries and aquaculture (Legislative decree No 154/2004, article 3).

Local advisory committee for fisheries and aquaculture. (Provisions related to the skills, the mode of operation and composition of the committee and).

Collection of data in the fisheries sector: the Regulation No 508/2014 establishes a national data collection programme on fishery-

Central advisory committees for fisheries and aquaculture. The Commission gives his opinion on the decrees of the Ministry of Agriculture and Forestry.

Local advisory committees for fisheries and aquaculture. The Regions establish the committees by regulating its skills, mode of operation and composition and by providing the connection with the port authorities.

The legislative decree No 226/2001, at article 4, establishes the district of fishery, that targets the rational use of the biological resources.

The decision of the ministry of agriculture and Forestry 23 February 2010 establishes the district of the North Adriatic (subzone 17), which includes the Region of Friuli Venezia Giulia, Veneto and Emilia-Romagna. It promotes the collaboration between the companies and the producers in the fisheries sector for the development of the common actions that have to be taken in this sector.

Tuscany competent authority

The Region and the municipalities are the competent authorities.

Regional agency for the environmental protection shall perform the activities as stated by article 13, Regional Law No 30/2009 (article 4, regional Law No 66/2005).

Regional advisory committee of fishery and aquaculture (article 9, regional Law No 66/2005). The committee shall give an opinion on the themes related to fishery and aquaculture, proposes some incentives for the fishery and aquaculture.

Law

International level

Convention on Fishing and Conservation of the Living Resource of the High Seas, 1958.

United Nations Convention on the Law of the Sea, Montego Bay, 1982



The United Nations Agreement for the implementation of the provisions of the United Nations Convention on the Law of the Sea, 10 December 1982.

The Agreement elaborates on the fundamental principle, established in the Convention, that States should cooperate to ensure conservation and promote the objective of the optimum utilization of fisheries resources both within and beyond the exclusive economic zone.

It promotes the effective management and conservation of high seas resources by establishing, among other things, detailed minimum international standards for the conservation and management of straddling fish stocks and highly migratory fish stocks; ensuring that measures taken for the conservation and management of those stocks in areas under national jurisdiction and in the adjacent high seas are compatible and coherent (...).

Code of Conduct for Responsible Fisheries, which establishes and criteria for the elaboration and implementation of national policies for responsible conservation of fisheries resources and fisheries management and development.

Reykjavik Declaration on Responsible Fisheries in the Marine Ecosystem, 2001. Point 2: There is a clear need to introduce immediately effective management plans with incentives that encourage responsible fisheries and sustainable use of marine ecosystems, including mechanisms for reducing excessive fishing efforts to sustainable levels.

(d) improve the monitoring of by-catch and discards in all fisheries to obtain better knowledge of the amount of fish actually taken; (e) support research and technology developments of fishing gear and practices to improve gear selectivity and reduce adverse impacts of fishing practices on habitat and biological diversity.

ICZM Protocol, it is the seventh Protocol in the framework of the Barcelona Convention, signed in Madrid on 21 January 2008.

Article 9, concerning economic activities, provides that “the parties agree (b) Fishing: (i) to take into account the need to protect fishing areas in development projects; (ii) to ensure that fishing practices are compatible with sustainable use of natural marine resources”.

Rio Document+(2012), The future we want, point 83. We note that despite agreement to restore global fish stocks to sustainable levels by 2015, many stocks continue to be depleted unsustainably. We call upon States to re-commit to maintaining or restoring depleted fish stocks to sustainable levels and to further commit to implementing science-based management plans to rebuild stocks by 2015.

Point 84. We urge countries to combat illegal, unreported and unregulated (IUU) fishing by adopting and implementing effective tools, in accordance with international law. We note the agreement on port state measures to prevent, deter and eliminate illegal, unreported and unregulated fishing approved by FAO in 2009 and urge States that have not yet acceded to the agreement to do so.

European level

The common fisheries policy (articles 38 and 44, Title III, TFEU).

The Common Fisheries Policy (CFP) is exclusive EU competence. A good example of integrated management of marine space across sectoral policies is the decision (based on Article 9 of the Basic Regulation of the CFP, Regulation (EC) No 2371/2002, adopted by the Commission at the request of the Dutch government to protect a habitat on the Dutch North Sea Cost (Voordelta area). Given the interaction of fisheries with the ecosystem and the mobility of fish stocks, sustainable management of fisheries in EU waters would benefit from coherent MSP.

