

MUSES PROJECT

CASE STUDY 6: COASTAL AND MARITIME TOURISM AND O&G DECOMMISSIONING AS DRIVERS FOR POTENTIAL MULTI-USE IN THE NORTHERN ADRIATIC SEA

MUSES DELIVERABLE: D3.3 - CASE STUDY IMPLEMENTATION - ANNEX 9

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APPENDIX 1 – Scored DABI sheets

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1 GEOGRAPHIC DESCRIPTION AND GEOGRAPHICAL SCOPE OF THE ANALYSIS

The area considered for this Adriatic case study (Figure 1-1) includes Italian Adriatic internal and territorial waters, spanning along over 220 kilometres of Italian coasts, including the Veneto and Emilia Romagna Regions. The area falls within the Marine Strategy Framework Directive sub-region “Adriatic Sea” (MSFD, 2008/56/CE).

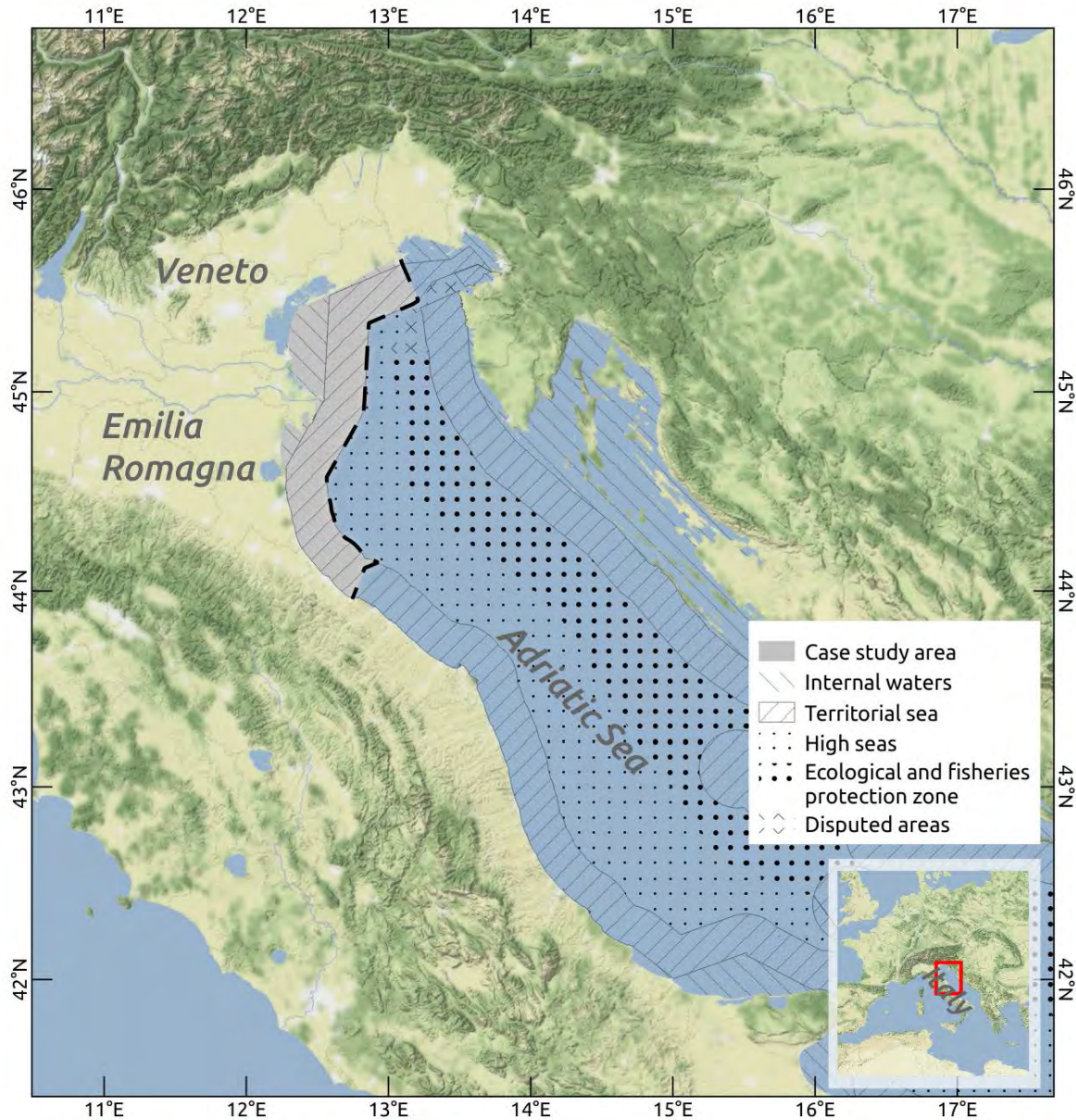


Figure 1-1 Case study geographic area with marine boundaries in the Adriatic Sea. Source: MUSES elaboration on data from Adriplan Data Portal Background map tiles by Stamen Design, under CC BY 3.0. Data by OpenStreetMap, under OdbL

The Northern Adriatic Sea features the largest shelf area of the entire Mediterranean, with a very smooth coastal area and a gentle sloping bottom. Due to its shallowness, the basin demonstrates a temperate climate with low winter temperatures (about 7°C on average) and vertical stratification in the summer. The typical near surface circulation in the area includes a cyclonic gyre, the North Adriatic Gyre (NAG), occupying most of the shallow area, and the Western Adriatic Current (WAC) flowing south-eastward along the Italian coasts south of the Po delta. Basin-wide thermohaline circulation is cyclonic and driven by density and pressure gradients. Both pressure gradients are controlled by salinity, with Italian shores being characterized by the presence of a relatively high fresh water input from riverine run-offs. This circulation is strongly influenced by the local wind forcing, from northern/north-eastern Bora winds to Sirocco south-easterly winds. The coastal landscapes host a diversity of geomorphological features: cliffs and rocky coasts, coastal plains, deltas, wetlands, dunes and lagoons. Deltas and narrow coastal plains generally occupied by wetlands and lagoons define the main landscape of the coastal area, which includes the Po Delta, the lagoons of Venice, Grado and Caorle, all of high ecological relevance. The conspicuous fresh water inputs make the area among the most productive of the Mediterranean (Ott, 1992). Veneto and Emilia Romagna Adriatic coasts are relatively low, smooth and regular, in particular in the southern part of the area.

The Northern Adriatic Sea can be considered a hot-spot of endemic and highly valuable species, vulnerable habitats, and hosts a variety of communities crucial in ecosystem services (Coll et al., 2012). The marine area features a high richness in seabed biodiversity spanning along its extensions, with a wide heterogeneity of bottom sediments. The North-western Adriatic Sea bottom consists of siliciclastic marine sediments grading into continental deposits in the offshore, at about 15–25 m of water depth. The predominant seabed sediments, especially along Emilia Romagna, are sandy–muddy, influenced by fluvial supplies from Po river. Sediment composition is one of the main factors regulating the distribution and composition of soft bottom communities (Cerrano et al., 1999), with typical sandy-muddy habitats accounting for approximately the 70% of the sea floor. Sea pens (*Pennatulaceans*) and bivalves are the main habitat forming species of complex soft-bottom communities featuring hydroids, echinoderms, gastropods and holothurians and play an important role in the ecology of this basin. However, these sessile benthic communities are threatened by the set of activities and processes involving the alteration of the bottom substrate. Intense trawling fisheries over the last decades have induced severe shifts in species composition and diversity (Lotze et al., 2006) in large areas of the basin, with typical benthic sessile invertebrate communities shifting to communities featuring (e.g. *Asteroidea* and *Mollusca*) borers and opportunistic species (Santelli et al., 2017).

The Northern Adriatic Sea has been repeatedly affected over the last four decades by bottom anoxia and benthic mortalities. Many of the outbreaks occurred in the northern sector of the basin where, due to its shallowness, high water temperature, low winds and stable sea prevent pollutant and nutrient dispersion. These disturbances, along with benthic fisheries, have a major impact on the macro-epibenthic community.

In Veneto waters, the presence of endemic bioconstructions (rocky outcrops) is widely known, which, according to the traditions of the local fishermen, are known under various dialectal names, e.g., *tegnùe*, *trezze*, *lastrure*. These localized bioconstructions on rocky outcrops, widespread along the north-western Adriatic Sea inner shelf, occur between 10 and 40 m depths. The rocky outcrops rise up to 3–4 m above the sea floor and their exact locations have been identified through time by fishermen attracted by their fishing value. Their ecological role is high, since *tegnùe* provide several



ecosystem services, from fisheries to recreational diving, and offer shelter, reproduction and nursery grounds to fish and invertebrate species (Tosi et al., 2017). Tegnùe have a patchy distribution and represent a valuable hotspot of biodiversity, hosting a variety of benthic assemblages of bio-constructors contributing to their growth, including bryozoans, molluscs, serpulid polychaetes, scleractinians and calcareous algae as the main builders. This justifies their protection by European and regional laws, i.e. European Marine Protected Areas, Biological Protection Zones, since they are severely threatened by several anthropogenic activities affecting seafloor integrity, especially fisheries bottom trawling.

Veneto and Emilia Romagna waters enclose essential foraging habitats for the loggerhead turtle, *Caretta caretta* and, between marine mammals, only the common bottlenose dolphin *Tursiops truncatus* is considered regularly present. During last decades, sharp declines in sea turtles and severe threats to bottlenose dolphin populations were observed due to by-catch, high levels of fishing and marine traffic interaction, marine litter and pollution, requiring urgent and effective countermeasures (Fortuna et al., 2015).



2 CURRENT CHARACTERISTICS AND TRENDS IN THE USE OF THE SEA

As for other coastal marine areas, the Northern Adriatic marine area is currently intensively crowded by a wide set of uses expected to grow over the next years. In the area of analysis the interactions among uses are particularly intense and coastal and maritime tourism – which includes a variety of tourism typologies - represents the main socio-economic driver with great potential for the future. Land-sea interactions are also very strong, due for example to major ports of Venice and Ravenna or the presence of the delta of Po river just to mention some examples. The geographical area of the case study includes two different Italian Regions which share a number of common elements, but also show some significant differences in terms of maritime uses. Besides coastal and maritime tourism, maritime activities common to the two regions include: port activities, shipping of goods and passengers, fisheries, bivalve aquaculture, energy and communication cables, military uses, sand extraction and coastal protection. The most relevant differences are related to the presence of offshore gas and oil platforms which are only installed in front of Emilia Romagna, while Veneto marine water hosts an offshore terminal for LNG (in the southern part of the region in front of the Po Delta).

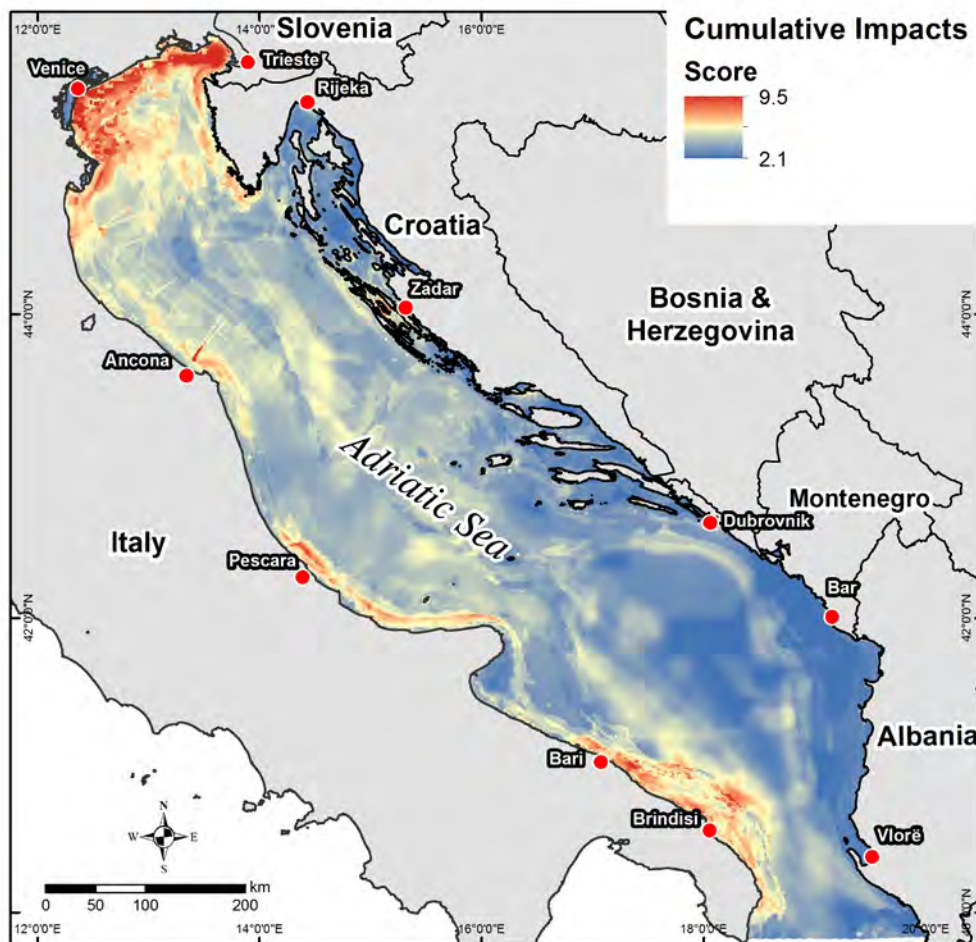


Figure 2-1 Map showing the cumulative impacts for the Adriatic and Ionian Region. Adapted from Depellegrin at al. (2017)

Furthermore, as described in chapter 1 and further in below sub-chapters, these activities cohabit with habitats of significant ecological, naturalistic and economic values (as in particular submerged rocky outcrops) which are only partially protected and with a number of underwater cultural heritage sites (mainly wrecks), still not entirely investigated and valorised. Previous projects (as Shape, Adriplan and Ritmare¹) analysed conflicts among these activities, as well as their environmental cumulative impacts (Figure 2-1), which are further analysed by the on-going Supreme “Supporting Maritime Spatial Planning in the Eastern Mediterranean” project.

Considering the socio-economic importance of coastal and maritime tourism in the area, the Northern Adriatic case study aims to analyse MU combinations that can be triggered and/or further expanded (considering existing experiences and initiatives) by this important driver and evaluating the benefits that these combinations can generate for the other involved sectors, specifically fisheries, aquaculture, environmental protection and underwater cultural heritage. These four sectors are quite characteristic for the case study area and are described in more details in following sections.

As mentioned above, offshore oil and gas platforms specifically characterise the marine area facing the Emilia Romagna Region. Relevance of this sector for the case study does not only come from the significant number of offshore platforms, but is also due to the fact that a subset of these platforms will have to be decommissioned by 2020. This offers a great opportunity to analyse the potential re-use of decommissioned platforms from a MU perspective, in particular in combination with renewable energy production, tourism, aquaculture and environmental protection. Thus, brief information on renewable energy completes the description of the maritime sectors relevant for the development of MU opportunities in the case study area.

2.1 Tourism

Coastal tourism in Italy is a very attractive business, involving about 636 million tourists, equal to almost 2/3 of the whole of Italian tourist overnight stays (ISPRA, 2016). The Emilia Romagna coastal area has the highest number of tourists, followed by the coastal area of Veneto Region (Table 2-1). The Northern Adriatic sandy coast, where the two regions are located, are strongly equipped with mass tourism resorts, mainly offering beach tourism, more or less integrated with cultural tourism, linked to the presence of important art cities, particularly Venice. The case-study area in fact includes the coastline close to Venice and its lagoon, one of the most important and well-known touristic destinations in Italy and in the world, accounting on average for 3 million tourist arrivals and 22 million overnight stays annually (Meneghello & Mingotto, 2016).

The economic impact of coastal tourism in Italy is obviously high, considering that Italian coastal areas account for almost a half of the total Italian touristic expenditure, equal to 74 billion € (ISPRA, 2016). The Emilia Romagna region, followed by Lazio and Veneto regions are those with the highest touristic expenditures (Table 2-2).

¹ See related web-sites: www.shape-ipaproject.eu; adriplan.eu; www.ritmare.it/en/; accessed on 22.11.2017



Table 2-1 Overnight stays in coastal areas of Italy. Source: ISPRA, 2016, based on Ciset elaborations

Italian region	Tourist stays			Regional coast/Italian coast
	Coastal areas	Whole region	Coast/Region	
Liguria	53.359.263	55.627.040	95,9%	8,4%
Veneto	64.200.355	123.674.070	51,9%	10,1%
Friuli-Venezia Giulia	15.698.638	23.076.658	68,0%	2,5%
Emilia-Romagna	96.986.980	128.305.276	75,6%	15,3%
Toscana	47.747.654	92.956.105	51,4%	7,5%
Marche	28.823.732	39.736.575	72,5%	4,5%
Lazio	51.509.631	68.399.444	75,3%	8,1%
Abruzzo	33.177.137	45.914.991	72,3%	5,2%
Molise	1.947.364	5.106.821	38,1%	0,3%
Campania	38.823.082	43.868.499	88,5%	6,1%
Puglia	58.981.890	63.395.061	93,0%	9,3%
Basilicata	4.350.796	6.079.328	71,6%	0,7%
Calabria	38.977.243	39.399.211	98,9%	6,1%
Sicilia	60.773.508	70.297.512	86,5%	9,6%
Sardegna	40.373.475	41.560.573	97,1%	6,4%
TOT	635.730.747	847.397.164	75,0%	100,0%

Table 2-2 Touristic expenditures in coastal areas of Italy. Source: ISPRA, 2016, based on Ciset elaborations

Italian region	Touristic expenditures - billion € -			
	Coastal areas	Whole region	Coast/Region	Regional coast/Italian coast
	Aree costiere	Totale regionale	Costa / Regione	Costa / Italia Costiera
Liguria	3,6	4,7	75,4%	7,7%
Veneto	4,7	11,1	42,8%	10,3%
Friuli-Venezia Giulia	1,1	2,3	48,9%	2,4%
Emilia-Romagna	7,4	10,8	68,5%	16,0%
Toscana	4,5	10,3	43,6%	9,7%
Marche	1,5	2,3	64,6%	3,2%
Lazio	5,6	10,3	54,1%	12,0%
Abruzzo	1,5	2,3	67,3%	3,3%
Molise	0,1	0,2	35,8%	0,2%
Campania	3,5	4,6	75,7%	7,6%
Puglia	3,4	4,2	82,8%	7,5%
Basilicata	0,2	0,3	58,8%	0,4%
Calabria	1,4	1,5	93,9%	3,1%
Sicilia	4,6	5,9	77,9%	9,9%
Sardegna	3,1	3,4	89,8%	6,6%
TOT	46,25	74,32	62,2%	100,0%

Coastal tourism considered in this report includes different specific typologies of tourism: beach, urban, nautical and cruise; each of them having its own market, dynamics and sensitiveness to environmental components (particularly marine water quality). All these typologies are significant for the case-study area, though the most relevant one, in terms of number of tourists and total

expenditure amount, is surely beach tourism, for which the sea and the marine water quality have a central role.

In addition to or as a declination of the above mentioned typologies of coastal tourism, we can also consider a new and increasing form of tourism linked to the sea and its coast, which can be denoted as “experience-based tourism”, where the integration with nature, culture and local tradition is the central node of the touristic offer.

A study of Meneghello & Mingotto (2016) estimated the potential demand of visitors interested in doing excursions related to discovery of naturalistic areas and traditions of local communities in the Venetian coastal area. The results indicate a quota of about 30% of resident people and about 5-10% of tourists living/staying along the Venetian coast, leading to a total amount of about 1 million people. A deeper analysis was then performed to investigate the effective demand for fisheries-related tourism. The demand was estimated at about 110,000 people for the Venetian coastal area, which resulted large enough to satisfy all operators, potentially allowing fishermen to benefit from a significant source of income and providing economic benefits for the local destinations, mainly in the long-term, deriving from visitor’s expenditures.

With this regard, EU policies² (see among the others “COM/2012/494 final - the Blue Growth Strategy” and “COM/2010/352 final Europe, the world's No 1 tourist destination – a new political framework for tourism in Europe”), macro-regional strategies (in particular the Action Plan of the EU Strategy for the Adriatic and Ionian Region - EUSAIR on Pillar 4 – Sustainable tourism; European Commission, 2014) and national strategies (Piano Strategico di Sviluppo del Turismo 2017-2022 – *Strategic Plan for Tourism Development 2017 - 2022*, Ministero dei Beni e delle Attività Culturali e del Turismo, 2017) encourage the development of sustainable tourism, promoting diversification, season-adjustment, innovation and integration of touristic offers.

2.2 Fisheries

Veneto and Emilia Romagna Regions have a strong and long tradition in fisheries, with a fleet that accounts for almost 10% of the national fleet.

The trend of the fishery sector in the Emilia-Romagna Region in the period 2010-2015 is steadily decreasing. Over the last few years, Emilia-Romagna's maritime fleet has undergone a general and continuous reduction in terms of number of boats and motor power. Similarly, a general decrease in the number of companies working on fisheries is occurring also in Veneto, as well as a decrease in the number, tonnage and motor power of vessels composing the fleet (Table 2-3).

