

Policy Research Corporation

**“The potential of Maritime Spatial Planning in the
Mediterranean Sea”**

Case study report: The Adriatic Sea

For the attention of

European Commission

Directorate-General for Maritime Affairs and Fisheries

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I. INTRODUCTION

Maritime Spatial Planning (MSP), aiming to result in a more coordinated management of maritime space, received significant attention at EU-level in recent years. The Communication ‘*Roadmap for Maritime Spatial Planning: Achieving common principles in the EU*’, was adopted by the Commission on November 25, 2008. This communication provides information on current Maritime Spatial Planning practices in both EU and non-EU Member States and outlines the instruments that have an impact on Maritime Spatial Planning. Besides the development of ten key principles for Maritime Spatial Planning and a series of dedicated workshops, the Commission also initiated a number of specific studies. Against this background, the study on ‘*Exploring the potential for Maritime Spatial Planning in the Mediterranean Sea*’ was launched in October 2009. During this study, four areas were identified that could have more potential for the application of cross-border/international Maritime Spatial Planning and were therefore subject to a more in-depth analysis:

- The Alboran Sea (Algeria, Morocco, Gibraltar / UK and Spain);
- ***The Adriatic Sea basin (Albania, Bosnia and Herzegovina, Croatia, Italy, Slovenia and Montenegro);***
- The Western Mediterranean (Italy, France, Monaco and Spain);
- The area surrounding Malta (including Tunisia, Libya and Italy).

This case study elaborates on the potential for the application of ***cross-border/international Maritime Spatial Planning in the Adriatic Sea basin***.

For the purpose of this report and in the light of the definition of MSP¹, the *potential* of Maritime Spatial Planning is analysed on the basis of three aspects:

- *Purpose of MSP in the area*: type and intensity of uses as well as the ecological value of the marine area;

¹ Maritime Spatial Planning (MSP) is a process of analysing and allocating parts of the three-dimensional marine space (ecosystems) to specific uses, to achieve ecological, economic and social objectives that are usually specified through a political process. It is a tool for improved decision-making and provides a framework for arbitrating between competing human activities and managing their impact on the marine environment. Its objective is to balance sectoral interests and achieve sustainable use of marine resources in line with the EU Sustainable Development Strategy.

- *Feasibility of MSP in the area*: scientific data / knowledge base, institutional capacity, legal and administrative supportive framework and stakeholders involvement;
- *Conditions for cross-border/international cooperation* (in case the marine area falls beyond national jurisdiction – which is mostly the case for marine areas in the Mediterranean Sea basin).

The present case study is structured on the basis of the *MSP key principles* and provides further insight into:

- The need for MSP in the Adriatic Sea basin²:
 - Description of the area;
 - Maritime jurisdiction;
 - Sea-uses and environmental pressures.
- The application of MSP in the Adriatic Sea basin:
 - The different sea-uses in specific areas and sub-areas in the Adriatic Sea basin and the existing / expected competition between these uses (including ecology preservation)³;
 - National stakeholder participation⁴;
 - The institutional arrangements (including transparency) and legal framework related to Maritime Spatial Planning⁵;
 - Cross-border/international cooperation and consultation⁶;
 - Data collection, monitoring and evaluation⁷;
 - Coherence between territorial planning and Maritime Spatial Planning⁸.
- Conclusions and recommendations.

Information on these elements per country is detailed in *Appendix I* to the final report. A list of abbreviations used in this report is provided in *Annex I*.

² MSP key principles 1 and 2.

³ MSP key principles 1 and 2.

⁴ MSP key principle 4.

⁵ MSP key principles 3, 5 and 6.

⁶ MSP key principle 7.

⁷ MSP key principles 8 and 10.

⁸ MSP key principle 9.

II. THE NEED FOR MSP IN THE ADRIATIC SEA BASIN

A first impression with regard to the need / potential for MSP in the Adriatic Sea basin is provided in the following sections. A general description of the area is given in *Section II.1*, followed by an overview of the areas under national jurisdiction, which is an important aspect with regard to the actual application of (cross-border/international) MSP in a certain area. *Section II.3* concludes by providing insight into the different sea-uses in the sea basin along with competition between the different uses and the related environmental pressures.

II.1. DESCRIPTION OF THE AREA

The Adriatic Sea basin has its own typical features, both at land and sea. Although part of the wider Mediterranean Sea basin, it is a semi-enclosed, narrow sea area solely connected to the rest of the Mediterranean through the Strait of Otranto, which is the narrowest part of the Adriatic Sea. The northern and northwestern coastlines are characterised by shallow waters and sandy beaches. The eastern part of the sea is deeper, rocky and contains many islands and islets. The deepest parts of the Adriatic are located in the south (see also *Figure 2*).

The Adriatic Sea is bordered by six coastal states in total: Albania, Bosnia and Herzegovina, Croatia, Italy, Slovenia and Montenegro. The share each country has in the total Adriatic Sea coastline differs greatly. Croatia has by far the longest coastline of the six Adriatic countries. Including more than 1 000 islands, the Croatian coastline amounts to almost 6 000 km, which is approximately 75% of the total length of the Adriatic coastline. The Italian coastline accounts for 15% of the total Adriatic coastline length, while the remaining countries of the Adriatic are characterised by shorter coastlines. Slovenia and Bosnia and Herzegovina have the shortest coastlines in the Adriatic Sea basin, respectively 47 and 23 km⁹. Apart from large differences in terms of coastline length, *Section II.3* illustrates that there are considerable imbalances in terms of share in maritime activities as well¹⁰. *Figure 1* presents the Adriatic Sea basin and its surrounding countries and *Table 1* summarises the coastline length of the Adriatic countries and the number and surface of islands and islets.

⁹ The Network of Managers of Marine Protected Areas in the Mediterranean, www.medpan.org.

Figure 1: The Adriatic Sea basin and its coastal states



Source: Policy Research Corporation based on Vidas, D., 2008, *The UN Convention on the Law of the Sea, the European Union and the Rule of Law, What is going on in the Adriatic?*

Table 1: Summary country characteristics¹¹

	<i>Albania</i>	<i>Bosnia and Herzegovina</i>	<i>Croatia</i>	<i>Italy</i>	<i>Montenegro</i>	<i>Slovenia</i>
<i>Adriatic coastline (km)</i>	362	23	5 835	1 300 ¹²	294	47
<i>Islands and islets</i>	n/a	n/a	1 185 (3 300 km ²)	n/a	n/a	n/a

Source: Policy Research Corporation

II.2. MARITIME JURISDICTION

The Adriatic Sea basin has an average width of around 85 nautical miles (nm). The Strait of Otranto – through which the Adriatic Sea basin is connected with the rest of the Mediterranean Sea – is only 45 - 55 nautical miles wide. As the width of the Adriatic Sea basin does not amount to 400 nautical miles, the establishment of maritime zones implies either an agreement amongst neighbouring States on a delimitation boundary or, if no agreement is reached, the submission of a dispute to a third party dispute resolution body.

Croatia as well as Italy established a territorial sea of 12 nm along their coasts¹³. In principal, Slovenia is also entitled to a territorial sea. However, the country has not yet reached an agreement with Croatia

¹⁰ Vidas, D., 2008, *The UN Convention on the Law of the Sea, the European Union and the Rule of Law, What is going on in the Adriatic?*

¹¹ n/a: not applicable or available.

¹² Vidas, D., 2008, *The UN Convention on the Law of the Sea, the European Union and the Rule of Law, What is going on in the Adriatic?*

on the exact delimitation of the area along the bay of Piran. Croatia and Slovenia recently agreed to set up an Arbitral Tribunal to reach agreement on their maritime border¹⁴.

Regarding the maritime border between Croatia and Bosnia and Herzegovina, a treaty on the maritime borders of Bosnia and Herzegovina's territorial sea was signed in 1999. In this specific case, the ratification of the treaty has not yet been completed.

Besides the establishment of territorial seas, a number of special zones have been established by Croatia, Italy and Slovenia, implying an extension of their national jurisdiction beyond territorial waters. These zones incorporate a number of specific topics like fisheries and ecological protection:

- In 2003, Croatia established an Ecological and Fishery Protection Zone (EFPZ) in order to mitigate the negative impacts on marine resources. However, in 2004 the Croatian Parliament decided that the implementation of the zone regime for the EU Member States would only begin after signing a fishery partnership agreement with the EU. Since no such agreement was signed, in 2006 the Croatian Parliament decided that the legal regime of the EFPZ with regard to the EU Member States was to commence as of 1 January 2008 at the latest. Subsequently, a new decision was adopted by which the EFPZ was provisionally not to apply to EU Member States “until a common agreement in the EU spirit was reached”. Consequently, so far, the EFPZ only applies to non-EU Member States¹⁵;
- In 2005, Slovenia established an Ecological Protection Zone. However, delimitation agreements with neighbouring coastal States are still pending¹⁶;
- Italy has passed legislation empowering the establishment of an Ecological Protection Zone (one zone for the whole country) in 2006. The effective establishment of single portions of the EPZ will be acted by agreement with neighbouring countries, or, pending the negotiations of the same agreements, by unilateral decree adopting provisionally the method of geometric equidistance¹⁷. So far no EPZs have been established.

The southern Adriatic countries – Albania and Montenegro – did not establish any special zones. Therefore, their national jurisdiction is limited to their territorial waters.

Although a number of Adriatic countries have established special zones, a considerable part of the Adriatic Sea basin is not or partially managed or controlled, since only a limited number of zones have been established or management is limited to certain aspects (i.e. EPFZ/EPZ). To conclude, it is important to also take into account the continental shelf. Overall, the Adriatic Sea basin is

¹³ In case a law is adopted for the establishment of a certain maritime zone, the zone is considered to be ‘established’. If a country is intending to establish a maritime zone, but does not have such legislation in place, the maritime zone is considered to be ‘claimed’.

¹⁴ An Arbitration Agreement between the Government of the Republic of Slovenia and the Government of the Republic of Croatia was signed, which in Article 3 stipulates the tasks of the Arbitration Tribunal. The Arbitration Tribunal shall, among other, determine the course of the maritime boundary between the Republic of Slovenia and the Republic of Croatia, Slovenia's junction to the High Seas and the regime for the use of the relevant maritime areas.

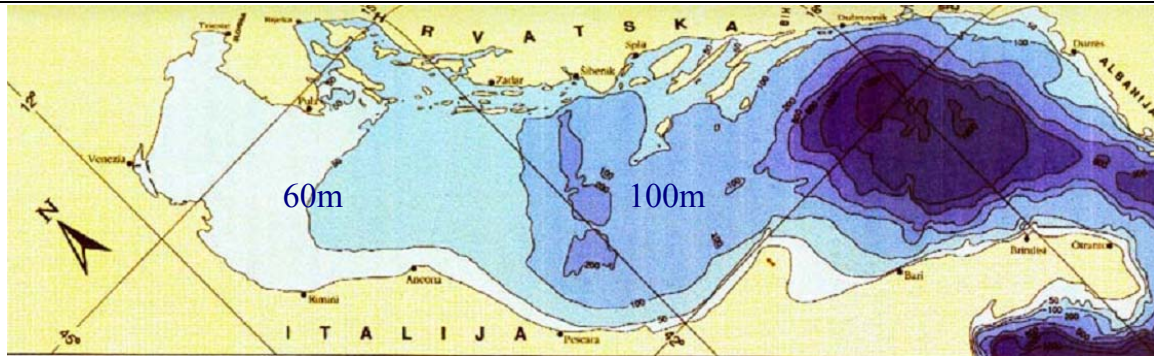
¹⁵ Croatian authorities; Vidas D., 2008, *The UN Convention on the Law of the Sea, the European Union and the Rule of Law, What is going on in the Adriatic?*

¹⁶ UN, Maritime Space: Maritime Zones and Maritime Delimitation, *Ecological Protection Zone and Continental Shelf of the Republic of Slovenia Act*, 22 October 2005.

¹⁷ Ministry of Foreign Affairs Italy, feedback on country report Italy on August 6, 2010.

characterised as a shallow enclosed sea area. However, the southern part of the region is far deeper than the northern part¹⁸. *Figure 2* illustrates the shallow and deeper areas of the Adriatic Sea basin.

Figure 2: Depth of the Adriatic Sea basin



Source: *FAO/Adriamed, 2004, Review of current knowledge on demersal shared stocks of the Adriatic Sea*

¹⁸ FAO/Adriamed, 2004, *Review of current knowledge on demersal shared stocks of the Adriatic Sea*.

Table 2 summarises the maritime zones that were established by the different Adriatic countries.

Table 2: Coastline length and maritime zones – Adriatic Sea basin¹⁹

	<i>Albania</i>	<i>Bosnia and Herzegovina</i>	<i>Croatia</i>	<i>Italy</i>	<i>Montenegro</i>	<i>Slovenia</i>
<i>Territorial Sea (width)</i>	12 nm	Treaty signed; not ratified	12 nm	12 nm	12 nm	Established, but no agreement
<i>Territorial Sea (area km²)</i>	6 210		31 710	n/a	n/a	n/a
<i>Continental shelf (width)</i>	North: 25 nm South: 2 – 4 nm	n/a	Extends outside of Croatia's territorial waters to the median line	Extends outside of Italy's territorial waters to the median line	n/a	n/a
<i>Continental shelf (area km²)</i>	n/a	2.4	44 850	n/a	3 079	n/a
<i>Ecological and Fishery Protection Zone</i>	-	-	In force, but does not apply to EU Member States	-	-	-
<i>Ecological Protection Zone</i>	-	-	-	Framework legislation was passed in 2006; up until today, no EPZ established	-	Established in 2005 (no agreement)

Source: Policy Research Corporation

II.3. SEA USES AND ENVIRONMENTAL PRESSURES

The beauty of the Adriatic Sea makes the region an attractive place to live and work. Each year, more tourists spend a holiday in the region. In addition to the maritime transport and fishery activities, these activities make the Adriatic Sea basin a crowded area both on land and at sea. The crowdedness of the area is also likely to have an impact on the environment. For example, some of the most sensitive and precious habitats such as lagoons and river delta environments have been impacted by the marine activities in the region. In this paragraph an overview is provided of the activities taking place in the Adriatic Sea and the activities that cause pressure on the marine environment.

a/ Flora and fauna and Marine Protected Areas

Flora and fauna

The most caught fish species in the Adriatic Sea are small pelagic species, such as anchovies and sardines. The Adriatic Sea is also a productive area for molluscs; the most frequently caught molluscs

¹⁹ n/a: data not available.

species in the sea are clams, cuttlefish and octopus. Crustacean species are caught as well, but in smaller numbers. The shrimp is the most represented crustacean²⁰.

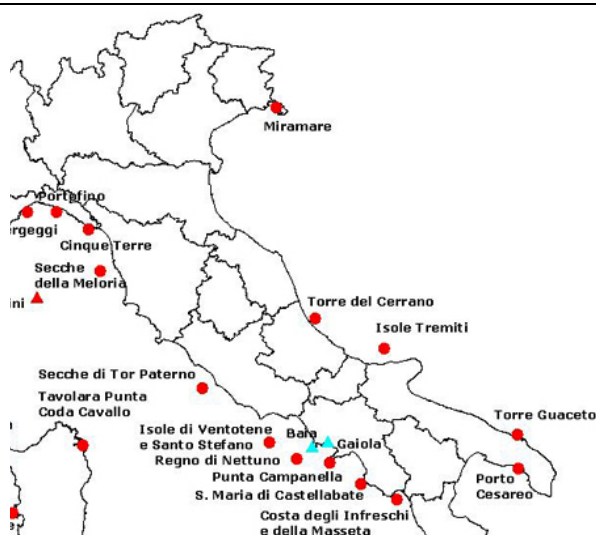
Two cetacean species have been consistently abundant in the Northern Adriatic until the 1960s: the short-beaked common dolphin and the common bottlenose dolphin. Killings caused significant dolphin mortality until the 1960s (possibly several thousands of animals). Habitat degradation and changes in prey availability (overfishing) in subsequent years probably prevented their recovery, and determined the disappearance of this species²¹.

Four of five Mediterranean seagrass species occur in the Northern Adriatic Sea, along the coast of Slovenia and the western coast of the Istria peninsula in Croatia²². *Cymodocea nodosa* and *Zostera noltii* are common, but *Zostera marina* and *Posidonia oceanica* are rare. *Posidonia oceanica* is listed in the Red Data List of Threatened Vascular Plants in Slovenia. Its only natural habitat in Slovenia is about 50m wide and 1 km long and is protected as a natural monument.

Marine Protected Areas

Marine biodiversity in the Adriatic Sea is high, but at the same time a considerable number of species (both vegetation and animals) are endangered. In order to preserve biodiversity and maintain stocks of species, countries surrounding the Adriatic Sea have established marine protected areas. This section gives an overview of the MPAs in these countries. *Figure 3* shows the four MPAs in the Adriatic part of Italy.