COM (2001)0162 final - Biodiversity Action Plan for Fisheries, point 4: Action plan with respect to capture fisheries.

Action I. Overall reduction in fishing pressure to promote conservation and sustainable use of commercially important fish stocks

Action II. Technical measures with the objective of improving the conservation and sustainable use of commercially exploited fish stocks.

Action III. Technical measures with the objective to reduce impact on non-target species and habitat

Action IV. Research priorities to secure traditional support for the CFP.

Action V. Research to provide enhanced knowledge related to biodiversity.

Council Regulation (EC) No 1967/2006 concerning management measures for the sustainable exploitation of fishery resources in the Mediterranean Sea.

The use of certain types of gear is prohibited in leisure fisheries (ie Chapter IV, Restrictions concerning fishing gears).

Article 19 - Management plans for certain fisheries in territorial waters. 1. Member States shall adopt, by 31 December 2007, management plans for fisheries conducted by trawl nets, boat seines, shore seines, surrounding nets and dredges within their territorial waters. 4. Management plans may include measures which go beyond the provisions of this Regulation for the purpose of: a) increasing the selectivity of fishing gear; b) reducing discards; c) limiting fishing effort. 5. The measures to be included in the management plans shall be proportionate to the objectives, the targets and the expected time frame, and shall have regard to: a) the conservation status of the stock or stocks; b) the biological characteristics of the stock or stocks; c) the characteristics of the fisheries in which the stocks are caught, d) the economic impact of measures on the fisheries concerned.

Council Regulation (EC) No 1198/2006 of 27 July 2006 on the European Fisheries Fund. Article 37, letter (m) improve



management and control of access conditions to fishing areas, in particular through the drawing up of local management plans approved by the competent national authorities. – **replaced by Regulation (EU) No 508/2014.**

Council Regulation (EC) No 1100/2007 of 18 September 2007, establishing measures for the recovery of the stock of European eel.

COM(2009)163 final, Green Paper, Reform of the Common Fisheries Policy. The Commission has announced a Communication on a strategy for the sustainable development of European aquaculture. Increasing competition for marine and coastal space, and quality of water are the main challenges for the development of aquaculture. MSP can provide guidance and reliable data for the location of activities.

COM(2009) 466 final, Communication from the Commission to the Council and the European Parliament, Towards an Integrated Maritime Policy for better governance in the Mediterranean.

Council Regulation (EC) No 1224/2009, establishing a community control system for ensuring compliance with the rules of the common fisheries policy.

COM(2011)417 final, Reform of the common fisheries policy.

Commission implementing regulation (EU) No 404/2011 of 8 April 2011, laying down detailed rules for the implementation of Council Regulation (EC) No 1224/2009. This Regulation lays down detailed rules for the application of the control system of the European Union as established by the Control Regulation.

COM(2011) 571 final- Roadmap to a Resource Efficient Europe. Milestone: By 2020, good environmental status of all EU marine waters is achieved, and by 2015 fishing is within maximum sustainable yields.

The Commission will: a) within the context of the latest Commission proposals for the reform of the Common Fisheries Policy, aim to ensure sustainable management of fishery resources; b) make further proposals to phase out all fisheries subsidies that could be environmentally harmful; c) contribute to safeguarding natural coastal and marine capital by proposing policy measures on management and planning (in 2012) as well as continued support for knowledge and demonstration projects (...).

Regulation (EU) No 1303/2013 of the European Parliament and of the Council laying down common provisions on (...) the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund.

Regulation (EU) No 1380/2013 of the European Parliament and of the Council on the Common Fisheries Policy.

The CFP shall cover "the conservation of marine biological resources and the management of fisheries and fleets exploiting such resources (...)"

Art. 2, Objectives: the CFP shall apply the precautionary approach to fisheries management (...).

In order to reach the objective of progressively restoring and maintaining populations of fish stocks above biomass levels capable of productizing maximum sustainable yield, the maximum sustainable yield exploitation rate shall be achieved by 2015 where possible and, on progressive, incremental basis at the latest by 2020 for all stocks.