These trends reflect the general decrease observed at national level, characterized by a progressive reduction of the national fleet, starting since 2000 (ISPRA, 2016). A reduction of the fleet dedicated to small-scale fisheries, polyvalent fisheries, and, since 2005, trawling fisheries has been reported also by Veneto Agricoltura (2015) analysing the fishing trends in the whole Northern Adriatic Region.

² It is worth noting that the EU Parliament and the EU Committee of the Regions are urging the EU Commission to adopt a comprehensive EU tourism strategy. In December 2013, the European Commission launched two public consultations to get the opinion from the tourism sector on key issues: ‘European Tourism of the Future’ and the ‘Regulatory and Administrative Framework on EU Tourism’.



The application of national and European legislation aimed to balance the fishing effort with the resource availability, as well as the increase of the operative costs, induced several operators to abandon fishing activity using the support of the incentives applied for the definitive exit from fisheries. The ban on trawling within 3 nautical miles from the coast has affected the downsizing of the activity at national level but especially in the Northern Adriatic area, where the most significant reduction in the average number of fishing days has been detected for the regions of Veneto and Emilia Romagna (ISPRA, 2016).

The most practiced fishing systems in the case-study area (ISPRA, 2016 based on 2012 data) include small-scale fisheries (56% in Emilia Romagna and 45% in Veneto; operated through gill nets, fish traps and other artisanal systems) and trawling fisheries (29% in Emilia Romagna and 27% in Veneto, only allowed beyond 3 nautical miles), followed by the use of hydraulic dredging mainly for clam fishing and floating trawls.

Fish production in the two regions of the case-study area (almost 45,000 tons in total in 2012) is shown in Figure 2-2 and Figure 2-3, where the decreasing trend is clear. This can be mainly attributed to the decrease of fish production of both trawling systems and small-scale fisheries.

Table 2-3 Change in fleet characteristics in the case-study territory, for the period 2007-2015. Sources: VEGAL (2016), Delta2000 (2016) and GAC Chioggia e Delta del Po (2016)

	Emilia Romagna Coast	Veneto Coast (northern part, from San Michele al Tagliamento to Venice)	Veneto Coast (southern part, from Chioggia to Porto Tolle)
Total tonnage (GT)	-26.2%	-31.1%	-10.7%
Motor power (KW)	-24.7%	-35.4%	-18.1%

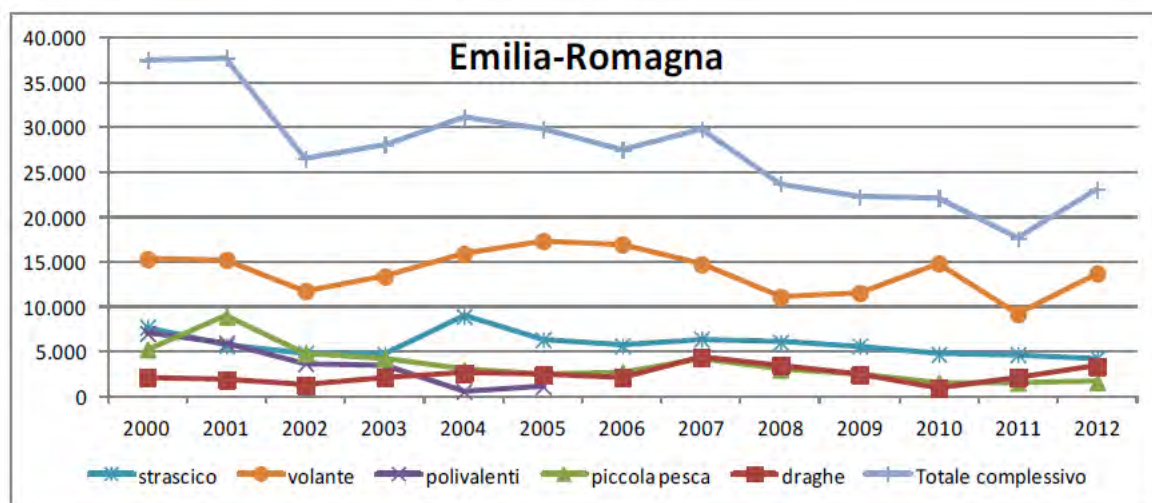


Figure 2-2 Fish production (tons) for each fishing system, for Emilia Romagna region. Source: Veneto Agricoltura (2015). Note: strascico = trawling fisheries, volante = floating trawling fisheries, polyvalenti = polyvalent fisheries, piccola pesca = small-scale fisheries, draghe = hydraulic dredging, totale complessivo = overall total



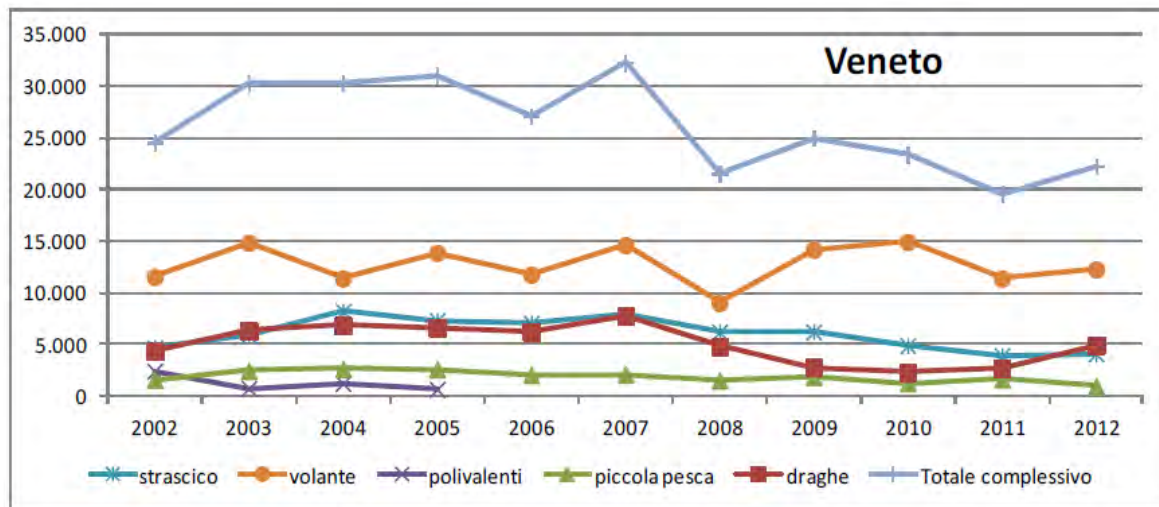


Figure 2-3 Fish production (tons) for each fishing system, for Veneto region. Source: Veneto Agricoltura (2015). Note: strascico = trawling fisheries, volante = floating trawling fisheries, polyvalenti = polyvalent fisheries, piccola pesca = small-scale fisheries, draghe = hydraulic dredging, totale complessivo = overall total

2.3 Aquaculture

The whole case-study area is one of the most productive Italian areas for aquaculture (mainly mollusc aquaculture), with a well rooted tradition in both territories. Emilia Romagna, with 45.7% of the national production, and Veneto, with 20% of the national production, are the two most representative regions for clam and mussel aquaculture (Piano Strategico Nazionale per l’Acquacoltura 2014-2020 - *National Strategic Plan for Aquaculture*).

Clams are mainly produced in the transitional waters of the case-study area. The most important production zones are the lagoon of Venice (though with an important decreasing trend), and the areas located next the river Po Delta both in the Veneto and in Emilia Romagna regions, where the two most important production sites are “Sacca di Goro” and Comacchio (Veneto Agricoltura, 2016).

Mussels, mainly produced in the marine area, are the most important mollusc species for Italian aquaculture, accounting for 72.3% of the total mollusc production (Piano Strategico Nazionale per l’Acquacoltura 2014-2020 - *National Strategic Plan for Aquaculture*).

In the Northern part of Veneto region (Venice Maritime District) concessions for mussel aquaculture are located along the littorals of Pellestrina and Cavallino and in the area of Caorle. There are 19 long-line plants occupying a total surface of 1,031 ha. In 2014 the total production was about 4,500 tons. A minimal part comes from the Venice lagoon where mussel farms are managed by operators of Lido and Pellestrina (VEGAL, 2016).

In the Southern part of Veneto Region, mussel production mainly occurs in the province of Rovigo (“Polesine”), where 18 marine plants are in operation, occupying a total surface of 2,510 ha. The total production (year 2014) is about 12,130 tons, of which 10,000 tons come from offshore plants, 2,000 tons from the lagoon plants and 130 tons from the area of Chioggia. Temporal trends reveal



that the offshore contribution is progressively increasing, while lagoon production is decreasing (GAC Chioggia e Delta del Po, 2016).

During 2015 a significant collapse of the mussel production in Veneto region occurred, due to a strong storm which destroyed most of the existent offshore long-line plants (Veneto Agricoltura, 2016).

In the Emilia Romagna Region, mussel farms are distributed along the whole coast, with a higher density in the area from Porto Garibaldi to Sacca di Goro (Northern part of the region). Based on 2014 data, a total amount of 28 plants are currently in operation with a total production of about 22,200 tons, equal to about 1/3 of the national production. (DELTA2000, 2016). Production from mussel farming in Emilia Romagna in the last fifteen years has been continuously growing, with the exception of two significant drops occurring in 2004 and 2015, both due to adverse weather conditions (Veneto Agricoltura, 2016).

In addition to mollusc production, extensive large scale fish aquaculture in the Northern Adriatic area is typically performed in brackish waters from Friuli to Emilia Romagna, according to an ancient, traditional local technique (locally known as "Vallicoltura"). Fish farms are located in the lagoons of Caorle, Venice and Po delta. Farmed species include sea basses, sea breams, eels, mullets.

2.4 Environmental protection

The area considered by this case study is part of the Northern Adriatic area which is entirely included in the list of Ecologically or Biologically Significant Marine Areas (EBSA, Figure 2-4). EBSAs are special areas that serve important purposes to support the healthy functioning of oceans and the many services that they provide, which are identified based on scientific criteria defined in the 19th meeting of the Conference of the Parties to the Convention on Biological Diversity (COP 9).

A number of Natura 2000 sites are present in the case study area (Figure 2-5), mainly concerning some rocky outcrops (the so-called "Tegnùe"³ already mentioned under chapter 1, more information in ARPAV - Fondazione Musei Civici Veneziani, 2010) a few miles off the coast of the Veneto Region (in front of the cities of Chioggia⁴, Cavallino and Caorle⁵) and a wreck of a gas platform collapsed during the sixties (Piattaforma Paguro⁶) located off the coast of the Emilia Romagna Region, that has been significantly colonised by marine flora and fauna species. Besides the few but very important Tegnùe designated as Natura 2000 marine areas, the Northern part of the case study area (in front of

³ The so-called "tegnùe" refer to particular rocky substrates, typical of some areas of the Northern Adriatic seabed. The name "tegnùe", which means "held" in the Venetian dialect, comes from the fact that the fishing nets can be entangled by the roughness in the seabed. Their nature of very hard, bare calcareous stones makes them dangerous for navigation and fishing but very rich in biodiversity (benthic organisms and fish).

⁴ The SIC IT3250047 – *Tegnùe di Chioggia* has an extension of 2656 ha and includes the habitat 1170 (Reefs), as well as species such *Tursiops truncatus*, *Caretta caretta* and *Chelonia mydas*.

⁵ The SIC IT3250048 – *Tegnùe di Porto Falconera*, rocky outcrops located 1.5 miles off Porto Falconera coast.

⁶ The SIC IT4070026 - *Relitto della piattaforma Paguro*. It's a wreck of a gas platform collapsed after an explosion occurred in 1965 located 12 miles off Marina di Ravenna coast and about 66 hectares wide.



Veneto region) hosts a wide number of rocky outcrops of various extensions and diverse ecological importance which are not currently subjected to environmental protection.

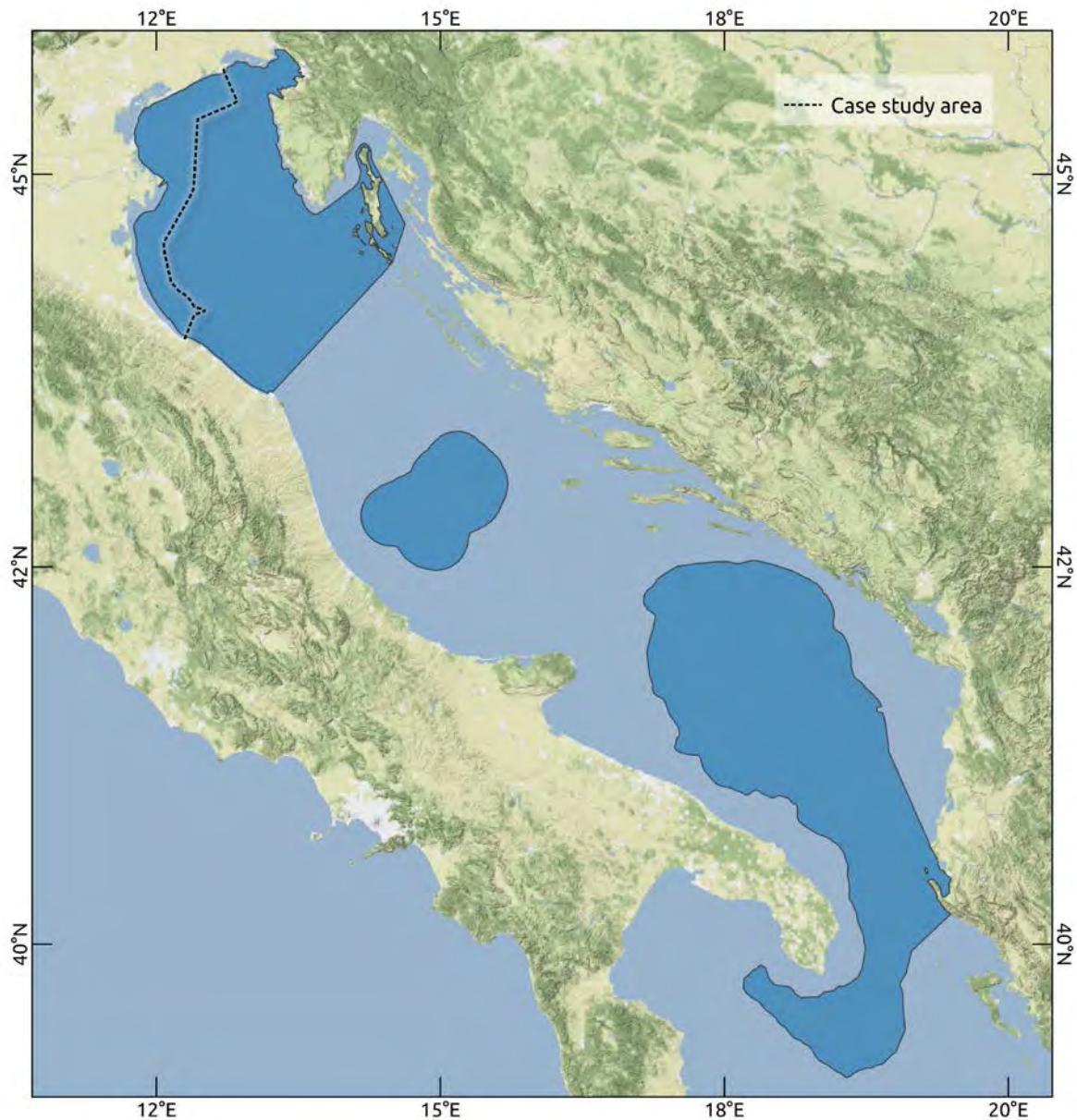


Figure 2-4 Ecologically or Biologically Significant Marine Areas in the Adriatic-Ionian Region: Source: MUSES elaboration on data from MAPAMED, the database on Sites of interest for the conservation of marine environment in the Mediterranean Sea. MedPAN, UNEP/MAP/RAC-SPA. May 2016 release



Figure 2-5 Detail of Marine Protected Areas and Ramsar Sites in the case study area. Source: MUSES elaboration on data from Adriplan Data Portal (<http://data.adriplan.eu/>). Background Map tiles by [Stamen Design](#), under [CC BY 3.0](#). Data by [OpenStreetMap](#), under [OdbL](#)

Notwithstanding the fact that they are not located in marine areas, it is worth mentioning the presence of several protected areas (Natura 2000 sites and Parks) of outmost importance along the coast of Veneto and Emilia Romagna and in particular referring to lagoon areas and deltas (i.e. Po Delta Regional Park) or other specific littoral biotopes (i.e. Penisola del Cavallino and Lido di Venezia), dune and pinewoods habitats, as well as the presence of Ramsar sites (Figure 2-5) located in coastal lagoons, deltas and salts pans. As a matter of fact, as will be discussed in the following chapter, the presence of important natural, historical and cultural sites along the coast must be taken into account when considering the potential for the development of tourism related MU.

Other protected areas are present in the region: the Biological Protection Zone (ZTB) “*Fuori Ravenna*” (established by Decree at national level), a nursery area where limitations on professional and leisure fisheries are imposed, and some Biological Protection Areas (ATB) in the Emilia Romagna Region, corresponding to sites where artificial submerged reefs act as shelters for the natural spawning of fish species (with the ultimate aim of fish restocking) and are the object of scientific study, such as the areas of Porto Garibaldi, Cattolica, Foce del Bevano, Riccione and Sacca di Goro (Figure 2-5).

It’s worthy to note the existence of a network of Protected Areas in the Adriatic (AdriaPAN, which built on the experience of MedPAN) whose aim is to facilitate contacts between MPAs so to raise management efficiencies and favour the elaboration of consortium projects⁷.

2.5 Underwater Cultural Heritage

The actual consistency of the UCH in the area is mainly unknown owing to the fact that a systematic inventory of all traces of human existence having a cultural, historical or archaeological value was not realized to date, despite the very important and significant role that the Adriatic Sea, its ports, cities and overall culture played over the years. Important national projects (Archeomar 1 and 2⁸ –) created a register of all the underwater archaeological sites along the coastlines of Calabria, Puglia, Basilicata, Campania, Lazio and Tuscany, i.e. in the Southern Adriatic Sea and part of Tyrrhenian Sea,, but a project for North Adriatic area still has to come.

Some commercial web sites (se for example www.relitti.it⁹) offer maps, publications and other information about some wreck located in the seas around Italy, including the case study area (see an example in Figure 2-6).

At the local level, the Veneto Region promoted the realization of a project which ended with the publication of the volume “*I relitti del Golfo di Venezia*” (*Wrecks of the Venice Gulf*, Figure 2-7). The volume (Falconi et al., 2015), combining historical and archival research with field activities, analytically describes some 35 wrecks in the gulf of Venice including not only multiple type of ships (military ships, motor boats, merchant ones etc.) but also airplanes, pylons, buoys, cages and some special considerations about the transport of stone material by old wrecks.

Such a consistent number of wrecks include different typologies and consequently a different type of access depending on the relevance and vulnerability of the single wreck. Some wrecks are well known and largely visited (Figure 2 8) whereas the position of some others is not of public domain for protection reasons.

Superintendences are the Italian institutions deputed to the preservation of cultural heritage. They act as the peripheral institution of the Ministry of Cultural Heritage and Tourism. From the point of view of the governance of cultural heritage, it’s worth mentioning that a global reform of Superintendences was recently planned, aiming to establish specific competent authorities on

⁷ www.adriapan.org; accessed on 22.11.2017

⁸ www.archeomar.it; accessed on 22.11.2017

⁹ Accessed on 22.11.2017



underwater cultural heritage: the Superintendences for the Sea. The reform has not been implemented yet, with the exception of the institution of the Superintendence for the Sea in the Sicilian Region.

