

1. Environmental status related to the pool of existing pressures

In order to achieve the goal of a long-term sustainable development in the Adriatic–Ionian Region, MSP should guarantee that Good Environmental Status (GES), as defined in the Marine Strategy Framework Directive (MSFD), is maintained and that pressures and impacts of human activities on key environmental components of the marine ecosystem are correctly evaluated and managed.

In the framework of MSP, in order to correctly assess the pressures and impacts of the different planning options on the environmental status, specific information at adequate spatial and temporal resolution must be collected and used, in accordance with the spatial and temporal extension of the maritime space involved in the activity (e.g. from local mussel farming to large scale maritime transport).

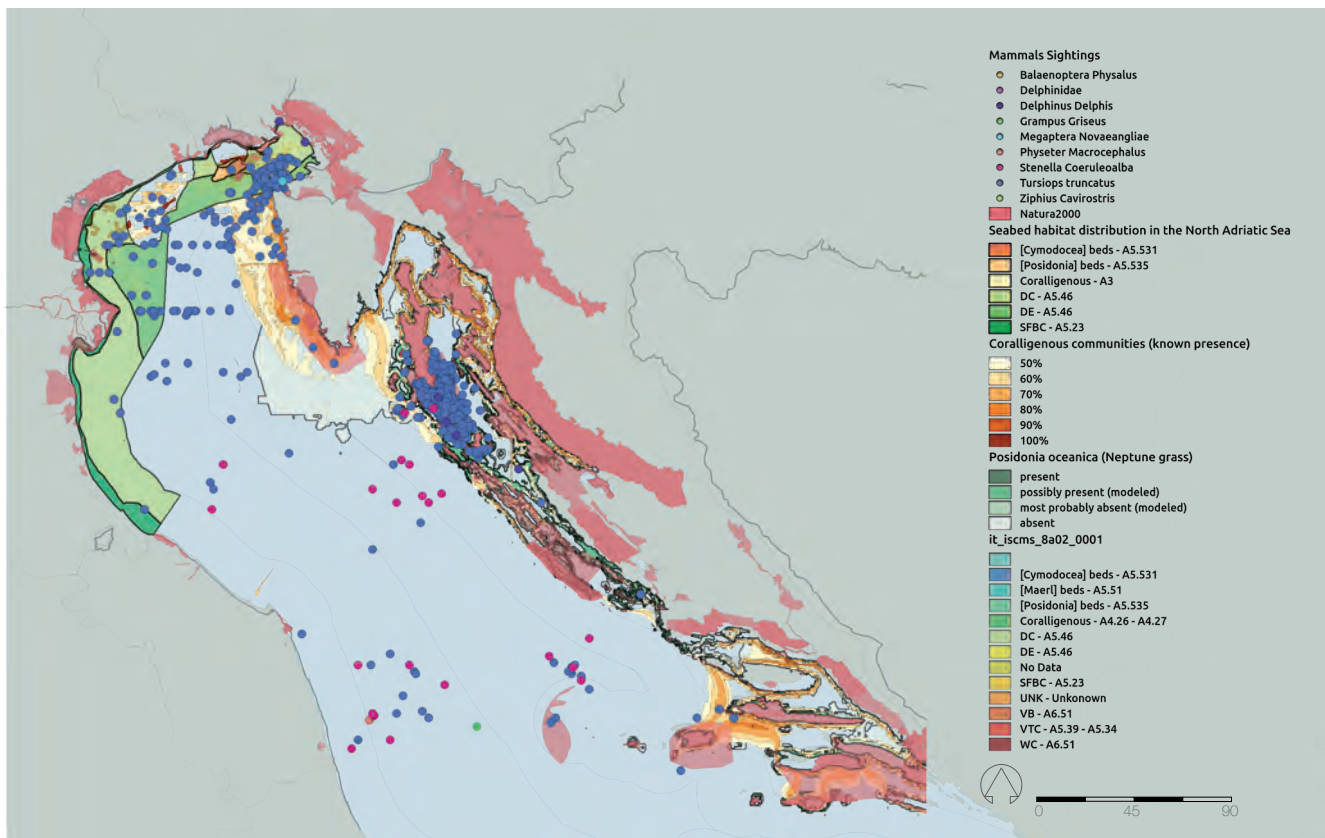
The intensity of pressures and impacts of maritime activities on the environment is tightly related to the specific environmental features involved, therefore, the specific physiographic, bathymetric, oceanographic and biological features of the basin are key elements to be considered in order to properly design and evaluate planning options.