Article 20- Member State measures within the 12 nautical mile zone. Paragraph 1. A Member State may take non-discriminatory measures for the conservation and management of fish stocks and the maintenance or improvement of the conservation status of marine ecosystems within 12 nautical miles of its baselines provided that the Union has not adopted measures addressing conservation and management specifically for that area or specifically addressing the problem identified by the Member State concerned. The Member State measures shall be compatible with the objectives set out in Article 2 and shall be at least as stringent as measures under Union law.

Part IV- Management of fishing capacity.

Member States, in order to preserve the ecosystem, shall/may adopt measures aimed at the conservation/conservation measures, by the territorial sea, with limitations or bans concerning the fishery activity, for certain zones or periods. So, the measures we want to propose, may be supported by this provision.

Regulation (EU) No 508/2014 of the European Parliament and of the Council on the European Maritime and Fisheries Fund and repealing Council Regulations (EC) No 2328/2003, (EC) No 861/2006, (EC) No 1198/2006 and (EC) No 791/2007 and Regulation (EU) No 1255/2011 of the European Parliament and of the Council.

Article 1: This regulation defines Union financial measures for the implementation of: a) the Common Fisheries Policy (CFP); b) relevant measures relating to the Law of the Sea; c) the sustainable development of fisheries and aquaculture areas and inland fishing; and d) the Integrated Maritime Policy (IMP).

Article 6: The EMFF shall contribute to the Europe 2020 strategy and to the implementation of CFP. It shall pursue the following Union priorities for the sustainable development of fisheries and aquaculture and related activities, which reflect the relevant thematic objectives referred to in Regulation (EU) No 1303/2013.

Article 18- Content of the operational programme. The operational programme shall include: Letter (i) in Member States where over 1000 vessels can be considered small-scale coastal fishing vessels, an action plan for the development, competitiveness and sustainability of small-scale coastal fishing.

Regulation (EU) 2015/2102 of 28 October 2015, amending Regulation (EU) No 1343/2011 on certain provisions for fishing in the GFCM (General Fisheries Commission for the Mediterranean) Agreement area.

Chapter V: Reduction of the impact of fishing activities on certain marine species. Incidental catches of seabirds in fishing gears, Incidental catches of sea turtles in fishing gears, Incidental catches of monk seals (*Monachus monachus*). Chapter VI: Measures



for fisheries for small pelagic stocks in the Adriatic Sea.

Regulation (EU) 2017/1004, of the European Parliament and of the Council, on the establishment of a Union framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the common fisheries policy and repealing Council Regulation (EC) No 199/2008.

Article 1: With a view of contributing to the objectives of the common fisheries policy set out in article 2 of Regulation (EU) No 1380/2013, this Regulation establishes rules on the collection, management and use of biological, environmental, technical and socioeconomic data in fisheries sector as provided for in article 25 of Regulation (EU) No 1380/2013.

Commission delegated regulation (EU) 2017/86 of 20 October 2016, establishing a discard plan for certain demersal fisheries in the Mediterranean Sea. Article 1: The landing obligation provided for in Article 15(1) of Regulation (EU) No 1380/2013 shall apply in the Mediterranean Sea to the fisheries as set out in the Annex to this Regulation.

National level

Law No 963, 14 July 1965, Provisions related to the sea fishery (repealed almost entirely by Legislative Decree No 153 and No 154/2004).

Presidential Decree No 1639, 2 October 1968, Regulation implementing law No 963/1965, Chapter IV, which provides the possibility to prohibit fishery of certain species in some areas concerned (over-exploitation).

Ministerial Decree 16 March 2004, Establishment of a biological protected area known as "Area fuori Ravenna".

Legislative Decree No 226, 18 May 2001, Modernization of fisheries and aquaculture sectors, in accordance with the article 7 law 5 March 2001, No 57

Article 1 - General Principles - Policies related to fishery and aquaculture look to the principles of a) sustainability and responsibility towards the environment and the consumers b) promote the use of techniques that ensure a proper, of quality and environmental friendly productions c) promotion of the employment opportunities d) promote the use of certain concertation instruments between the state, regions, trade associations and the trade union associations.

Legislative Decree No 153, 26 May 2004, implementation of law 7 March 2003, No 38, in the sea fisheries sector. Article 1: the rationalisation of fishery is based on the principles of sustainable development and responsible fishing, in coordination with the economic activities and the protection of the ecosystem.

Legislative Decree No 154, 26 May 2004, modernization of fishery and aquaculture sector.

National strategy for biodiversity (2011-2020), adopted by the Ministry of Environment, Land and Sea.