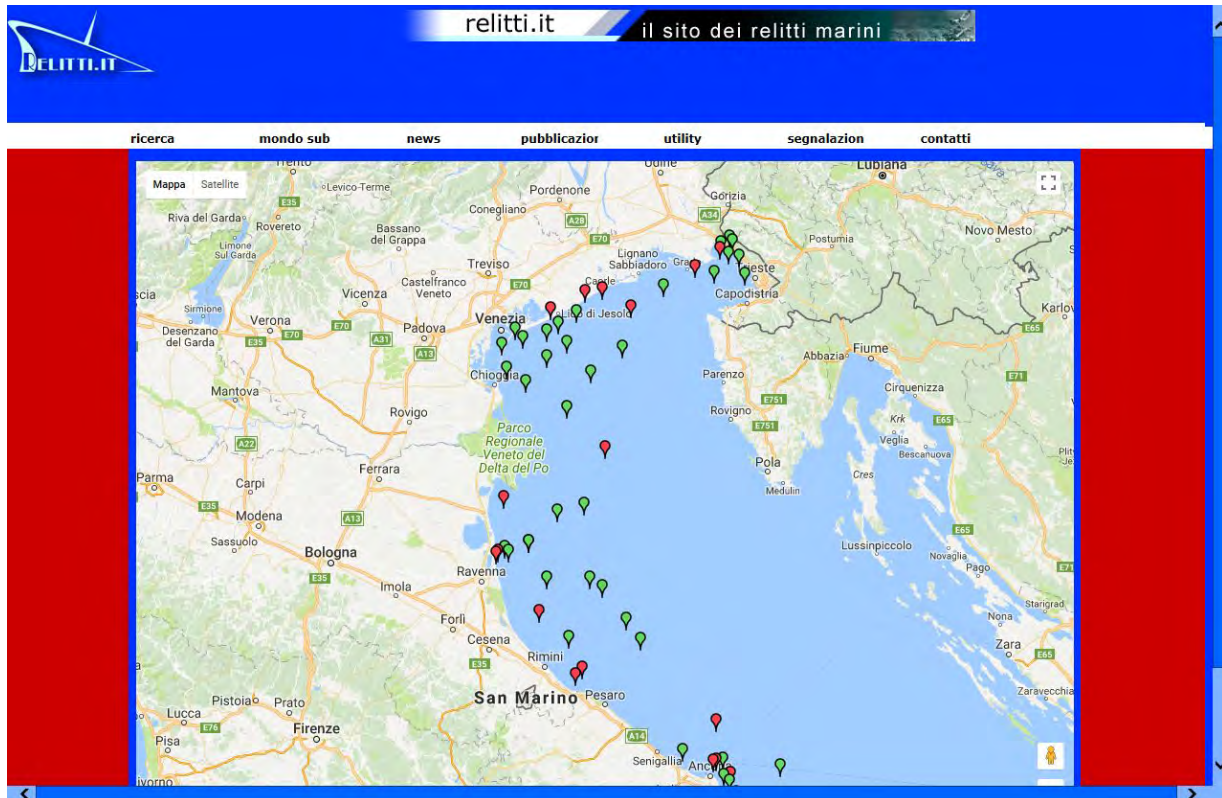


Figure 2-6 Web site for commercial use with information on wrecks located off the Adriatic coast. Source: www.relitti.it, accessed on 22.11.2017





Figure 2-7 Cover of the volume “I relitti del Golfo di Venezia”, describing about 35 wrecks located in the Northern Adriatic area. Source: Veneto Region

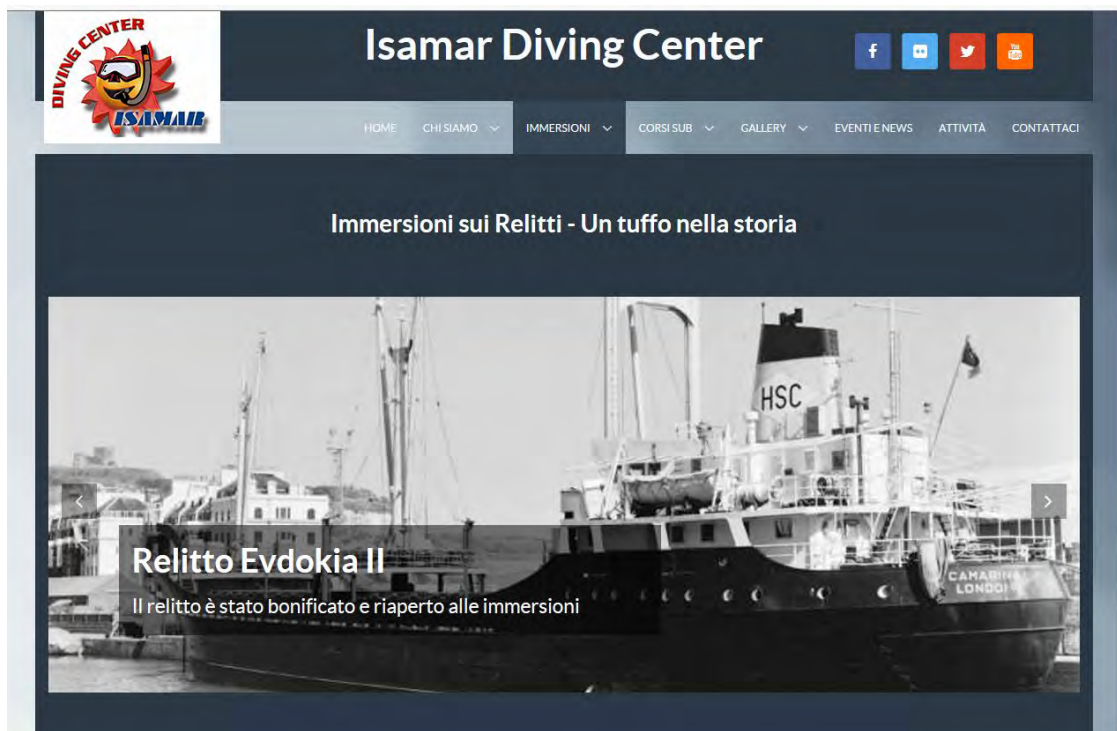


Figure 2-8 Example of diving club offering visits to wrecks. Source: <http://www.isamardivingcenter.it/relitti>; accessed on 22.11.2017

2.6 Oil and Gas

Oil and gas activity (O&G) in the case study area is entirely made by methane gas extraction in the marine area of the Emilia-Romagna Region: there are 68 offshore platforms, most of them falling within the 12 nautical miles, as shown in Figure 2-9. In the marine area of Veneto Region only few O&G exploitation areas are defined but there are currently no platforms active for extraction.

The hydrocarbon industry in Italy was born in the Emilia Romagna Region. The research and extraction of hydrocarbons in this Region contributes to the extraction of 48% of the natural gas at the national level. Methane gas is extracted here and transported through pipelines to national and international networks. In this region, the methane extraction has been historically more relevant, with the highest number of exploration wells perforated on both land and sea: 857 wells in the period 1960-2012 considering 3,440 wells at the national level. After the peak of 90 wells perforated in 1957, there was a sharp decline in the second half of the 1990s during which the numbers have been always under 20, with a minimum of 2 wells in 2010 (Assomineraria, 2015).

The production activity has also decreased in the last twenty years, as shown in Figure 2-10. The trend started declining after the peak of 13 billion cubic meters in 1994. Over the past 10 years, the production has halved from 7.4 in 2003 to 3.7 billions of cubic meters in 2013. Despite the strong decline, the Emilia-Romagna Region is still the first region in Italy for the number of exploitation concessions and employment in the sector.

The current trend, as reported in "Territory and Hydrocarbon in Emilia Romagna-Assomineraria 2015" and confirmed by the annual production data (years 1980-2016) of methane gas in Zone A as declared by the Ministry of Economic Development DGS-UNMIG¹⁰, is represented by a clear reduction of the amount extracted from the peaks of the 1990s.

¹⁰ <http://unmig.sviluppoeconomico.gov.it/>; accessed on 22.11.2017



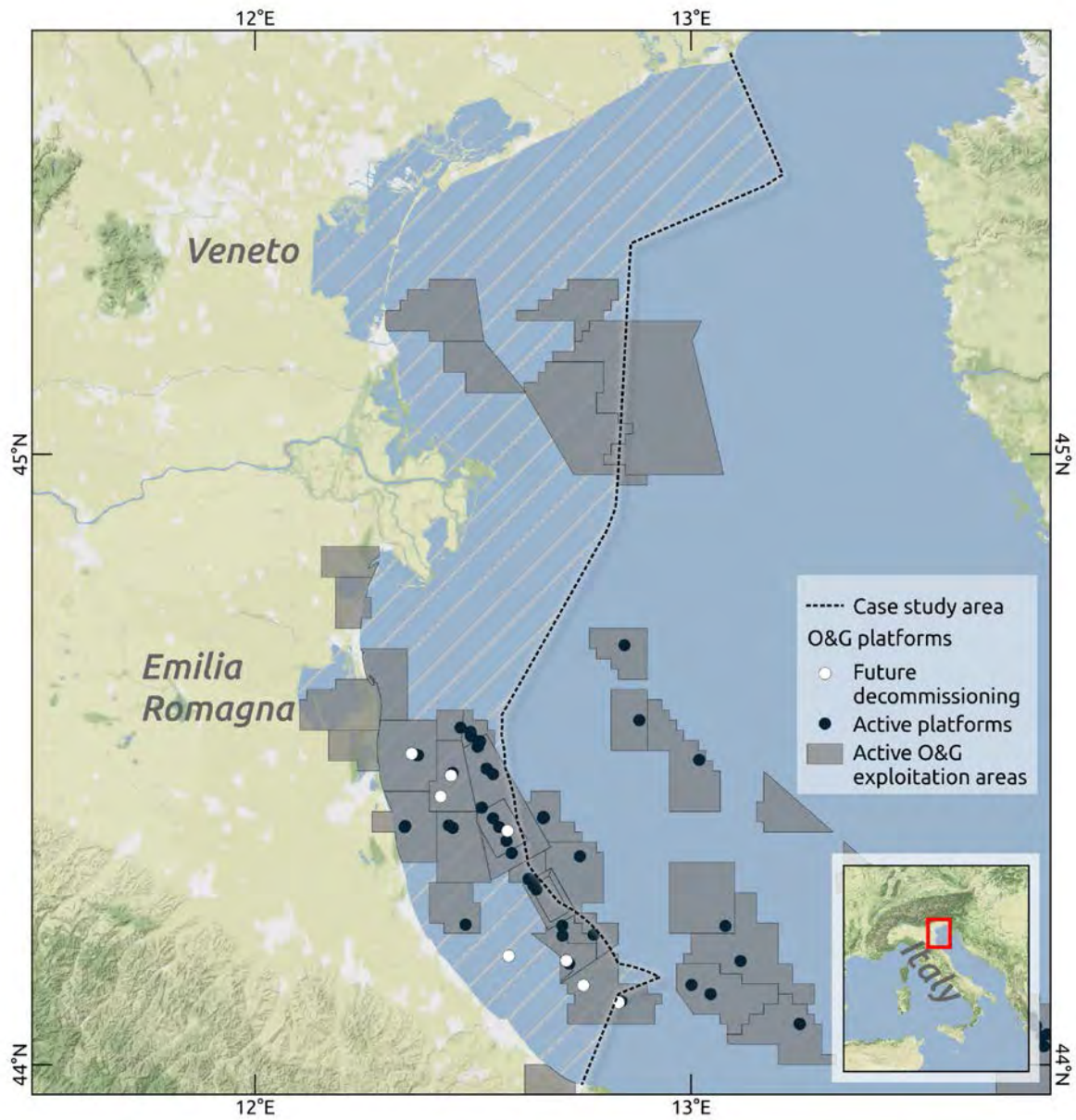
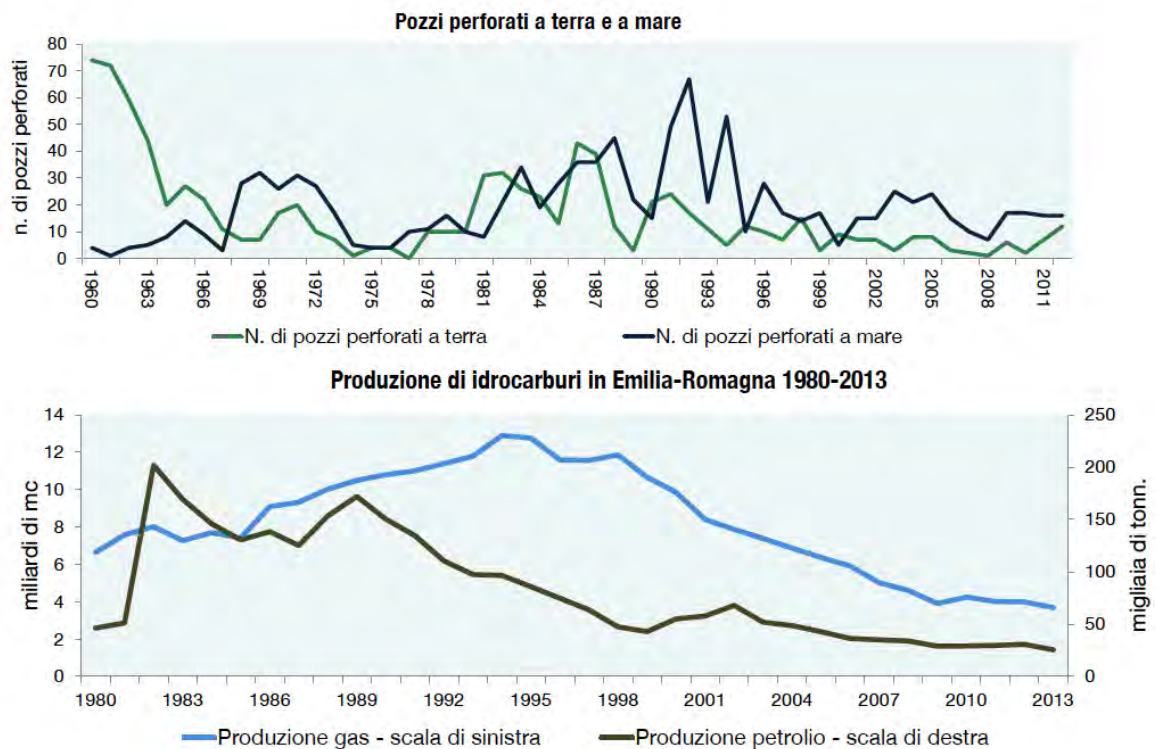


Figure 2-9 Location of active oil and gas exploitation areas and oil and gas offshore platform (including those active and those to be decommissioned in the next future) in the case study area. Source: MUSES elaboration on data from MISE: <http://unmig.mise.gov.it/>. Background Map tiles by Stamen Design, under CC BY 3.0. Data by OpenStreetMap, under OdbL.



Fonte: Elaborazioni Rie su dati UNMIG

Figure 2-10 Trend of hydrocarbon production in Emilia Romagna Region. Upper graph: in green number of land-based wells, in black number of offshore wells. Below graph: in blue gas production (left graph scale), in black oil production (right graph scale). Source: Assomineraria, 2015

In the future, on the basis of the Industrial Plan presented by ENI for 2017-2020, the carryover of mining activities "in order to maximize the restoration of the identified reserves" has been foreseen. The Plan foresees the maintenance of current production, around 53 kboed, with a possible expansion up to a maximum scenario of 120 kboed, together with around 2 billion euros in investments for existing plants. In addition, within Zone A and at the limit with the "area of assessment of the non-existence of appreciable risk of subsidence", Po Valley Ltd national started an EIA assessment for the production of the oilfield called "Teodorico" (Figure 2-11).



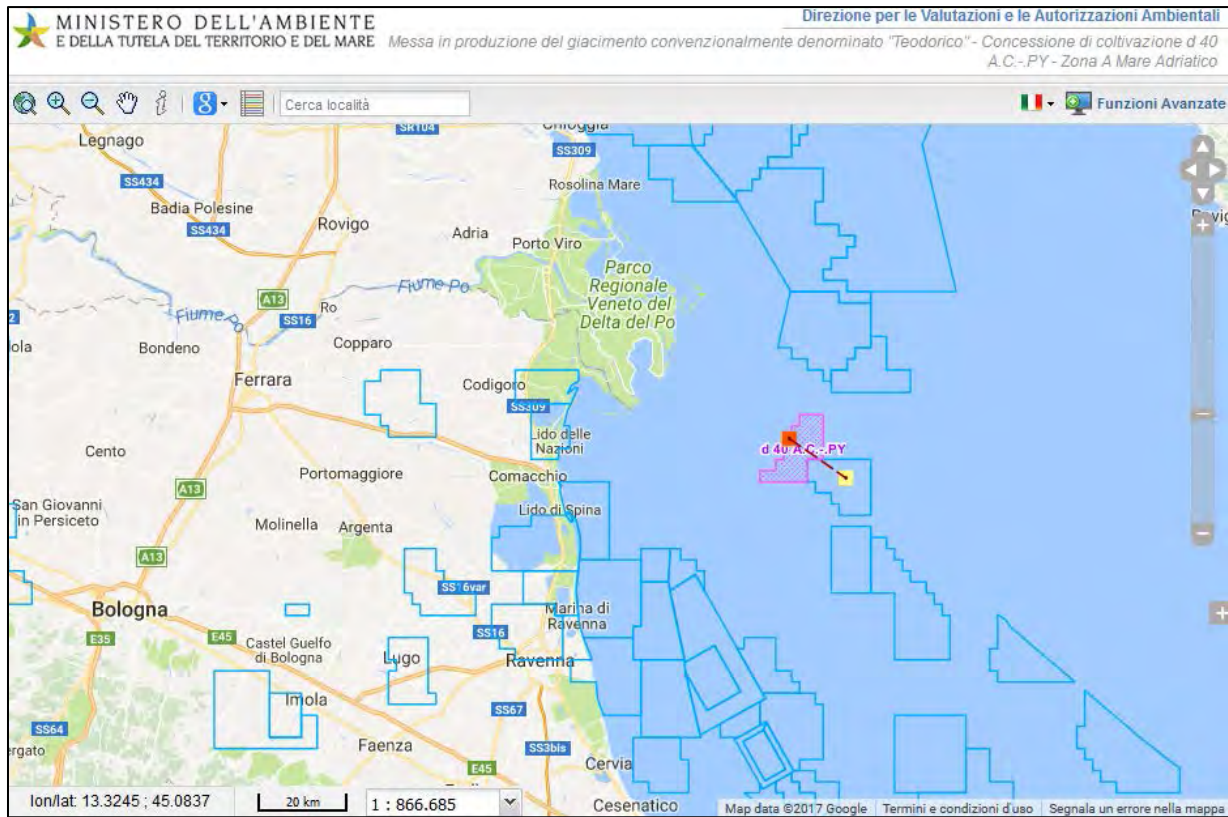


Figure 2-11 Location of the new platform Po Valley Ltd “Teodorico”. Source: www.va.minambiente.it, accessed on 22.11.2017

In parallel, a dismissing plan by 2021-2022 is under way: 8 platforms (within the 12 nautical miles) are planned to be decommissioned (ENI Industrial Plan 2017-2020; “Forum on the future of Platforms”), as shown in Figure 2-9: Porto Corsini 73, Benedetta 1, Giulia 1, Porto Corsini WA, Armida 1, Diana, Regina 1, Azalea A.

It is also worthy to note that the Emilia-Romagna Region and the Ministry of Economic Development (MISE) signed an agreement (DGR 1551/2016) at the end of 2016, on the basis of the interest in the Oil and Gas sector at the regional level and considering its future perspectives within the Blue Economy at the national and international levels. This collaboration is established for security and innovation activities in the field of research and exploitation of offshore hydrocarbons and related infrastructures. The agreement aims at enhancing the economic and industrial demands of offshore oil exploration and exploitation, while respecting environmental protection and taking into account the development of the tourism-recreational supply chain.

2.7 Renewable energy

In the Veneto and Emilia Romagna Regions there are currently no offshore facilities for renewable energy production (solar, wind and wave). The only production of renewable energy is the self-sustainability of part of the platforms facilities, which can be supplied with solar panels or mini wind propellers in order to produce energy useful for platform to work.



Wind energy potentials in the area have been studied in the last years through different projects (e.g. 4POWER (Province of Rimini), IPA-POWERADE (Abruzzo Region), H2020-CocoNet (CNR-ISMAR) and studies commissioned by the Italian Ministry for Economic Development (MISE) (RSE, 2016; 2017).

These projects and studies concluded that, considering present incentives, there is an energy potential that is economically sustainable. Although this potential is not particularly high in absolute terms (annual specific production potential at 100 m of 1000-1500 MWh/MW), its exploitation is favoured by the low water depth (<30 m), the muddy / sandy bottom and a relatively easy connection to the grid onshore. In addition, oil and gas platforms to be decommissioned can potentially support renewable energy production.

There are also other European projects (MAREEnergy, MERMAID, SDWED, THESEUS, to mention some examples), which investigate innovative techniques and best siting practices of possible wind power plants, also associated with the structures of offshore platforms, and tested alternative forms for the production of renewable energies such as those from wave motion.



3 MU OVERVIEW

As introduced in chapter 2, the Northern Adriatic case study focuses on two sectors as potential major drivers for the development of MU opportunities: coastal and maritime tourism (shortly identified as tourism) and decommissioning of O&G offshore platforms.

As far as the tourism driver is concerned, more interesting MU combinations were pre-identified based on a wide desk review and then verified and confirmed by stakeholders involved in the case study, both through interviews and a dedicated workshop held in Venice on October the 18th (see chapter 7). A similar approach was also followed for the identification of MU combinations relevant for the O&G decommissioning driver: desk research was verified by involved stakeholders. In this latter case, stakeholder engagement activities were different; they included interviews as well, but not a workshop. The role of the “Forum on the future of Platforms” promoted by the Italian Ministry for Economic Development (MISE) – Commission of Hydrocarbons and Mineral Resources was particularly important for the O&G related MU combinations.

Based on the above considerations, six MU combinations have been identified as relevant for the case study area, some of them already showing significant experiences. Four of them are mainly related to the coastal and maritime tourism driver:

- Tourism and Fisheries
- Tourism and Aquaculture
- Tourism and Environmental Protection
- Tourism and Underwater Cultural Heritage

Other two are related to decommissioning of O&G offshore platforms:

- O&G decommissioning and Renewable Energies
- O&G decommissioning, Tourism and Aquaculture.

3.1 Tourism and Fisheries

According to Piasecki et al. (2016) and Saba (2015), the combination between tourism and fisheries in Europe originates in Italy, under the expression of “pescaturismo”, then translated as “pesca-tourism” in several international contexts, keeping the first Italian part of the term “pesca”, meaning fishery. The term “pesca-tourism” is in fact generally preferred to the literally translated term “fisheries-tourism”, because the latter one can be confused with “recreational fishing”, a very different concept (Piasecki et al, 2016) which doesn’t involve professional fishermen and which should not be considered alone as a multi-use experience.