Figure 3: Marine Protected Areas – Italy



Source: DITANAVE

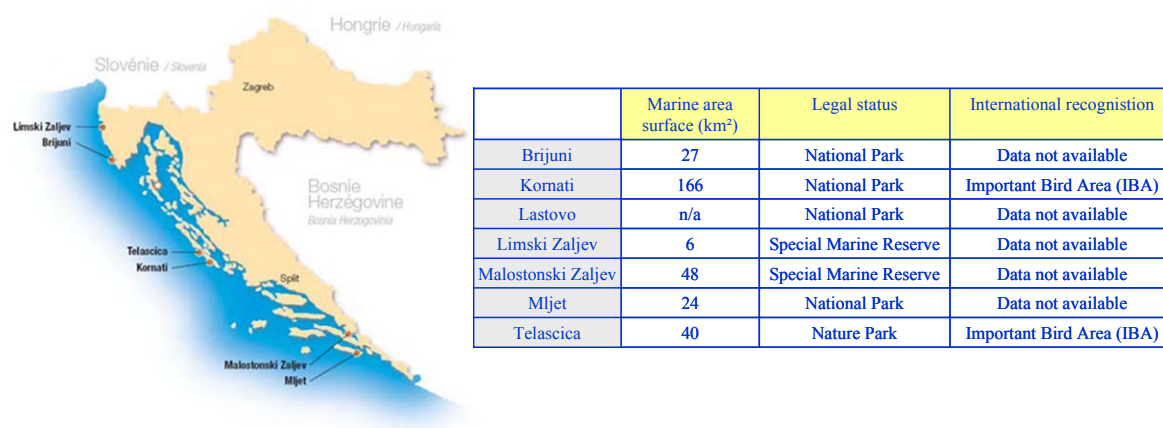
²⁰ Landing statistics for 2004 from Italian, Slovenian and Croatian Ministries (received from ISPRA).

²¹ Bearzi, G. et al., 2004, *The role of historical dolphin takes and habitat degradation in shaping the present status of northern Adriatic cetaceans*. Aquatic conservation: marine and freshwater ecosystems, volume 14.

²² Koce, J.D. et al., 2003, *Genome size of Adriatic seagrasses*. Aquatic Botany, volume 77.

In Croatia seven MPAs are present. Information about these areas is presented in *Figure 4*.

Figure 4: Marine Protected Areas – Croatia



Source: Policy Research Corporation based on *The Network of Managers of Marine Protected Areas in the Mediterranean*, www.medpan.org

In *Figure 5*, Slovenia's MPAs are illustrated.

Figure 5: Marine Protected Areas – Slovenia



Source: Policy Research Corporation based on *The Network of Managers of Marine Protected Areas in the Mediterranean*, www.medpan.org

According to the Network of Managers of Marine Protected Areas in the Mediterranean (MedPAN)²³, Albania is establishing one Marine Protected Area – Karaburun – which is located in its territorial sea and which will include the existing fisheries reserve. Two additional MPAs – Kepi i Rodonit and Porto Palermo – are planned in the Albanian territorial sea²⁴. Both Montenegro and Bosnia and Herzegovina do not have MPAs and neither of them is planning to establish MPAs.

²³ The Network of Managers of Marine Protected Areas in the Mediterranean, www.medpan.org; ECAT Tirana (Environmental Center for Administration and Technology), e-mail April 19, 2010.

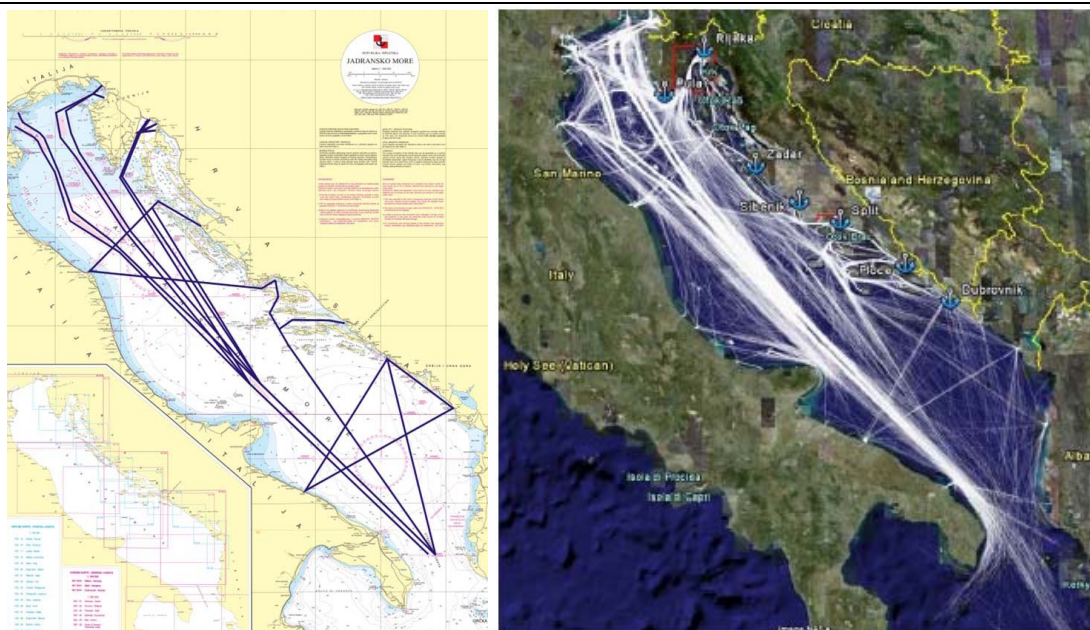
²⁴ Information on the international recognition of the Karaburun MPA or the legal status / international recognition of the Kepi i Rodonit and Porto Palermo MPA projects was not available.

b/ Maritime transport and environmental issues

The Adriatic Sea is an important maritime transport route used by merchant ships in international and national trade, by yachts, fishing vessels, war ships and other non-merchant ships. A significant number of important industrial centres are located along the western Adriatic coast and several mid-European – and in many cases landlocked – countries heavily depend on the Northern Adriatic ports (among others the port of Trieste, Venice, Koper and Rijeka) for the import of energy. In addition, several of the eastern Adriatic ports are deep-water ports – especially in Croatia – which could host super-tankers. These ports could serve as a solution for today’s bottlenecks with regard to oil export routes in Eurasia²⁵. Consequently, the Adriatic countries believe that maritime transport will increase in the future. Existing routes will be used more intensively, new routes will be introduced and new south-eastern transit ports will gain importance (among others Ploce in Croatia, Bar in Montenegro and Vlorë in Albania)²⁶.

Figure 6 provides insight into the traffic routes / separation schemes in the Adriatic Sea basin and into the intensity of maritime traffic in the Adriatic Sea in 2008.

Figure 6: Traffic routes and maritime traffic intensity in the Adriatic Sea in 2008



Source: Policy Research Corporation based on Maglic, L., Simic Hlaca, M. & Zec, D., 2009, *Maritime Transport and Possible Accidents in the Adriatic Sea*

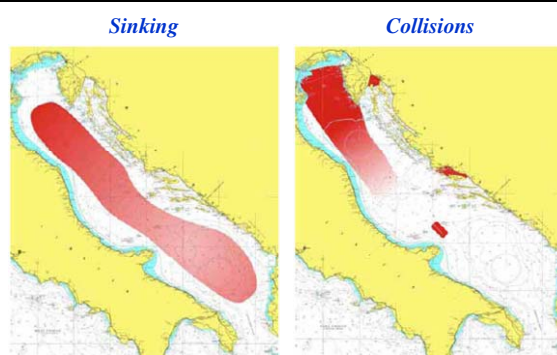
²⁵ Vidas, D., 2008, *The UN Convention on the Law of the Sea, the European Union and the Rule of Law, What is going on in the Adriatic?*

²⁶ Vidas, D., 2008, *The UN Convention on the Law of the Sea, the European Union and the Rule of Law, What is going on in the Adriatic?*

The Adriatic Sea is characterised by a large marine biodiversity and is home to some significant treasures of world heritage. This is recognised by the proposal of Adriatic countries (initiated by Croatia) to designate the whole Adriatic Sea as a *Particularly Sensitive Sea Area (PSSA)*. A Particularly Sensitive Sea Area requires special protection through action by the International Maritime Organisation (IMO) because of its significance for recognised ecological, socio-economic or scientific reasons and because it may be vulnerable to damage by shipping. Once designated as a PSSA, specific measures can be approved by IMO to reduce the risk associated with shipping.

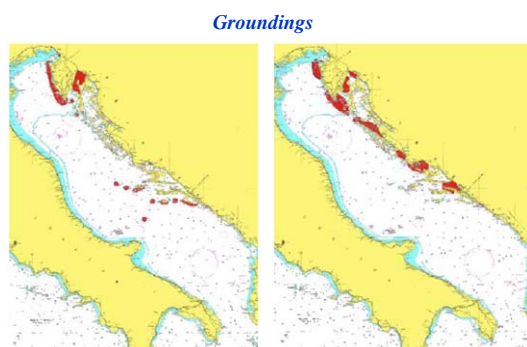
The intensive maritime transport in the Adriatic Sea basin implies a significant risk of accidents and consequently a potentially strong impact on the marine environment. Given the enclosed nature of the Adriatic Sea basin, the impact of a single accident – even though accidents are rare – can be highly disastrous²⁷. *Figure 7* and *Figure 8* shows the areas of increased risk of sinking, collision and grounding.

Figure 7: Areas of increased risk of sinking and collisions



Source: Policy Research Corporation based on Maglic, L., Simic Hlaca, M. & Zec, D., 2009, Maritime Transport and Possible Accidents in the Adriatic Sea

Figure 8: Areas of increased risk of groundings

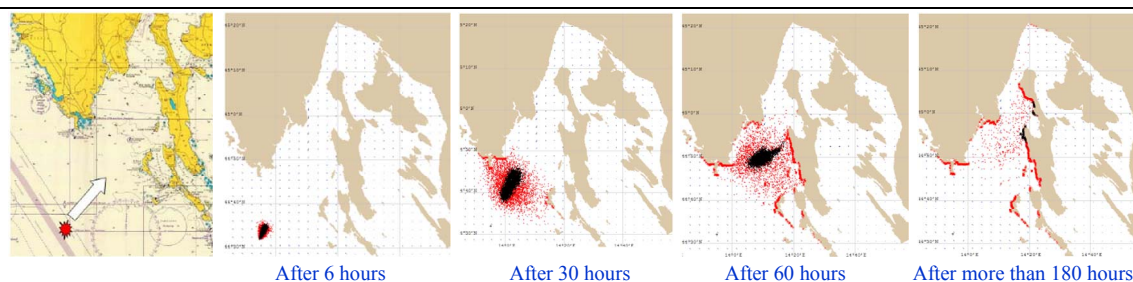


Source: Policy Research Corporation based on Maglic, L., Simic Hlaca, M. & Zec, D., 2009, Maritime Transport and Possible Accidents in the Adriatic Sea

²⁷ Maglic, L. & Simic Hlaca, M. & Zec, D., 2009, *Maritime Transport and Possible Accidents in the Adriatic Sea*.

Moreover, *Figure 9* illustrates the impact on the environment of a collision near the entrance of the Kvarner Gulf in Croatia. Given the effects of accidents on the Adriatic environment, continuous monitoring of the sea area is considered a necessity²⁸.

Figure 9: Impact collision near the entrance of the Kvarner Gulf in Croatia



Spill size: 6 000 tonnes of oil in 16 hours
Current: NNE 0.3 knots
Wind: SW 15 m/s

Source: Policy Research Corporation based on Maglic, L., Simic Hlaca, M. & Zec, D., 2009, *Maritime Transport and Possible Accidents in the Adriatic Sea*

Italy and Slovenia already have a Vessel Traffic Monitoring and Information System (VTMIS) implemented to increase safety. Croatia is currently developing VTMIS. The Twinning Project PHARE 2006 ‘Institutional Capacity Building for VTMIS and Flag State Implementation (FSI) is coming to an end²⁹. This project covered institutional co-operation of the Croatian maritime administration with Finland, Italy and Sweden concerning the organisation of the Croatian VTMIS, as well as the training of future employees. This project ensured the transfer of know-how from Finland and Italy regarding navigation management and control. Furthermore, Italy, Croatia and Slovenia cooperate in the Northern Adriatic with VTMIS³⁰.

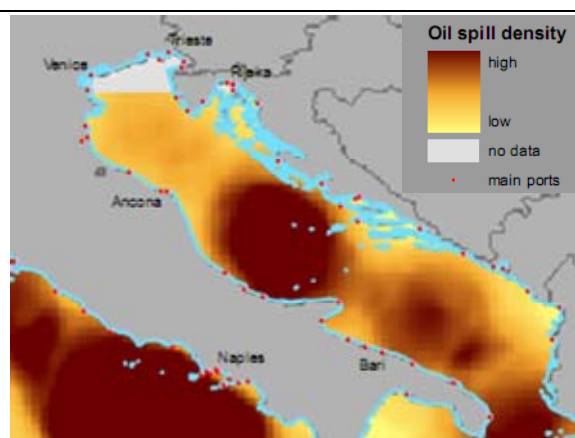
Figure 10 gives an indication of the density of oil spills in the Adriatic Sea. This density is based on satellite pictures that recorded oil spills and is normalised for the number of pictures taken for specific parts of the sea.

²⁸ Maglic, L., Simic Hlaca, M. & Zec, D., 2009, *Maritime Transport and Possible Accidents in the Adriatic Sea*.

²⁹ Croatian Business & Finance Weekly, May 18, 2010.

³⁰ Ministry of the Sea, Transport and Infrastructure, Directorate for Maritime Transport, Maritime Domain and Ports, meeting on February 2, 2010 in Zagreb.

Figure 10: Oil spill density in the Adriatic Sea



Source: Policy Research Corporation based on Joint Research Centre of European Commission, <http://serac.jrc.it>

The ballast water of ships can lead to another effect on the marine environment. Ballast water is used by ships to reach a certain draft for stability purposes. When a ship is not (fully) loaded, water is added in the port of departure. When the ship is subsequently loaded with cargo in another port, the water is discharged because the cargo will provide the necessary weight. In ballast water, invasive species may be present, which can have an impact on the flora and fauna of the sea if it is discharged into the sea³¹.

c/ Fisheries and mariculture

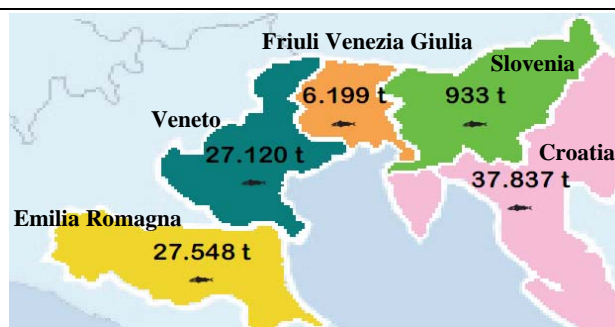
Apart from being an important maritime transport route, the Adriatic Sea basin is among others a fruitful area for fishing (including mariculture). As mentioned earlier, fishing has traditionally been an important sector to most Adriatic countries. Italy has by far the largest fishing fleet in the Adriatic.

The production of fish, mussels and clams by aquaculture / mariculture in the northern part of the sea basin is shown in *Figure 11* and *Figure 12*. Catches from both the Adriatic Sea and the lagoons are taken into account. The majority of mussels and clams is produced in the lagoons (especially the Venice lagoon)³².

³¹ International Union for Conservation of Nature (IUCN), *Marine Menace – alien invasive species in the marine environment*.

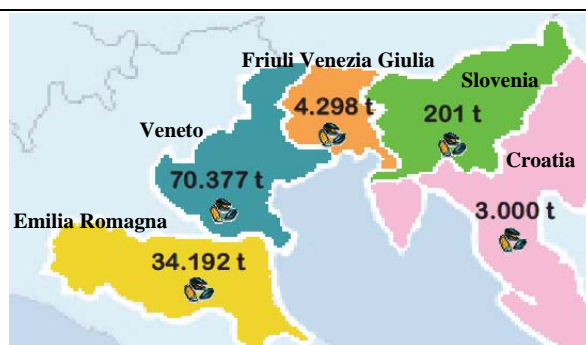
³² ISPRA, meeting in Chioggia on May 25, 2010.

Figure 11: Production of marine and lagoon fish in the northern Adriatic regions in 2006



Source: Policy Research Corporation based on Veneto Agricoltura, 2008, *La Pesca in Numeri: raccolta 2007 - 2008*

Figure 12: Production of mussels and clams in the Northern Adriatic region in 2005



Source: Policy Research Corporation based on Veneto Agricoltura, 2008, *La Pesca in Numeri: raccolta 2007 - 2008*

The share of the fisheries sector in the national economies is decreasing. Fish stocks have suffered from overfishing and / or pollution, especially in the Italian part of the Northern Adriatic Sea. Pollution is caused by water discharges of industrial activities, agriculture and urbanised areas, but also by river discharges (e.g. the Po) in the Adriatic Sea, containing pollutants due to discharges along the river³³. Fishing is characterised by multi-gear fishing activities, ranging from small-scale artisanal fishery³⁴ and hydraulic dredging to demersal³⁵ trawling and pelagic³⁶ mid-water trawling and

³³ ARPAV, meeting in Padova on May 25, 2010.