Directorial Decree 20 May 2011, (general director of sea fishing and aquaculture), which establish 8 trawl fishing management plan and which provides the regulation of the activity, through space and time, and the reduction of the fleet. Its aim is to help to reduce fishing pressure (in terms to capacity and activity) in order to allow the recovery of fish stocks and to encourage the use of more environmentally-friendly equipment and practices in fishing. It is also important to make the procedures for and the intensity of fishing compatible with the potential for biological renewability.

Main objectives: a) conservation and recovery of fish stocks; b) improvement of the economic conditions in the fisheries sector; c) maximization of fishing opportunities.

Ministerial Decree, 24 January 2012, adopted by the Ministry for Agriculture and Forestry policy- adaptation of the European provision concerning fishing licence.

Legislative Decree No 4, 9 January 2012, measures for the reorganization of fishery and aquaculture sector, in order to implement regulation (EC) No 1198/2006 and regulation (EC) No 1005/2008.

Article 10- Administrative offense: In order to protect biological resources and to prevent and discourage illegal fishing, it's forbidden: to fish in areas prohibited by European and national legislation, to hold, transport and trade in areas and prohibited by European and national legislation, to fish quantity exceeding that laid down in European and national legislation. Article 22, paragraph III, identifies the parties responsible for the monitoring activities, which are the port authorities, the financial police, the central and peripheral maritime authorities.

Ministerial Decree, 11 February 2015, adopted by the Ministry of Environment, Land and Sea, Determination of the indicators related to the environmental targets and the monitoring programmes, issued pursuant to article 10, paragraph 1 and article 11, paragraph 1, of the legislative decree No 190/2010. Programme 3- Fishery.

Ministerial Decree 7 December 2016, adopted by the Ministry for Agriculture and Forestry policy- Provisions related to the small-scale fishing and the small-scale artisanal fishing.



New: Draft law No 2914/2017 (Measures for the simplification and the reorganization of the fishing sector.

Three-year national fisheries and aquaculture programme (2017-2019). It is the only policy instrument for the aquatic policies. Point 5: objectives and instruments: sustainable development of fisheries. Reduction of fleet capacities, containment of fish capture, implementation of technical measures laid down in Regulation (EC) No 1967/2006, implementation of national and local management plan (concerning fish capture).

European Maritime and Fisheries Fund-Operational Programme for Italy (FEAMP), Point No 2: To promote sustainable fisheries, to protect the environment and to ensure resource-efficient.

National management plan, concerning fishing fleets (GSA 17 (Central and northern Adriatic Sea) and GSA 18 (Southern Adriatic Sea); recovery of fish stocks within biological limits by 2020 and reduction of fishing capacity. Management plan for GSA 17 and 28 areas: reduction of fishing capacity, implemented through a vessel decommissioning. The plan, for the years 2018-2020, provides for a reduction of fishing days.

Action programme: the objectives for the sustainable development in Europe. 2030 Agenda and the report "Financing the future", No 53, February 2017. Objective 14: States commit themselves to the conservation and sustainable use of oceans, seas and marine resources for a sustainable development.

Point 14.6 - By 2020, the fisheries subsidies, which contribute to increase the fishing effort in areas where there is a manifest danger of overfishing and the subsidies which contribute to an illegal, uncontrolled and unregulated fishing should be banned.

Tuscany

Regional Law No 7, 3 January 2005, Management of fish stocks and regulation of inland fishing.

Article 1 provides that the activities have to respect the preservation of ecosystems.

Article 8 provides the adoption of a regional plan for inland fishing. The regional council approves the regional plan (there are a lot of detailed provisions related to the plan). The Region is the competent authority for the preparation and the monitoring of the plan and the Region cooperates with ARPAT and with the research institutes and the university.

Regulation No 6/R, 7 February 2018, Implementing regulation of Law No 7/2005,

Art. 5 - Fishing periods (article 21, paragraph 1, letter b) Regional Law No 7/2005). Article 6 - Catch limits (article 21, paragraph 1, letter c) Regional Law No 7/2005).

Law No 66, 7 December 2005, Provisions related to sea fishing, professional fishing and to aquaculture.

Article 1: Promotion of the support and valorization of stock fish. The policies are based to the principles of sustainability, development, responsibility towards the environment and the consumers.

Article 3: Municipalities- The municipalities shall perform the functions with regard to fishing tourism and sea aquaculture.