Pesca-tourism can be generally defined as the *boarding of people, which are not part of the crew, on fishing vessels with touristic and recreational scopes*. It can include activities such as showing fishing techniques and offering local food and drink on board. Importantly, pesca-tourism generally also has educational purposes, with the aim of spreading the local culture of the sea, respecting the environment and promoting sustainability principles.

The term “pesca-tourism” differs from the more recent “ichthy-tourism”, which is a different possible combination between tourism and fisheries, strictly related and often considered together to pesca-tourism in literature, legislative provisions as well as in stakeholder thinking. “Ichthy -tourism” can be



defined as the *hosting activity offered by the fish operators in their home or in other facilities that they own*. Hence, it is mainly a land-based activity which can be connected with the maritime activity of “pesca-tourism” whenever the touristic offer includes a connection between fishing at sea and food consumption on land.

The Mediterranean origins of fisheries-related tourism can be easily understood, considering the optimal climate, the long history of local traditions and the well-known cultural heritage of the region, making it a very attractive area for tourists (Piasecki et al., 2016).

In Italy, the combination between tourism and fisheries has been active for almost 20 years (Saba, 2015) and it has been taken as a model to start similar activities in other countries (Cataudella and Spagnolo, 2011). The reasons why it was started are summarized in “Manuale di Pescaturismo – *Manual for Pescaturism*” (Ministero delle Politiche Agricole e Forestali, 2005):

- To extend and to diversify fishery activity;
- To favour an optimal use of vessels and fishing gear;
- To enhance awareness of consumers;
- To extend knowledge of the territory;
- To promote environmental education and respect through a direct experience.

According to the same Italian manual, the development of such a combination can be an example of sustainable development, having as a primary interest the conservation of the marine environment.

3.1.1 Funding programmes

The possibility of developing activities of fisheries in combination with tourism was supported at the European level by the European Fisheries Fund (2007-2013) and is currently supported by the European Maritime Fisheries Fund (2014-2020), under the Common Fishery Policy.

As for the first funding period (2007-2013), EFF provided funding to the fishery industry and coastal communities to help them adapt to changing conditions in the sector and become economically resilient and ecologically sustainable. The “Sustainable development of fisheries areas” (axis 4 of the Fund) specifically aimed at helping local communities reduce their economic dependency on fish catches, promoting measures to add value to fisheries products, and developing tourism infrastructure and service and protecting the environment (Council Regulation EC 1198/2006). The measures were actuated through public-private partnerships, the so called Coastal Action Groups (CAGs), composed by representatives of fisheries, aquaculture and other local socioeconomic sectors, which elaborate Local Development Plans for the development of the territory.

As for the second funding period (2014-2020), EMFF support (according to the priority 1 of the Union regarding the Sustainable development of fisheries) investments contributing to the diversification of the income of fishermen through the development of complementary activities, including investments on board, angling tourism, restaurants, environmental services related to fishing and educational activities concerning fishing.

Similar measures supporting diversification of the income are included within priority 2 of the Fund, regarding sustainable development of aquaculture, thus being relevant also for the second MU combination identified for the case study area related to tourism.



The EMFF shall support sustainable development of fisheries and aquaculture areas following a Community–Led Local Development Approach (CLLD), as set out in Article 32 of Regulation (EU) No 1303/2013. CLLD shall be (a) focused on specific sub-regional areas; (b) led by local action groups composed of representatives of public and private local socio-economic interests, (c) carried out through integrated and multi-sectoral area-based local development strategies and (d) designed taking into consideration local needs and potential. Within EMFF, local action groups are designated as Fisheries Local Action Groups (FLAGs).

FARNET is the Fisheries European Area Network working on projects financed by the European Commission under EFF (European Fisheries Fund) in years 2007–2013, and under EMFF (European Maritime and Fisheries Fund) throughout the period 2014–2020. FARNET is the community of people implementing different CLLD bringing together FLAGs.

To access these funds, the member states have to draw up an operational programme to implement the Union priorities set in the EC Regulations. The above mentioned Funds are used to co-finance projects, along with national funding.

The Italian Operative Plan within EFF (April 2010) and the Italian Operational Plan within EMFF (2014) support the reconversion of fishermen towards other different productive activities, promoting the capacity of carrying out multiple activities (multi-functionality of fisheries) and supporting infrastructure and services for small-scale fisheries and tourism in favour of small communities that live on fishing. The development of “pesca-tourism” and “ichthy-tourism” is considered as an opportunity to actuate this diversification of fisheries, providing an integrative source of income. In Italy, CLLD for 2014-2020 focus on the fishery sector’s local production systems, promoting innovative fisheries products and processing, and supporting links with the agro-food sector. Economic and social diversification, linked to changes in the fisheries sector and the development of sustainable tourism, are included among the Italian CLLD objectives and challenges.

3.1.2 Local Action Groups

The first available resources from the EFF 2007-2013 led to the formation of 43 Coastal Action Groups (CAGs, then designated as FLAGs for the second funding period) across the Italian territory, covering different extents of the regional territories. All strategies developed by CAGs show a more or less strong tendency to diversify fishing activities, enhancing the possibility of carrying out complementary activities, which are mainly polarized on the integration between the fisheries and aquaculture sector and the tourism sector.

In the case-study area, during the first funding period (2007-2013), four CAGs were established: two in Veneto (VEGAC and Chioggia – Delta del Po, now being identified as FLAGs) and two in Emilia Romagna (Distretto Mare Adriatico and Marinerie della Romagna). These last two groups are currently unified in a single FLAG designed as GAL Delta 2000, covering the entire coast of the Emilia Romagna Region (Figure 3-1).

The territory of “VEGAC” FLAG covers the entire coast between the mouth of the river Tagliamento (North) and the northern pier of the Port of Chioggia (South). The leading economic activity in the area is tourism and many other activities are linked to it. The Venetian FLAG supports initiatives that



link fisheries to tourism, gastronomy and promotion of fish products to improve incomes of local businesses.¹¹

VEGAC strategies (VEGAL, 2015; VEGAL, 2016) aim to create an integration between the local production system and the local touristic system in order to keep and favour employment in the fisheries sector, and developing experimental activities, including those related to “pesca-tourism.

The territory of “Chioggia e Delta del Po” FLAG is located in the lower part of Veneto Region, up to the municipality of Porto Tolle. It includes the town of Chioggia and the Po river’s delta. Diversification of fishing activities towards the combination with tourism is supported by this group as a possible response to the experienced difficulties in the fisheries sector.

The territory of GAL Delta 2000 FLAG covers the entire 130 km coast of the Emilia-Romagna region. Fishery-related tourism is supported together with other activities focusing on the revival of the local fishery community, wholesale, processing and retail, youth employment. Among the needs of the area, the Strategy of Local Development (GAL Delta 2000, 2016) emphasize the valorisation of the multifunctional role of fishermen towards the development of new activities of diversification (pesca-tourism and ichty-tourism) aimed to better integrate tourism and fisheries, leading to an added value for the coastal area (strategic objective n.2).

¹¹ https://webgate.ec.europa.eu/fpfis/cms/farnet2/on-the-ground/flag-factsheets-list_en; accessed on 22.11.2017



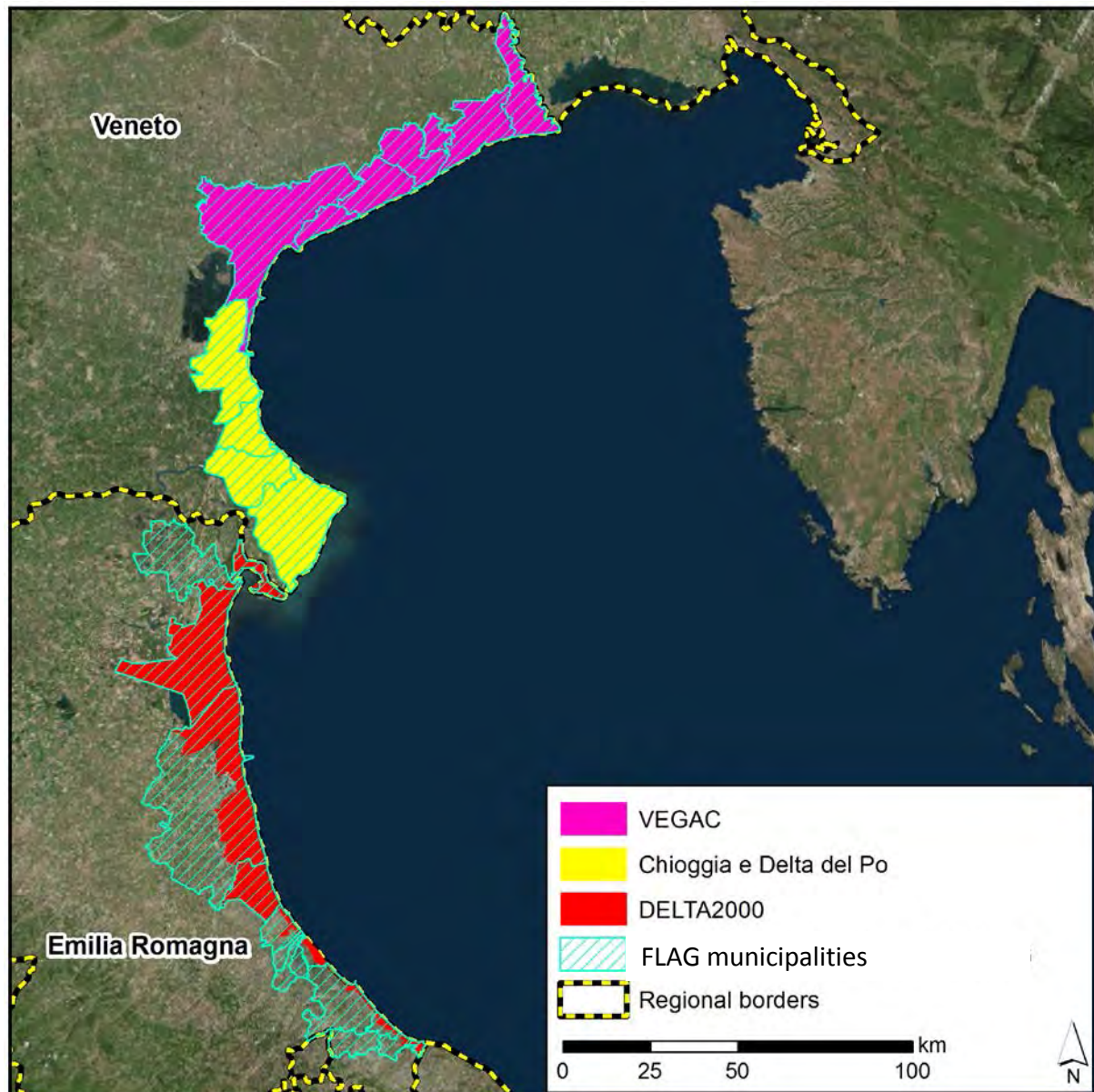


Figure 3-1 Territory covered by the Fisheries Local Action Groups of the case-study area. Source: MUSES elaboration on information from VEGAL (2016), GAC Chioggia e Delta del Po (2016) and Delta 2000 (2016)

3.1.3 National and local Legislative frameworks

Italy, together with France and Greece, is one of the first European countries which has developed an effective legislature pertaining to fisheries-related tourism (Piasecki et al, 2016). In Italy, the sector of pesca-tourism is regulated through three national legislative acts:

- The DM 293/1999, regulating fishery-tourism activities;
- The DL 154/2004, concerning modernization of the fishery and aquaculture sector
- The D.Lgs 4/2012 (modified by L.134/2012).

According to this legislative framework, the Italian approach to the development of pesca-tourism, assigns relevance to dissemination of local culture of the sea and fishing tradition, also promoting knowledge and valorisation of marine, coastal and lagoon environment.

The law establishes the maximum number of people allowed on board (12 persons). The law also provides that medical supplies must be present on-board, with life-saving equipment and radiotelephone service. A specific authorization to start the activity of pesca-tourism is needed and it is released by the Head of the Maritime District of the place of registration of the vessel. The authorization gives the right to carry on the business within the Department of registration and in the surrounding municipalities.

At more local level, in some Italian regions, debates for the development of specific regulations are currently on-going (Meneghello & Mingotto, 2016), while in some other regions, specific legislative provisions are already in force.

In the Northern Adriatic case-study area, pesca-tourism is specifically regulated both in the Veneto Region and Emilia Romagna Region, with different legal provisions.

In the Veneto Region, “pesca-tourism” is regulated by two recent legislative acts:

- the regional law of 2012, August 10th, n. 28 (LR 28/2012), concerning “agro-tourism”, “ichthy-tourism” and “pesca-tourism”;
- the regional decision n. 604 of May 3rd 2013 (DGR 604/2013) concerning the implementation of provisions for the above mentioned activities.

The objectives of such regulations (art. 1 of LR 28/2012) include the offer of diversification and income growth for fishermen, the permanence of fish operators in the areas with fishing activity, environmental protection, the valorisation of the local culture and traditions, and the promotion of the short-distribution-chain.

The regional provision introduces the need for a specific training course to be attended by the fishing operators to practice the activity of pesca-tourism, with the release of a final certificate of competence. Furthermore, the operators must hold the fishing licence for at least one year and must be in possession of the certificate of the stability test for the vessel. A specific integration in the navigation licence is also required to include pesca-tourism specification. The whole procedure is illustrated in Figure 3-2. The regional regulation is currently under a revision process, in order to include a reorganization of the authorities competent for licencing.



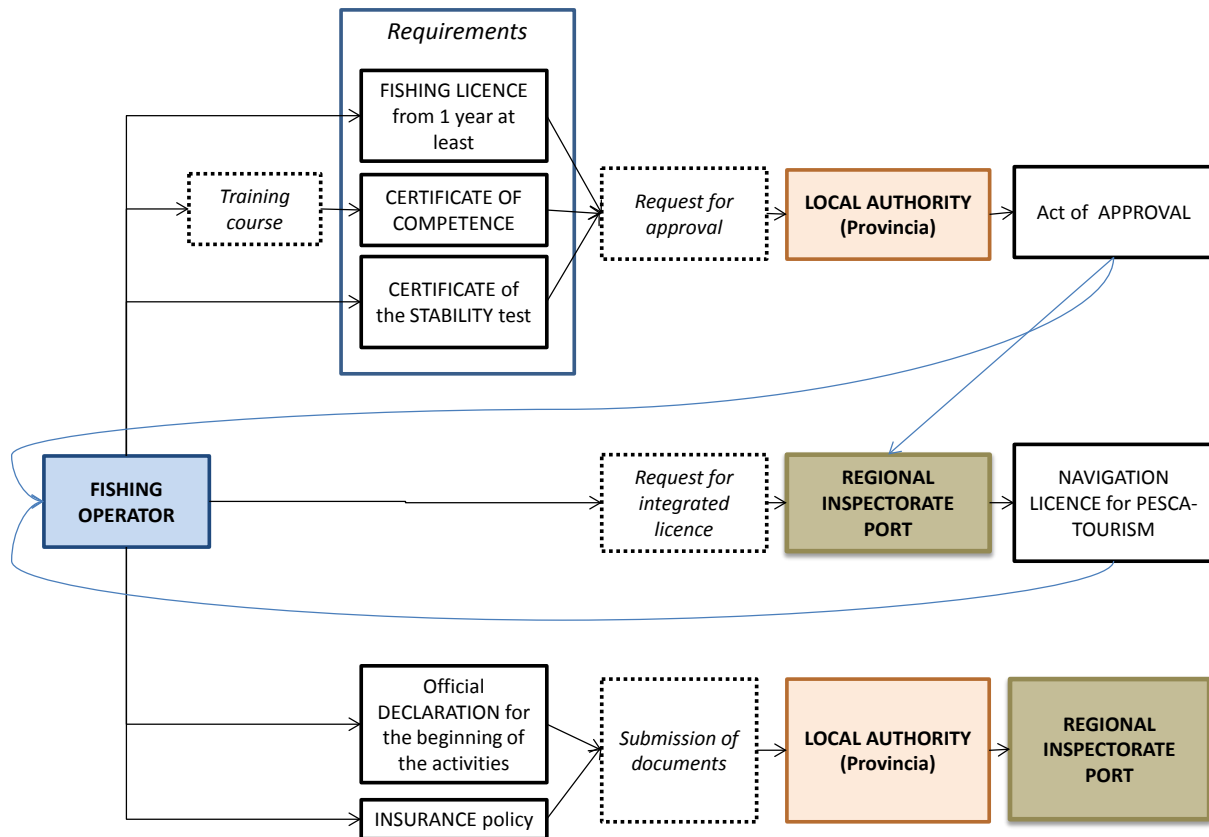


Figure 3-2 Procedure to initiate pesca-tourism activity according to Veneto Region legislation (DGR 604/2013)

In Emilia Romagna Region, the combination between tourism and fisheries is promoted and regulated by the regional law n. 22, April 24th 2014. The same law also regulates activities of “itchy-tourism” and “Aqui-tourism” (combination between aquaculture and tourism). In the law definitions, pesca-tourism is considered as a way to disseminate the know-how of the local fishing tradition and culture through the organisation of boat trips along coasts, lagoons, lakes and rivers. The observation of professional fishermen and the practice of sport fishing can be included. The law establishes that, in order to begin an activity of pesca-tourism in Emilia Romagna, the official declaration for commencement of activity has to be submitted to the local authority (municipality). Other requirements established at the national level remain valid. The administrative procedures, the requirements and the prescriptions for the activity of pesca-tourism are demanded to a specific local regulation still in preparation.

3.1.4 Current status and future potential of the combination

In the case-study area, some experiences of pesca-tourism (i.e. boarding of people, which are not part of the crew, on fishing vessels with touristic and recreational scopes) have been identified during desk analysis and then confirmed and better outlined through stakeholder participation activities (see chapter 7 on specific activities of stakeholder engagement that have been implemented). In the case study coastal area, small-scale fisheries (mainly operated through gill nets,

fish traps, etc.) or bivalve fisheries are the only fishery sectors which are effectively performing pesca-tourism. They can also be considered the most promising sectors for the future. On the contrary, trawling fisheries, which is practiced beyond 3 miles from the coast according to the current legislation, pose many difficulties and great concern about the security of the tourists hosted on board. Moreover, Italian and regional legislation specifically exclude the use of trawling systems during the activities of pesca-tourism, which must be landed and sealed. For all these reasons, the opportunity to develop the combination between tourism and trawling fisheries can be assessed as low.

The main advantages of the combination between tourism and fisheries include firstly the integration of fishermen income, especially in those periods when catches are low (or when caught species are of low value), while also contributing to preserve fish stocks (in agreement with the EU Common Fishery Policy) due to the imposed reduction of fishing efforts and to the application of sustainability principles. The combination can also promote and valorise a more responsible tourism, strictly linked to local traditions of the territory.

A first local emphasis toward pesca-tourism was initially given within the first fisheries funding period (EFF 2007-2013) which supported actions of diversification of fisheries. Indeed, several projects were proposed through CAGs involvement to launch this combination, especially including training courses, information campaigns etc. In the VEGAC area for example (VEGAC, 2015), several projects were performed in order to promote pesca-tourism including: (i) the adaptation of a motor vessel type to pesca-tourism needs, (ii) the preparation of a Protocol for Sustainable fishing in the Caorle municipality with training of operators and information campaigns, (iii) the promotion of activities of itchy tourism and pesca –tourism through the organization of seminars, guided tours, events and drawing up guidelines and an informative brochures. Similarly, in Chioggia and Po Delta area, initiatives to adapt existing facilities to ichthy-tourism activities and to educate and to train operators with specific courses on pesca-tourism¹² were performed in the same period.

A survey to explore the potential interest of fishermen in beginning the activity of pesca/itchy-tourism was performed by Ciset (International Centre of Studies on the Tourism Economy) in the summer of 2014 (Ciset-VEGAL, 2015). A sample of 50 fishermen operating along the Venetian coast answered to a questionnaire about their understanding of pesca/itchy-tourism, about their awareness of benefits and about their opinion on major concerns and challenges. According to the results of the survey (Ciset-VEGAC, 2015), major opportunities and benefits of pesca/itchy-tourism include (in decreasing order according to the percentage of the answers):

- Diversification and income integration;
- Collaboration with other actors of the territory, especially tourist operators;
- Promotion of local fish products;
- Increase of social awareness and interest in fishing activities.

Main obstacles to initiate pesca/itchy-tourism include:

¹² www.gacchioggiadeltadelpo.com/i-progetti-sostenuti; accessed on 22.11.2017



- Too restrictive and unclear legislation;
- Complex bureaucracy;
- Difficulty in combining normal fishing activities with touristic activity;
- Presence of vessels which usually are not suitable for hosting people;
- Difficulty in intercepting the touristic demand;
- Time needed to attend the training courses;
- Lack of trust about possible benefits derived from this activity.

Among the above mentioned obstacles, legislation and bureaucracy encountered the large majority of the fishermen answers (CISSET-VEGAC, 2015), revealing a high overall importance of these factors.

According to stakeholder opinion collected in the implementation of this MUSES case study, besides legislation obstacles which are still considered relevant, one of the major limits to the development of pesca-tourism is the cultural attitude of fishermen to change and to begin novel activities. Fishermen in many cases probably haven't captured the real benefits of the combination. Furthermore, fishermen have to be inclined to verbalize their job and their experience to tourists and this does not always occur. Training of operators is hence considered a very relevant issue, as well as the definition of the contents (tradition, culture, experience, environment etc.) which should be spread by fishermen.