The informative framework collected in the ADRIPLAN Initial Assessment (Mosetti and Lipizer, 2014) indicates that the Adriatic–Ionian Region presents a wide range of relevant environmental features. The Region is characterised by:

- High biodiversity and presence of many species and habitats requiring special conservation and management measures (eg. *Posidonia oceanica* meadows, coralligenous habitats, nesting sites of marine reptiles, habitats of several endangered marine mammals,...);
- High risk of introduction of non-indigenous species (NIS);
- Presence of nursery and spawning areas of fish of high socio-economic and environmental relevance;
- Over-exploitation of several commercially relevant fish stocks;
- High vulnerability of food web integrity;
- The sea floor hosts several habitats of high ecological and economical relevance (rocky coralligenous habitats, biogenic hard substrates);
- Hot spots of contamination from hazardous substances (several Sites of National Concern – SIN (Siti di Interesse Nazionale), along the Italian coast), together with high risk of contamination caused by ship accidents due to high traffic intensity;
- Increasing trend in marine litter;
- Probable high level of underwater noise;
- High vulnerability to sea level rise and global climate change;
- Seismic hazard.

Considering in particular the **Focus Area 1**, the main environmental issues concern:

- Hot spot of biodiversity and of endemism, especially of fish species;
- Presence of sensitive benthic habitats crucial for biodiversity conservation along the Veneto and Friuli Venezia Giulia, of lagoons and critical environments that are classified of primary importance