Article 7: Measures aimed at the supporting of professional fishing and aquaculture.

Regional agricultural plan (PRAF) (adopted on the basis of Regional Law No 1/2006, article 2)-official guidelines. The actions are in line with the strategy and the objectives affirmed by the national planning and by the national biological strategic plan (PSN)

Point 2.6 - To improve the fishing governance - The objective is to involve all the stakeholders in order to modernize the management system with the support of the representative organisations.

Regional development programme, established by Law No 1, 7 January 2015.

Regional economic and financial document, related to financial incentives.

Article 5-ter: The regional government may establish: temporary limitation of fishing activities for certain areas; temporary mode to use the different types of fishing gears; delimitation of the marine areas and inland areas in which it is possible to carry out aquaculture activities.

Regional development programme 2016-2020, adopted by resolution No 47, 15 March 2017.

Fishing tourism

Regional Law No 66/2005- Article 17-bis- Pursuit of the activity of fishing tourism.

Coastal management

The importance of the management of the marine coastal resource has been affirmed by international, European and national legislation. Coastal defence and the contrast erosion represent a crucial aspect. Coastal resource and coastal environment are being degraded and eroded over the years at it is important to adopt some measures in order to establish a situation of governance or integrated management of the coastline.

The need to intervene in this coastal area has been affirmed by international legislation. Agenda 21, at Chapter 17, provides that *"each coastal state should consider establishing appropriate coordinating mechanisms for integrated*



management and sustainable development of coastal and marine areas and their resources". The Rio+ Document (2012) highlight the importance to protect and manage coastal area. Regional environmental marine organizations and agreements like the Helsinki Convention, OSPAR and Barcelona Convention are developing different networks of marine protected areas.

The EU also gives importance to coastal erosion and the protection of the coastal zone. The EU action aimed at promoting integrated coastal zone by using European tools and programmes, and by proposing to Member State a collaborative approach for the coastal planning and management (COM(2000)547 final). The Integrated Coastal Zone Management (ICZM) (it is an European programme) aimed at the promotion of sustainable growth of maritime and coastal activities and the sustainable use of coastal and marine resources. The ICZM also allows the Mediterranean countries to better manage and protect their coastal zones, as well as to deal with the emerging coastal environmental challenges (art. 6- General principles of integrated coastal zone management, article 8- Protection and sustainable use of coastal zone, article 23- Coastal erosion).

The EU wants Member States to take a strategic approach to the management of their coastal zones, which is based on some measures, such as the protection of the coastal environment, or sustainable economic opportunities and employment options (Recommendation No 413/2002, concerning the implementation of Integrated Coastal Zone Management in Europe). By the financial side, Directive 2011/92/EU, on the assessment of the effects of certain public and private projects on the environment, at annex II, shall consider the infrastructure projects referring to *"(k) coastal work to combat erosion and maritime works capable of altering the coast through the construction, for example, of dykes, moles, jetties and other sea defence works, excluding the maintenance and reconstruction of such works"*. The EU claims also that it is necessary to have a coherent and complementary approach in the identification process of Natura 2000 sites and other networks of marine protected areas that would be a favourable measure for the enhancing of a global coherence of the network.

The national legislation, with the legislative decree No 112/1998, at article 89, provides that "all measures related to the programming, planning, and the integrated management of the coastal area and defense are assigned to the regions and the local authorities. This provision was reaffirmed in the law No 179/2002, which, at article 21 (measures aimed at the protection of the coastline), assigned the coastal competence to the Regions. Italy approved also the national guidelines for the defense of the coast from erosion and coastal erosion. There are some dispositions related to the assessment of coastal erosions, to the analysis of coastal erosion, measures aimed at coastal defence, taking into consideration the economic and environmental aspects.