³⁴ Artisanal fisheries: traditional fisheries involving fishing households (as opposed to commercial companies), using relatively small amounts of capital and energy, relatively small fishing vessels, making short fishing trips, close to shore, mainly for local consumption. In practice, definition varies between countries (e.g. from gleaning or a one-man canoe in poor developing countries, to more than 20 m trawlers, seiners, or long-liners in developed ones). Artisanal fisheries can be subsistence or commercial fisheries, providing for local consumption or export. Sometimes referred to as small-scale fisheries (glossary FAO). Trawling is a harvesting method that involves dragging a net behind a boat.

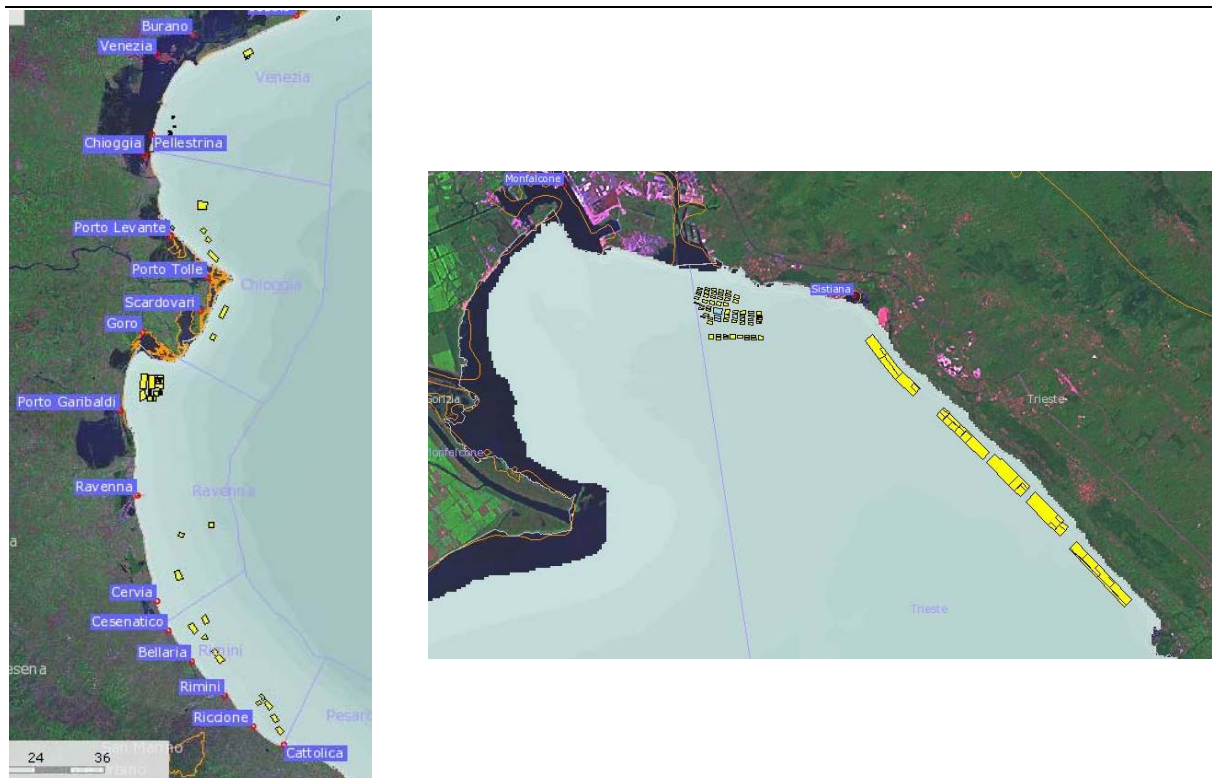
³⁵ Demersal = near the seabed.

³⁶ Pelagic = water column neither close to the bottom nor close to the surface.

recreational fishing. In Croatia fishing is primarily artisanal, while in Italy trawling is the common fishing method³⁷.

A shift towards mariculture has been experienced in recent years, although the sector is facing environmental and spatial constraints. Not all locations are suited for the installation of offshore farms nor are all suitable locations in compliance with other activities. Mariculture activities mainly involve the production of mussels³⁸. Mariculture locations in the Emilia-Romagna, Veneto and Friuli Venezia Giulia region are shown in *Figure 13*.

Figure 13: Mariculture locations in Emilia-Romagna and Veneto region (left) and Friuli Venezia Giulia region (right)



** scale of maps differs and therefore maps are not comparable on size*

Source: Policy Research Corporation based on GIS system ARPA Friuli Venezia Giulia, <http://mapserver.arpa.fvg.it/adriblu/map.phtml>

Mariculture may cause an environmental impact on underwater ecosystems. The impact depends primarily on the rate of water renewal in the area. If the rate of water renewal is too low to enable

³⁷ Raicevich, S. (ISPRA), *Spatio-temporal distribution of fishing effort and biological resources in the Northern Adriatic Sea (case study for the GAP project)*.

³⁸ Veneto Agricoltura, 2008, *La Pesca in Numeri: raccolta 2007 – 2008*.

clean-up of fish wastes (on the soil below the cages), the soil becomes polluted. In Croatia³⁹, the Ministry of Environment released a report in 2003 in which it stated that tuna farming is likely to negatively impact the environment primarily because fish farms are often located in shallow waters near the coast, where water renewal is low. In addition, 'excessive' fish feeding contributes to the environmental impact.

d/ Tourism

The countries around the Adriatic Sea are important tourist destinations. As their importance as tourist destinations clearly depends on the Adriatic Sea basin itself, it is very important to maintain the Adriatic Sea basin's status and undertake actions for the preservation of the region. The Veneto region received 14.1 million arrivals in 2008 with 60.6 million overnight stays. Seaside tourism accounted for 3.7 million arrivals (25.8 million overnight stays) in 2007⁴⁰. In the Friuli Venezia Giulia region 2 million arrivals took place in 2008 (8.9 million overnight stays) and in Emilia-Romagna 8.8 million arrivals (38.3 million overnight stays)⁴¹. A total of 11 million tourists arrived in Croatia in 2009. Tourist overnight stays amounted to 56 million⁴².

Regarding marine tourism, Croatia expects an increase of the number of nautical ports and coastal moorings from 21 020 in 2007 to 33 655 in 2015. 'Marine' tourists are mostly attracted to areas under different categories of protection as they are characterised by a high natural value and their biodiversity. Particularly attractive are the national parks of Brijuni, Kornati, Krka and Mljet and the nature parks of Telascica and Lastovo islands, whereas the largest number of marine tourists' visits is realised in the national park of Kornati⁴³. Slovenian statistics show a total number of 2.8 million tourists arriving in Slovenia in 2008. Overnight stays in the same year amounted to 8.4 million⁴⁴. Overnight stays in 2006 amounted to 17 million in Montenegro⁴⁵.

Intensive coastal tourism leads to pollution of the sea, especially when wastewater treatment plants lack the capacity to treat all wastewater and, as a result, discharge a certain (substantial) quantity directly into the sea. Coastal protection through beach nourishment instead of using protection barriers (due to unattractive sight) may have negative environmental effects as well. Although less significant, marine tourism activities may also affect the environment. For instance, diving and recreational bathing can damage marine vegetation.

³⁹ PAP/RAC, 2007, *National Report on Current Policy, Procedures, Legal Basis and Practice of Marine Spatial Planning in Croatia*, Split.

⁴⁰ Regione del Veneto, *Veneto business and more*.

⁴¹ EUROSTAT, *regional tourism statistics NUTS 2*.

⁴² Ministry of tourism Croatia, 2009, *Tourist traffic in Croatia for the year 2009*.

⁴³ Ministry of the Sea, Transport and Infrastructure, Ministry of Tourism, 2008, *Nautical tourism development strategy of the Republic of Croatia 2009 – 2019*.

⁴⁴ Statistical Office of the Republic of Slovenia, www.stat.si.

⁴⁵ Ministry of Tourism and Environment, *Montenegro tourism development strategy to 2020*.

e/ Offshore oil and gas platforms and LNG terminals

Some Adriatic regions are suitable for the installation of offshore Liquefied Natural Gas (LNG) terminals. The first offshore LNG terminal in the world has been built in the Northern Adriatic in the proximity of Porto Levante (province of Rovigo, Veneto). It went into operation in 2009. Several other companies have proposed plans for developing new offshore LNG terminals. For instance an offshore terminal is proposed in the Gulf of Trieste (Terminal Alpi Adriatico, by Endesa Europa) in the Italian territorial sea, near Slovenia⁴⁶.

The presence of such terminals leads to competition with other maritime activities within the Adriatic Sea basin. For example, fishing will be prohibited around the terminal and around the pipeline that connects the terminal with the shore⁴⁷. Offshore platforms also involve a certain risk of strong pressure on the environment; if accidents happen, the effects on the marine environment can be high.

In the Adriatic Sea offshore gas production is taking place through various projects. Eni (Italian) and INA (Croatian) have created a joint venture that started producing gas by platform Annamaria A in six wells in Croatian waters in 2009. The Annamaria B platform (located in Italian waters) started production in 2010⁴⁸. A substantial number of offshore platforms (approximately 100) is located in the Emilia-Romagna region. An overview of platforms in Emilia-Romagna is given in *Figure 14*.

Figure 14: Platforms along the coast of Emilia-Romagna



Source: Policy Research Corporation based on GIS system ARPA Friuli Venezia Giulia, <http://mapserver.arpa.fvg.it/adriblu/map.phtml>

⁴⁶ Reuters, www.reuters.com/article/idUSL1186435520080311.

⁴⁷ Franceschini, Raicevich & Bonometto – ISPRA, meeting in Chioggia on May 25, 2010.

⁴⁸ www.upstreamonline.com.

III. THE APPLICATION OF MSP IN THE ADRIATIC SEA BASIN

While carrying out the country-by-country analyses, differences have been observed between the northern part of the Adriatic and the central and southern part with regard to experienced and/or expected competition between maritime activities. The northern part of the Adriatic has more potential for the application of Maritime Spatial Planning than the other parts of the Adriatic. Consequently, the remainder of this case study focuses on the northern part of the Adriatic.

The following sections will be structured according to the MSP key principles⁴⁹. After detailing the area and the type and density of the activities taking place in the region, stakeholder involvement and the legal and institutional framework is discussed. Next the cross-border/international cooperation and consultation is discussed, followed by the data collection, monitoring and evaluation of marine / maritime-related topics. The chapter ends with the coherence between terrestrial and Maritime Spatial Planning.

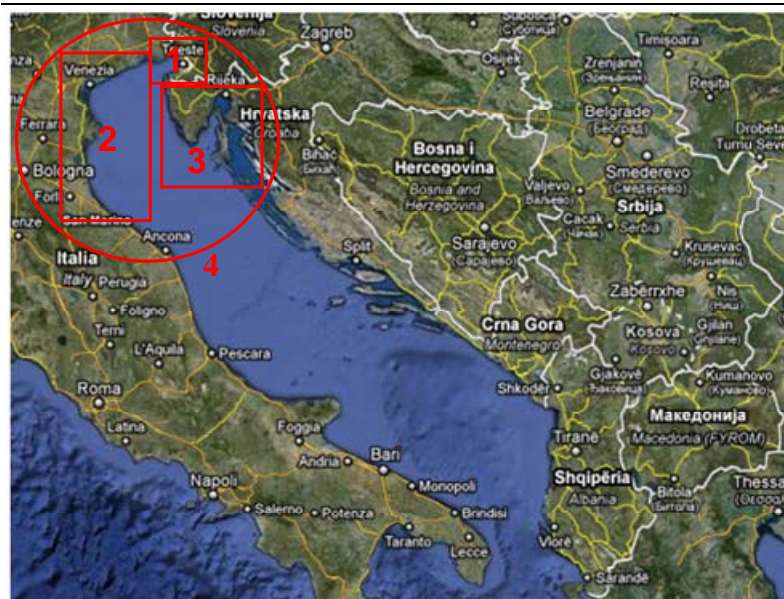
III.1. AREA AND TYPE OF ACTIVITIES

A maritime spatial plan may not need to cover a whole area but should be based on the type of planned or existing activities and their impact on the environment (MSP key principle 1 and 2)

The Northern Adriatic (see *Figure 15*) is an intensively used area. Besides maritime transport, the area is characterised by a significant number of other maritime activities, likely leading to competition between the different maritime uses in the area. Moreover, the intensity of the different maritime activities is expected to increase. Given the crowdedness of the area and the involvement of several countries in the region, cross-border/international MSP could be considered a more efficient tool in order to resolve competition in terms of maritime space compared to national Maritime Spatial Planning. Certain activities taking place at the national / local level have transboundary impacts on the surrounding areas. These issues can be addressed in cross-border/international MSP.

⁴⁹ Communication from the Commission, 25 November 2008, *Roadmap for Maritime Spatial Planning: Achieving Common Principles in the EU*, COM (2008) 791.

Figure 15: Area covered by the Northern Adriatic – including the Gulf of Trieste



- Including:
- Slovenia
 - Italy:
 - Friuli Venezia Giulia region
 - Veneto region
 - Emilia-Romagna region
 - Northern Croatia

Source: Policy Research Corporation

In this section information is provided about the competition taking place in a number of regions in the Northern Adriatic Sea. These areas are (see *Figure 15*): (1) Slovenian territorial waters, (2) waters under Italian jurisdiction, (3) waters under Croatian jurisdiction. Besides competition at the national level, competition is experienced across the Northern Adriatic, as the migration loop of fish (4) shows.

(1) Waters under Slovenian jurisdiction

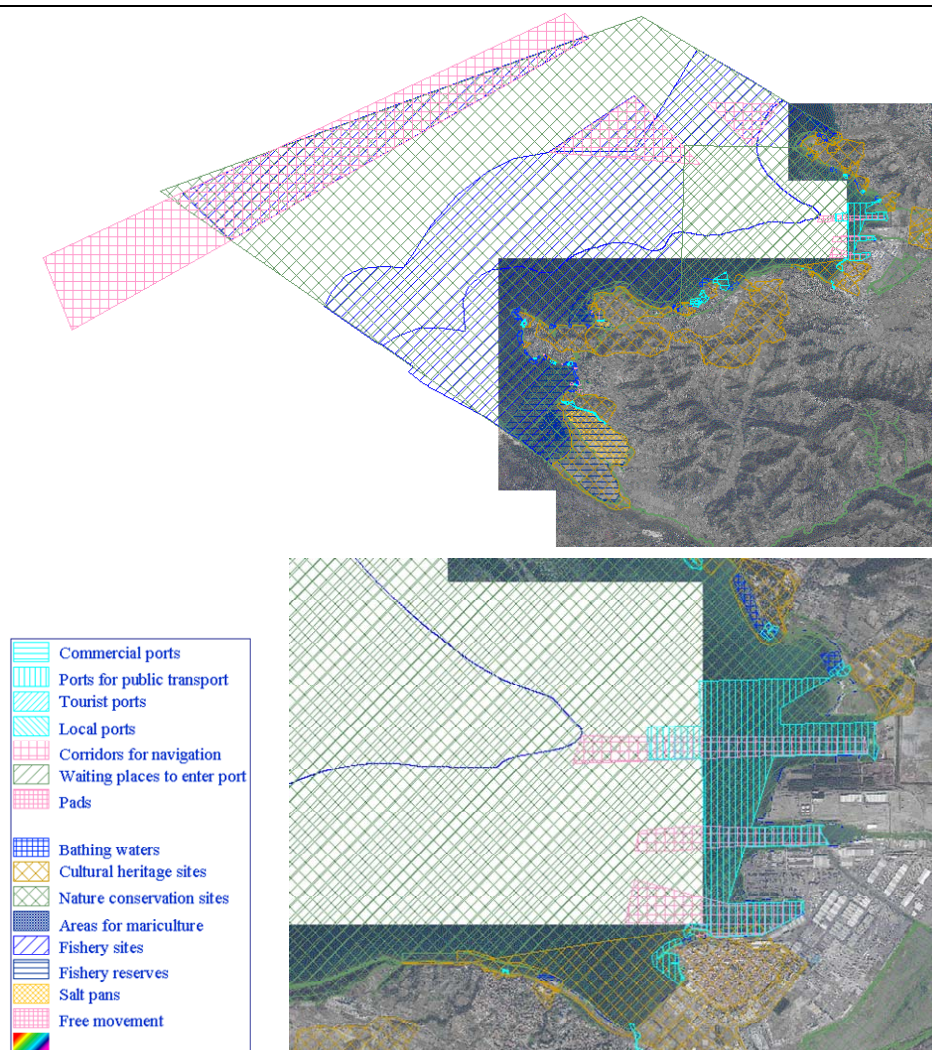
Within the framework of the PlanCoast project, a map was developed to obtain awareness of the current situation on marine uses in Slovenia. During the process information was gathered on established uses and regimes, possible competition between the different maritime uses and assessments of the arguments in favour or against the implementation of MSP in Slovenia. Moreover, through the development of this map, the major stakeholders related to maritime uses were identified⁵⁰. *Figure 16* shows the current maritime uses in the internal and territorial waters in Slovenia (as part of the Gulf of Trieste) as prepared during the PlanCoast project⁵¹. The activities shown include among others corridors for navigation, bathing waters, fishery sites, salt pans and nature conservation sites. The maps can be consulted in more detail on the website of the Regional Development Centre in Koper⁵².