Another issue is related to the need for investment for fishermen in order to adapt vessels to host people on board and to perform pesca-tourism. Finally pesca-tourism, in order to be a successful experience, must be effectively profitable for fishermen. At the same time, the price for touristic trips must be priced effectively so that tourists are willing to pay for the experience.

As a consequence of all these concerns, few vessels in the case study area are currently authorized to perform pesca-tourism, with a quite low level of activity in the marine area. The existing experiences, mainly located in lagoon and delta areas, are still weak and isolated. What is currently missing to strengthen this combination is a proper organisation of fishermen in cooperatives or networks, having major entrepreneurship and investment capacity greater than single fishermen. With this regard, a first network of five local fishermen interested in starting pesca-tourism activity has been reported by CISSET-VEGAC (2015) in the municipality of Caorle (northern Veneto Region), in order to guarantee an overall offer throughout the year and for more days per week. In this way, the touristic operators can rely on a well-organised offer, having the possibility to plan excursion proposals for their client. Some examples of more active experiences in pesca-tourism are located in some other Italian regions or Mediterranean areas, where a more structured organization exists.

A more structured and attractive touristic offer, linking for example the experience at sea and/or in the lagoon areas (boat trip) with the offer of food on land (restoration, ichty-tourism) could help promote this combination. However, very restrictive requirements for ichty-tourism exist, imposing building renovation and hygiene and health standard fulfilment, with very local specificities, which are not homogeneous across the overall territory, due for example to urban planning constraints acting at a municipality level. Other links could be created between pesca-tourism and other land-based activities involving fishermen, as principally commercialisation of local fish products (0 nautical miles products) or involvement of fishermen as guides for visits to museums of the sea and navigation.



Though limited development of this combination has been detected, a high interest of tourist operators was reported by stakeholders involved in the case study analysis, considering that this combination can be very attractive from the touristic point of view. An analysis of the potential demand for diverse tourism related to fisheries experiences for the Venetian Coastal Area was performed by Meneghello & Mingotto (2016). The authors estimated that the potential demand of visitors interested in engaging in an excursion related to discovery of naturalistic areas and traditions of local communities accounted for about 30% of residents and about 5-10% of tourists living/staying along the Venetian coast, leading to about 1 million people. Visitors interested in partaking in such experiences of fisheries- related tourism (excursion on fishing boats, visits to traditional fishermen huts, tasting local fish dishes etc.) were then estimated in about 110,000 people (94,000 residents and 14,000 tourists), by considering their attitude to live such experiences. Economic benefits were assessed in terms of turnover per year per fisherman (Figure 3-1 and in terms of total visitor's expenditure in the destination which demonstrated a higher revenue in the long term.

Table 3-1 Fishermen turnover estimates for "Pescaturism" activities. Source: Meneghello & Mingotto (2016)

	Short term (year 2016)	Medium term (year 2018)	Long term (year 2020)
N° of fishermen offering pesca-tourism excursions	15	36	54
N° of week per year	20	24	30
N° of excursions per week	2	2	2
Price of excursion	€50.00	€5000	€5000
N° of passengers	12	12	12
Turnover per year per fishermen from pesca-tourism	€24,000.00	€29,000.00	€36,000.00
Demand satisfied by fishermen	8,000	21,000	39,000
Demand not satisfied yet	100,000	87,000	69,000

3.2 Tourism and Aquaculture

Different alternative or integrated ways to combine aquaculture and tourism have been identified for the study area and were explored for the analysis of MU potential.

The first type of combination is very similar to the above described pesca-tourism and can be defined as the *boarding of people on aquaculture vessels to visit plants and learn aquaculture techniques, with educative and recreational scopes*. As for pesca-tourism, this combination can also include food and beverage offered on board or can be linked to land facilities, through the ichthy-tourism connection. Hence, most challenges and benefits of these combination typologies are very similar to the challenges and benefits resulted for pesca-tourism.

A second combination opportunity comes from *sport fishing tourism* (mainly angling), which could be practiced *next to mussel aquaculture plants* in marine spaces which commonly function as attractive



areas for a number of fish. Aquaculture operators can benefit from this type of combination because most predator species (e.g. seabasses, seabreams), feeding on farmed molluscs, are caught by sport fishermen, hence reducing the predation pressure. Furthermore, in developing this kind of combination, aquaculture enterprises could receive an economic remuneration by sport fishermen for their fishing day in the aquaculture concession space. This combination typology, effectively being experienced in the case-study area at a local level as described further below, is also mentioned in the VEGAC Local Action Plan (VEGAL, 2016), where a specific action for aquaculture development and innovation is set up in order to support the marine production of mussels. The diversification of marine spaces used for aquaculture with sport and recreational fishing activities is expressly included.

A third combination opportunity could include *diving/snorkelling tourism*, which could be practiced next to aquaculture farms, where a rich fauna can be observed. Its feasibility has to be carefully checked considering the real attractiveness of farming sites for such recreational activities, the limited visibility of Northern Adriatic waters and the safety conditions that must be ensured to visitors.

Indeed, the possibility of developing multi-functional sites in connection with aquaculture plants emerged as a very interesting and promising idea for the potential development of this combination. In this hypothesis, equipped areas for diving, snorkelling and/or sport fishing could be associated to aquaculture plants, where small touristic infrastructures should also be put in place.

All typologies of aquaculture and tourism combinations can represent an integrative source of income for aquaculture operators who experience periods of loss of revenue due to the presence of natural calamities. Too high summer temperatures leading to a low quality of the farmed mussels, strong storms with structural damage to the plants or toxic algae have recently impaired the local mussel production, leading to significant economic impacts for the aquaculture sector.

A possible concern emerged during stakeholder consultation about the involvement of sport fishing in this combination, because it could be a possible further source of fish stock overexploitation. To avoid this problem, an effective control on fish catches must be actuated in order to fulfil the objectives of the Common Fishery Policy.

The possibility of developing activities of aquaculture in combination with tourism is supported at the European level by the same funds implementing the Common Fishery Policy mentioned for pesca-tourism, specifically:

- European Fisheries Fund (2007-2013). EFF, through the priority axis 4 (Sustainable development of fisheries areas) supported restructuring and redirecting economic activities through diversification and promotion of eco-tourism initiatives, provided that these activities do not result in an increase in fishing efforts.
- European Maritime Fisheries Fund (2014-2020). EMFF may support, according to priority 2 of the Union concerning “Sustainable development of aquaculture”, the diversification of the income of aquaculture enterprises through the development of complementary activities.

Similarly, the role of the three currently existing FLAGS (VEGAC, Chioggia e Delta del Po and Delta2000) described in section 3.1.2 is relevant also for the combination between tourism and aquaculture. All the strategies developed by the three groups highlight the concept of diversification, including not only fisheries but also aquaculture.



The combination between aquaculture and tourism is assimilated to pesca-tourism also in national legislation. The DM 293/1999 and D.Lgs 4/2012, already mentioned for pesca-tourism establishes that aquaculture cooperatives or enterprises, which are concessionaries of marine spaces for aquaculture, can perform activities of pesca-tourism in their areas. As for pesca-tourism, the Italian approach to the development of touristic initiatives on aquaculture sites assigns great relevance to the aspects of dissemination of the local culture of the sea and of aquaculture, also promoting knowledge and valorisation of the marine, coastal and lagoon environment. The procedure to get the authorization is exactly the same described for pesca-tourism (section 3.1.3) at national level.

Unlike Veneto region, where no legislation expressly defines the combination between aquaculture and tourism, Emilia Romagna regional law (LR 22/2014), beyond pesca-tourism, specifically includes the term “Acquiturismo”, meaning aquaculture-related tourism and referring to the hosting, recreational, educative and cultural activities aimed to a correct fruition of water environment and aquaculture resources, as well as to a valorisation of socio-cultural aspects. The activity is performed by the aquaculture farmers using their own facilities, including vessels.

The current status of this combination appears poorly developed in the case-study area, also due to a legislative framework where aquaculture-related tourism is generically assimilated to pesca-tourism, and due to a legislative inhomogeneity among regions, where “Acquiturismo” is for example specifically defined in Emilia Romagna regional law but not in Veneto. Some differences in regulations also exist among different areas of the same region (e.g. different provinces, sanitary districts), highlighting the need for a general simplification of bureaucracy and for a better administrative coordination. Furthermore, the development of the combination is also hampered by the fact that the existing vessels used for aquaculture plants often are not suitable and cannot be used for touristic activity. A more detailed analysis of barriers, for several aspects equal to pesca-tourism ones, is performed in chapter 4.

Though overall poorly developed, the combination encountered the interest of several stakeholders who indicate some success examples of this combination already occurring in the case-study area, mainly involving the fishing tourism in the proximities of aquaculture plants. An active experience of this combination is located in the Cavallino-Jesolo mussel plant (northern area of Veneto region), where sport-recreational fisheries, managed by the Italian Federation of Sport Fishing, is occurring within the area used for aquaculture. Experiences of guided tours in the aquaculture plant have been also recently organized on board a fishing vessel within the same area where sport fisheries have been also practiced.

3.3 Tourism and Environmental Protection

The combination of Tourism with Environmental Protection related activities implies the reinforcement of the links and of the possible mutual advantages between tour operators, touristic services’ providers, institutions and associations involved in the field of marine protection. The rationale behind the definition of such a combination is that reinforcing the awareness about the value of marine habitats and/or finding solutions to fund environmental protection measures through the use of part of the income deriving from e.g. guided tours in protected areas (to perform *diving/snorkelling tourism*) should result in an overall advantage, for environmental protection purposes and for social and economic development. A complete cost/benefit analysis of this combination should encompass the identification and evaluation of the indirect benefits of using natural assets that is an evaluation of the so-called ecosystem services.



As regarded in the legal framework, it's worth mentioning that the Veneto Region, through the Regional Law n. 15/2007, promoted (art. 4) the establishment of Biological Protection Zones in the marine areas off the coasts of Chioggia and Caorle, then transformed into Natura 200 sites (Sites of Community Importance - SICs). The article states also that the Veneto Region promotes the activities of institutions and NGOs finalized to the organization of guided tours for leisure, touristic and scientific diving. The same Law (art. 5) defines interventions for the immersion of artificial structures finalized to the experimentation of multiple activities, included maritime tourism.

The current status of this combination denotes a generally limited level of development and reveals some contradictory aspects. In fact, as mentioned in chapter 2, the marine areas where such a combination shows the highest potential are those facing the urban settlements of Chioggia, Cavallino-Treporti and Caorle which can profit from the presence of rocky outcrops (*tegnùe*) in marine areas right off their coasts. In the case of Chioggia, the presence of the *tegnùe* (SIC 3250047, see chapter 2 for a short description) is well known and characterizes quite well the naturalistic attraction of the area, but a virtuous system of synergies between public administration funding the maintenance of the area, tour operators and scuba diving centres is still lacking, with the result of exposing the areas at an indiscriminate exploitation by private, experienced, as well as occasional, divers. Moreover, the insufficient delimitation of the areas exposes habitats to possible damages due to unauthorized trawling or underwater fishing.

A project for the development and management of the "Tegnùe di Chioggia" was funded in 2003 by the Veneto Region and entrusted to the NGO "Tegnùe di Chioggia", whose purpose is the safeguard and development of marine areas of the *tegnùe* through the development of scientific, didactic, sportive and recreational activities as well as through the raising of social awareness. The NGO „Tegnùe di Chioggia" collaborates with several (around 14) diving clubs located around the provinces of Venice, Padua and Rovigo, which committed in matching the behavioural guidelines of the NGO. The web site of the association offers a map of buoys and feasible moorings (Figure 3-3), being prohibited any type of anchorage. It also provides an update of the state of the buoys. The map is interactive, for each mooring point it is possible to get a description of the buoy (code, location) plus a narrative description of the area and a feasible itinerary. In Figure 3-4, some images illustrating the organization of the site are shown. The average number of divers for each visit is around 8 and during summer season their total number can exceed 500 on monthly base.



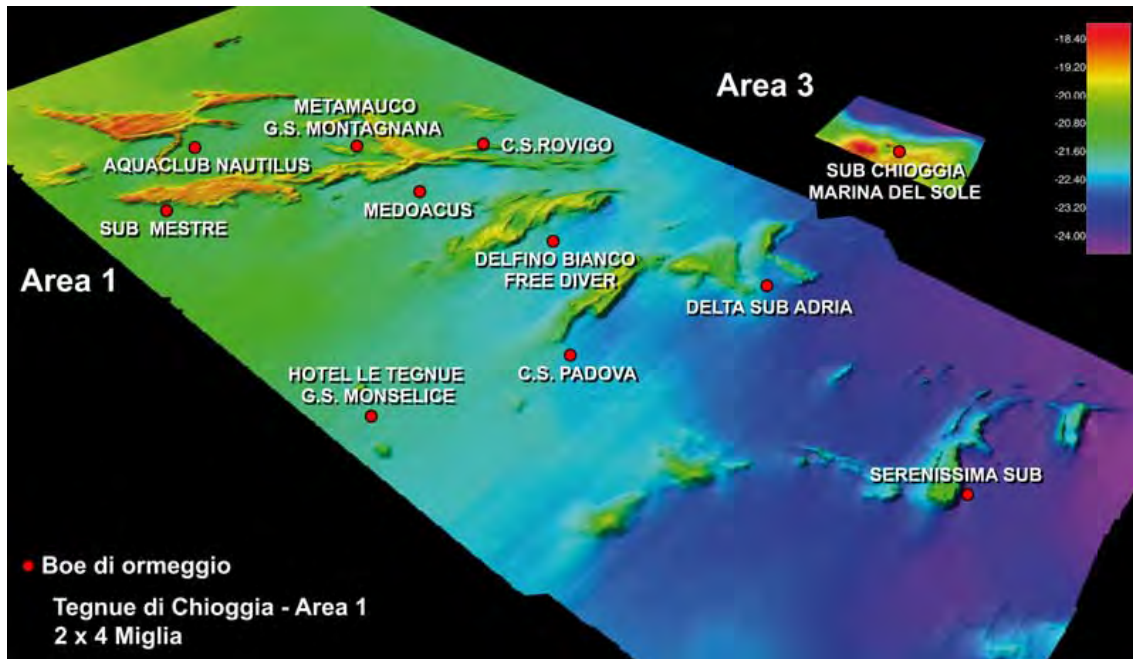


Figure 3-3 Map of mooring buoys (red dots) for diving activities of diving points in the area of SIC Tegnù di Chioggia. Source: www.tegnue.it; accessed on 22.11.2017

The establishment of a protected area is defined at a national or regional level whereas site specific modalities to marine activities (including diving) are regulated by Orders of the Coast Guard. Specific Orders of Chioggia and Venice Coast Guards regulating leisure and scientific diving are *Ordinanza n° 16/07* and *Ordinanza n° 106/06* respectively. The Tegnù di Chioggia is involved in the network AdriaPAN (see chapter 2).

Similarly, in relation to the Tegnù of Porto Falconera (SIC IT3250048), the Veneto Region established the “Oasi Marina città di Caorle”, an area about 1 square miles wide where some artificial structures were submerged with the aim of environmental protection of the rocky outcrops. Management of this area was entrusted to a local diving club; Caorle Municipality collaborates in control, monitoring and management activities. The Order *Ordinanza n° 38/2005* of Maritime Authority regulates the use of the area. At present, four itineraries are equipped in the area, the first one easy for families to go snorkelling and visit some ancient ruins, the second one to be enjoyed via free-diving (visiting a submarine spring of methane) whereas the last two itineraries to the tegnù area must be performed with certified equipment, with the presence of divers of the managing diving club and after obtaining specific authorization. In Figure 3-5 the MPA and itineraries are illustrated.

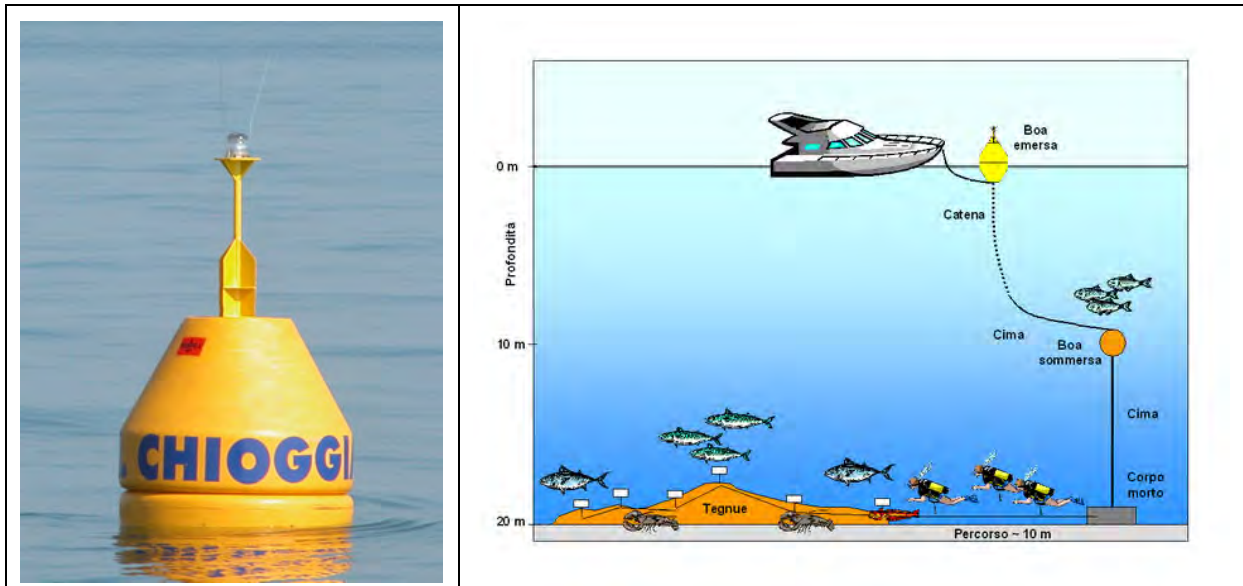


Figure 3-4 Mooring buoy and organisation of diving visit at the SIC Tegnù di Chioggia. Source: www.tegnue.it; accessed on 22.11.2017

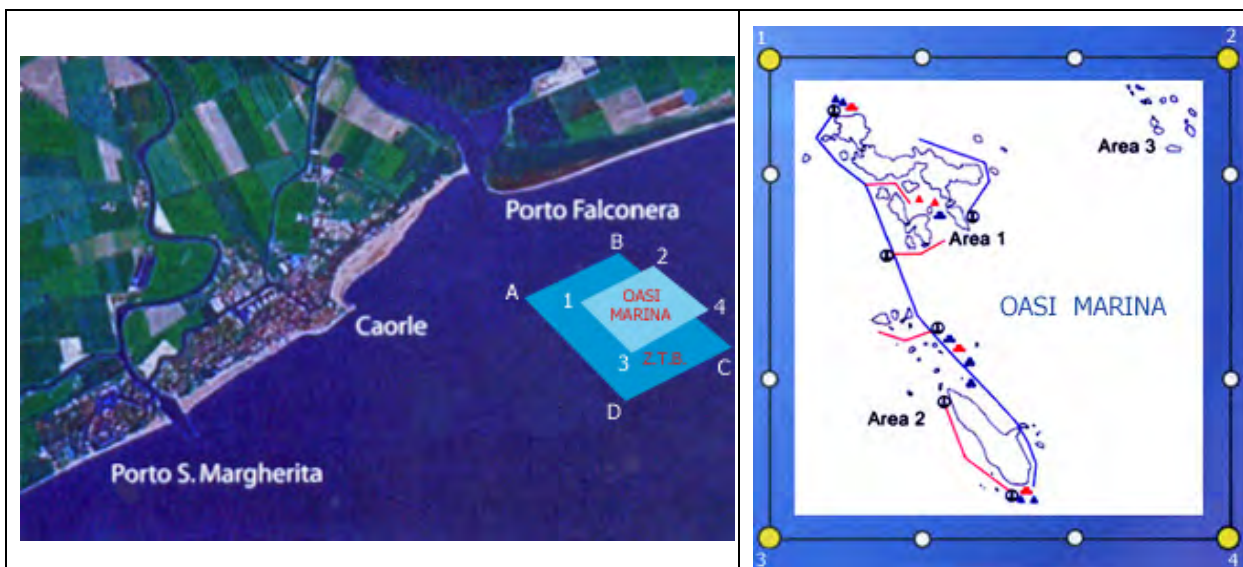


Figure 3-5 Delimitation of the SIC Tegnue of Porto Falconera and of the "Oasi Marina Città di Caorle" area. Right side figure illustrates the four equipped itineraries for snorkelling and/or diving. Source: www.caorlotti.it; accessed on 22.01.2017

The SIC IT4070026 - *Relitto della piattaforma Paguro*, located in Emilia Romagna Region, is particularly relevant for the case study area. The presence of the gas platform wrecks favoured the settlement of such an important habitat which determined the establishment of this site as MPA in 1995 (by national Decree), whereas in 2012 this area was also identified as a Site of Community Importance. Due to the fact that the MPA originates from a wreck, the item is discussed in the next section dedicated to Underwater Cultural Heritage.