Tuscany regional law No 88/1998, at article 17, provides that the Region performs administrative functions, planning, control and supervision which are not reserved to the State or to other entities other than Region, and, in particular functions related to the protection and the observation of coastal areas. Regional Law No 22/2015 also reaffirms the Regional competence on the coastal area. The region has to plan the adoption of some measures for the recovery and the rebalancing of the coastline. Tuscany adopts the working document for the recovery and the rebalancing of the coastline, which has been approved by decision No 624/2018, which is the regional planning of the interventions aimed at the recovery and the rebalancing of the coastline. The Region deals also with the monitoring of the realization, maintenance and management of coastal interventions. Tuscany has also adopted a strategic plan for the coastal development (2016-2020), which contains some objectives that have to be reached, such as environmental rehabilitation of productive areas and intervention aimed at the mitigation of the human activities, measures aimed at the protection of coastal environmental balance, and measures related to energy efficiency and to promotion of renewable energy. It is important to guarantee the development of the multiple uses of the coast and the actions to achieve some of these goals are largely included in the Flood Management Plan. Most recently (august 2018) it has been initiated the procedure for the creation of the National observatory of coastal erosion. It is essential to guarantee the development of the uses of the coast, which is in close connection with the other activities that are carried out in the area, such as aquaculture, tourism, small-scale fishery.

In the light of the above, the measures that have been identified during the report may be discussed with the Region, which is the competent authority for the protection and the observation of coastal areas. Region may, for example, consider do adopt measures aimed at the promotion of the awareness among stakeholders and citizens on key points for sustainable management and development of the coastal area. Furthermore, it is necessary to take into account the other activities that are carried out in the coastal area, such as tourism, aquaculture and energy. It is important to highlight that all these sectors are interconnected and that it is necessary an integrated approach in this sense. For example, the promotion of sustainable coastal ecotourism is closely linked to coastal management, which has to be integrated with local traditions and ecosystems. It is obvious that it is necessary to adopt some measures in order to maintain or restore the natural capacity of the coast to adapt to changes, including those caused by the rise in the sea levels (international, European, national and regional provisions are clear and unequivocal in providing this).

All the measures identified during the report, in the light of the specificities of the area, must be necessarily considered in a framework of ICZM-MSP and, in particular, in the new draft of the MSP plan. This is required because the measures have clearly defined marine declinations, they are a fundamental part of the future vision for the area and they highlight a series of land-sea interactions, which must be addressed within the plan.



Measures	Competent authority
<p>Promote awareness among stakeholders and citizens on key points for sustainable management and development of the coastal area (e.g. awareness on the key role of seagrass meadows to mitigate coastal erosion).</p> <p>Tuscany- Assess sea-based input of contaminants from marine traffic (e.g. pollutants from gasoline consumption)</p>	<p>The Basin authority has been established by the legislative decree No 152/2006, article 63 and aims at the protection and the arrangement of the sea shores.</p> <p>ISPRA has been established by the law No 133, 6 August 2008, and it is a research entity.</p> <p>In August 2018 it has been launched the procedure for the creation of the national observatory for coastal erosion. Its objectives are the coastal defence from the different activities carried out in the zone (such as tourism, fishery, aquaculture, etc.) and the objective will be the basis for the elaboration of the coastal defense plan, which has to be homogenous in all the national territory and has to cover the whole territory. The plans will regulate the use of the coastal zone and will identify the measures to be taken.</p> <p>Special attention will be paid to the provisions regulating the use of sediments into watercourses and the coastal zone.</p> <p>Tuscany</p> <p>ARPAT is the competent authority for the monitoring of coastal and marine waters, in collaboration with the Region.</p>
Law	
<p>International level</p> <p>Montego Bay Convention, article 194- Measures to prevent, reduce and control pollution of the marine environment. 5. The measures taken in accordance with this Part shall include those necessary to protect and preserve rare or fragile ecosystems as well as the habitat of depleted, threatened or endangered species and other forms of marine life.</p> <p>The Recommendation on Integrated Coastal Zone Management, adopted by the OECD Council on 23 July 1992.</p> <p>Code of conduct for responsible fisheries (FAO, 1995), more specifically article 10-Integration of fisheries into coastal area management.</p> <p>European Code of Conduct for coastal zones, 1998.</p> <p>Agenda 21, Chapter 17 (1992). Agenda 21 is the programme of action adopted at the 1992 Earth Summit in Rio de Janeiro.</p> <p>Firstly it made clear that the management of the marine coastal resources has not always proved capable of achieving sustainable development and that coastal resources and the coastal environment are being rapidly degraded and eroded; secondly, it suggested an approach for establishing a situation of governance or integrated management. It provided that each coastal state should consider establishing appropriate coordinating mechanisms for integrated management and sustainable development of coastal and marine areas and their resources.</p> <p>Documento Rio+ 2012. The future we want - Point 72. Cities: We commit to promote an integrated and holistic approach to planning and building sustainable cities through support to local authorities, efficient transportation and communication networks; point 78. Oceans and Seas, SIDS; point 81. We call on countries to advance implementation of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities, including further capacity-building and mobilization of resources for investment in treatment of human wastes and waste water and to develop a global action plan to combat marine litter and pollution.</p> <p>Protocol on Integrated Coastal Zone Management (ICZM), signed in Madrid, on 21 January 2008. The ICZM Protocol is the seventh Protocol in the framework of the Barcelona Convention and represents a crucial milestone in the history of MAP. The Protocol on Integrated Coastal Zone Management will allow the Mediterranean countries to better manage and protect their coastal zones, as well as to deal with the emerging coastal environmental challenges.</p> <p>Article 6- General principles of integrated coastal zone management - In implementing this Protocol, the Parties shall be guided by the following principles of integrated coastal zone management (...) (c) The ecosystems approach to coastal planning and management shall be applied so as to ensure the sustainable development of coastal zones.; (f) The formulation of land use strategies, plans and programmes covering urban development and socio-economic activities, as well as other relevant sectoral policies, shall be required; (i) Preliminary assessments shall be made of the risks associated with the various human activities and infrastructure so as to prevent and reduce their negative impact on coastal zones; (j) Damage to the coastal environment shall be prevented and, where it occurs, appropriate restoration shall be effected.</p>	