⁵⁰ Regional Development Centre Koper, meeting on February 2, 2010 in Koper.

⁵¹ Although the border with Croatia is not correctly displayed, this figure is useful since it indicates the activities taking place and the presence of knowledge and technology.

⁵² Regional Development Centre Koper, www.rrc-kp.si.

Figure 16: Maps of sea-uses in the Slovenian marine area (as part of the Gulf of Trieste)



Source: Policy Research Corporation based on Regional Development Centre Koper, www.rrc-kp.si

The Slovenian internal and coastal waters are intensively used and competition between maritime uses – both at the national / regional as well as on the cross-border/international level – is present. The fact that Slovenia has a relatively small coastal / marine area limits the space available for maritime activities and thus increases the possibility of competition for space. At present, competition between tourism, maritime transport and fisheries is already experienced at the national / local level. One example of currently existing cross-border/international competition concerns a plan for an Italian offshore gas terminal in the Gulf of Trieste as it is regarded as competing with tourism (which is an important sector in Slovenia). The LNG terminal would be placed 300 metres from the Slovenian coast. Slovenian stakeholders foresee negative effects for the Slovenian tourism sector⁵³.

⁵³ Regional Development Centre Koper, meeting on February 2, 2010 in Koper.

Given the crowdedness of the Slovenian marine area and the presence of more than one country in a relatively small sea area/region (which is likely to lead to cross-border/international competition next to the existing national competition), the concept of cross-border/international Maritime Spatial Planning could provide a solution to solve spatial issues at sea. However, the willingness of the involved governments to cooperate in establishing a cross-border/international Maritime Spatial Plan has to be kept in mind.

(2) Waters under Italian jurisdiction

The waters under Emilia-Romagna, Veneto and Friuli-Venezia Giulia jurisdiction are intensively used by coastal and marine tourism, maritime transport, fishing, mariculture, offshore platforms and sand extraction. Maritime transport is an important activity and Italy possesses a significant number of large ports in the Northern Adriatic Sea (i.e. Ravenna, Venice, Chioggia, Porto Levante, Trieste and Monfalcone). These ports are important for the transportation of goods as well as passengers⁵⁴.

Different maritime activities compete with each other in northern Italian waters. For instance, sand extraction competes primarily with fishing. After sand is extracted from the sea bed, the composition of the seabed changes, which may lead to damage to fishing gear since fishermen cannot estimate the new depth of the sea. Sand extraction, fishing and other activities experience competition from offshore platforms and pipelines. Around platforms safety zones are in place, in which activities are prohibited. Safety zones around pipelines are also in place, prohibiting fishing and dredging but not affecting shipping. Competition among different types of fishing is experienced as well. Trawlers tend to fish illegally within the 3 nautical miles limit or within the 50 metres depth limit. Due to the higher capacity of trawlers, this poses a threat to the artisanal fishermen.

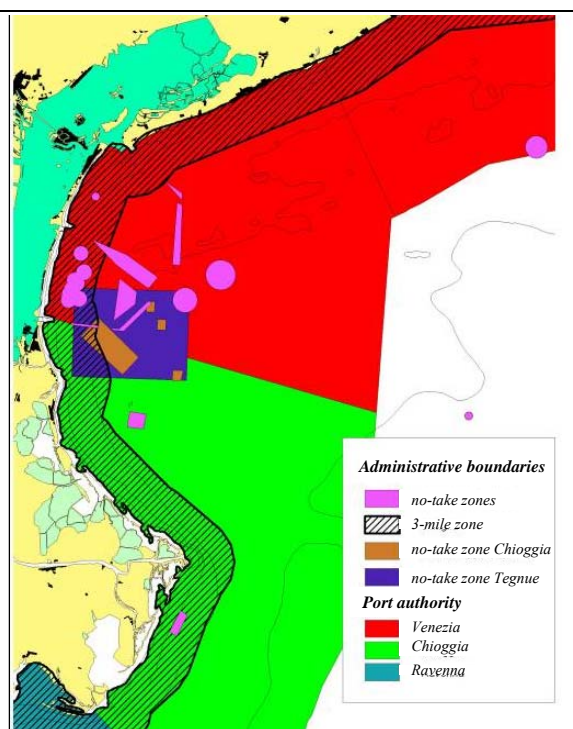
Maritime activities in the northern Italian part of the Adriatic Sea also impact the environment. Illegal clam fishing in the Venice lagoon for example has an impact on the sediment. Competition between fishing and the environment is also experienced in the so called 'rocky outcrops' (Tegnúe)⁵⁵, because (illegal) fishing in this area damages the protected soil and affects fish stocks in an unsustainable way. In *Figure 17* no-take zones in this area are presented, including the protected Tegnúe area.

Other maritime activities with an impact are sand extraction (damages the soil) and shipping (pollution). Land-based activities also have a negative impact on the marine environment because non-purified wastewater is discharged into the sea, leading to water pollution.

⁵⁴ DG Environment Emilia-Romagna region, e-mail February 10, 2010; Regione del Veneto, *Veneto business and more*.

⁵⁵ DG Environment Emilia-Romagna region, e-mail February 10, 2010; Fondazione Eni Enrico Mattei, meeting on May 24, 2010 in Venice; ISPRA, meeting on May 25, 2010 in Chioggia; ARPAV, meeting on May 25, 2010 in Chioggia.

Figure 17 : No-take zones for fishing in part of northern Italy



Source: Policy Research Corporation based on GIS-database ISPRA (Chioggia office)

(3) Waters under Croatian jurisdiction

The most important maritime activities in Croatia are maritime transport, marine and coastal tourism and fisheries. Competition between maritime uses is experienced at the national level mainly around port cities such as Rijeka, Zadar and Split. As a rise in maritime transport is expected, competition in the port regions is also likely to increase. Furthermore, competition between maritime uses at the local level is experienced between the tourism sector, the fisheries sector and the upcoming mariculture sector⁵⁶.

Maritime transport towards ports in Croatian waters is expected to increase as several of the Croatian ports are deep-water ports which could accommodate super-tankers. Consequently, Croatian ports are believed to provide a solution for today's bottlenecks in oil export routes in Eurasia⁵⁷. In this respect, the set-up of the pre-accession maritime transport strategy of the republic of Croatia is relevant. This strategy provides information about the developments and investments related to maritime transport⁵⁸.

⁵⁶ Relevant Croatian Ministries, meeting in Zagreb on February 2, 2010.

⁵⁷ Vidas, D., 2008, *The UN Convention on the Law of the Sea, the European Union and the Rule of Law, What is going on in the Adriatic?*

⁵⁸ Ministry of the sea, tourism, transport and development, 2005, *Pre-accession maritime transport strategy of the republic of Croatia*, Zagreb; in 2004, the total traffic of Croatian ports of national importance reached 7 million passengers and 17 million tonnes of cargo. The expected increase in traffic volumes therefore required additional facilities and equipment to be installed in the ports.

Furthermore, fishing has always been an important economic activity for the Croatian population. The country's coastline combined with its numerous islands, bays, coves and cliffs provides good conditions for fishing. Nevertheless, compared to other parts of the Mediterranean, the Croatian part of the Adriatic has limited fisheries resources. Therefore, steps have been taken to preserve this specific kind of resources, through (1) the establishment of the Ecological and Fisheries Protection Zone and (2) the division of the Croatian territorial waters into seven fishing zones according to fishery legislation. Each zone has particular restrictions regarding the possible timeframe for and type of fishing activities⁵⁹. *Figure 18* illustrates the division of the Croatian territorial sea into seven fishing areas.

Figure 18: Fishing zones in Croatia



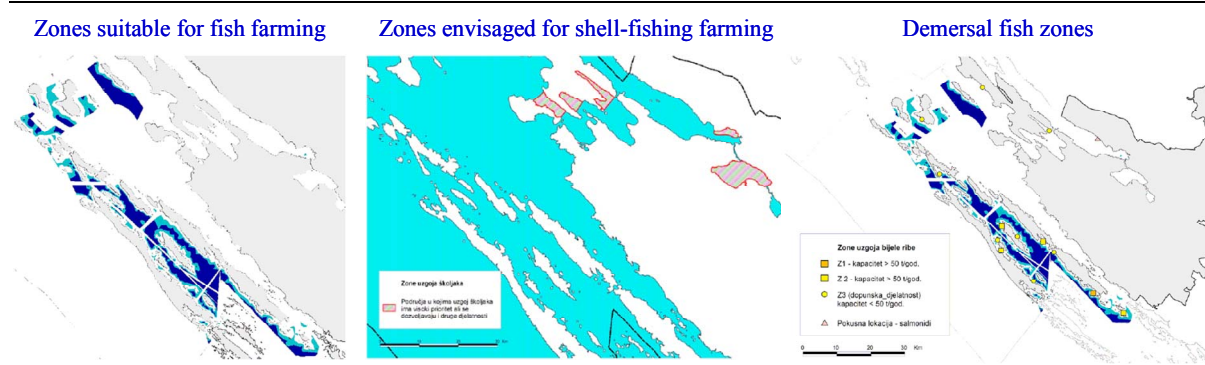
Source: Policy Research Corporation based on PAP/RAC, 2007, National Report on Current Policy, Procedures, Legal Basis and Practice of Marine Spatial Planning in Croatia, Split

As indicated, fishing activities (and recently developed mariculture) are experiencing more and more competition with other activities. The Zadar county developed maps of suitable zones for fish farming, shell-fish farming and zones for demersal fish within the framework of the ‘study of use and protection of the sea and underwater area in the Zadar County’. This study mainly focused on Maritime Spatial Planning in terms of mariculture⁶⁰. The exact zones are specified in *Figure 19*, also illustrating the potential competition between mariculture and marine and coastal tourism activities in those specific regions.

⁵⁹ PAP/RAC, 2007, *National report on Current Policy, Procedures, Legal Basis and Practice of Marine Spatial Planning*, Split; Relevant Croatian Ministries, meeting on February 2, 2010 in Zagreb.

⁶⁰ PAP/RAC, 2007, *National report on Current Policy, Procedures, Legal Basis and Practice of Marine Spatial Planning*, Split.

Figure 19: Zones suitable for fish farming, for shell-fish farming and demersal fish zones



Source: Policy Research Corporation based on PAP/RAC, 2007, *National Report on Current Policy, Procedures, Legal Basis and Practice of Marine Spatial Planning in Croatia, Split*

(4) Migration loop of fish

In the Adriatic Sea many fishery resources are shared between different countries. Usually nursery areas are situated at the western side (Italy), while at the eastern side, spawning areas can be found. For instance, the common sole fish species moves in the winter to the south-west of Istria to spawn. After the eggs have come out, the juveniles subsequently reach the lagoons in the early spring in the north-west of Italy. In the lagoon, they grow further and during fall these fish leave the lagoon to reach the Italian coastal area and later on, the high seas. The stocks of fish species have decreased as a result of human activities, also along this migration loop. Unsustainable fishing is carried out in the hotspots along the migration loop. Also pollution in lagoons (which is a part of the migration loop), resulting from port activities and land-based activities, is affecting the health of fish and the fish stocks. This means that for the protection and sustainable use of marine resources, it is necessary to take into account the biological cycle of species, and thus manage the whole ecosystem (i.e. protect spawning and nursery areas permanently or temporarily)⁶¹.

III.2. NATIONAL STAKEHOLDER PARTICIPATION

In order to achieve broad acceptance, ownership and support for the implementation of MSP, it is important to involve all stakeholders at the earliest possible stage in the planning process (MSP key principle 4)

The stakeholders listed in *Table 3* are included based on their competences in the field of (maritime) spatial planning, maritime activities / policy and environmental protection. Moreover, research centres and other stakeholders providing information for the implementation of maritime policy are included. Stakeholders representing economic activities such as fisheries, maritime transport, ports and offshore wind are not included in this table, although they are important stakeholders for MSP.

⁶¹ ISPRA, meeting in Chioggia on May 25, 2010.

Table 3: Relevant stakeholders in the marine area

		<i>Italy</i>	<i>Slovenia</i>	<i>Croatia</i>
<i>Public authorities</i>	<i>National</i>	Ministry of the Environment, Land and Sea Ministry of Infrastructure and Transport Ministry of Agriculture and Fisheries Ministry of Defence	Ministry of the Environment and Spatial Planning, Spatial Planning Directorate Ministry of Agriculture, Forestry and Food Ministry of Economy Slovenian Maritime Administration Ministry of Transport	Ministry of Environmental Protection, Physical Planning and Construction Ministry of the Sea, Transport and Infrastructure Ministry of Economy, Labour and Entrepreneurship Ministry of Agriculture, Fisheries and Rural Development
	<i>Regional / local</i>	Ordinary regions (i.e. Emilia-Romagna, Veneto) Special regions (i.e. Friuli Venezia Giulia) (Coastal) Provinces (e.g. Provincia di Venezia) (Coastal) Municipalities	(Coastal) municipalities: Koper, Izola and Piran	(Coastal) regions / counties: Istrian, Primorje-Gorski Kotar, Lika-Senj, Zadar, Sibenik-Knin, Split-Dalmatia and Dubrovnik-Neretva
<i>Other stakeholders</i>		ISPRA ARPA	Regional development agency South Primorska Institute of the Republic of Slovenia for Nature Conservation	Institute for Oceanography and Fisheries Centre for Marine Research Agency for the protection of the environment (AZO)

Source: Policy Research Corporation

More information on the competences and activities of the different stakeholders will be provided in Sections III.3 and III.5.

a/ Italy

Stakeholder involvement in territorial management is mandatory. All the territory management tools have to be developed through⁶²:

- Institutional agreement phases;
- Stakeholders consultation;
- Face-to-face conversations with directly involved people and participation of people who are interested.

The abovementioned required involvement of stakeholders shows that authorities should include stakeholders in territorial management plans and thus incorporate their opinions in an early stage. Consequently, if MSP would be developed, a similar approach is likely to be adopted.

⁶² PAP/RAC, 2007, *National Report on Current Policy, Procedures, Legal Basis and Practice of Marine Spatial Planning in Emilia-Romagna region – Italy*, Bologna.

Formally, the involvement of different levels of authorities is common given the division of responsibilities between national and regional authorities. For example, the Ministry of Environment, Protection of the Territory and the Sea (Directorate for Sea Protection) activated a consultation process with the coastal regions in order to define a national ICZM strategy as well as related planning and implementing projects (such as a CAMP project). However, up until today no national ICZM strategy has been developed.

b/ Slovenia

The Spatial Planning Act (2007) details the spatial planning process and lays down the stipulations for coordination and involvement of stakeholders at the national level. The following steps ensure a coordinated and transparent approach at all planning levels⁶³:

- The producer of a plan (Ministry of the Environment and Spatial Planning or municipality)⁶⁴ prepares a draft (national) spatial plan;
- The spatial planning stakeholders provide the guidelines within their competences on this basis of which the producer complements the draft;
- The producer must acquaint the public with the draft (national) spatial plan through public exhibition (lasting 30 days) and ensure a public debate; amended (national) spatial plan is put on a public exhibition, followed by a public debate;
- The producer prepares an amended (national) spatial plan and asks for the opinions of the spatial planning stakeholders;
- The producer finalises the draft (national) spatial plan and submits this to the Government⁶⁵ or the Municipal Council⁶⁶ for adoption.

During the PlanCoast project, it was proposed to develop the Marine Spatial Plan as a separate ‘national strategic spatial plan’⁶⁷. In this case, it would be the Ministry of the Environment and Spatial Planning who would draft the Marine Spatial Plan and the Government who would finally adopt the Marine Spatial Plan. The procedure would ensure coordination between stakeholders and involvement of the public and local communities when new spatial arrangements at sea are being developed. Consequently, new developments at sea would be planned in a participatory and transparent manner. Such a procedure is also used when Environmental Impact Assessments are carried out.

c/ Croatia

A certain level of integration and coordination among competent authorities with respect to spatial planning has been achieved in Croatia. Spatial plans are being coordinated at various levels (national, municipal and county level) to avoid conflicts between objectives, strategies and uses of land.

⁶³ PAP/RAC, 2008, *National Report on Current Policy, Procedures, Legal Basis and Practice of Marine Spatial Planning*, Koper. Regional Development Agency of South Primorska, e-mail March 16, 2010.

⁶⁴ Whether the Ministry of the Environment and Spatial Planning or the municipalities draft spatial plans depends on the type of spatial plans.

⁶⁵ In case the Ministry of the Environment and Spatial Planning was the producer of the plan.

⁶⁶ In case the municipality was the producer of the plan.

Nevertheless, this applies almost exclusively to onshore spatial planning and the first 300 metres seawards. For the remaining part of the marine area, coordination among stakeholders is limited and a sectoral approach dominates⁶⁸.

III.3. INSTITUTIONAL AND LEGAL FRAMEWORK

Maritime Spatial Planning needs a streamlined decision process, sufficient coordination and transparency among administrative authorities and should be legally binding (MSP key principle 3, 5 and 6)

An overview of the institutional and legal framework is presented in *Table 4*.