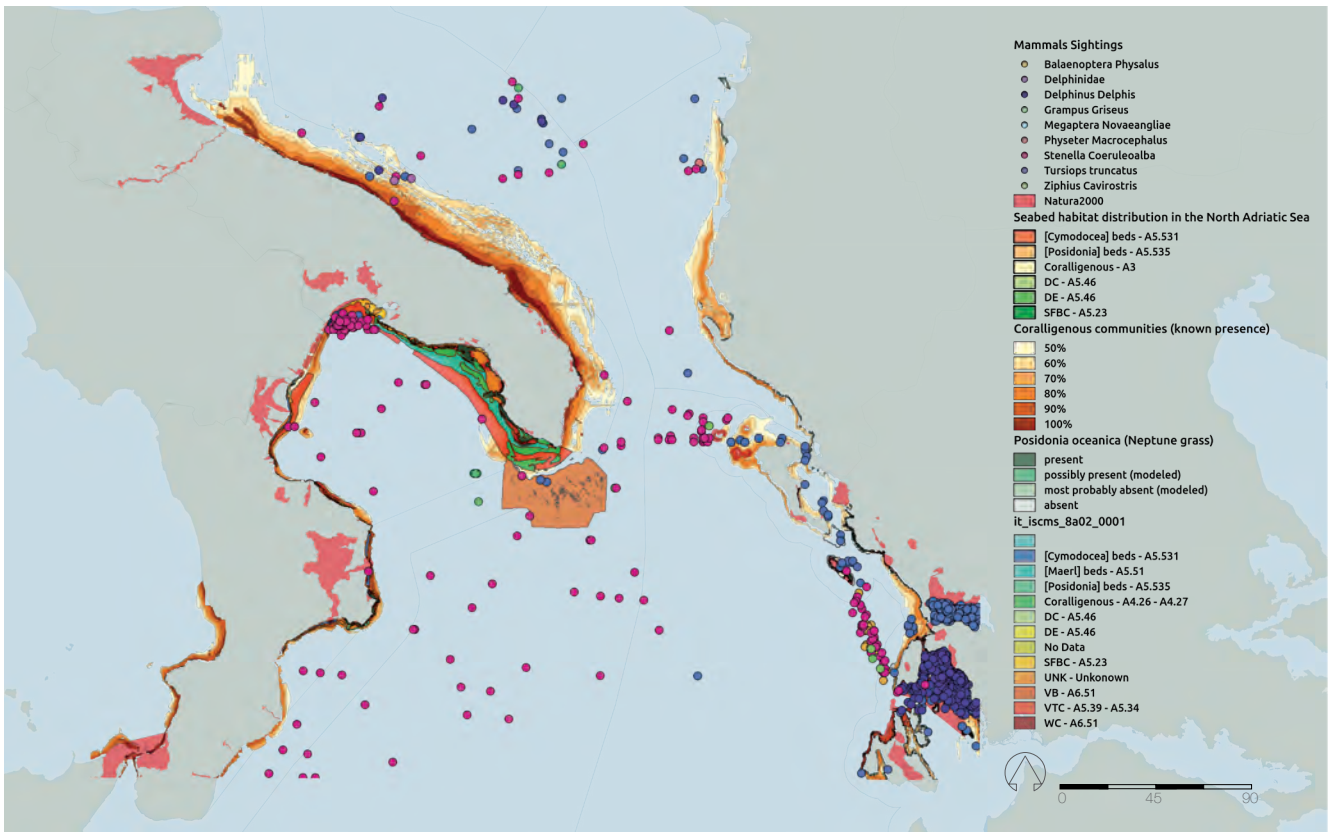


5. Distribution of species and habitats requiring special conservation and management measures in FA1.

- according to the Habitats Directive (92/43/EEC) and that provide valuable ecosystem services (Figure 5);
- Several peculiar submarine rock outcrops located in patchy features in all the northern shallow Adriatic sea hosting hotspots of biodiversity;
 - Particularly high risk of introduction of non-indigenous species due to the intense activities in the North Adriatic ports;
 - High exploitation of fish and shellfish stocks;
 - Particularly high vulnerability of food web integrity due to cumulative impacts of several concentrated pressures (wide range of trophic conditions, hypoxia risk, overfishing, jellyfish increase, physical loss and damage);
 - Several localised areas at risk of eutrophication (Po River input and coastal lagoons);
 - Sea floor integrity threatened by several conflicting activities such as construction and maintenance of ports and other coastal developments, land claim, tourism, beach nourishment, oil and gas installations, cables and pipelines, aquaculture and artificial reefs; fish trawling;
 - Large degree of coastline artificialisation and high vulnerability to erosion and subsidence;
 - Confined areas at risk of contamination from hazardous substances.

The distinctive features of **Focus Area 2** include:

- Vital area for biodiversity, hosts critically endangered species and key populations of globally threatened species of marine mammals and reptiles, presence of some key priority habitats (Figure 6);



- Important migrating corridor for cetaceans, marine turtles and monk seals to and from the Adriatic Sea;
- Risk of introduction of non-indigenous species close to the main ports;
- Presence of anchovy nursery habitats;
- Confined areas at risk of eutrophication;
- Confined areas at risk of contamination from hazardous substances;
- Increase in marine litter and presence of military dumping areas;
- Presence of several Natura2000 sites and areas of special conservation.

6. Distribution of species and habitats requiring special conservation and management measures in FA2

2. Key uses, conflicts and potential synergies

The AIR is crowded by uses, with all typical marine and maritime uses concentrated in a relatively small area: transport of goods and passengers, fisheries, aquaculture, oil & gas, energy and communication cables, coastal tourism, military uses, sand extraction, cultural heritage, protected areas. The scenario at 2020 adds potentially new uses and/or shows the increase of present uses (e.g. wind farming, aquaculture, coastal and maritime tourism, maritime transport, oil & gas, etc.).

Most data related to those uses and their spatial distribution have been collected from different sources and are now available through the ADRIPLAN Data Portal.

A detailed analysis of their interaction in space has been carried out using and adapting the methodology developed by the FP7 project "COEXIST"

(Schultz et al., 2010), and particularly the spatially explicit version of the method (GRID – Gramolini et al., 2013).