Article 8: Protection and sustainable use of coastal zone

Article 23 - Coastal Erosion - 1. In conformity with the objectives and principles set out in Articles 5 and 6 of this Protocol, the Parties, with a view to preventing and mitigating the negative impact of coastal erosion more effectively, undertake to adopt the necessary measures to maintain or restore the natural capacity of the coast to adapt to changes, including those caused by the rise in sea levels.

2. The Parties, when considering new activities and works located in the coastal zone including marine structures and coastal defence works, shall take particular account of their negative effects on coastal erosion and the direct and indirect costs that may result. In respect of existing activities and structures, the Parties should adopt measures to minimize their effects on coastal erosion.

3. The Parties shall endeavour to anticipate the impacts of coastal erosion through the integrated management of activities, including adoption of special measures for coastal sediments and coastal works.

Coastal Area Management Programme (CAMP) is oriented at the implementation of practical coastal management projects in selected Mediterranean coastal areas, applying Integrated Coastal Zone Management (ICZM) as a major tool.

Bologna Charter 2012 aimed at the strengthening of the role of the coastal Administrations in the context of European policies and initiatives at the Mediterranean scale-coastal protection, integrated management and adaptation to climate change.

European level

COM(2000)547 final, On integrated coastal zone management: a strategy for Europe, EU Strategy for ICZM.

European programme aimed at promoting integrated coastal zone by using European tools and programmes, and by proposing to Member State a collaborative approach for the coastal planning and management.

Recommendation 413 of 30 May 2002, concerning the implementation of Integrated Coastal Zone Management in Europe.

Chapter 1-Member States take a strategic approach to the management of their coastal zones, based on: (a) protection of the coastal environment, based on an ecosystem approach preserving its integrity and functioning, and sustainable management of the natural resources of both the marine and terrestrial components of the coastal zone; (b) recognition of the threat to coastal zones posed by climate change and of the dangers entailed by the rise in sea level and the increasing frequency and violence of storms; (c) appropriate and ecologically responsible coastal protection measures, including protection of coastal settlements and their cultural heritage; (d) sustainable economic opportunities and employment options (...).

COM(2007) 308 final, Report to the European Parliament and the Council: An evaluation of Integrated Coastal Zone Management (ICZM) in Europe. The current EU ICZM Recommendation remains valid to support the implementation of the national strategies and to further ICZM along Europe's coast.

Directive 2008/56/EC establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive). Point 12- Coastal waters, including their seabed and subsoil, are an integral part of the marine environment, and as such should also be covered by this Directive, in so far as particular aspects of the environmental status of the marine environment are not already addressed through Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy ⁽²⁾ or other Community legislation, so as to ensure complementarity while avoiding unnecessary overlaps. By reason of the transboundary nature of the marine environment, Member States should cooperate to ensure the coordinated development of marine strategies for each marine region or subregion.

Directive 2011/92/EU, on the assessment of the effects of certain public and private projects on the environment (codification).