Table 4: Institutional and legal framework in the Northern Adriatic

	<i>Italy</i>	<i>Slovenia</i>	<i>Croatia</i>
<i>Level of responsibility for coastal planning</i>	State ⁶⁹ Regions	Municipalities	State Counties / Municipalities
<i>Responsible ministry for coastal planning</i>	Ministry of the Environment, Land and Sea	Ministry for the Environment and Spatial Planning	Ministry of Environmental Protection, Physical Planning and Construction and other ministries
<i>Legal basis for coastal planning</i>	Regional Coastal Plans	National Spatial Planning Act (2007)	Act of Physical Planning and Construction (1994) Governmental Regulation on Development and Protection of Coastal Protected Area (2004)
<i>Level of responsibility for maritime planning</i>	State Regions	State	State
<i>Responsible ministry for maritime planning</i>	Sectoral ministries	Mainly the Ministry for the Environment and Spatial Planning	Sectoral ministries
<i>Legal basis for Maritime Spatial Planning</i>		National Spatial Planning Act (2007)	

Source: Policy Research Corporation

⁶⁷ Regional Development Agency of South Primorska, e-mail March 16, 2010.

⁶⁸ Relevant Croatian Ministries, meeting on February 2, 2010 in Zagreb.

⁶⁹ The recent changes of the Italian legislative framework involved a shift of the main coastal competences from the State to the Regions; nevertheless, the coastal planning system is still characterised by a fragmentation between the different authorities of the State, Regions and Communes; PAP/RAC, 2007, *National Report on Current Policy, Procedures, Legal Basis and Practice of Marine Spatial Planning in Emilia-Romagna Region*, Bologna.

a/ Italy

In 1982, following the fast development of human activities on the Italian coast, the Law on General Rules for Sea Protection was established. The law foresaw the creation of a sea and coastal defence plan for the whole national territory to be defined in agreement with the regions. Such national plan has not been elaborated so far. Instead, the government decided in 1998 to shift the main coastal competences from the state to the regions as the regions were considered more suited to implement planning policies and Integrated Coastal Zone Management. The regions have the commitment to evaluate the state of the environment, especially in inland and coastal areas. Moreover, they have to coordinate aquaculture and fishing activities although they depend on different ministries in relation to the coordination at national level.

Consequently, there is no dedicated national legal framework for ICZM or MSP but some Italian coastal regions took the opportunity to develop their own Regional Coastal Plans and adequate laws which serve as regional planning instruments. In addition, the following national legislation is relevant to consider:

- *The Urban Planning Law (N°1150/1942)* regulates the building implementation and development in urban centres as well as in the territory; Italy has three levels of spatial planning, namely the regions, the provinces and the communes;
- *Law on Marine Protected Areas (N° 394 of 1991)* identifies and defines the activities in MPAs in order to ban those activities that could jeopardise the protection of the environment;
- *Environmental Consolidated Act (N°152/06)* foresees that the regions develop, in compliance with the European Water Framework Directive 2000/60, a Water Protection Plan as this is a necessary regional instrument to achieve environmental targets as regards the environmental quality of superficial and sea water.

To date, however, the situation of coastal planning still seems to be characterised by fragmentation between the different levels of authority, namely the state, the regions and the communes⁷⁰.

With regard to Maritime Spatial Planning, the following ministries have related competences⁷¹:

- The Ministry of the Environment, Land and Sea⁷²: responsible for the management and protection of inland waters, the prevention of pollution and the protection of the sea and coastal environment;
- The Ministry of Infrastructure and Transport (MIT)⁷³: responsible for all transport infrastructure and general transport planning and logistics; in addition, MIT governs maritime properties of national interest (e.g. sea defences);
- The Ministry of Agricultural, Food and Forestry Policies (MIPAAF)⁷⁴: responsible for the coordination of policies on aquaculture and fisheries; in addition, the Ministry manages fisheries resources;

⁷⁰ PAP/RAC, 2007, *National Report on Current Policy, Procedures, Legal Basis and Practice of Marine Spatial Planning in Emilia-Romagna region – Italy*, Bologna.

⁷¹ Istituto Superiore per la Protezione e la Ricerca Ambientale, e-mail June 16, 2010.

⁷² Ministry of the Environment, Land and Sea, www.minambiente.it, art. 36, DLGS 300/1999.

⁷³ Ministry of Infrastructure and Transport, www.mit.gov.it, art. 42, DLGS 300/1999.

- The Ministry of Defence⁷⁵: responsible for the defence of the Italian territory, including the marine areas.

Table 5 provides insight into the competences of the regions related to MSP.

Table 5: Responsibilities Italian regions⁷⁶

<i>Public body</i>	<i>Responsibilities (related to maritime activities)</i>	<i>Related legislation</i>
<i>Ordinary regions (e.g. Emilia-Romagna and Veneto)</i>	<ul style="list-style-type: none"> - Maritime networks and ports (only small ports) - Administration of maritime (e.g. sea defences) and riverine / lake properties (when used for tourist purposes) - Protection of environment, establishment and management of reserves at regional level - Management and protection of inland waters - Navigation in inland waters - Fisheries in inland and estuarine waters (conservation of species, fishing licence, aquaculture) - Prevention of pollution in inland, estuarine and coastal waters 	<ul style="list-style-type: none"> - Art. 117 Constitutional Law, as modified in art. 3 Constitutional Law 18 October 2001 n. 3 - Art. 59 of DPR 616/1977 - Art. 83 of DPR 616/1977 - Art. 91 of DPR 616/1977 - Art. 97 of DPR 616/1977 - Art. 100 of DPR 616/1977 - Art. 100 of DPR 616/1977
<i>Special regions (e.g. Friuli Venezia Giulia)</i>	<ul style="list-style-type: none"> - Responsibilities listed above - Fisheries, aquaculture and maritime transport 	<ul style="list-style-type: none"> - Art. 4 Constitutional Law January 31, 1963

Source: Policy Research Corporation, information provided by Raicevich, S. – Istituto Superiore per la Protezione e la Ricerca Ambientale, e-mail June 16, 2010

b/ Slovenia

In Slovenia, spatial plans are being developed at the national and municipality level. *Coastal* as well as *Maritime* Spatial Planning has always been the responsibility of the municipalities. In their spatial plans, the municipalities covered both coastal and a number of sea uses. Following the adoption of the Spatial Planning Act of 2007, the responsibility for Spatial Planning was shifted from the

⁷⁴ Ministry of Agricultural, Food and Forestry Policies, www.politicheagricole.it, art. 33, DLGS 300/1999.

⁷⁵ Ministry of Defence, www.difesa.it, art. 19 – 20, DLGS 3000/1999.

⁷⁶ In Italy, there are 20 regions to allow for a better administration of the country. Five out of 20 of these regions were defined as ‘special’ regions (i.e. Friuli Venezia Giulia, Trentino Alto Adige, Valle D’Aosta, Sicily and Sardinia). This implies that these regions have a stronger autonomy and more economic support from the central state; Istituto Superiore per la Protezione e la Ricerca Ambientale, e-mail June 16, 2010.

municipalities to the state, more specifically the Ministry of Environment and Spatial Planning, the Spatial Planning Directorate. Although the act does not specifically address Maritime Spatial Planning, its regulations may also be applied to the entire Slovenian marine area. Consequently, substantial legislative changes are not necessary to enhance Maritime Spatial Planning in Slovenia⁷⁷.

The Spatial Planning Act provides for three types of spatial plans: national, municipal and inter-municipal⁷⁸ plans. At all levels, a strategic as well as a detailed plan can be established. The coastal zone has not been defined in Slovenia; part of South Primorska, covering the municipalities of Koper, Izola and Piran, is considered as the coastal area. As a result, planning of the coastal area forms part of the (inter-)municipal plans of Koper, Izola and Piran in accordance with the objectives and directives of the national strategic master plan. On the basis of the Spatial Planning Act, a Maritime Spatial Plan could form part of the overall national strategic spatial plan or being undertaken in the form of a separate national strategic maritime plan⁷⁹.

Besides the Spatial Planning Act, the following Slovenian legislation is relevant to consider in the framework of applying Maritime Spatial Planning⁸⁰:

- *Spatial planning of arrangements of national significance Act*⁸¹ (*Zakon o umeščanju prostorskih ureditev državnega pomena v prostor* (ZUPUDPP) - Official gazette of the Republic of Slovenia, nr. 80/10). The spatial arrangements at the sea are recognised as spatial arrangements of national significance.
- *Waters Act* (“Zakon o vodah” (ZV-1) - Official gazette of the Republic of Slovenia, nr. 67/02, amendments: Official gazette of the Republic of Slovenia, nr.110/02-ZGO-1, 2/04-ZZdrI-A, 41/04-ZVO-1, and 57/08) - Governs the management of marine, inland and ground waters, and the management of water and waterside land; this comprises the protection of waters, the regulation of waters and decision-making on the use of waters;
- *Environmental Protection Act* (“Zakon o varstvu okolja” (ZVO-1 UPB1) - Official gazette of the Republic of Slovenia, nr. 41/04, amendments: Official gazette of the Republic of Slovenia, nr.17/06, 20/06, 28/06 Skl.US: U-I-51/06-5, 39/06-UPB1, 49/06-ZMetD, 66/06 Odl.US: U-I-51/06-10, 112/06 Odl.US: U-I-40/06-10, 33/07-ZPNačrt, 57/08-ZFO-1A, 70/08, and 108/09)
- *Nature Conservation Act* (“Zakon o ohranjanju narave” (ZON-UPB2) - Official gazette of the Republic of Slovenia, nr. 56/99 (31/00) amendments: Official gazette of the Republic of Slovenia, nr.110/02-ZGO-1, 119/02, 22/03-UPB1, 41/04, 96/04-UPB2, 61/06-ZDru-1, 63/07 Odl.US: Up-395/06-24, U-I-64/07-13, 117/07 Odl.US: U-I-76/07-9, 32/08 Odl.US: U-I-386/06-32, and 8/10-

⁷⁷ PAP/RAC, 2008, *National Report on Current Policy, Procedures, Legal Basis and Practice of Marine Spatial Planning*, Koper; Regional Development Agency of South Primorska, e-mail March 16, 2010.

⁷⁸ Regions have not been established in Slovenia; the 2007 Spatial Planning Act does not encourage a regional spatial planning approach but only inter-municipal cooperation in the field of spatial planning and environmental infrastructure in particular.

⁷⁹ PAP/RAC, 2008, *National Report on Current Policy, Procedures, Legal Basis and Practice of Marine Spatial Planning*, Koper; Ministry of Environment and Spatial Planning meeting on February 3, 2010 in Ljubljana; Regional Development Agency of South Primorska, e-mail March 16, 2010.

⁸⁰ PAP/RAC, 2008, *National Report on Current Policy, Procedures, Legal Basis and Practice of Marine Spatial Planning*, Koper; Ministry of Environment and Spatial Planning meeting on February 3, 2010 in Ljubljana.

⁸¹ Official translation of Act is not yet available.

ZSKZ-B): Provides the measures for the preservation of biotic diversity and the system of valuable natural features protection with the aim to contribute to the conservation of nature;

- *Maritime code* (“Pomorski zakonik” (PZ- UPB2) – Official gazette of the Republic of Slovenia, nr. 26/01, amendments: Official gazette of the Republic of Slovenia, nr. 21/02, 110/02-ZGO-1, 2/04, 37/04-UPB1, 98/05, 49/06, 120/06-UPB2); Regulates the sovereignty, jurisdiction and control of the Republic of Slovenia over the sea, navigational safety in territorial waters and internal waters, protection of the sea against pollution from vessels and legal regime of ports;
- *Marine Fisheries Act* (“Zakon o morskem ribištvu” (ZMR-2) - Official gazette of the Republic of Slovenia, nr. 115/06): Lays down goals and measures in marine fishery.

For spatial planning, the Ministry of the Environment and Spatial planning, Spatial planning Directorate is responsible at the national level, the municipalities at the local level:

- The state is competent to determine the objectives of spatial development, determine the policies and guidelines for spatial planning at all levels, plan spatial arrangements of national significance and supervise the legality of spatial planning at the municipal level;
- Municipalities are competent to determine the objectives and guidelines for spatial development at local level, determine the land-use and set the conditions for spatial development and plan spatial arrangements of local importance at terrestrial level.

As regards Maritime Spatial Planning, the competence lies with the state and not with the municipalities. The sea is defined as national public good. All proposed spatial interventions are therefore a matter of national spatial planning according to the Governmental Decree on the types of spatial arrangement of national significance issued on the basis of the Spatial Planning Act 2007. Besides the Ministry of the Environment and Spatial Planning, the following ministries have competences related to Maritime Spatial Planning⁸²:

- Ministry of the Environment and Spatial Planning: policy making and implementation with regard to nature conservation and spatial planning; the ministry conducts the spatial planning procedures and strategic environmental assessment of plans and programmes;
- Ministry of Agriculture, Forestry and Food: policy making, implementation and licensing concerning fisheries and aquaculture; the ministry also takes a role as stakeholder in the spatial planning processes, responsible for natural resources (land, soil, forest);
- Ministry of Economy: policy making, implementation and licensing concerning offshore oil and gas; the ministry also takes a role as stakeholder in the spatial planning processes (energy);
- Slovenian Maritime Administration: licensing with regard to shipping and cruise tourism;
- Ministry of Transport: policy making and implementation with regard to cruise tourism and shipping; the ministry also takes a role as stakeholder in the spatial planning processes (road-, rail-, air-, marine transport).

⁸² Slovenian Maritime Administration, www.up.gov.si/en; Ministry of Agriculture, Forestry and Food, www.mkgp.gov.si/en; Ministry of the Economy, www.mg.gov.si/en; Ministry of the Environment and Spatial Planning, www.mpo.gov.si/en; Ministry of Transport, www.mzp.gov.si/en.

At regional level, the Regional Development Centre Koper (RDC Koper) should also be taken into account. It aims at promoting business and economy development in the region. It performs the role of regional coordinator of interests on local as well as national level in the fields of regional development, economy, human resources and environment protection. RDC Koper gained the status of leading organisation of the Regional Development Agency South Primorska for the municipalities of Divača, Hrpelje-Kozina, Ilirska Bistrica, Izola, Komen, Koper, Piran and Sežana in 2001. Consequently, RDC Koper became a permanent representative of ministries, governmental organisations, chambers of commerce and craft, companies and other institutions.

c/ Croatia

MSP and coastal spatial planning is at present mainly a national affair. Although the Ministry of Environmental Protection, Physical Planning and Construction prepared the National Spatial Planning Strategy (1997) and the National Spatial Planning Programme (1999)⁸³ and monitors the implementation of physical planning and coordinates the licensing of development permits, the regulatory system that governs the *sea* area is still characterised by a sectoral approach. This is the consequence of the absence of a legal framework for MSP⁸⁴. The following ministries should be taken into account with regard to MSP:

- Ministry of Economy, Labour and Entrepreneurship, Directorate for Energy;
- Ministry of the Sea, Transport and Infrastructure;
- Ministry of Agriculture, Fisheries and Rural Development;
- Ministry of Tourism.

In Croatia, there is no direct Maritime Spatial Planning legislation, nor any spatial planning or coastal law which can also be applied to the sea. Existing laws and regulations relevant in the framework of Maritime Spatial Planning are limited to a number of sectoral laws and regulations. Important laws in this respect include the Maritime Code (1994 and 1996), the Shoreline and Marine Harbours Law (2003), the Law on Marine Fishery (1994) and the Law on the Protection of Nature (2005) which regulated the establishment of MPAs⁸⁵.

One exception is the *300 m marine belt* which is protected under the Act on Physical Planning and Construction (1994) and the Government Regulation on Development and Protection of the Protected Coastal Area (2004). The coastal zone of 1 km landwards and 300 m seawards is considered as

⁸³ The National Spatial Planning Strategy defines long-term objectives of the physical development and planning harmonised with the overall economic, social and cultural development; the Spatial Planning Programme defines measures and activities towards the implementation of the Spatial Planning Strategy.

⁸⁴ Relevant Croatian ministries, meeting on February 2, 2010 in Zagreb; PAP/RAC, 2007, *National report on Current Policy, Procedures, Legal Basis and Practice of Marine Spatial Planning*, Split.

⁸⁵ Relevant Croatian ministries, meeting on February 2, 2010 in Zagreb; PAP/RAC, 2007, *National report on Current Policy, Procedures, Legal Basis and Practice of Marine Spatial Planning*, Split.

Protected Coastal Area in which restrictive conditions for construction apply as well as clear planning requirements⁸⁶.

III.4. CROSS-BORDER/INTERNATIONAL COOPERATION AND CONSULTATION

Cooperation across borders will lead to the development of common standards and raise the overall quality of MSP (MSP key principle 7)

The Adriatic countries are involved in a number of initiatives / projects which could help facilitate the dissemination of the concept of Maritime Spatial Planning as a cross-border/international tool to solve competition between maritime activities (and their environmental impact).

a/ Trilateral Commission for the protection of the Adriatic⁸⁷

The Trilateral Commission for the protection of the Adriatic originates from the bilateral commission between Italy and Yugoslavia (1974), which was re-launched in 1992, including Italy, Croatia and Slovenia. Montenegro has recently become a member of the initiative. Even though the other Adriatic countries – Albania and Bosnia and Herzegovina – do not form part of the Trilateral Commission, their interest in activities conducted by the Trilateral Commission was expressed. They were invited for – and attended – the last meetings of the Trilateral Commission.