It must be noted that some other ecologically and naturalistically important areas, in particular those characterised by the presence of non-protected *tegnùe*, are not yet included in any program of protection and should be considered as further occasion to expand both the protection of the marine environment and the opportunities to develop socio-economic activities. Similarly the existence of many coastal protected areas could be a driver for widening their limits of protection toward the sea. Moreover, this would respond to a specific input and request by the EU of raising the overall extent of marine protected areas (further on this in the discussion on DABI in chapter 4).

Stakeholder engagement activities performed during the case study implementation suggested some other potential opportunities for the development of this MU combination in the study area, whose relevance and feasibility must be checked in detail:

- MU combination of tourism and environmental protection at sea could be potentially linked with environmental/naturalistic related touristic activities on land. For example, this might be particularly interesting for land-based facilities dealing with protection and recovery of specific marine species and connected environmental education and awareness raising activities (e.g. the site for turtles protection and care, located in Alberoni - Venice, managed by the Venice Museum of Natural History¹³). Part of the economic resources that tourism activities would bring in these sites could be reinvested for marine species protection and monitoring.
- Recently, Veneto Region submitted the project proposal “SYN4MPA Project - SYnergy for Mediterranean Marine Mega fauna conservation in Marine and coastal Protected Areas” to the Interreg MED funding program. The objectives of the project consist in reinforcing the synergy between MPAs, stakeholders, national and international policies through: (i) the improvement of cooperation and management capacity of MPAs and their role in the preservation of Marine Mega fauna (MMM), the exchange of socio-economic and scientific data, and (iii) supporting MPAs by monitoring MMM and threats. Project objectives and activities could be connected with the aim of creating new MPAs along the coast, to be also exploited for sustainable tourism purposes.
- Another potential opportunity for the MU development could in future come by decommissioning and reconversion of Porto Tolle ENEL power plant. The area of the power plant and its surroundings located in the Po Delta could become a hub with a very high potential for developing touristic activities also connected with the creation of new MPAs along the coast of such an important land-sea transition system.
- Even if not properly concentrated on marine areas, the objectives and future results of the recently started (June 2017) Interreg - Central Europe project CEETO (11 partners from 6 EU countries) could provide examples of possible approaches to be capitalised also in a marine context. The project aims at i) implementing an innovative governance system for tourism based on a participatory planning approach that will help to improve the managing capacities of managers of protected areas and ii) identifying and testing innovative management and

¹³ <http://www.msns.it/centro-recupero-tartarughe-marine>; accessed on 22.11.2017



monitoring tools specifically focused on sustainable tourism activities in different contexts. The Emilia Romagna Region and WWF Adria are partners of the project.

Stakeholder engagement activities also highlighted the importance of involving specifically trained people in the MU development, specialists of didactic and scientific dissemination on environmental items who can really transfer knowledge and awareness about the value of the marine environment.

3.4 Tourism and Underwater Cultural Heritage

The advantages expected from this combination are quite similar to those expected from the combination of tourism with environmental protection. Actually sometimes it is even difficult to distinguish between the type of experience, since often an old wreck gives home to a very valuable ecosystem and tourists can enjoy the historical heritage as well as the natural environment at the same time.

Taking into consideration the MU perspective, that is the status of development of a virtuous system where the protection and, most of all, the promotion of cultural heritage can benefit from the development of related touristic activities and connected raising of social awareness, the picture is definitely poor. Indeed, the offer is not properly conveyed and clearly defined and the weight of this type of tourism in the overall touristic budget seems really marginal.

Nonetheless, given the particular geographic context and the overarching historical framework of the Northern Adriatic, characterized by the presence of historical urban settlements of utmost importance along the coast (e.g. Venice), the combination appears promising, with a high development potential. On the other hand the scarce transparency of the water column (also affecting the MU combination tourism and environmental protection) along the west coast of the Northern Adriatic represents a limiting factor for the development of such MU combination.

The current status of this combination must be considered close to zero, considering the fact that, as far as it was possible to assess, there are almost no examples of public – private agreements for the safeguard of UCH sites and their valorisation through regulated touristic activities. The multiple wrecks present in the area can be presently visited with the assistance of local diving clubs in the area of Chioggia, Cavallino-Treporti and Caorle. In certain instances, as in the case of Cavallino - Treporti, touristic accommodations (e.g. camping areas), the offer of the guided tours to the wrecks are included.

Generally speaking, after analysing the results of stakeholder engagement activities (interviews and the workshop, see chapter 7) what is really lacking is a comprehensive view and project about safeguarding and valorising UCH sites. This situation, even worse than the MPAs one, exposes the submerged cultural heritage to the concrete risk of looting and damaging, which was confirmed by a NGO of divers which resulted to be the most active and valuable actor.

The Relitto della piattaforma Paguro (*Paguro gas platform's wreck* – SIC IT4070026, Figure 3-6) represents a valuable exception combining both environmental protection and UCH to the tourist use of the site. Indeed, this is both a marine protected area and a wreck of an old gas platform, which is however not so ancient worth being looted. Being a Site of Community Importance, it is managed through a Management Plan with specific objectives of habitat and species conservation, as well as raising social awareness and local population involvement. Related measures are therefore connected with a strict control of accesses to the site (leisure, didactic and scientific diving) and the prohibition of whichever type of fishing, also including continuous monitoring activities.



After the positioning of other submerged structures by the Oil & Gas company ENI S.p.A., two diving sites are present in the area whose extension (considering the SIC area) is about 66 hectares. Authorization for diving may be obtained through the NGO “Associazione Paguro”,¹⁴ <http://www.associazionepaguro.org/> which was entrusted to manage such recreational activities by the Port Military Authority and Coast Guard of Ravenna with a specific Order in 1997. On the web site of the NGO “Associazione Paguro”, all necessary information for diving activities may be retrieved; the average number of registered diving visits immediately after the agreement was around 2,000 on yearly basis and the trend shows an increase toward 3,000, notwithstanding the natural fluctuations especially due to meteorological conditions (Figure 3-7).

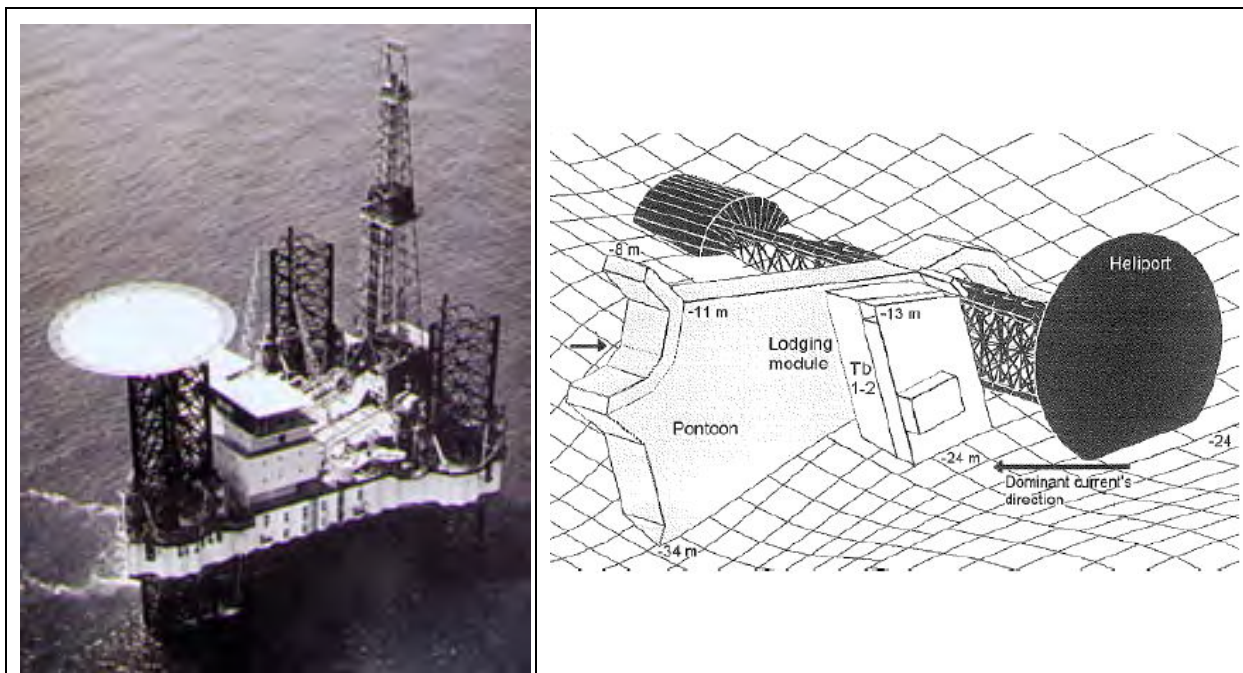


Figure 3-6 Left image: the Methane extraction platform Paguro before the explosion of 1965. Source: www.associazionepaguro.org. Right image: tri-dimensional model of principal structures of the wreck. Source: Ponti et al., 2002 as reported in Regione Emilia Romagna, 2013 “Management Plan of the Wreck of Piattaforma Paguro SIC IT4070026”

¹⁴ <http://www.associazionepaguro.org/>; accessed on 22.11.2017

Anno	N° immersioni realizzate
1997	1865
1998	2820
1999	2750
2000	2468
2001	2125
2002	2854
2003	3512
2004	2380
2005	2566
2006	2871
2007	2798
2008	3085
2009	3256
2010	3358
2011	2365
2012	2985
totale immersioni	44058

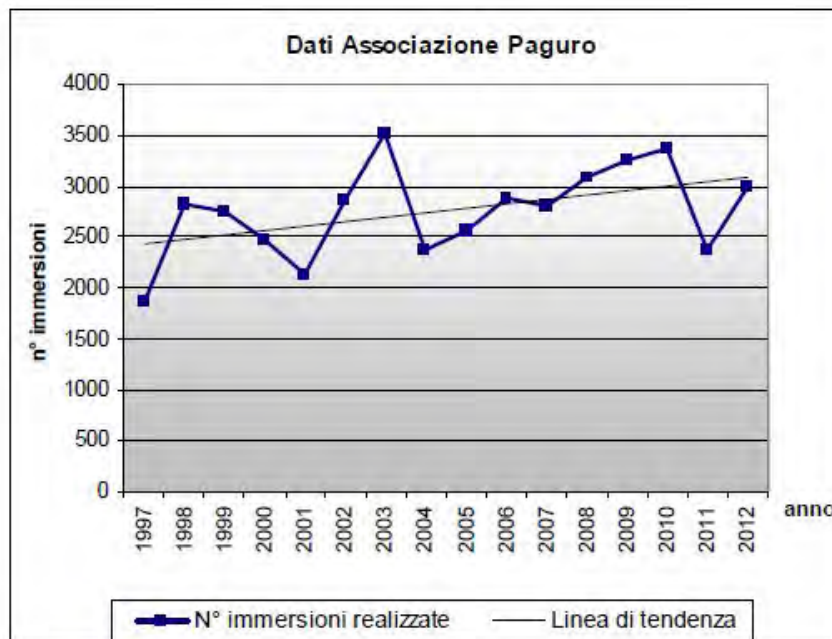


Figure 3-7 Total diving visits per year at Piattaforma Paguro according to the NGO “Associazione Paguro. Source Regione Emilia Romagna, 2013 “Management Plan of the Wreck of Piattaforma Paguro SIC IT4070026”

A concrete opportunity to develop the combination is represented by a project proposal developed by the Veneto Region: the Habitat Deception Strategy (HDS) project that was submitted to the Interreg Italy–Croatia funding program. The objective of such a project consists of creating new areas designed for the installation of underwater parks through the sinking of artificial structures or modules or even dismantled naval wrecks. At the same time, the creation of a new Adriatic Tourist Product Club (Adria TP Club) and a specific educational program are foreseen by the project.

With a wider perspective, a strong potential to develop this MU in the studied area lies in the possibility to develop touristic itineraries across the sea, the coast and the inland, following some documented ancient routes (e.g. the Rimini-Aquileia route, dating IV sec. B.C.), considering the presence of old ports now located in the inland (e.g. Adria and Aquileia) and considering the presence of the most important Italian coastal wetlands (as the lagoons of Venice, Carole, Grado and Marano e the Po Delta). This would open to the possibility to include also locations related to the events of a most recent past, such as the route of Giuseppe Garibaldi and his arrival in the Po Delta. This type of offer would reinforce an “experience based” and “high-level quality” tourism, giving a smart, sustainable appeal to the area, both to the “wide area” of the Northern Adriatic and to small villages that could benefit being included in a “wide itinerary” offer, combining both land-based and underwater cultural heritage sites. As a matter of fact, the demand of such a type of tourism is constantly growing.

In order to promote this MU, the huge amount of information and maps collected in existing archives of Superintendences (Italian institutions deputed to the preservation of cultural heritage, depending on the Ministry of Cultural Heritage and Tourism) and of National Institute for Naval History should be studied and could be brought to the general public.



Similarly to the case of the previous combination (tourism and environmental protection), one of the main pieces feedback emerging from stakeholder engagement (specifically at the workshop, see chapter 7) was the important emphasis put on the necessity of involving schools, research institutions and students to develop new professional categories as well as considering student population as a particular type of end users of such a MU combination.

Moreover, the development of new technologies could help in developing the sector and in turn could open a specific market niche, considering the need of remote monitoring of UCH sites, as well as the possibility to implement some of the almost infinite state-of-the-art ways of virtual exploration.

Further unexplored possibilities, at least in the case study area, are related to the combination of tourism and underwater art, with the installation or ad hoc construction of artworks for their successive immersion and underwater visits.

3.5 MU combinations related to O&G decommissioning

The potential MU combinations concerning decommissioning of oil and gas platforms together with renewables energies or tourism and aquaculture (and potentially others MU combinations) are driven by the decommissioning of 21 platforms by 2021-2022 in the Adriatic Sea (8 in the Case Study area) (MISE, 2017) and therefore the need to identify potential re-uses of the platforms.

This topic is currently under discussion through a permanent “Forum on the future of Platforms”, promoted by MISE together with the University of Bologna, following a workshop organised in the framework of OMC2017 (“The future of the Platforms and Blue Economy: decommissioning, multipurpose or other uses?”, Ravenna, 29 March 2017). Participation in the Forum is wide, involving: national authorities (e.g. Ministry of Economic Development, Ministry for Environment, Land and Sea), regional and local authorities (e.g. Emilia Romagna-Region, Municipality of Ravenna), port authorities, competent authorities on navigation safety, O&G companies, operators on installation, maintenance and decommissioning, engineering companies, universities and research institutions, environmental agencies, environmental NGOs, trade unions.

Main topics debated in the four Forum meetings held from May to October 2017, are the following:

- State of the art of the sector and recent / ongoing practices, focusing on decommissioning and the Emilia-Romagna marine area.
- State of the art of legislation and administrative procedures, in order to operationally support the preparation of new guidelines on Platforms decommissioning, as established by Decree 104/2017.
- Economic relevance and economic constraints;
- Connections with Blue Growth and Maritime Spatial Planning;
- Reuse / multi-use options and constraints;
- Opportunities for innovative solutions and R&I developments, including new research projects to support this policy initiative;
- Potentials, added values, barriers, and possible solutions (technical and legal/administrative).



The Forum also invited representatives of other countries (Croatia, Greece, and The Netherlands) to present their state of the art, view, on-going actions on the subject and share practices and needs for future actions¹⁵.

Oil and gas platforms can be indeed reused for different activities, such as aquaculture in combination with tourism activities: fishing, diving, gastronomic experiences, environmental education. In addition decommissioned platforms can be used for supporting renewable energy devices: wave energy devices, wind energy, solar panels.

One key challenge of the BLUEMED Strategy R&I Agenda (Bluemed, 2016) under enabling technology and capacity creation for the Mediterranean foresees multi-purpose offshore platforms in the Mediterranean.

Major barrier is the economic sustainability of maintenance costs of the platform's second life that in generally requires economic availability of former operator to be maintained. Another important barrier is related to the technical characteristics of the platforms that are a key element for the definition of their potential reuse. Emilia-Romagna Region located along the Northern Adriatic Sea represents a special test and operative case, as it is the sea area with highest density of offshore oil and gas in Italy and in the Mediterranean.

Various legal, administrative and procedural instruments are still missing or lacking clear indications, on how to deal with this issue. For this purposes, the Italian Ministry of Economic Development together with the Ministry for Environment, Land and Sea is preparing, according to Decree 104/2017, a set of guidelines for oil and gas platform decommissioning and reuse, recently presented and discussed at the "Forum on the future of Platforms".

¹⁵ More information is available on <http://unmig.mise.gov.it/unmig/agenda/dettaglionotizia.asp?id=427>; accessed on 22.11.2017





Figure 3-8 Platform “Porto Corsini MWA”, one of the platforms to be dismissed. Source: ENI

3.5.1 O&G decommissioning and Renewable Energy

This MU combination can have several technical implementations, including:

- The re-use of a decommissioned platform in combination with a single wind turbine (Nanni, 2017);
- The re-use of the decommissioned platform as energy storage facility surrounded by several wind energy turbines (Tiong et al., 2015; see Figure 3-9);
- Other implementation opportunities for this MU can refer to the extendable solar energy devices on top of the structure (Nanni et al., 2017) and
- Implementation of tidal energy devices combination with the platform (ADAG, 2010).



Figure 3-9 Platform Conceptual rendering of platform in combination with offshore wind energy devices and solar panels. Combined installations of wind and solar energy were currently only considered for the self-sustainability of the platform rather than for provision to land. Source: Tiong et al., 2015

In Figure 3-10, another example of potential integration with tidal energy was presented by the Ravenna Offshore Contractors Association (ROCA; Nanni 2017). It was mentioned that for instance tidal technologies such as pilot installation for tidal energy generation in the Messina Strait named Kobold I (10 m diameter; 40 Kwatt) can be conceptually valuable re-use of the decommissioned platforms. The device has 10 m rotor diameter, 40 Kwatt power and a vertical turbine of 6 m in diameter (ADAG, 2010).

Direct and indirect added values of the MU combination between O&G decommissioning and offshore renewable energy are:

- The area surrounding the installation can be integrated with artificial reefs and support the development of MPAs;
- The application of MSP is an essential tool to organize sea uses in and around potential decommissioned sites and to identify the most suitable combinations on a case by case level.
- Improve the image of O&G companies and support blue economic growth in the region through fostering renewable energy expansion through self-sustainability and testing of new technologies.
- Positive economic effects on the maritime engineering and service sector in terms of revitalization and expansion.
- Especially 8-leg platforms can be feasible for the testing of an offshore wind turbine.
- Despite the combination with wind energy generation, also other renewable energy devices can find potential integration, such as tidal energy and extendable solar energy devices.

- As hard infrastructure, O&G platforms can have positive effects on the biodiversity, attracting fish species and can have positive effects on the ecological connectivity.



Figure 3-10 Kobold 1 tidal energy generator in the Strait of Messina (Sicily). Source: ADAG, 2010

3.5.2 O&G decommissioning, Tourism and Aquaculture

This MU refers to a decommissioned O/G platform re-used to support recreational activities (e.g. diving, recreational fishing, environmental education, marinas, gastronomic experience) and functioning as structural and or logistical support for aquaculture installations (Figure 3-11).

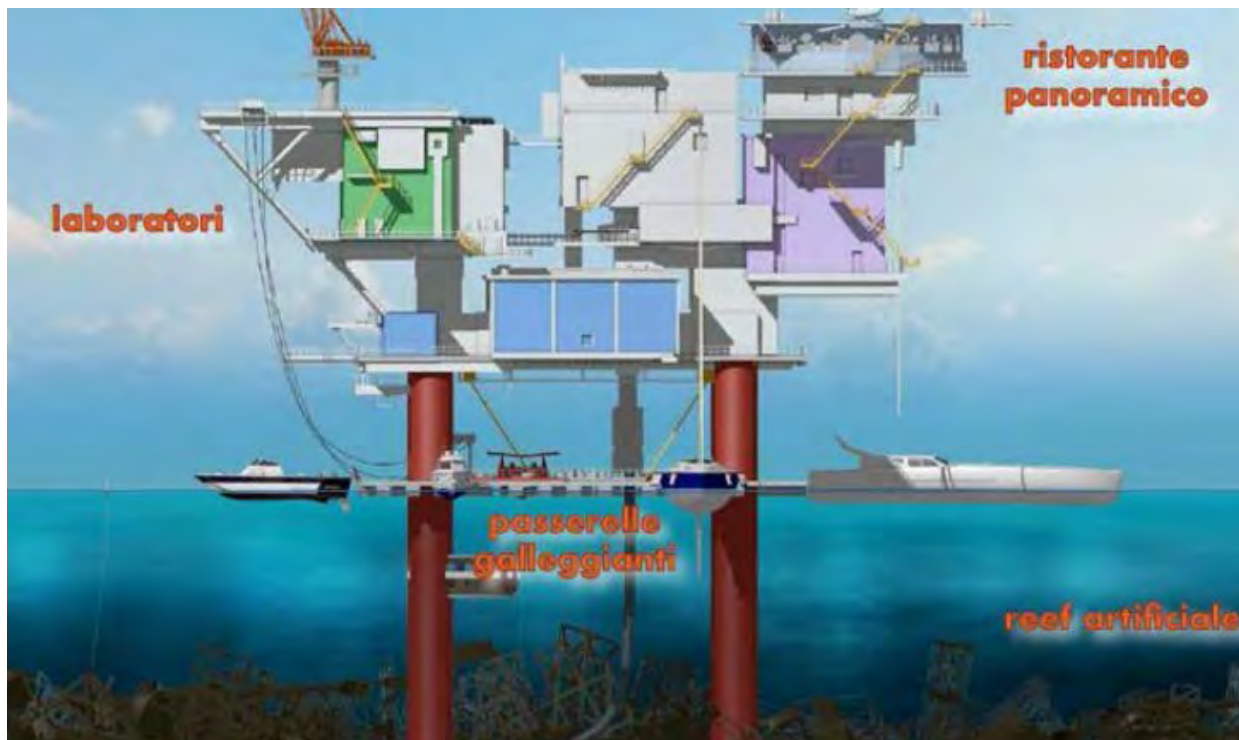


Figure 3-11 Conceptual rendering of a re-use of a decommissioned platform for recreational purposes such as fishing, diving, marinas, gastronomy. Note: laboratori = labs, ristorante panoramico = panoramic restaurant; reef artificiale = artificial reef; passerelle galleggianti = floating moorings. Source: Nanni, 2017

Added values of this potential MU combination include:

- Current aquaculture sites in proximity to coastal areas can be moved further offshore, supporting the development of coastal tourism and reducing environmental impacts.
- In coastal areas, waves can cause physical damage to aquaculture cages. Therefore, the repositioning of aquaculture further offshore and in proximity of O & G decommissioned sites can reduce physical damage.
- MSP is an essential tool to organize sea uses in and around potential decommissioned sites and to identify the most suitable combinations on a case by case level.
- Aquaculture sites can be installed within the security zone of 500 m of the O & G decommissioned platform and can therefore benefit from the security area already established without affecting pre-existing shipping lanes.