15 different uses have been considered and their conflicts and synergies have been analysed based on 4 different criteria: position on water column (surface, water column, seafloor); activity domain (small, medium, large); activity temporal domain (short, medium, long/permanent); mobility (fixed or mobile). Conflict scores at 1 km² resolution have been calculated, together with associated statistics (for more details see Barbanti et al., 2015).

The map in Figure 7 shows the “number of overlapping uses” per each cell of analysis, as the sum of the scores of “coexistence score” of each pairs of maritime uses insisting on the same cell of analysis.

Coastal & Maritime Tourism vs Trawling and Trawling vs Small Scale Fishery are the combination of uses which occupy the greater number of cells, while Trawling is the use that in percentage contributes more to the final score (26%).

Synergies and conflicts between uses, as emerging from the analysis of coexistence and from the stakeholders participation process, together with their potential impacts on the ecosystems (e.g. specific evaluations and cumulative impacts analysis), are collected and analysed at once, to put in evidence emerging issues and demands for planning. Regarding interactions among existing and future maritime uses, these were identified on the base of indications provided within the planning process by technical and institutional partners, as well as by stakeholders.

Synthesis maps with spatial identification of main conflicts/synergies emerging through the previously performed analysis are elaborated. In the maps the following issues are reported and, if possible, spatially localised:

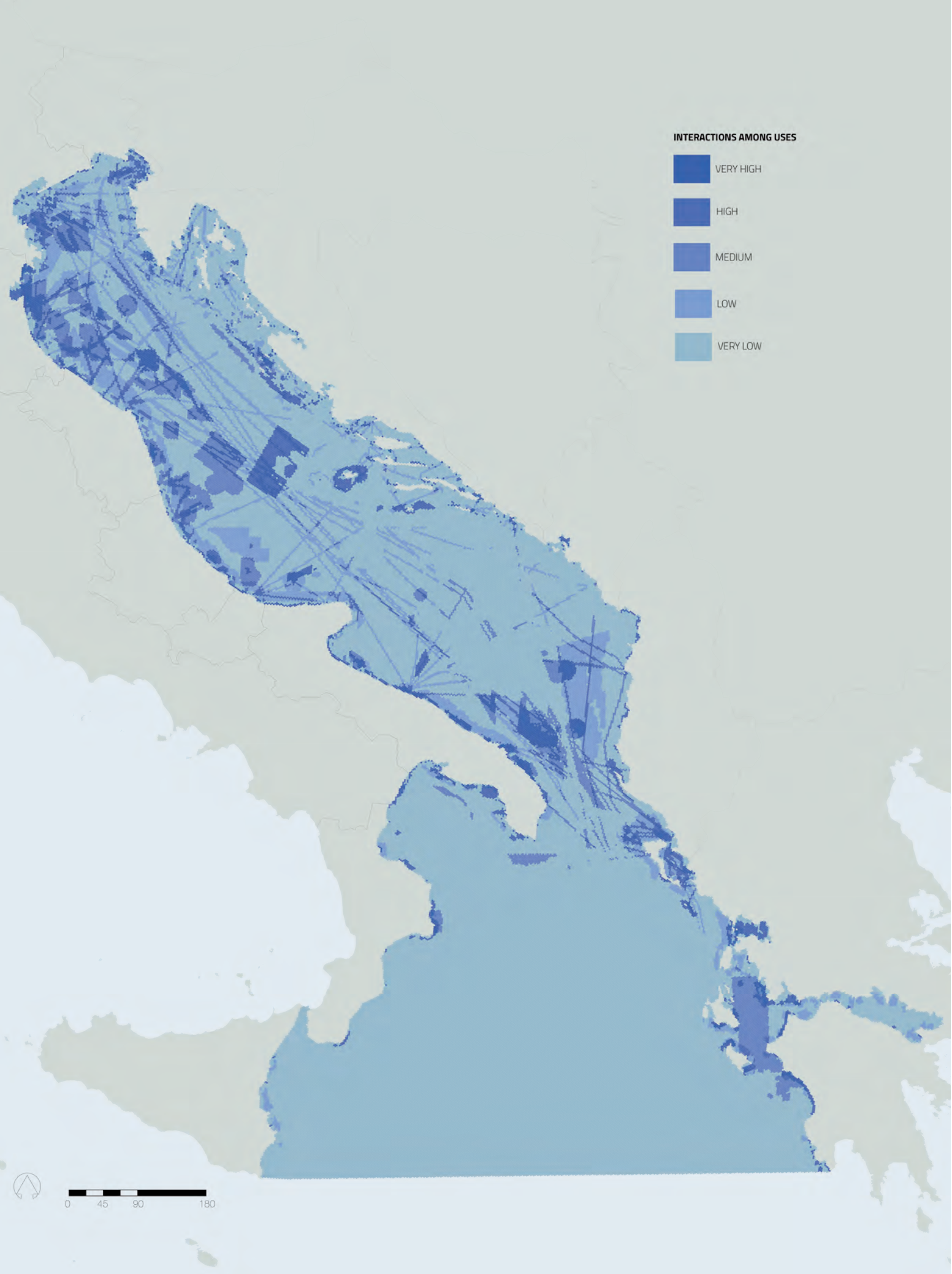
- (i) use-use conflicts/synergies;
- (ii) environment-use conflicts/synergies;
- (iii) regulatory/management/ planning conflicts;
- (iv) main planning needs and priorities (from the results of the stakeholder involvement process, main issues emerged by dialogue with institutions and analysis of uses at 2020).