The main goal of the Trilateral Commission is the protection of the Adriatic Sea and coastal areas against pollution. Therefore, the Commission:

- Studies all problems related to the pollution of the Adriatic Sea waters and coastal areas;
- Does propositions and recommendations to the government related to the research needed;
- Is engaged in introducing measures required to eliminate the current pollution and prevent new causes of pollution.

The Trilateral Commission presents the adequate institutional framework for the cooperation of the Adriatic states in the field of marine environmental protection. Moreover, the work of the Trilateral Commission has proved to be an efficient model, housing different aspects of marine environmental issues and providing for appropriate response to new challenges. Consequently, the Trilateral Commission is believed to be the instrument to come to a common vision – a long-term Maritime Spatial Planning strategy – with regard to cross-border/international Maritime Spatial Planning in the (Northern) Adriatic.

The 10th meeting of the Trilateral Commission in June 2009 discussed:

⁸⁶ Relevant Croatian ministries, meeting on February 2, 2010 in Zagreb; PAP/RAC, 2007, *National report on Current Policy, Procedures, Legal Basis and Practice of Marine Spatial Planning*, Split.

- The current marine environment protection topics;
- Ballast water management in the Adriatic Sea;
- Implementation of the Sub-Regional Intervention Plan for Cases of Sudden Adriatic Sea Pollution;
- EU Marine Strategy Directive;
- The integrated management of coastal areas and safe harbours.

The members emphasised the importance of coordination and synergy of all activities in the Adriatic for the purpose of its efficient protection and sustainable development.

b/ Adriatic-Ionian Initiative⁸⁸

The Adriatic-Ionian Initiative (AII) was established as a political initiative at the Conference on Safety and Development of the Adriatic and Ionian Sea, held in Ancona (Italy) in May 2000. This platform for cross-border/international cooperation includes representatives of Albania, Bosnia and Herzegovina, Croatia, Greece, Italy, Montenegro, Serbia and Slovenia.

The Adriatic-Ionian Initiative links the coastal countries of the two seas (Adriatic and Ionian) for the purpose of cooperation in the development and safety of the whole area. Its objectives are achieved by cooperation in different fields: tourism, transport, maritime affairs, culture, education as well as environmental protection and sustainable development. The issues of environmental protection and maritime safety (e.g. high sensitivity of the maritime and coastal areas of the enclosed Adriatic Sea) are central for socio-economic development in the sub-region.

Its organisational structure consists of the Adriatic-Ionian Council, the Council of Senior Officials and round table meetings. It could provide a good basis for high-level dissemination of the advantages and benefits of cross-border/international Maritime Spatial Planning and for the development of strategies and actions in the region.

The Adriatic-Ionian Initiative dealt and deals with among others:

- The Adriatic Action Plan, adopted in 2003;
- Contingency plan for the Adriatic, including a Sub-regional Contingency Plan for the Northern Adriatic (Slovenia, Italy and Croatia), to be coordinated by the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC);
- Proposal for the designation of the Adriatic Sea as a Particularly Sensitive Sea Area (PSSA)⁸⁹;
- Strategic Environmental Assessment of Maritime Activities including Ballast Water Issue⁹⁰;

⁸⁷ Ministry of Environmental Protection, Physical Planning and Construction, www.mzopu.hr; Organization for Security and Co-operation in Europe, 2008; The Organisation for Security and Co-operation in Europe, 2008, *Plenary Session III – Experiences in maritime co-operation in the Mediterranean Region*.

⁸⁸ Bricelj, M., Orhini, T., *Adriatic-Ionian Initiative*; Ministry of Environmental Protection, Physical Planning and Construction, www.mzopu.hr; The Adriatic Sea Partnership, <http://asp.rec.org>.

⁸⁹ A Particularly Sensitive Sea Area (PSSA) is an area that needs special protection through action by IMO because of its ecological or socio-economic or scientific significance and which may be vulnerable to damage by international maritime activities.

- Integrated Coastal Zone Management.

c/ Adriatic Euroregion⁹¹

The Adriatic Euroregion (AE) was founded on June 30, 2006 in Pula, Region of Istria, Croatia for transnational and interregional cooperation between regions of the Adriatic coastline. The Adriatic Euroregion is the institutional framework for jointly defining and solving important issues in the Adriatic area. It consists of 26 members - regional and local governments from Albania, Bosnia and Herzegovina, Croatia, Greece, Italy, Montenegro and Slovenia.

The aims of the AE are the following:

- Forming an area of peace, stability and co-operation;
- Protection of the cultural heritage;
- Protection of the environment;
- Sustainable economic development in particular of tourism, fishery and agriculture;
- Solution of transport and other infrastructure issues.

The Adriatic Euroregion is divided in 6 technical Commissions, namely for:

- Tourism and culture;
- Fisheries;
- Transport and infrastructure;
- Environment;
- Economic affairs;
- Welfare.

The Commission for Environment is led by the Emilia-Romagna region and aims to identify common policies and joint projects to promote the sustainable development of the Adriatic area. In 2008 the Commission adopted an Integrated Strategy for the environmental protection of the Adriatic Region where Coastal Zone Management and Maritime Spatial Planning are defined as strategic objectives.

The following reasons for the need of ICZM and MSP in the Adriatic region have been expressed by the AE:

- Coasts and sea are strategic for the well-being and prosperity of the Adriatic Countries;
- Human activities tend to develop in coastal and marine areas competing with each other and with protection needs of habitats and landscapes;
- Many issues transcend national borders; sharing a common approach to the management of marine space in the same sea basin will make it easier to meet global challenges.

⁹⁰ The introduction of invasive marine species into new environments by ships ballast water, attached to ships hulls or via other vectors was identified as one of the four greatest threats to the seas.

⁹¹ Regione Emilia-Romagna, 2009, Shape (Shaping an Holistic Approach to Protect the Adriatic Environment: between coast and sea), Bologna.

The Trilateral Commission and the Adriatic Ionian initiative – given the good relationships between the different member and non-member countries and their fields of action/expertise – could be deemed important drivers for the establishment of cross-border/international MSP in the Adriatic region. The Adriatic Euroregion also seems to be a qualified initiative through which MSP could be applied to the Adriatic Sea. This initiative is sector-neutral and includes both environmental and economic objectives. MSP initiatives should be neutral, meaning that the initiative should not only target at environmental protection or the development of one or more particular economic activities. Instead, it should have a holistic ecosystem-based approach that aims at sustainable development of maritime activities. In that respect, the Trilateral Commission is primarily focused on protection of the marine environment and therefore seems less qualified. A disadvantage of AE is that only coastal regions are members; there are no participants from national authorities. Since national authorities are also responsible for maritime affairs, they need to be involved in cross-border/international initiatives for the application of MSP.

Other cross-border/international projects are being proposed in the framework of the IPA (Instrument for Pre-Accession Assistance) Adriatic Cross-border Cooperation Programme. The following section provides information about this programme and some of the project proposals with relevance to MSP.

d/ IPA (Instrument for Pre-Accession Assistance) Adriatic Cross-border Cooperation Programme⁹²

The IPA instrument seeks to provide targeted assistance to countries which are candidates or potential candidates for membership of the EU rationalising Pre-Accession Assistance by replacing the various instruments which previously existed for the assistance. IPA prepares, inter alia, candidates for the implementation of Structural and Cohesion Funds and Rural Development on accession, by specifically supporting institution building and introducing procedures as close as possible to the Structural Funds. Cross-border cooperation between candidate countries / potential candidate countries and between them and the Member States is supported by the IPA Component II (the Cross-border cooperation component). Within this programme, the proposals Shape, COAS and IMaGe have been submitted. The Shape project has been approved and selected provisionally as a funded project. Although the other project proposals have not (yet) been adopted, they show that initiatives with relevance for MSP are undertaken.

Shape

The Emilia-Romagna region has submitted a project proposal called ‘Shape’ (Shaping a Holistic Approach to Protect the Adriatic Environment)⁹³ under the first call of the IPA (Instrument for Pre-Accession Assistance) Adriatic Cross-border Cooperation Programme (2007-2013). The Shape

⁹² Annual Report on the implementation of the IPA Adriatic Cross-Border Cooperation Programme (www.adriaticipacbc.org).

‘project’ is to be a cross-border/international cooperation project aiming at the sustainable development of the Adriatic Maritime Region and consequently aims to promote the rational use of the sea and its resources through an integrated approach. The project furthermore aims at creating a multilevel cross-sector governance system, able to solve competition between different uses. In addition, the project focuses on ICZM and MSP and offers the opportunity to develop adequate tools supporting spatial planning in the whole Adriatic Basin.

According to the project proposal, the objectives / tasks of an Adriatic project on MSP (‘Shape’) are:

- To make human activities in coastal and marine areas more sustainable;
- To manage competition between different uses and support the decision-making process;
- To improve the institutional framework, the stakeholders involvement and the public awareness;
- To strengthen the role of ICZM in the Adriatic Sea basin and to prepare the ground for national and local strategies;
- To promote MSP in the Adriatic Sea basin according to the MSP key principles;
- To reach a high level of coherence between planning in coastal areas and planning in maritime spaces, binding ICZM and MSP;
- To share data and experience as a common base of knowledge allowing the coherent and conscious governance of the coastal and marine environment;
- To develop a coherent picture of the Adriatic Sea and contribute to EMODNET (European Marine Observation and Data Network).

CAOS (Coordinated Adriatic Observing System)

Within the IPA Adriatic Cross-border Cooperation Programme (2007-2013), the CAOS project has been proposed. The CAOS project is a cross-border/international initiative between Italy (Emilia Romagna, Veneto, Friuli Venezia Giulia), Slovenia and Croatia. The aim is the creation of an Observatory for the protection of the marine and coastal environments in the Adriatic-Ionic basin, which will support decision makers. The *North Adriatic Coastal Observatory* will be a permanent network between public authorities, aimed at providing timely and continuous information to all bordering countries on the state of the sea. The final aim of the Observatory is to guarantee integration of all activities and initiatives at local and cross-border level in order to provide a homogeneous and coherent action on the Upper Adriatic.

IMaGe

This project proposal involves 31 parties representing national environmental ministries, public institutions, research institutes, universities and regional authorities from Italy, Slovenia, Croatia, Bosnia and Herzegovina, Montenegro, Albania and Corfu (Greece). The objectives are:

- To share data and experiences as a common base of knowledge, thus allowing a coherent and conscious governance of the coastal-marine environment;

⁹³ Regione Emilia-Romagna, 2009, Shape (Shaping an Holistic Approach to Protect the Adriatic Environment: between coast and sea), Bologna.

- To enhance the sustainability of the activities occurring in the Adriatic coastal and marine areas by improving institutional building and public awareness in the Adriatic area;
- To promote a model of governance of the marine and coastal environment through the application of Integrated Coastal Zone Management (ICZM) in the Adriatic Region;
- To promote a new instrument of Maritime Spatial Planning in the Adriatic Sea as a tool for achieving international consensus on the future use of maritime and coastal surfaces, bearing in mind growing pressures and related conflicts;
- To contrast damaging phenomena, both natural and caused by human actions, as eutrophication, coastal erosion, salt-intrusion, diffusion of invasive species, subsidence and sea level raising.

III.5. DATA COLLECTION, MONITORING AND EVALUATION

Maritime Spatial Planning has to be based on sound information and scientific knowledge and requires a transparent regular monitoring and evaluation mechanism (MSP key principle 8 and 10)

a/ Italy

The monitoring of sea water quality started around 10 years ago by the Italian Sea Protection Department and the 15 coastal regions in order to⁹⁴:

- Improve knowledge on sea water quality;
- Protect sea and marine ecosystems;
- Identify possible degradation situations;
- Prevent and reduce water pollution.

The regions carry out the monitoring tasks through environmental agencies, universities and research institutes. One of these agencies is ARPA (Agenzia Regionale per la Prevenzione e Protezione Ambientale). It is an environmental control and technical support body to the regional, district and local authorities and is administratively and technically independent. ARPA has dedicated offices in each one of the Italian regions. Its functions cover all aspects concerning environmental control, including:

- Monitoring of the various environmental components;
- Management and surveillance of human activities and their territorial impacts;
- Activities in support of the environmental impact assessment of plans and projects;
- Creation and management of a regional environmental information system.

The agencies also have a water department that monitors the marine and coastal habitat in a variety of ways. The following activities are carried out:

⁹⁴ PAP/RAC, 2008, *State of the Art of Coastal and Maritime Planning in the Adriatic Region – Synthesis Report*.

- Checks on bathing waters;
- Checks on the ecological quality of the marine and coastal environment;
- Studying and monitoring anomalous phenomena such as sea bloom and eutrophication;
- Studies and applies research into areas of particular environmental value.

The agency's activities are aimed at local, regional and national institutional customers, the business world and private citizens. In addition, ARPA collaborates with the Italian Agency for the Environment and Territory, the European Environmental Agency and Italian, European and International institutes and research centres.

ISPRA (Istituto Superiore per la Protezione e la Ricerca Ambientale) is another Italian research institute. The Italian Institute for Environmental Protection and Research has been established by Decree no. 112 of 25 June 2008 and converted into Law no. 133 (with amendments) on 21 August 2008. ISPRA performs the following tasks:

- Ex-APAT, Italian Environment Protection and Technical Services Agency (article 38 of Legislative Decree no. 300, July 30, 1999, and subsequently amended);
- Ex-INFS, National Institute for Wildlife (Law no. 157 of February 11, 1992, and subsequently amended);
- Ex-ICRAM, Central Institute for Scientific and Technological Research applied to the Sea (Decree no. 496, article 1-bis, December 4, 1993, converted into Law no. 61, Article 1, January 21, 1994, with amendments).

The Institute acts under the vigilance and policy guidance of the Italian Ministry for the Environment and the Protection of Land and Sea.

CNR-ISMAR is an institute of marine sciences. The research themes of the institute are⁹⁵:

- The evolution of oceans and their continental margins, studying submarine volcanoes, faults and slides and their potential impacts onshore;
- The influence of climate change on oceanic circulation, acidification, bio-geochemical cycles and marine productivity;
- Submarine habitats and ecology, and the increasing pollution of coastal and deep-sea environments;
- The evolution of fish stocks with a view to keep commercial fishing within sustainable limits and improve mariculture and aquaculture practices;
- Natural and anthropogenic factors that economically and socially impact coastal systems from pre-history to the industrial epoch.

These themes show a strong link to the issues relevant for MSP and the institute is therefore highly relevant for data collection and knowledge building.

b/ Slovenia

Within the framework of the PlanCoast project – as mentioned in *Section III.1* – a map illustrating the current maritime uses in the Slovenian internal and territorial waters was developed, showing that information on the different maritime activities currently taking place in Slovenian waters is available⁹⁶.

In addition, the ‘Institute of the Republic of Slovenia for Nature Conservation’ has as main objective to conserve the nature (including the sea) with a special care devoted to its most valuable and most threatened parts. Some of the institute’s key tasks are:

- Collection of data on plant and animal species, their habitats and ecosystems (in cooperation with the implementers of public works in the sphere of direction of natural resources management);
- Registration and evaluation of separate nature's parts;
- Management of databases concerning natural riches and biodiversity components;
- Monitoring of the state of nature preservation, biodiversity and the state of natural riches;
- Development of models for various purposes.

Furthermore, the Inspectorate for the Environment and Spatial Planning of the Ministry of the Environment and Spatial Planning maintains the ‘Spatial Information System’. The system is used to facilitate the implementation and monitoring of national and municipal tasks in the area of spatial planning, including the preparation of spatial planning documents. Nevertheless, this information system mainly focuses on onshore development rather than on offshore development⁹⁷.

c/ Croatia

In Croatia, in 2004, all responsibilities for protected areas and nature conservation initiatives (including marine areas) were transferred from the Ministry of Environmental Protection, Physical Planning and Construction to the Ministry of Culture, Administration for the Protection of Nature. The scientific work connected to among others data collection, Natura 2000, background documents for the proclamation of protected areas and the revision of management plans is the responsibility of the State Institute for Nature Protection (i.e. Agency for the protection of the environment).

*Institute for Oceanography and Fisheries*⁹⁸

The Institute of Oceanography and Fisheries is a scientific institution established for the investigation of the sea. Its activities encompass virtually all aspects concerned with sea exploration: physical, chemical, geological, biological aspects and fisheries.

⁹⁵ Website CNR-ISMAR: www.ismar.cnr.it.

⁹⁶ Regional Development Centre Koper, meeting on February 2, 2010 in Koper.

⁹⁷ PAP/RAC, 2008, *National Report on Current Policy, Legal Basis and Practice of Marine Spatial Planning*, Koper.

⁹⁸ Institute for Oceanography and Fisheries, www.izor.hr.