- MU has the benefit that aquaculture installations can be moved further offshore and therefore reduces potential visual impacts and reduce spatial conflicts with other uses in coastal areas.
- The strategic installation of this MU and the availability of technical expertise (operators, tourism sector, and aquaculture sector) in the case study area would guarantee the generation of additional job opportunities and the development of new technical specializations, particularly focused on the reuse and recycling of platforms.
- The installation of such a MU can become a regional attraction site and stimulate strategic development of the region.

3.5.3 Rigs to Reefs

One of the alternatives of the complete removal and disposal at land of old O&G offshore platforms is the so-called Rigs to Reefs (RTR) alternative, which is the practice of converting decommissioned offshore oil and gas rigs into artificial reefs. This solution might be viable for any of the types of platforms (mono-tubular, bi-tubular, reticular, cluster) to be dismissed, present in the Emilia-Romagna Region area.

But not all sites can be an optimal solution to receive dismissed rigs with the aim to become possible sites for artificial reefs, nor are all the platforms suitable as reefing candidates; so, in order to be considered for reefing, extensive ecological evaluations have to be performed in the candidate areas to assess any potential value for the local ecosystem.

Possible benefits for this option are:

- Creation of habitats for various species both for hard substrata and original habitat,
- Protection and support for nursery areas for some species,
- Creation or integration of protected areas,
- Driver for recreational activities such as diving, other recreational activities, small scale fisheries, marine research and monitoring.

As already mentioned in another chapter of the report, there is already one existing example in the area that can act as a good reference and a source of knowledge and good practice. The Site of Community Importance SIC IT4070026 "Relitto della piattaforma Paguro" (Paguro gas platform wreck) is an artificial reef derived from a gas platform that collapsed in the 1965 at 12 nm from Marina di Ravenna. During the period of 1990-2000, dismantled jackets from about 20 other platforms were disposed in the area, creating an artificial reef, which is now a destination for intense diving activity (see sub-chapter 3.4).

Various administrative, legal and management instruments are still missing or lacking clear indication, on how to deal with this issue. For this purpose, the Italian Ministry of the economic development is preparing a set of guidelines for oil and gas platform decommissioning that have been recently presented during the last meeting of the "Forum on the future of Platforms".



Figure 3-12 Left image: Collapsing of Paguro Platform. Source: Associazione Paguro, <http://www.associazionepaguro.org/esplosione.htm>, accessed on 22.11.2017. Right picture: Paguro relict today, a biodiversity spot and popular diving site. Source: <http://www.biologiamarina.org/relitto-del-paguro>, accessed on 22.11.2017

4 CATALOGUE OF MU DRIVERS, BARRIERS, ADDED VALUE, IMPACTS (DABI)

For the tourism-driven combinations, the DABI catalogue presented in this chapter is the overall result of desk research, interviews and workshops performed for this case study (see Chapter 7 for details on stakeholder engagement modalities). In particular, DABI factors, firstly collected through the desk research and through 15 overall interviews, were integrated, validated and in some cases discarded during a final workshop held in October 2017 in Venice, which involved 24 participants. For the tourism-driven combinations, this work led to a final DABI catalogue shared among all the engaged stakeholders who also scored the finally identified DABI factors as reported in chapter 5.

Similarly, but with some differences, for the oil and gas decommissioning-driven combinations, the DABI catalogue is the result of a focused desk research, interviews and regular interaction with key stakeholders involved in the decommissioning process in the case study. No specific workshop was organized. However, CNR-ISMAR is one of the research stakeholders in the national “Forum on the future of platforms”, which provided substantial insights for the integration of a detailed DABI catalogue generated previously through a literature review. Due to the uncertain potentialities of both MUs presented and the ongoing Forum discussion, specific scoring on the factors in the case study area was not performed.

4.1 DABI for Tourism and Fisheries

In Table 4-1, DABI factors for the combination between Tourism and Fisheries are reported. Several drivers for this combination were identified, belonging to five different categories.

The EU legislative framework implementing the Common Fishery Policy and the national and regional legislative framework regulating the activity of pesca-tourism are included as policy drivers for this combination.

Socio-Economic drivers are somehow linked to this legislative and policy framework, being related to the role of FLAGS and to the presence of the European Maritime Fisheries Fund 2014-2020 (EMFF), which support investments contributing to the diversification of the income of fishermen, with special attention of tourism opportunities. Social and economic drivers also include the increasing interest and demand for consuming local fish products and for an experience-based tourism, which are both offered by pesca-tourism activity.

As emerged during the workshop, the presence of several ports and marinas in the study area is considered as a driver (interaction with other uses) for the combination (offering many localities suitable for pesca-tourism) but also as a possible barrier, due to the risk of an excessive fragmentation of the offer generating competition among neighbouring localities.

Several environmental drivers emerged. In fact, the concept of pesca-tourism is born as an economic compensation from the crisis in the fisheries sectors, as well as due to the recent policies aimed at preserving natural fishing stocks and reducing fishing efforts. The decrease in fish catches and the need for a co-management of fish stocks are hence considered as relevant drivers in the case-study area.

Concerning barriers, stakeholders generally agreed on the need for a simpler and more harmonised legislation over the territory, with simpler bureaucratic procedures to obtain permission to perform pesca-tourism. Current regulations limiting for example the number of people hosted on board or the motor power, and the bureaucratic procedures involving different institutions, actually act as legal and administrative barrier.



As a result of the workshop, stakeholders provided some new factors which didn't arise during the desk analysis or during interviews. They raised the concern on possible competition with other traditional food distribution (restaurants) or accommodation activities. Competition with foreign, more attractive localities with higher environmental potential was also highlighted. Furthermore, stakeholders also highlighted the loss of traditional jobs in the case-study area, which could make pesca-tourism not actually practicable, and hence acting as a barrier.

On the contrary, the fact that pesca-tourism is a niche-tourism, with low potential of involving mass tourism, is not considered as a barrier for its development, and hence it was discarded from the initial catalogue according to the workshop results. Niche tourism is instead seen as high quality tourism, different and not in competition with mass tourism. This consideration matches with the increasing demand of a sustainable, experience-based tourism.

Stakeholder engagement also highlighted how some of the present barriers could be progressively removed or lowered. For example, the generational turnover stemming from the entrance of younger operators in the world of fisheries may help reduce some social barriers linked to the current mistrust and resistance to change manifested within some fishing communities. The activation of training initiatives through specific training courses have already been attended by a huge number of fishermen, which can surely help filling educational gaps.

Considering the presence of real vs perceived barriers, the legislative barriers reported by stakeholders (inhomogeneity among different regional provisions, presence of regulations which limit the activity) match with the desk analysis, being documented in the consulted legislative documents. These impediments can be considered as real barriers for the development of MU, according to the definition provided in MUSES methodology documents.

On the contrary, the lack of funds to initiate activities of pesca-tourism, as well as the lack of fishermen competence reported by some stakeholders, can be considered as perceived barriers. The desk analysis in provided evidence for the existence of important funding programmes which can support diversification of fisheries, as well as the conclusion of some specific training courses organized in compliance with the legislative requirements, encountering the interest and the participation of several fishermen. In relation with this latter point, it can be concluded that there is still need for specifically targeted MU educational activities in the case study area.

In Table 4-2, added values and impacts for the combination of tourism and fisheries are reported. Several added values (economic, social and environmental categories) were identified, against few impacts. The economic added values concern not strictly the fisheries operators who get an integration of their income, but, more generally, some aspects of the local economy of the coastal area in terms of valorisation and increase of the attractiveness of some minor localities offering pesca-tourism, upgrade of high quality touristic offers, and increase of commercialization of local fish products.

Among social benefits, a general cultural growth and an increase in awareness in sustainability principles of fishing has been highlighted. As a result of the workshop, the cultural enrichment of single fishermen must be also considered, because pesca-tourism can offer an experience of valorisation of fishermen knowledge. The environmental added values are indirectly linked to the reduction of fishing efforts pursued through complementary activities such as pesca-tourism which is included among the targets of the Common Fishery Policy. However, the relevance of this factor



surely depends on the typology of the involved fisheries, probably lower for small-scale fisheries than for trawling fisheries.

Few impacts were identified overall. The increase of touristic attractiveness of coastal areas offering pesca-tourism services, considered as an added value, has been also included amongst negative impacts of the combination because it can lead to a risk of an increase of the touristic pressure in areas which are already overcrowded. Possible negative effects on other “conventional” touristic and food distribution services (restaurants) sectors are also included among the impacts of the combination, even if an overall evaluation of the territorial "carrying capacity" could limit this impact. Some stakeholders also suggested the possible risk of entrance of not-competent operators (i.e. not-professional fishermen searching earning opportunities), with a distortion of the real meaning of MU. For this reason, all stakeholders agreed on the fact that only professional fishermen must be the main actors of the combination, and that the main activity remains fishing, while pesca-tourism should be a complementary activity.



Table 4-1 MU combination: Tourism and Fisheries. Catalogue of factors: DRIVERS and BARRIERS

DRIVERS = factors promoting MU	BARRIERS = factors hindering MU
<p>Category D.1 – policy/legal drivers</p> <p>Factor D.1.1 Legislative provisions at the EU level (e.g. Reg. 508/2014-FEAMP) national and regional (Emilia Romagna LR 22/2014; Veneto L.R. 10/2012 and DGR 646/2014) contributing to regulate pesca-tourism and ichty-tourism.</p>	<p>Category B.1 – legal barriers</p> <p>Factor B.1.1 Lack of a national harmonized law for this MU and inhomogeneity among regional legal provisions.</p> <p>Factor B.1.2 Presence of severe regulations which limit the activity (e.g. motor-power limits, maximum number of people hosted on board etc.).</p>
<p>Category D.2 – interactions with other uses</p> <p>Factor D.2.1 Significant presence of ports and marinas, being careful not to create dispersion or competition among localities.</p>	<p>Category B.2 – administrative barriers</p> <p>Factor B.2.1 Complex bureaucratic procedures to get licences of pesca-tourism, discouraging operator initiatives</p>
<p>Category D.3 – economic drivers</p> <p>Factor D.3.1 Availability of EU funding, especially EMFF.</p> <p>Factor D.3.2 Availability of regional funding (e.g. Veneto) for the tourism sector, specifically dedicated at the development of the enterprise network (European Regional Development Fund - ERDF).</p> <p>Factor D.3.3 Increasing demand for sustainable and local fish products. Relevance for seasonality and commercialisation of little-used species.</p> <p>Factor D.3.4 Increasing demand for experience-based tourism and responsible tourism</p>	<p>Category B.3 – financial barriers / risks</p> <p>Factor B.3.1 Competition with traditional food distribution services and accommodation facilities.</p> <p>Factor B.3.2 Competition with other areas (e.g. Croatian coast) with higher environmental potential.</p> <p>Factor B.3.3 Lack of a structured touristic offer finalised to promote MU and connection among different experiences (pesca-tourism and ichty-tourism).</p> <p>Factor B.3.4 Poor entrepreneurship and investment capacity of operators, also due to the medium-small size of enterprises and to its fragmentation over the territory.</p> <p>Factor B.3.5 Limited availability of funds to start the activity, also due to difficulties of access to finance.</p>
<p>Category D.4 – societal drivers</p> <p>Factor D.4.1 Support by FLAGS which encourage local projects about the diversification of fisheries.</p>	<p>Category B.4 – barriers related to technical capacity</p> <p>Factor B.4.1 Limited availability of the specific skills of fishermen, for example concerning communication, public interaction, and foreign languages. Need for specific training.</p> <p>Factor B.4.2 Need for the adaptation of fishery vessels for tourism activities, for example due to the small size of vessels and the requirements of hygiene and security standards.</p>
<p>Category D.5 – Environmental drivers</p> <p>Factor D.5.1. Decrease of fish catches, which contributes to stimulate the research of synergies among fisheries and other economic sectors related to tourism in order to find alternative sources of income.</p> <p>Factor D.5.2. Need for co-management of fish stocks.</p>	<p>Category B.5 – barriers related to social factors</p> <p>Factor B.5.1 Disappearance of traditional jobs related to fisheries (e.g. Delta Po) relevant to develop the combination</p> <p>Factor B.5.2 Resistance to change of fishermen communities, due to cultural/tradition factors and to the limited comprehension of MU benefits. Positive experiences can help remove barriers.</p>



DRIVERS = factors promoting MU	BARRIERS = factors hindering MU
<p>Category D.6 – Technical-operative drivers</p> <p>Factor D.4.2 Capitalisation of experiences and good practices in the case study area or in other Italian regions (e.g. organisation in cooperatives for the management of pesca-tourism or protocols for the sustainability of pesca-tourism)</p>	

Table 4-2 MU combination: Tourism and Fisheries. Catalogue of factors: ADDED VALUES and IMPACTS

ADDED VALUES = positive effects of MU	IMPACTS = negative effects of MU
<p>Category V.1 – economic added value</p> <p>Factor V.1.1 Integrative source of income for fishermen.</p> <p>Factor V.1.2 New and specialized job opportunities, whenever specific training courses are organized.</p> <p>Factor V.1.3 Upgrade of the touristic offer: development of an offer dedicated to a new group of users more interested in discovering the environmental and socio-economic characteristics of the area.</p> <p>Factor V.1.4 Overall increase in the attractiveness of the coastal areas which offer pesca-tourism activity.</p> <p>Factor V.1.5 Increase of commercialization of local fish products, also due to the direct understanding of sustainable fishing practices. The direct commercialization of fish products is endorsed by fishermen and meets the expectation of an experience – based tourism.</p>	<p>Category I.1 – economic impacts</p> <p>Factor I.1.1 Possible negative effects on other “conventional” tourism and food distribution sectors.</p>
<p>Category V.2 – societal added value</p> <p>Factor V.2.1 Professional growth of the economic sector of fisheries, with more informed and aware operators, able to create an enterprises network with more potential in the territory.</p> <p>Factor V.2.2 Contribution to the maintenance of local fishing tradition and to the related cultural heritage.</p> <p>Factor V.2.3 Cultural feedback for operators offering a multi-use experience; personal cultural growth.</p> <p>Factor V.2.4 Awareness of tourists and civil society about sustainable fisheries.</p>	<p>Category I.2 – societal impacts</p> <p>Factor I.2.1 Risk of entrance of not-competent operators (not-professional fishermen), with a distortion of the real meaning of multi-use.</p> <p>Factor I.2.2 Risk of an increase of touristic pressure in areas which are already overcrowded.</p>
<p>Category V.3 – environmental added value</p> <p>Factor V.3.1 Contribution to the reduction of fishing effort and to a sustainable management of fish stocks (How relevant? Factor also depending on the typology of involved fisheries).</p>	<p>Category I.3 – environmental impacts</p> <p>Factor I.3.1 If not properly managed, pesca-tourism can lead to an overexploitation of fish stocks.</p>



4.2 DABI for Tourism and Aquaculture

In Table 4-3, drivers and barriers for the combination Tourism and Aquaculture are reported.

Most of drivers are similar or equal to drivers previously described for pesca-tourism. For example, the existence of funds (EMFF), already mentioned for the fisheries sector, which promotes diversification of aquaculture through the integration of complementary activities, is surely a driver also for aquaculture-related tourism. The same considerations can be made for the existence of FLAGS, which can promote local projects of aquaculture diversification, and for the increasing demand for fish products and for an experience-based tourism.

The existing legislation which specifically regulates "Acquiturismo" is a specific driver for this combination, which however only is applicable in the Emilia Romagna region. Another specific driver for the Tourism and Aquaculture combination, which explicitly arose during the workshop, pertains to the existing low concession fees for aquaculture spaces, which should be kept low also whenever touristic activity is performed in the same space in order to make the combination practicable. The possibility of developing multi-use in different alternative or integrated ways (activities similar to pesca-tourism, combined with diving /snorkelling, combined with the recreational fisheries), emerged from the desk analysis and was then confirmed by stakeholders who considered it as a driver for further and innovative development of the combination.

Concerning barriers, the existence of restrictive regulations and the lack of a harmonized legislation and of common guidelines at the national level and across the case study area, limit the development of this combination. Being reported by stakeholders and confirmed by the desk analysis (analysis of legislative issues), legal barriers can be considered as real barriers for this MU. Administrative barriers were also reported by stakeholders who mentioned complex bureaucratic procedures and mainly a poor coordination among the different institutions competent for licensing.

Other encountered barriers are related both to financial issues pertaining to technical capacity. While desk analysis revealed the existence of relevant European funds encouraging the diversification of aquaculture into complementary activities, stakeholders report a perceived barrier related to the lack of proper funds. This consideration can be connected with the lack of private investment necessary to activate the combination. Indeed, stakeholders highlighted the need for a stronger organization among aquaculture operators, thus reducing fragmentation over the territory and enhancing entrepreneurship capacity. Barrier factors related to the technical capacity of aquaculture operators are, as for pesca-tourism, the presence of vessels which are not suitable to perform touristic activities and a general lack of skills to properly interact with tourists. Furthermore, the presence of few experiences and few good practices in combining aquaculture and tourism is considered as a barrier to invest in novel and not-well consolidated initiatives.

As previously highlighted for pesca-tourism, the fact that this combination offers a niche-tourism, with low potential of involving mass tourism, is not considered as a barrier for its development, and hence it was discarded from the initial barrier catalogue according to the workshop results. Niche tourism is seen, also in this case, as a high quality form of tourism, different and not in competition with mass tourism.

Added values and impacts for Tourism and Aquaculture are listed in Table 4-4. As for pesca-tourism, several added values were identified against few impacts. Economic added values directly pertain to aquaculture operators because the combination offers an integration to the farmers' income, but (as for pesca-tourism) also indirectly regard some aspects of the whole local economy of the coastal area



in terms of valorisation and increase of the touristic attractiveness of localities offering special experience-based tourism.

Societal added values include a cultural enrichment both for operators who can valorise their knowledge by spreading aquaculture traditions to tourists, with an increase of awareness in sustainability aquaculture practices. Finally, the opportunity of developing multi-functional sites where different touristic activities (diving/snorkelling, sport fishing and pesca-tourism) can be performed in combination with aquaculture was included among the added values of this combination, as suggested by stakeholders.