As an example, the synthesis maps for “Maritime transport and tourism” and “Environmental protection” are presented below (Figure 8 and 9).

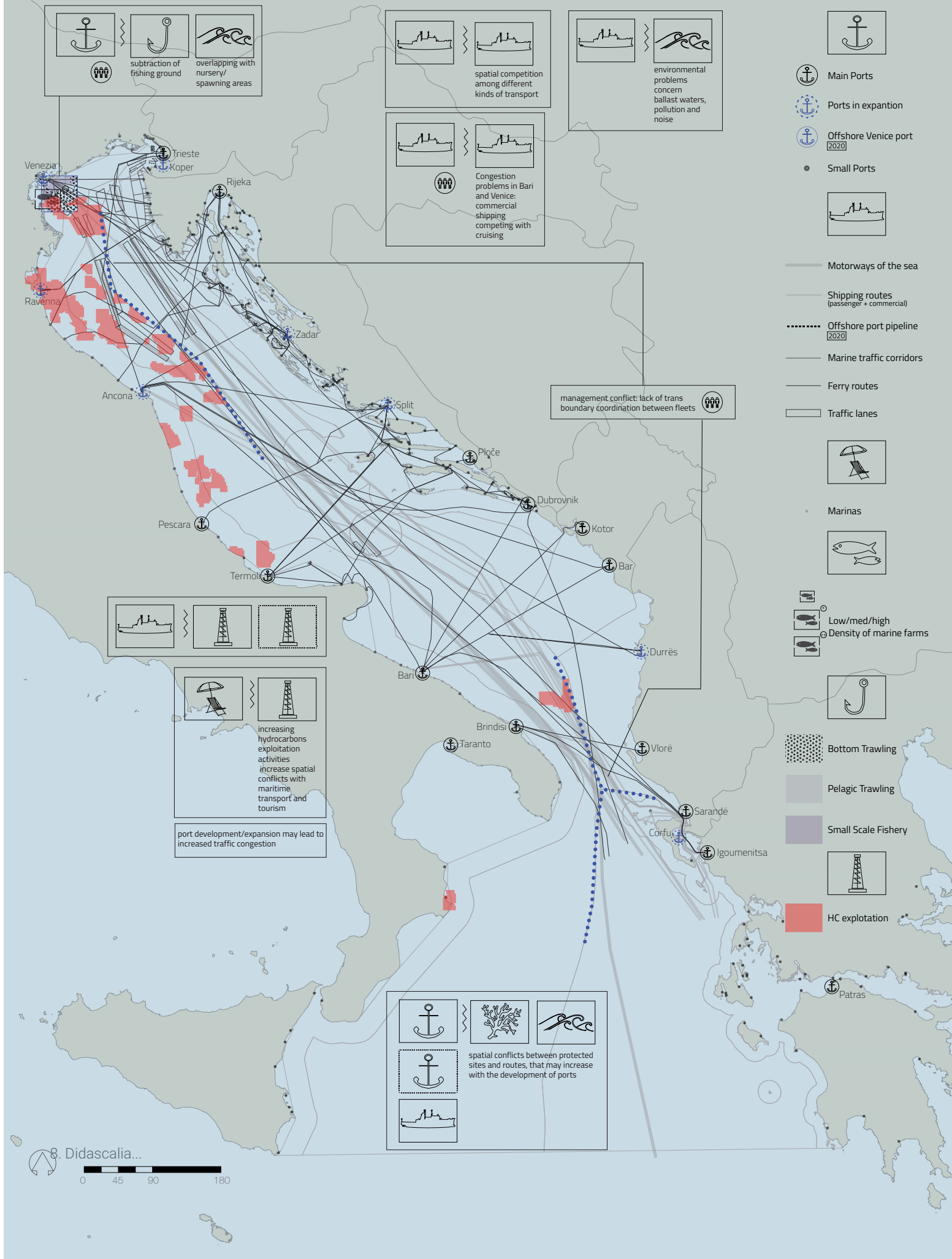
3. Vision, management objectives and potential added value of MSP