Papers have been written concerning expedition reports, hydrographic studies, dynamic properties of the marine eco-system, description of flora and fauna, ecological research (in particular, primary and secondary production), fisheries research, advancements in fishing and artificial breeding (in relation to the Adriatic and Mediterranean, including coastal and open seas), as well as the impact of human activities on the sea.

*Centre for Marine Research*⁹⁹

The Centre for Marine Research, part of the Ruder Bošković Institute in Zagreb, is an interdisciplinary research centre where activities are focused on basic and applied oceanographic research, including among others the following activities:

- Ecological, physiological and genetic studies of marine organisms and the effects of pollution;
- Monitoring of pollution and sea water quality.

d/ Cross-border/international efforts

A Croatian Vessel Traffic Monitoring System (VTMIS) is currently being implemented in order to avoid accident risks and to monitor the density of the international traffic. International cooperation is considered needed in this respect since countries cannot tackle major accidents on their own¹⁰⁰. Therefore, Italy, Slovenia and Croatia have the intention to cooperate on this topic.

Furthermore, the national institutes from the different countries maintain good relations with each other and cooperate frequently on various projects,

III.6. COHERENCE BETWEEN TERRESTRIAL AND MARITIME SPATIAL PLANNING

Maritime Spatial Planning is considered to benefit from a coherent development with terrestrial spatial planning (MSP key principle 9)

a/ Italy

According to the Constitutional Law, regions are responsible for spatial planning of the coast. Since there is no national ICZM strategy, several regions (Liguria, Marche, Tuscany and Emilia-Romagna) have developed their own Coastal Plan, examining the present condition of their coasts. All this has been realised based on the awareness that coastal governance required a methodological planning instrument, instead of the ‘urgent measures’ adopted in the past.

⁹⁹ Centre for Marine Research, www.cim.irb.hr/?lang=en.

¹⁰⁰ Relevant Croatian Ministries, meeting in Zagreb on February 2, 2010.

At present, the Italian regions have not yet developed any Maritime Spatial Plans. Nevertheless, the Coastal Plan involves several sectors: coastal protection, beach nourishment, marinas, coastal traffic issues, recovery and re-organisation of urbanised tracts and development of public and tourist facilities in the coastal area. Emilia-Romagna Region has developed and adopted, by Council Act n. 645 of 20 January 2005, the ICZM Regional Strategy that represents the tool to address all activities affecting the coastal area towards economic, social and environmental sustainability. The ICZM Plan is based on an integrated and multi-sector approach considering nine thematic areas¹⁰¹:

- Physical system, defence strategy;
- Integrated water management at basin scale;
- Port, transport, navigation related risks and management;
- Enlargements of natural habitats and improvement of biodiversity;
- Sustainable tourism;
- Fishing and aquaculture;
- Sustainable agriculture;
- Energy policy;
- Coastal urbanisation and transport.

This specific ICZM strategy shows that maritime activities are included and therefore coherence between strategies for land and sea is present in a number of cases. Nevertheless, awareness of the importance of coherence between terrestrial and marine planning needs to be increased in the other Italian regions as well.

b/ Slovenia

In Slovenia, legislation provides for the integration of the management of land and sea areas. Concrete examples towards such an attempt exist, indicating the government's will to achieve coherence between terrestrial and Maritime Spatial Planning¹⁰².

The most prominent example of land-sea integration in Slovenia is related to the requirements of the EU Water Framework Directive. Under this Directive, it is required to put in place River Basin Management Plans by 2013. The Waters Act – which provides for the implementation of the EU Water Framework Directive in Slovenia – prescribes the Water Management Plan for Aquatic Areas (or detailed water management plans). The Minister must provide its consent on each draft detailed water management plan that is submitted in order to ensure co-ordination with spatial planning and other sectoral plans¹⁰³. Moreover, the Water Council – which consists of the representatives of local

¹⁰¹ PAP/RAC, 2007, *National Report on Current Policy, Procedures, Legal Basis and Practice of Marine Spatial Planning in Emilia-Romagna region – Italy*, Bologna.

¹⁰² Ministry of the Environment and Spatial Planning, meeting on February 3, 2010 in Ljubljana.

¹⁰³ The Minister's consent ensures that the spatial plan is in compliance with river basin management plans and with the Water Act.

communities, the holders of water rights and non-governmental organisations – ensures the participation of public and stakeholders¹⁰⁴.

In addition, the Ministry of Environment and Spatial Planning indicated to be in favour of approaching the different EU directives' requirements in an integrated (cross-border/international) manner, together with Italy and Croatia. In that case, the Trilateral Commission is seen as a platform through which such an approach could be introduced¹⁰⁵.

c/ Croatia

In Croatia, integration between terrestrial and maritime planning is likely to be existent (theoretically) for the 300 meter marine belt as this forms part of the Protected Coastal Area. For the remaining parts of the marine area, it is the sectoral approach that dominates. The Act on Physical Planning and Construction (1994) and the Government Regulation on Development and Protection of the Protected Coastal Area (2004) prescribe cooperation between coastal stakeholders and thus different sectors. These acts however do not apply to the marine area, which implicates that integration between land and sea in terms of development and planning remains limited¹⁰⁶.

III.7. BENEFITS OF MSP IN THE ADRIATIC SEA

MSP has both economic and environmental benefits. In this paragraph the benefits of the application of MSP in the Northern Adriatic will be discussed.

Economic effects

Figure 20 gives an overview of the possible economic effects of MSP. The effective implementation of MSP in the Northern Adriatic Sea can lead to enhanced coordination with benefits for governments and private organisations in terms of lower administrative costs as a result of more efficient procedures. The implementation of MSP will also lead to lower search costs for companies. In addition, investments may be accelerated as a result of e.g. more efficient procedures. Moreover, MSP can contribute to the reduction of conflicts of interest.

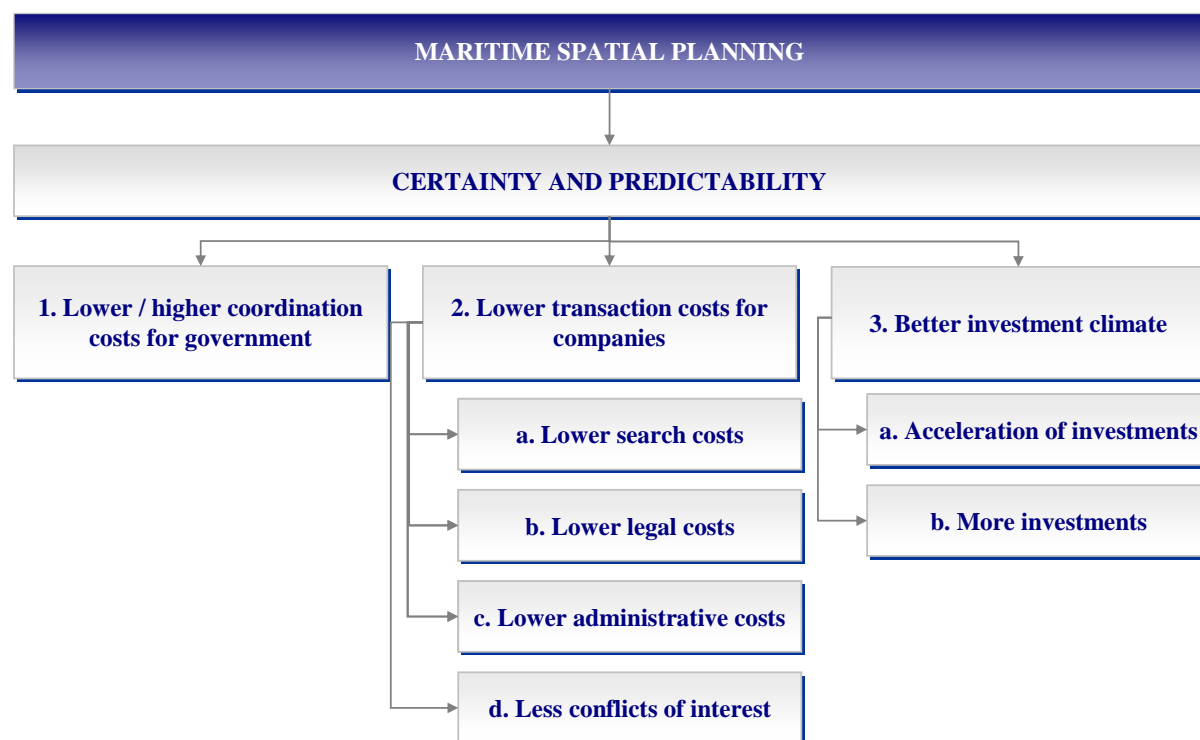
Quantification of the effects in the Northern Adriatic is not possible due to a lack of detailed area-specific data (e.g. the costs of procedures or the costs of conflicts of interest). Because of this, the effects of MSP will be discussed in a qualitative way.

¹⁰⁴ Ministry of the Environment and Spatial Planning, meeting on February 3, 2010 in Ljubljana.

¹⁰⁵ Ministry of the Environment and Spatial Planning, meeting on February 3, 2010 in Ljubljana.

¹⁰⁶ Relevant Croatian Ministries, meeting in Zagreb on February 2, 2010.

Figure 20: Economic effects of Maritime Spatial Planning



Source: DG Mare, 2010, *Study on the economic effects of Maritime Spatial Planning*

None of the countries in the Northern Adriatic has developed MSP so far. If the key principles of MSP would be effectively implemented, enhanced coordination mechanisms would be introduced for MSP-issues, leading to e.g. less administrative costs for authorities (local, regional and national). In the Northern Adriatic significant potential effects of MSP are available in case coordination is improved since sectoral approaches, requiring considerable coordination costs, dominate. Changes in the legal and institutional framework will first require investments in these countries, but the benefits are likely to be significant¹⁰⁷. In the longer term the benefits will only rise: competition between activities will increase, requiring an even stronger coordination between the authorities involved. The costs of changes in the institutional and legal framework will differ among Member States. Slovenia for example, will experience relatively low start-up costs, since it already has the legal framework for applying MSP at its disposal.

Integrated management of the sea will also be beneficial for companies that are engaged in maritime activities. Currently, the process of developing an activity at sea may take considerable time in terms of licensing and permitting procedures. If the government improves this process through better coordination, overlapping procedures or other inefficiencies may disappear leading to lower

¹⁰⁷ As mentioned before, quantification is not possible. However, uncoordinated decision-making is often mentioned as a disadvantage. Solving this problem will decrease costs (economic benefit).

administrative costs. In addition, as a result of a more efficient government, investments by companies may be accelerated. Accelerated investments result in economic effects, since the value of money today is worth more than the same amount next year. Another benefit is the reduction of search costs. The implementation of MSP will increase the knowledge base of the sea. This knowledge will provide the government the basis for the designation of specific maritime activities (e.g. mariculture, sand extraction) to certain zones, lowering the search costs for companies. The GIS project of ISPRA in Chioggia, Italy is an example of a system that incorporates information on different maritime activities and characteristics of the sea and its soil. This system may eventually contribute to the reduction of search costs (it is currently being developed).

In addition, MSP is useful by providing tools to decrease or prevent competition between maritime activities, which would reduce the cost of competition. For instance, in the area surrounding Venice both fishing and sand extraction activities take place. Fishing is affected by sand extraction because of the effects extraction has on the composition of the seabed and because fishermen cannot anticipate the new depths, resulting in damaged fishing gears. MSP can be beneficial by planning specific zones for extraction, so that fishermen know in which areas they will not be impacted by sand extraction. Another benefit of cross-border/international MSP concerns the Gulf of Trieste. Plans exist to build an offshore LNG terminal in the Italian part of the Gulf. Slovenia opposes to these plans because of the likely negative impact on coastal and marine tourism. If cross-border/international MSP would have been applied from the beginning, the parties involved would discuss these plans in an early stage in order to avoid this type of competition.

Environmental benefits

MSP includes applying the overarching principle of the ecosystem approach, expressing the need for sustainable development of maritime activities. The sustainability of certain activities in the Northern Adriatic could be improved. For instance, the current level of fishing activity is likely to lead to a continuous decline in fish stocks. If the implementation of MSP were to lead to a sustainable way of performing these activities (e.g. by installing MPAs or Fisheries Protection Zones), the environmental value of the area will increase. For certain activities this may also lead to economic benefits in the long term. For example, sustainable fishing can eventually lead to healthy fish stocks, leading to the long-term viability of the fishing sector. Also coastal and marine tourism will benefit from clean water and healthy flora and fauna. MSP can contribute to these benefits by, for example, providing the tools to select and establish MPAs.

IV. CONCLUSIONS AND RECOMMENDATIONS

IV.1. CONCLUSIONS

IV.1.1. AREA DESCRIPTION AND COMPETING MARITIME ACTIVITIES

The Adriatic Sea, a semi-enclosed sea, is intensively used by various maritime activities which illustrates the surrounding countries' strong economical dependence on the sea. The basin is also of environmental importance as the Adriatic Sea is characterised by a large marine biodiversity. Furthermore, it is home to significant treasures of world heritage.

The northern part of the Adriatic Sea has the most potential for the application of MSP in this basin. In the north, multiple maritime activities take place on a frequent basis, resulting in competition between maritime activities in certain cases. In addition, the intensity of these maritime activities and of land-based activities leads to a strong pressure on the marine environment. This is in particular relevant in the Northern Adriatic where the Po river loads are related to the occurrence of undesired phenomena like eutrophication and algae blooms. In the rest of the Adriatic Sea economic activities at sea are less intense, resulting in weak / non-existing competition between maritime activities and lower pressure on the marine environment. As a result, the need for MSP in the south and middle of the Adriatic Sea more limited. Besides a higher need for MSP, the Northern Adriatic also has a higher feasibility for the application of MSP.

Need for MSP

Several important ports are located in the north of the Adriatic (e.g. Venice, Trieste, Koper), implying intense maritime traffic in the area. Other important activities taking place at sea, which (could) contribute to (cross-border/international) competition, are fishing, LNG / gas platforms, sand extraction activities and coastal and marine tourism. In addition, all these maritime activities have an impact on the marine environment. Apart from maritime activities, land-based activities (agriculture, industry) are known to impact the marine environment through discharges. Wastewater discharges from urbanised areas also lead to an impact on the marine environment.

Several areas that qualify for the application of MSP have been identified in the northern part of the Adriatic Sea: the Gulf of Trieste, the area surrounding the Venice lagoon, the Emilia-Romagna region and a fish migration loop.

The Gulf of Trieste is characterised by competing activities such as shipping, fishing and coastal and marine tourism, which also have an impact on the environment. Furthermore, plans exist to build an (offshore) LNG terminal in the Italian territorial sea. This terminal is likely to cause cross-border competition with coastal and marine tourism in Slovenia. The intensity of the maritime activities taking place and the cross-border/international nature of these activities results in a need for (cross-border/international) MSP.

In the area surrounding the Venice lagoon, different activities take place as well. The Venice lagoon itself, which is intensively used, is classified as an inland water area. Since the lagoon provides the gateway to Venice, an important industrial and port city, shipping is an important maritime activity in the area, as well as other activities such as fishing, sand extraction and coastal and marine tourism.

In the Emilia-Romagna region a considerable number of offshore platforms is present. This presence leads to competition with the environment (risk of accidents) and diminishes the available space for other maritime activities leading to competition. Other activities competing for space in this area (and exerting pressure on the marine environment) are: maritime transport, coastal and marine tourism, fishing and (increasingly) sand extraction.

The application of MSP in the Gulf of Trieste will benefit from a cross-border/international approach between Italy (Friuli Venezia Giulia), Slovenia and Croatia, because the maritime activities have cross-border impacts. The application of MSP in the area surrounding the Venice lagoon and in Emilia-Romagna could also be beneficial, although it is less relevant for cross-border/international cooperation.

Another potential application of MSP is related to the fish migration loop between Italy, Croatia and Slovenia. Certain fish species migrate in a loop, following the currents in the Northern Adriatic Sea. As a result of overfishing in the area, fish stocks are under pressure. Protection of species by one country will not be effective given the migration paths of these fish. However, if important spots along this cross-border loop are protected, these species may regenerate. Consequently, sustainable fishing may become possible in the longer term. MSP can contribute to such a project by supporting the establishment of these cross-border protection zones. MSP can provide the process that may lead to an agreement between the stakeholders and the participating countries with regard to the establishment of marine protected areas. Such cross-border issues, with potentially important economic consequences in particular (for fisheries), require a holistic, cross-border approach. MSP is a tool that can provide this.

Feasibility of MSP

The potential for the application of MSP is not only determined by the need for MSP, but also by its feasibility. Several MSP key principles are related to this feasibility. These (in some cases aggregated) principles have been discussed in *Chapter III*: stakeholder involvement, institutional and legal framework, cross-border/international cooperation, data collection, monitoring and evaluation and coherence between ICZM and MSP.

Stakeholder involvement

The Italian and Slovenian terrestrial spatial planning laws specifically mention the consultation of stakeholders. This includes stakeholders representing sectoral interests. Stakeholder involvement in Croatia is less institutionalised. No references to public consultations are known and improvements in the coordination between authorities are deemed desirable. With regard to Maritime Spatial Planning, none of the countries has yet developed an integrated plan for spatial planning of the sea. As a result, no formal procedures for the involvement of stakeholders have been developed, although the Spatial Planning Act of Slovenia could be applied to the sea.