Annex II- Projects referred to in article 4(2) environmental impact assessment- Agriculture, silviculture and aquaculture- (g) Reclamation of land from the sea. Infrastructure projects- (k) Coastal work to combat erosion and maritime works capable of altering the coast through the construction, for example, of dykes, moles, jetties and other sea defence works, excluding the maintenance and reconstruction of such works.

National level

Law No 979, 31 December 1982, Provisions on sea defence, which introduced coastal plan. Article 1 provides that the plan "promotes and coordinates the activities concerning sea and coastal defence from the pollution and the environmental protection, according to planning criteria, with particular regard for the potential dangerous events and the measures which are necessary do reduce or limit the effect. The national plan is adopted in coordination with the regions.

Law No 431, 8 August 1985, the coastal area of the first 300 meters is under conservation (article 1, letter a).

The Legislative Decree No 112, 31 March 1998, gives the function of the coastal area to the regions and local authorities (more specifically, article 89, paragraph 1, letter h) programming, planning, and integrated management of the coastline). Article 70 provides that all the administrative tasks (related to the protection and monitoring of coastal areas) are given to



Regions and local authorities.

Law No 179/2002, Environmental provisions - Article 21 (Authorization for the adoption of measures aimed at the protection of the coastal zone) - The Region is the competent authority for the adoption of these coastal protection measures.

Legislative Decree No 42/2004, Code of the cultural and environmental heritage, which provides a coastal protected zone of 300 meters. The Regions, the MiBAC and the MELS may conclude some agreements for the elaboration of landscaping plans.

Legislative Decree No 152, 3 April 2006, Environmental rules, at article 56, paragraph 1, letter g) provides that the activities related to the terrestrial programming and planning have to include also the coastal protection, from erosion and from human activities, which may produce some negative impacts to the coast.

Article 56, letter d) provides that the “programming, the planning and the measures (...) aimed at the prevention of the territorial instability, included the erosion and the lowering of riverbeds and the coast”.

Annex IV, point 7: Obligation to perform a procedure called “screening” (the Region is the competent authority for doing so) for the coastal works intended to combat the coastal erosion and maritime works aimed at the coastal modification, by the construction of walls, piers and other sea defence works.

Legislative Decree No 49, 23 February 2010, implementing directive 2007/60/EC - Provisions related to the flood risk assessment and management, in order to reduce the negative consequences for the human health, the territory, the environment, the cultural heritage, the economic and social activities. The elaboration of the first flood risk management plans began in December 2015.

Law No 125/2015, article 7, paragraph 9-*septiesdecies*, provides that the Regions have to make a reconnaissance of their coastal zones, aimed also to a proposal for the revision of their maritime State property.

National guidelines for coastal defence from erosion and climate change, adopted on November 2016. There are some dispositions related to the assessment of coastal erosions, to the analysis of coastal erosion, measures aimed at coastal defence, taking into consideration the economic and environmental aspects.

Points: IV.1. Provision for the evaluation of the coastal erosion; IV.2. Identification of the measures aimed at the coastal management, taking in particular account the economic and environmental aspects.

Tuscany

Regional Law No 88, 1st December 1998, The local authorities are the competent authorities to perform the administrative duties related to the urban and spatial planning, the nature and environmental protection from pollution, waste management, soil protection, energy and public works. The provinces and the Municipalities are the competent authorities for the planning and the realization of the coastal defense works.

Article 17: The Region is the competent authority for the protection and the monitoring of the coastal zone.

Regional Law No 22, 3 march 2015, The tasks performed by the provinces in the field of the coastal defense are allocated again to the Regions.

Regional Law No 80, 28 December 2015, which states that the Region is the competent authority for the planning and the realization of the coastal defence works (more specifically, Chapter IV- Seacoast protection, article 17 gives a detailed list of the Region's competences and functions).

Article 18 - Regional programming of the coastal defense interventions. Operational paper for the recovery and the rebalancing of the coastline. Article 19- Monitoring activities (detailed description of the region's duties).

Decree of the regional government No 624/2018, Operational paper for the recovery and the rebalancing of the coastline. It is a regional programming tool for the measures aimed at the recovery of the coastal zone.

Strategic plan for coastal development 2016-2020. Point 3- Protection of the environmental quality and the natural resources in the coastal zone by the adoption of certain measures (aimed, for example, at the protection of the equilibrium of the coastal zones) and by promoting the sustainable use of resources.