The spatial explicit analysis depicts macro-conflicts/synergies, to be potentially addressed by the strategic plan, as well as meso- and micro-scale issues to be potentially addressed by specific planning measures in the two Focus Areas. In other words, this activity allowed the identification of relevant planning issues to be potentially addressed by planning strategies and measures.

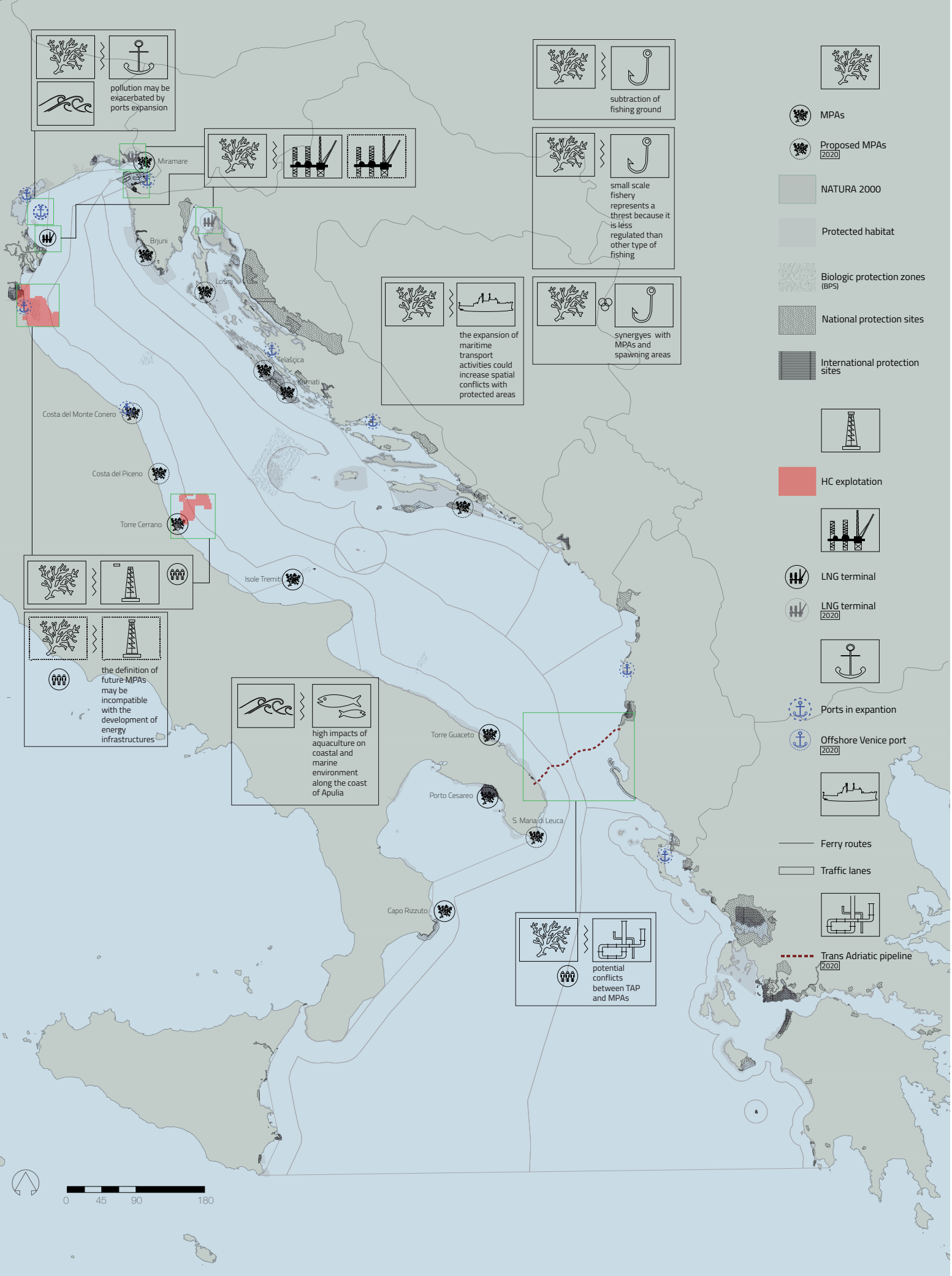
Such planning issues are integrated within the vision for the AIR expressed by the EUSAIR Action Plan and are consequently becoming a complete framework of high-level goals and management objectives for MSP in the AIR. As such, they are presented in the following, for each sector/cross-cutting issue considered.