Institutional and legal framework

In Italy, planning of the sea takes place at different levels of authorities, spread across various ministries. Both regional and national authorities are involved and a variety of laws exist concerning both coastal and maritime planning. This fragmentation hampers the application of MSP. Consequently, changes in the legal framework are necessary to provide the effective legal basis for the development of MSP. In addition, increased coordination and cooperation between the different levels of authority would prove to be beneficial.

Up until now, no Maritime Spatial Plan has been developed in Slovenia, but the Spatial Planning Act provides the legislative framework for the application for MSP. The state, and in particular the Ministry of the Environment and Spatial planning is responsible for maritime issues. The feasibility for the application of MSP is strong in this respect, although Slovenia still would need to develop a legal basis for MSP by creating a national strategic spatial plan for the sea.

In Croatia, coordination of spatial plans until 300 metres seawards is legally in place. For the remaining part of the marine area, coordination among stakeholders is limited and a sectoral approach dominates¹⁰⁸. To enable the development of a Maritime Spatial Plan, changes to the Croatian legal and institutional framework seem required in this respect.

Cross-border/international cooperation

Four key initiatives on cooperation have been identified in the Adriatic Sea that could help facilitate the dissemination of the concept of MSP: the Trilateral Commission, the Adriatic-Ionian Initiative, the

¹⁰⁸ Relevant Croatian Ministries, meeting on February 2, 2010 in Zagreb.

Adriatic Euroregion and the IPA Adriatic programme. This shows that cross-border/international cooperation with regard to the Adriatic Sea is well advanced, especially in the Northern Adriatic. Cooperation does not only take place at the level of research institutes, but also between public authorities.

In order to apply cross-border/international MSP through these initiatives, the latter should not only aim at environmental protection or the development of one or more particular economic activities, but instead should follow a holistic approach in which all interests are represented in a balanced way (sector-neutrality). The Adriatic-Ionian Initiative and the Adriatic Euroregion are both characterised by such a sector-neutral approach, although the Adriatic Euroregion only involves regional authorities, whereas relevant national stakeholders should be involved as well. The Trilateral Commission is primarily aiming at the protection of the marine environment and therefore does not seem qualified as a platform for MSP application. In conclusion, the Adriatic-Ionian Initiative seems to provide the best characteristics be used as a platform for MSP application in the Northern Adriatic.

Data collection, knowledge creation and evaluation

Research institutes are present in all three countries of the Northern Adriatic, providing a good basis for the data and knowledge aspect of MSP. However, the collection of data and knowledge of areas further offshore needs to be improved as a basis for MSP in that area. In addition, the data and research methods of the different research institutes need to be aligned in order to make data comparable. The international / cross-border initiatives that are taking place, or may take place in the future (e.g. the proposal COAS) will (further) improve the cooperation and coordination between the institutes.

Coherence between ICZM and MSP

In Italy there is no national ICZM strategy; regions are responsible for spatial planning of their coasts. Several regions (Liguria, Marche, Tuscany and Emilia-Romagna) have developed their own Coastal Plan, but have not yet developed any Maritime Spatial Plans. Emilia-Romagna has included maritime activities in its ICZM strategy, achieving coherence between strategies for land and sea in a number of cases. This is, however, a rare example. In Slovenia, legislation provides for the integration of the management of land and sea areas, but up until now no ICZM or MSP strategy has been developed. In Croatia, integration between terrestrial and maritime planning is possible for the 300 meter marine belt. In reality, no specific measures for the marine belt have been taken in the Regulation on the Protection of the Coastal Area. The lack of ICZM and MSP strategies in the Northern Adriatic increases the likelihood of planning issues, especially given the increasing activities taking place in the coastal areas, both onshore and offshore.

Table 6 summarises the status in Italy, Slovenia and Croatia with regard to the MSP ‘effect principles’¹⁰⁹, i.e. what to achieve with MSP. These principles are: (a) a simplified decision process, (b) the establishment of a legal framework, (c) cross-border/international cooperation and (d) coherence with other planning systems.

Table 6: Summary status MSP ‘effect principles’ in the Northern Adriatic

	<i>Italy</i>	<i>Slovenia</i>	<i>Croatia</i>
<i>Simplified decision-making process</i>	No single point of contact; fragmentation of competences between different levels of authority	At the national level, Ministry of Environment and Spatial Planning coordinates communication with other ministries	No single point of contact; Croatia’s administration follows a more sectoral approach
<i>Establishment of a legal framework</i>	To date no national legal framework of ICZM and MSP	Although legislation does not specifically address MSP, it could be applied to the marine area	No legal framework for MSP, nor any spatial planning or coastal law that can be applied to the sea
<i>Cross-border (/ international) cooperation</i>	Cross-border/international cooperation between the countries involved is well-established through initiatives such as the Trilateral Commission, the Adriatic-Ionian Initiative, the Adriatic Euroregion and projects under IPA Adriatic Cross-Border Cooperation		
<i>Coherence with other planning systems</i>	As competences are fragmented, coherence between strategies for land and sea is challenging	Legislation provides for the integration of management of sea and land areas; concrete examples towards coherence between terrestrial and maritime spatial planning exist	Integration is currently limited given sectoral approach; exception could be the 300 m marine belt which forms part of the Protected Coastal Area

Source: Policy Research Corporation

IV.2. RECOMMENDATIONS

In order to implement MSP in the northern part of the Adriatic Sea, it is recommended that the parties involved work according to the ten MSP key principles. Especially in areas such as the Adriatic Sea, the principle of cross-border/international cooperation is important as multiple states are involved. Due to the existing sectoral approaches in the countries concerned, national coordination will be important as well. Inter-ministerial committees or single coordinating bodies responsible for maritime spatial planning may be a solution to effectively and efficiently coordinate the development and implementation of MSP. With regard to managing the (high) seas, a solution could be to establish an independent management body. This way, control will not be bound to a national territory, which may be more effective to e.g. protect the migration loop of fish or control shipping. In the following paragraphs these recommendations are explained in detail. In addition, the section on

¹⁰⁹ See DG Mare, 2010, *Study on the Economic Effects of Maritime Spatial Planning*.

recommendations in the final report provides more extensive (general) recommendations useful for the Adriatic Sea. Also the best practices in the final report may provide useful examples for setting up or implementing certain aspects of MSP.

Stakeholder involvement

For the acceptance of and input for MSP, stakeholder involvement is key. It is important to convince stakeholders in an early stage of the need for the sustainable development of the sea and the role MSP can play in this respect. This enables them to provide input to policy makers. Moreover, support may be created for the results and process of MSP. An example of cooperation, although in this stage not yet directly related to MSP, is the GAP-project in the Northern Adriatic between fishermen and ISPRA. For this project, fisheries stakeholders participate in scientific research, aiming to reduce tensions and build collaborative working relationships between fishermen and researchers in order to create long-term benefits for resource management. This project was initiated because fisheries stakeholders frequently challenge the validity or interpretation of scientific advice because the policy decisions arising strongly influence their lives¹¹⁰.

Institutional and legal framework

Maritime-related policies are currently being developed according to a sectoral approach in all three countries. In Italy and Croatia this leads to considerable coordination and cooperation challenges for the public authorities involved, because of the large number of authorities involved. The use of a coordination body is recommended to overcome these challenges. The role of such a body can be carried out by an existing authority occupied with spatial planning or through the establishment of a separate entity. Of the countries involved, Italy's situation is the most complicated because the maritime management responsibilities are distributed over different levels of government (regional and national). Efficient vertical and horizontal coordination between regional and national authorities is required in order to enable a holistic, integrated approach with regard to MSP. For example, the coordinating body of the regions could directly coordinate with the national ministries involved (or with an inter-ministerial committee).

Data collection, knowledge creation and evaluation

For the collection of data and creation of knowledge about the Northern Adriatic, (international) cooperation and cooperation between the organisations involved in marine research is important. Although (international) cooperation already takes place, improvements could be made through initiatives such as Adriamed¹¹¹. The development of more uniform research methodologies is required in order to make data comparable and coordination on the selection of research topics is important in

¹¹⁰ The GAP project is co-funded by national governments and the EU under the Framework 7 research programme). More information about this project can be found at www.gap1.eu. Mr. Raicevich (ISPRA, Chioggia) is the contact person for the project in the Northern Adriatic Sea.

¹¹¹ Adriamed is promoting scientific cooperation among the Adriatic countries to support sustainable fishing in the Adriatic. Albania, Croatia, Italy, Montenegro and Slovenia are the countries involved in Adriamed.

order to avoid overlapping work. The creation of a network involving all marine research parties for the Northern Adriatic may provide the framework for further coordination and cooperation.

Coherence with terrestrial planning

In general, spatial planning of the coast is often perceived as being more challenging than maritime spatial planning, because of the concentration of activities on a relatively small area. Consequently, the development of an ICZM strategy often has a higher priority than the development of MSP. Up until now in the Northern Adriatic, ICZM has only been applied in Emilia Romagna and Slovenia. In practice, Maritime Spatial Plans will often only be applied after the implementation of ICZM or, preferably, simultaneously with ICZM.

Monitoring and control

To achieve the objectives of a Maritime Spatial Plan, the surveillance of the area needs to be effective. Currently, enforcement problems exist in the Northern Adriatic, for instance in the protected area around the Tegnue near Chioggia where illegal fishing takes place. If control on the execution of the Maritime Spatial Plan is not effective, the targets of MSP will not be reached. Improvements in surveillance are therefore highly recommended. For instance, vessel tracking monitoring systems can be implemented; the project to develop a common VTMS in the Adriatic Sea (under IPA Adriatic financing) is a good initiative in this regard and its implementation is recommended. For the detection of oil spills, the CleanSeaNet tool can be used, providing near-real-time satellite-based oil spill and vessel monitoring service. Moreover, cross-sectoral national cooperation should be considered to integrate monitoring and control activities. In addition, cross-border/international cooperation can be applied for physical surveillance. The coast guards may cooperate near borders for the purpose of control. Also the establishment of an independent monitoring and control body can be a solution. In addition, the use of cameras in protected areas may be useful.

For monitoring and control of (part of) the high seas, countries have the option to cooperate internationally through international conventions/treaties or through establishing maritime zones. It is recommended to first look into the possibilities for cooperation within the framework of the Barcelona Convention or other (regional) initiatives. The establishment of a specific MSP protocol for the Barcelona Convention could be a solution. If cooperation does not lead to the desired effects, an alternative is the establishment of maritime zones in the Mediterranean Sea, in particular Exclusive Economic Zones. If a country establishes such a zone it has the right and duty to manage and control the area to a certain extent, depending on the type of zone¹¹². In the Mediterranean Sea, the establishment of zones is challenging due to the relative proximity of other countries; the zones' borders may be disputed by the adjacent countries. Also in the Northern Adriatic, the establishment of zones is a difficult issue, in particular because of disagreement about the maritime border between

¹¹² An EEZ is the only type of zone that provides a basis for the application of MSP on the high seas.

Slovenia and Croatia. Recently, Croatia and Slovenia agreed to set up an Arbitral Tribunal to reach an agreement on their border.

ANNEX I: ABBREVIATIONS

General abbreviations

EEZ	Exclusive Economic Zone
EFMZ	Ecological and Fishery Protection Zone
EIA	Environmental Impact Assessment
EPZ	Ecological Protection Zone
EU	European Union
FAO	Fisheries and Agriculture Organisation
GT	Gross tonnage
IBA	Important Bird Area
IMO	International Maritime Organisation
LNG	Liquefied Natural Gas
MEDPAN	Mediterranean Protected Areas Network
MPA	Marine Protected Area
MSP	Maritime Spatial Planning
n/a	Not applicable
nm	Nautical mile
SPAMI	Specially Protected Areas of Mediterranean Interest
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea

Specific abbreviations

AE	Adriatic Euroregion
AII	Adriatic-Ionian Initiative
ARPA	Agenzia Regionale per la Prevenzione e Protezione Ambientale
CAOS	Coordinated Adriatic Observing System
EMODNET	European Marine Observation and Data Network
FSI	Flag State Implementation
IPA	Instrument for Pre-Accession Assistance
ISPRA	Istituto Superiore per la Protezione e la Ricerca Ambientale
MIT	Ministry of Infrastructure and Transport

MIPAAF	Ministry of Agricultural, Food and Forestry Policies
RDC	Regional Development Centre
REMPEC	The Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea
SHAPE	Shaping a Holistic Approach to Protect the Adriatic Environment
PSSA	Particularly Sensitive Sea Area
VTMIS	Vessel Traffic Monitoring Information System

ANNEX II: LIST OF CONTACT PERSONS

<i>Country</i>	<i>Contact</i>	<i>Organisation</i>
Albania	Alma Bako	Ministry of Environment, Forests and Water Administration
Albania	Etleva Canaj	Ministry of Environment, Forests and Water Administration
Albania	Marietta Mima	Environmental Centre for Administration and Technology Albania
Albania	Sokol Kapidani	Ministry of Public Works, Transport and Telecommunications
Bosnia and Herzegovina	Silvana Cavar	Neretva Cantonal Ministry of Physical Planning
Bosnia and Herzegovina	Tarik Kupusovic	MAP Focal Point
Croatia	Antun Paunovic	Ministry of Environmental Protection, Physical Planning and Construction, Institute for Physical Planning
Croatia	Goranka Radovic	Ministry of Environmental Protection, Physical Planning and Construction, Directorate for Physical Planning
Croatia	Ivan Benkovic	Ministry of Economy, Labour and Entrepreneurship, Directorate for Energy
Croatia	Ivica Trumbic	Former Priority Actions Programme Regional Activity Center
Croatia	Katja Božic	Ministry of the Sea, Transport and Infrastructure, Directorate for Maritime Transport, Maritime Domain and Ports
Croatia	Marijana Mance Kowalsky	Ministry of Environmental Protection, Physical Planning and Construction,

Croatia	Marko Prem	Directorate for International Co-operation and Sustainable Development Priority Actions Programme / Regional Activity Centre
Croatia	Martina Sorsa	Ministry of Environmental Protection, Physical Planning and Construction, Directorate for International Cooperation and Sustainable Development
Croatia	Mira Morovic	Institute of Oceanography and Fisheries
Croatia	Nevia Kruzic	Ministry of Environmental Protection, Physical Planning and Construction
Croatia	Petar Krznic	Ministry of Agriculture, Fisheries and Rural Development, Directorate for Fisheries
Croatia	Ratimir Zimmermann	Ministry of Environmental Protection, Physical Planning and Construction, Institute for Physical Planning
Croatia	Velimir Dumicic	Ministry of Environmental Protection, Physical Planning and Construction, Institute for Physical Planning
Croatia	Vesna Rajkovic	Ministry of Tourism, Directorate for Tourism Infrastructure and Resource Protection
Italy	Aldo Consenti	Coordinatore for the Barcelona Convention
Italy	Andrea Bonometto	ISPRA
Italy	Angelo Ciasca	Ministry of Environment, Land and Sea
Italy	Angelo Marino	Fisheries department – Puglia region
Italy	Bianca Picciurro	Assologica
Italy	Carlo Lombardi	Confitarma / Federazione del Mar
Italy	Carlo Visca	Aree urbane, servizio idrico integrato, manutenzione programmata del territorio – Abruzzo region
Italy	Emanuele d'Agostino	Contship Italia
Italy	Emanuele Giordano	Assessorato Trasparenza e Cittadinanza Attiva – Puglia region
Italy	Enrico Pujia	Ministry of Infrastructure and Transport
Italy	Ermanno Tamaro	Direzione Centrale Pianificazione Territoriale, Energie, Mobilità e Infrastrutture di Trasporto – Friuli Venezia Giulia
Italy	Gianluca Franceschini	ISPRA

Italy	Giuseppe Bortone	DG Environment – Emilia-Romagna region
Italy	Giuseppe Leo	Fisheries department – Puglia region
Italy	Katia Raffaelli	DG Environment – Emilia-Romagna region
Italy	Leonardo Tunesi	ISPRA
Italy	Luigi Fortunato	Direzione difesa del suolo – Veneto region
Italy	Marina Vazzoler	ARPAV – Veneto region
Italy	Mario Ragni	DG4 Politiche del Territorio et dei Trasporti, Pianificazione Urbanistica, Beni Ambientali
Italy	Oliviero Montanaro	Ministry of Environment, Land and Sea
Italy	Paulo Nunes	Fondazione Eni Enrico Mattei
Italy	Sasa Raicevich	ISPRA
Italy	Stefano Corsini	ISPRA
Montenegro	Aleksandra Ivanovic	JP Morsko Dobro
Montenegro	Dragoljub Markovic	JP Morsko Dobro
Montenegro	Jelena Knezevic	MAP focal point
Montenegro	Vladan Dubljevic	Ministry of Economy / Geological Survey of Montenegro
Slovenia	Inga Turk	Environmental Agency
Slovenia	Mitja Bricelj	Ministry of Environment and Spatial Planning
Slovenia	Slavko Mezek	Regional Development Agency of South Primorska