7. Analysis on coexistence between uses, as "number of overlapping uses".



8. Synthesis map for the pivotal use "Maritime transport and tourism".



9. Synthesis map for the pivotal use "Environmental protection".

Coastal and Maritime Tourism	
High level goal	Sustainable maritime tourism
Management Objectives	Enhance the attractiveness of tourism in the region to international tourists and reduce seasonality
	Improvement of port infrastructure (cruise and tourist ports) and interchange hubs for intermodal transport (road and railway transport system) to coastal tourism
	Promote cruise tourism
	Cluster maritime tourism destinations thematically (e.g. with cultural heritage sites)
	Develop and promote an integrated tourism product involving a network of ports and a network of marinas
	Develop tourism development indicators
	Promote sustainable tourism activities and routes, building a common brand for the region, diversifying the cruise and nautical sectors and enhancing the value and appreciation of natural and cultural heritage
	Reduce the impact of tourism related structures on the environment
	Improve quality and diversification of the tourism product offered
	Promote temporary and removable structures for touristic purposes in beaches and coastal zones
	Introduce more intensive cooperation in the region among public and private stakeholders
	Improve coordinated governance in the tourism sector
	Strengthen UNESCO sites
	Reduce coastal and maritime tourism environmental impact
	Establishing proper monitoring mechanism
Maritime Transport	
High level goal	Sustainable maritime transport
	Spatial integration
	Market internationalisation
Management Objectives	Reduce present and future maritime traffic congestion, allowing the expansion of cargo and passenger traffic, while limiting environmental impacts and conflicts with other uses
	Reduce pollution from ship traffic
	Develop a Vessel Traffic Monitoring System
	Improve Efficiency and Security of Ports (Improve Management, Develop Infrastructure, Implement ISPS Code)
	Promote short-sea shipping
	Promote measures to facilitate better connection of islands to the mainland and long distance intra AIR ferry passenger transport
	Enhance and develop intermodal transport
	Identify and work on new trading routes
	Improve connections on North-South and East-West axes and in connection to TEN-Ts Motorways of the Sea
	Smart Integration in the global Supply chain through shipping
	Optimisation of interfaces, procedures and infrastructures to facilitate trade
Energy	
High level goal	Safe and sustainable hydrocarbon search and exploitation
	Interconnection of electricity grids and promotion of the development of integrated energy market, also from renewable energies
	Gas networks for diversified and efficient supply
Management Objectives	Support sustainable development of search and exploitation activities, reducing conflicts with other uses and facilitating a thorough environmental permitting at the right spatial scale
	Ensure safety and security of search and exploitation activities
	Improving cross-border electricity interconnections, minimising conflicts with other uses in the area
	Locate offshore wind farms
	Enhance the transportation of natural gas from Eastern Europe
	Support the location of new LNG terminals and the best use of the areas surrounding the existing LNGs and realising main pipelines, minimising conflicts with other uses in the area
Fishery and Aquaculture	
High level goal	Sustainable development of fishery
	Sustainable development of aquaculture
Management Objectives for Fishery	Zoning of fisheries to reduce overfishing of pelagic and demersal species, with particular attention to fishery in nursery areas and coordinated management of stocks
	Promote the role of small scale fisheries in the area, considering its important and peculiar socio-economic value for coastal communities
	Assisting the adaptation of fishery methods and gears to the new obligations deriving from the Common Fishery Policy Reform
	Creation of a control system of fishing effort (to tailor the EU fishery policy on regional specificities, filling the existent gaps in the southern Mediterranean areas)
Management Objectives for Aquaculture	Improve sustainable aquaculture (including offshore aquaculture), through proper space planning for the development of new sites, co-location with other activities and facilitation of permitting procedures
	Improve productivity, quality and environmental sustainability of aquaculture (including offshore aquaculture) through proper space planning for the development of new sites co-location with other activities and facilitation of permitting procedures
	Explore and improve possibilities for cross-border collaborations according to which specific objectives should be selected (particularly identify collaboration between Italy and Greece on the development of different life stages of particular species considering the introduction of policy arrangements)
	Introduction of new species with high commercial value

10. High-level goals and management objectives for MSP in the AIR.

Climate change (cross-cutting issue)	
High level goal	Risk management and Climate change adaptation in coastal areas
Management Objectives	Coastal defence against erosion and flooding, developing a strategic approach (proper spatial scale; priorities; intervention and constant maintenance) and using marine sands (relict and of new deposition) as a strategic resource for beach nourishment and protection
	Promote the establishment of the setback zone (as defined in the ICZM Protocol, Art.8)
	Enhance the retreat of urban structures and facilitate the rebuilding of natural defence morphologies (sand dunes, beach vegetation, etc)
Environmental and Conservation Protection (cross-cutting issue)	
High level goal	Achieve Good Environmental Status (GES)
Management Objectives	Enhance the network of Marine Protected Areas. Move towards 10% surface coverage by 2020 of the Adriatic and Ionian Seas by Marine Protected areas, in line with international commitments
	Implement the obligations of the WFD, MSFD, H&B Directives (GES, FCS and Targets) and other national relevant environment protection obligations, using the Ecosystem-Based Management approach, to reduce impacts and pressures on species, habitats and ecosystems
	Reduce information gaps about the impact of the protection regulation on adjacent marine habitats/species
	Establish common assessment methodologies and monitoring plans throughout the Adriatic and Ionian states
	Reduce/eliminate the most destructive fishing practices
	Harmonise MPAs management
	Enhance management skills and communication strategies
	Address eutrophication by transnational coordinated actions
	Reduce Marine Litter
	Integrate climate change into MPAs monitoring
	Establish network on information on Non-indigenous species
	Preserve sea-floor integrity
	Preserve food-web integrity
	Limit risk of Non Indigenous Species introduction
	Support the production of management plans for SCIs
	Define shared Management Plans
	Underwater cultural heritage
High level goal	Preservation and sustainable use of underwater cultural resources
Management Objectives	Support the identification, documentation and research of cultural heritage on the seabed and coastal areas, facilitating the adoption of the long-term strategy for management and preservation of underwater sites of cultural importance
	Strengthen co-operation and sharing information across the region
	Achieve high standards in preventing and reducing threatening impacts and interventions
	Adopt the measures and solutions for the preservation of archaeological sites and historical wrecks
	Promote the presentation of underwater cultural heritage in situ
	Adopt the measures and solutions for sustainable touristic use of the cultural resources and its development; (vii) establishment and management of parks and protected areas in internal and territorial waters
	Exchange experience and share best practices for preservation and presentation for underwater cultural heritage through joint research projects and education programmes
	Examine the options for the establishment of a joint technological platform for the research of underwater cultural resources

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