Table 4-3 MU combination: Tourism and Aquaculture. Catalogue of factors: DRIVERS AND BARRIERS

DRIVERS = factors promoting MU	BARRIERS = factors hindering MU
<p>Category D.1 – policy/legal drivers</p> <p>Factor D.1.1 Existence of a regional law (for Emilia Romagna) specifically regulating “Acquiturismo” (L.R. 22/2014).</p>	<p>Category B.1 – legal barriers</p> <p>Factor B.1.1 Lack of guidelines and of a common regulation of aquaculture-related tourism.</p> <p>Factor B.1.2 Lack of a national harmonized law for this MU and inhomogeneity among regional legal provisions.</p> <p>Factor B.1.3 Restriction in the legislation or in its interpretation, regulating the possibility of hosting tourists on board aquaculture vessels.</p>
<p>Category D.2 – interactions with other uses</p> <p>Factor D.2.1 Significant presence of ports and marinas, being careful not to create dispersion or competition among localities.</p>	<p>Category B.2 – administrative barriers</p> <p>Factor B.2.1 Bureaucratic (license release) and administrative barriers limiting MU development.</p> <p>Factor B.2.2 Scarce cooperation among institutions and operators for MU development.</p>
<p>Category D.3 – economic drivers</p> <p>Factor D.3.1 Availability of European Funds, especially the European Maritime Fisheries Fund EMFF (2014-2020)</p> <p>Factor D.3.2 Availability of regional funding (e.g. Veneto) for the tourism sector, specifically dedicated towards the development of an enterprise network (European Regional Development Fund - ERDF).</p> <p>Factor D.3.3. Increase in demand for local fish products.</p> <p>Factor D.3.4 Possibility of applying and maintaining low (and hence competitive) concession fees for aquaculture spaces, also for activities of aquaculture-related tourism</p> <p>Factor D.3.5 Increasing demand for an experience-based tourism and responsible tourism.</p>	<p>Category B.3 – financial barriers / risks</p> <p>Factor B.3.1 Limited availability of proper funds to start the activity, also due to difficulties regarding access to finance</p> <p>Factor B.3.2 Poor entrepreneurship and investment capacity of aquaculture operators, also due to the medium-small size of enterprises and to the fragmentation over the territory.</p>
<p>Category D.4 – societal drivers</p> <p>Factor D.4.1 Support by FLAGs, which encourage local projects about the diversification of fisheries.</p>	<p>Category B.4 – barriers related to technical capacity</p> <p>Factor B.4.2 Need for adaptation of fishery vessels for tourism activities, for example due to the small size of vessels and the requirements of hygiene and security standards.</p> <p>Factor B.4.2 Presence of few experiences and few good practices in aquaculture-related tourism.</p> <p>Factor B.4.3 Limited availability of specific skills of fishermen, for example due to communication/public interaction and foreign languages. Need for a specific training.</p>
<p>Category D.5 – technical-operative drivers</p> <p>Factor D.5.1 Possibility of developing multi-use in different alternative or integrated ways: activities similar to pesca-tourism, combination with diving /snorkelling, combination with recreational fisheries.</p>	



Table 4-4 MU combination: Tourism and Aquaculture. Catalogue of factors: ADDED VALUES and IMPACTS

ADDED VALUES = positive effects of MU	IMPACTS = negative effects of MU
<p>Category V.1 – economic added value</p> <p>Factor V.1.1 Integrative source of income for aquaculture operators.</p> <p>Factor V.1.2 New and specialized job opportunities when specific training courses are organized.</p> <p>Factor V.1.3 Upgrade of tourism offerings: development of an offer dedicated to a new group of users more interested in discovering the environmental and socio-economic characteristics of the area.</p> <p>Factor V.1.4 Increase of commercialization of local fish products, also due to the direct understanding of the local aquaculture practices.</p>	<p>Category I.1 – economic impacts</p> <p>Factor I.1.1 Conflicts with other maritime activities, if aquaculture needs more space for its development</p>
<p>Category V.2 – societal added value</p> <p>Factor V.2.1 Contribution to the maintenance of local aquaculture traditions and to related cultural heritage.</p> <p>Factor V.2.2 Cultural feedback for operators offering a multi-use experience; personal cultural growth.</p> <p>Factor V.2.3 Awareness of tourists and civil society about sustainable aquaculture and its benefits.</p>	<p>Category I.2 – societal impacts</p> <p>Factor I.2.2 Risk of an increase of tourism pressure in areas which are already overcrowded.</p>
<p>Category V.3 – environmental added value</p>	<p>Category I.3 – environmental impacts</p> <p>Factor I.3.1 Risk of overexploitation of fish stocks, in case of poorly managed recreational fisheries in combination with aquaculture.</p>
<p>Category V.5 - technical added values</p> <p>Factor V.5.1 Realization of pilot activities, which can be exported in other contexts</p> <p>Factor V.5.2 Potential development of multi-functional sites: aquaculture plants, equipped sites for diving/snorkelling, equipped areas for recreational fisheries, artificial reefs, small touristic infrastructures</p>	<p>Others</p> <p>Other risks to be specifically identified due to the poor experience available in the case-study area for this combination</p>



4.3 *DABI for Tourism and Environmental Protection*

Driving factors that are possibly promoting the development of the combination are manifold, none of them seem possess the potential of achieving full implementation of MU, despite the fact that, from the point of view of Regional governing institutions, some activities related to marine area protection are compelling since the EU is strongly pushing for an extension of MPAs in Italian seas. The Veneto Region (Project Unit: Regional Strategy on Biodiversity and Parks) is quite active in working towards this objective, attempting also to identify synergies with protected coastal areas (and recognized Parks Institutions) of outmost importance such as the Po delta. The possibility to develop synergies with the multiple assets (natural, urban, social, historical) of the North Adriatic coast emerged as a common Driver between many MU combinations, pointing out an urgent and strong need for a comprehensive vision of development and definition of a touristic offer for the area, characterized in terms of sustainability. Such a type of offer would encounter an undoubtedly growing demand for new ways of experiencing a sustainable living and tourism and more specifically the growing demand of divers for immersion sites.

The development of this MU would also result in an enhanced protection of the areas, although it seems that there is a cultural deficiency in terms of understanding the benefits of MU, which may be connected to the insufficient institutional capacity of or investment for conveying the concept. Stakeholders as well seem not cooperating and coordinating to pursue the objectives.

When dealing with the relationships between civil society and institutions, it is not always easy to distinguish between real and perceived barriers since the habit of complaining about institutions is generally quite common and provides an opportunity to shift responsibilities. However, the frequency and diffusion of citations of these type of barriers provides for a sort of frustration of citizens and suggests that it is better to consider administrative barriers as real ones.

From the view of Environmental Protection organizations, the fear of possible impacts is quite diffused, but this feeling originates likely from a situation of uncontrolled and insufficiently organized access to the areas, a factor which would be weakened through enhanced organization of administrative and socio-economic framework. In this respect, the barrier represented by the “environmental compatibility” should be analysed in further detail, possibly with the support of quantitative scenarios of development of the combination, since at least part of the resistance could be brought back to the concept of “perceived” barrier and could finally be overcome.



Table 4-5 MU combination: Tourism and Environmental Protection. Catalogue of factors: DRIVERS AND BARRIERS

DRIVERS = factors promoting MU	BARRIERS = factors hindering MU
<p>Category D.1 – policy/legal drivers</p> <p>Factor D.1.1 - Support from Strategic documents (i.e. Blue Growth strategy), also at macro-regional level (Adriatic Ionian Region) to promote sustainable tourism</p> <p>Factor D.1.2 - EU is strongly encouraging Italy to identify new MPAs. At a regional level this is interpreted also as an opportunity to develop the tourism sector</p>	<p>Category B.1 – legal barriers</p>
<p>Category D.2 – interactions with other uses</p> <p>Factor D.2.1 - MPA already existing, i.e. the tegnùe, is worth being exploited</p> <p>Factor D.2.2 – Possibility to develop synergies between MPAs and UCH sites</p>	<p>Category B.2 – administrative barriers</p> <p>Factor B.2.1 – Limited coordination between institutions involved, moreover acting at different scales</p> <p>Factor B.2.2 – Lack of cooperation (finalized to co-management and promotion of marine natural resources) between authorities in charge of environmental protection and tourism sector operators</p> <p>Factor B.2.3 – Complex administrative procedures</p> <p>Factor B.2.4 – Lack of a common vision between sectors and of synergies at a political level</p> <p>Factor B.2.5 – Inability of institutions to convince stakeholders about the added value of synergies</p>
<p>Category D.3 – economic drivers</p> <p>Factor D.3.1 - Increasing demand for sustainable eco-tourism and for activities related to the dissemination of environmental asset values (value of natural resources)</p> <p>Factor D.3.2 - Increasing demand for diving sites due to a growing interest by divers and operators of the sector</p>	<p>Category B.3 – financial barriers / risks</p> <p>Factor B.3.1 – Niche touristic sector whose potential is still not properly evaluated</p> <p>Factor B.3.2 - Lack of adequate financial incentives</p>
<p>Category D.4 – societal drivers</p> <p>Factor D.4.1 – Possibility to identify links with environmentally related activities along the coast, creating an opportunity for growth for the overall area</p>	<p>Category B.4 – barriers related to social factors</p> <p>Factor B.4.1 – Limited understanding of benefits of MU to the goal of environmental protection</p> <p>Factor B.4.2 – Lack of sufficiently diffused culture about environmental protection among the general population (need to raise social awareness)</p> <p>Factor B.4.3 – Conflicts instead of synergies between stakeholders working on similar subjects</p>
<p>Category D.5 – environmental drivers</p> <p>Factor D.5.1 – Need to regulate and promote the sustainable use of MPAs which at present occur in individual, fragmented and not-controlled ways</p>	<p>Category B.5 – barriers related with environmental factors</p> <p>Factor B.5.1 – Scarce transparency of water column and seasonal restrictions to go diving</p> <p>Factor B.5.2 - Problems of compatibility between MPA high ecological requirements (due to their high vulnerability) and its touristic exploitation</p>



DRIVERS = factors promoting MU	BARRIERS = factors hindering MU
<p>Category D.6 – technical-operative drivers</p> <p>Factor D.6.1 Capitalisation of experiences and good practices in the case study area or in other Italian regions</p>	<p>Category B.6 – barriers related to technical capacity</p> <p>Factor B.6.1 – Limited expertise in the field (i.e. divers trained in disseminating biologic-naturalistic knowledge)</p>

Table 4-6 MU combination: Tourism and Environmental Protection. Catalogue of factors: ADDED VALUES and IMPACTS

ADDED VALUES = positive effects of MU	IMPACTS = negative effects of MU
<p>Category V.1 – economic added value</p> <p>Factor V.1.1 - Additional finance (from tourism) to environmental protection</p> <p>Factor V.1.2 – Creation of synergies between stakeholders</p> <p>Factor V.1.3 – Development of positive economic interactions (production chains) between coastal and marine activities</p>	<p>Category I.1 – economic impacts</p> <p>Factor I.1.1 – Possible conflicts with other maritime uses (transport, fisheries etc.)</p>
<p>Category V.2 – societal added value</p> <p>Factor V.2.1 - Diversification of tourism offerings, targeting people motivated to know about natural and socioeconomic resources of the area</p> <p>Factor V.2.2 - Job creation, specialization and diversification, formation of a new type of professionals</p> <p>Factor V.2.3 – Overall increase in attractiveness of the area, able to offer positive sustainable eco-tourism experiences (i.e. <i>tegnùe</i> are already a brand)</p> <p>Factor V.2.4 – Educational benefits (raising awareness about environmental protection)</p>	<p>Category I.2 – societal impacts</p>
<p>Category V.3 – environmental added value</p> <p>Factor V.3.1 – Effective collaboration of operators and end users for the management, protection and sustainable use of MPAs</p> <p>Factor V.3.2 – Raising of awareness of end users implies benefits for present and future protection projects</p>	<p>Category I.3 – environmental impacts</p> <p>Factor I.3.1 – Possible aggravation of environmental impacts in fragile marine ecosystems due to raising the volume of touristic activities or to improper use of resources</p> <p>Factor I.3.2 – Possible entry in the market of operators not interested in real MU, but only in business and the exploitation of resources</p>
	<p>Others -</p> <p>Other risks to be specifically identified, due to the poor experience available in the case study area for this combination</p>

4.4 *DABI for Tourism and Underwater Cultural Heritage*

Interviews and discussions with stakeholders during the workshop provided several hints about the potentials and barriers related to this combination. Some of them are similar to those related to the previous combinations (tourism and environmental protection), whereas others are quite specific.

The analysis underlined how, due the specific location of the North Adriatic area, the possibility to identify itineraries linking the land and the sea may represent the most important asset of the combination. Urban sites, as well as coastal lagoons and the Po delta, their history and their links with the culture of the sea are so important that they could really act as a driving factor for the development of a touristic offer building on the fact that submerged sites and wrecks are positioned on the routes linking such important sites. Another important driver for developing the combination is the urgent need of protection of the sites, which at present are quite exposed to looting and damaging.

Similar to the previous combination, remarkable physical barriers exist such as the scarce transparency of the water column. Moreover, the lack of a common vision, the emphasis on protection instead of valorisation, the absence of coordination among different authorities and institutions as well as a scarcely defined legal and administrative framework can strongly limit the development of the combination. Drivers and Barriers are listed Table 4-7. Most of barriers identified appear as real barriers as witnessed by the very scarce development of the combination. Physical limits are quite consistent even if such factors are somehow limiting activities (i.e. reducing the period of the year able to perform diving) but not preventing the feasibility (with favourable meteorological conditions) and development of all connected activities. Also administrative and institutional barriers appear quite real (e.g. the Superintendence for the Sea was not established in North Adriatic regions yet) and projects to realize an official census of UCH sites (similar to those executed in central-southern Italy through the projects Archeomar 1 and 2) were not elaborated.

From the point of view of the added values that would possibly originate from the development of MU, most of them are related with societal benefits such as raising awareness about the value of UCH, the growth of a sustainable and cultural offer benefitting the overall area's appeal, the formation of a new type of profession, a probable stimulus to the development of new technologies for controlling sites and the essential improvement in the protection of the sites (i.e. the cultural goods of the area) determined by co-management and co-monitoring.

As in the case of MPAs, while developing the tourism market, a particular attention must be posed in terms of avoiding entry into the market of subjects not really involved with UCH items but only interested in exploiting the business. Added Values and Impacts are listed in Table 4-8.



Table 4-7 MU combination: Tourism and Underwater Cultural Heritage. Catalogue of factors: DRIVERS AND BARRIERS

DRIVERS = factors promoting MU	BARRIERS = factors hindering MU
Category D.1 – policy/legal drivers	Category B.1 – legal barriers Factor B.1.1 - Lack of guidelines/regulatory aspects
Category D.2 – interactions with other uses Factor D.2.1 – Submerged sites of potential touristic interest existing, worth being exploited Factor D.2.2 – Possibility to develop synergies between MPAs and UCH sites Factor D.2.3 – Need to regulate and promote the sustainable use of UCH sites which at present occur in individual, fragmented and not-controlled ways Factor D.2.4 – Limited marine space	Category B.2 – administrative barriers Factor B.2.1 - Lack of communication/coordination amongst the authorities dealing with UCH and tourism
Category D.3 – economic drivers Factor D.3.1 – UCH site’s sustainable activities can contribute to the identification and mapping of sites Factor D.3.2 - Increasing demand for diving sites due to a growing interest by divers and operators of the sector Factor D.3.3 - Increasing demand for experience-based tourism	Category B.3 – financial barriers / risks Factor B.3.1 – Niche touristic sector whose potential is still not properly evaluated Factor B.3.2 - Lack of adequate financial incentives
Category D.4 – societal drivers Factor D.4.1 – interest in promoting and safeguarding cultural heritage Factor D.4.2 – Possibility to identify itineraries with multiple interconnections with land and coastal historical sites, creating opportunity for growth of the overall area (e.g. connections with Museums of the Sea) Factor D.4.3 – Amateur and volunteer groups and NGOs existing in the area and very motivated	Category B.4 – barriers related to social factors Factor D.4.1 - Limited availability of experiences and good practices in the case-study area or in other Italian regions, especially in order to make people (and interested stakeholders) understand the real benefits of MU as well as to UCH itself Factor D.4.2 – lack of a “culture of the sea” and of a cultural-educational programme able to raise awareness about the value of UCH
Category D.5 – environmental drivers	Category B.5 – barriers related with environmental factors Factor B.5.1 – Scarce transparency of water column and seasonal restrictions to go diving Factor B.5.2 – Conflicts with other uses of the marine area (i.e. transport)
Category D.6 – technical-operative drivers	Category B.6 – barriers related to technical capacity Factor B.6.1 – Limited expertise in the field (i.e. divers with archaeological knowledge and trained in disseminating historical humanistic knowledge) Factor B.6.2 – High vulnerability of sites, due to their intrinsic fragility

Table 4-8 MU combination: Tourism and Underwater Cultural Heritage. Catalogue of factors: ADDED VALUES and IMPACTS

ADDED VALUES = positive effects of MU	IMPACTS = negative effects of MU
<p>Category V.1 – economic added value</p> <p>Factor V.1.1 - Additional finance (from tourism) to protection sites</p>	<p>Category I.1 – economic impacts</p> <p>Factor I.1.1 – Possible entry in the market of operators not interested in real MU, but only in business and exploitation of resources</p> <p>Factor I.1.2 – Conflicts with other uses (transport)</p>
<p>Category V.2 – societal added value</p> <p>Factor V.2.1 - Diversification of tourism offerings, targeting people motivated to learn about historical and socioeconomic resources of the area</p> <p>Factor V.2.2 - Job creation, specialization and diversification, formation of a new type of professionals</p> <p>Factor V.2.3 – Co-management and co-monitoring of sites, resulting in a better protection of UCH, also given the present state of abandoned or improperly managed sites</p> <p>Factor V.2.4 – Educational benefits (raising awareness about promotion and safeguard of UCH)</p>	<p>Category I.2 – societal impacts</p> <p>Factor I.2.1 - Risk of looting and damage to UCH by increased touristic pressure</p>
<p>Category V.3 – environmental added value</p>	<p>Category I.3 – environmental impacts</p>
	<p>Others -</p> <p>Other risks to be specifically identified, due to the poor experience available in the case study area for this combination</p>



4.5 DABI for O&G decommissioning and Renewable Energy

The catalogue of DABI derived from desk research and interview is presented in the following tables for the combination related to O&G decommissioning and renewable energy.

The major policy drivers for the establishment of the MU refers to the BLUEMED strategy, which suggests that the development of multiuse platforms, and the case study area in particular, need to decommission 8 platforms by 2020 that are at the end of their life cycle. This condition triggers the need for actions by decision-makers and operators to identify potential alternative solutions for the re-use of platforms, compared to just the simple removal of the platform. Economic drivers mainly come from O&G companies looking for cost effective solutions to reuse the platforms.

A barrier identified in the literature research is the need to develop a coordinated network of national authorities at the sea basin and EU level (especially Mediterranean and North Sea) that can share experience and best practices on the implementation of re-use of decommissioned O&G platforms with a second and third use. Other important barriers are of an administrative nature include the need for new environmental impact assessment and the unclear multitude of permission requirements. Economic barriers are of highest concern by energy operators, as the maintenance costs of the platform's second life would need to be carried out by the operator itself and the costs for final removal of the structure. Another important barrier is related to the lack of clear and recognized criteria (technological, technical, security-driven, economic, social and environmental) that can guide authorities and operators in the identification of most suitable decommissioning option. An example of criteria is for instance the fish production (in kg) surrounding of the platform that can be used to identify most suitable decommissioning options (de Nigris, 2017): leave in place, complete removal, partial removal (remove topside/leave jacket), partial removal (topside and upper jacket disposed on the bottom of the reef).

So far, technical implementations of renewable energy on platforms were most prevalent in the form of small scale wind turbines ensuring the self-sustainability of the platform. A higher level of integration with offshore wind energy platforms depends on the type of platform and the jacket. A major added value is the opportunity to use decommissioned platforms in support of biodiversity, and in particular, as an artificial reef or marine protected area. An example in the study area, already mentioned in previous chapters, is the submerged oil rig "Paguro", now having the status of Natura 2000 marine SCI (Site of Community Importance). Substantially hard substrate has positive effects on biodiversity.

Negative impacts are mostly related to the uncertainty of the environmental effects during the decommissioning phase and the implementation of an additional new use.

The state of maturity of the MU considered here had a substantial influence on the analysis of the perceived vs real barriers. This MU combination needs to be considered as one of the available options for re-use of decommissioned platforms. Therefore, one of the major focuses in the "Forum on the future of Platforms" was the analysis of the structures to be potentially decommissioned in the mid/mid-long term, identifying the specific aims for a decommissioning campaign, collecting relevant data (e.g. cost estimates, scientific/technical literature) from operators, service companies and other actors, and sharing experiences on a national and international level to better identify viable solutions. Every alternative-use project needs to be evaluated for its cost and revenues relationship. Currently, there is no realistic business plan that relates the decommissioning capacity expenditure and maintenance capacity expenditure.



Real technical barriers are related to safety and its related maintenance costs. The maintenance of the infrastructure includes many operational tasks (e.g. subsea and lifeboat inspections; maintenance of structures, cranes, lightning systems, emergency accommodations; anti-corrosion paints; logistical aspects insurance, etc.). These operational aspects require experienced contractors with particular knowledge of the structure. In this, MU specific estimates of costs for an alternative use of the platform still remain uncertain. Another real technical barrier directly related to renewable energy installation itself is the fact that a multitude of infrastructure to be decommissioned exist, with different technical specifics (e.g. mono-tubular, 4-legs, 8-legs small/big), which is a limiting factor to the technical feasibility of the implementation of a wind turbine.

Perceived barriers to be further investigated might be those related to the actual productivity of the wind turbine, due to the fact that compared to other sea areas in the Italian Adriatic Sea (e.g. Gargano Peninsula; Soukissian et al., 2017), wind conditions in the Northern Adriatic Sea are not optimal for wind energy development (CoCoNet, 2017). Moreover, re-using a platform can result in continuous visual impacts in the area compared to a physical removal of the infrastructure.



Table 4-9 MU combination: O&G decommissioning and Renewable Energy. Catalogue of factors: DRIVERS AND BARRIERS

DRIVERS = factors promoting MU	BARRIERS = factors hindering MU
<p>Category D.1 – policy drivers</p> <p>Factor D.1.1 Transposition of the EU Offshore Directive on O&G activities</p> <p>Factor D.1.2 One key challenge of the BLUEMED Strategy R & I Agenda under enabling technology and capacity creation for the Mediterranean foresees multi-purpose offshore platforms in the Mediterranean.</p> <p>Factor D.1.3 EUSAIR Strategies can support the development of this MU.</p> <p>Factor D.1.4 The high number of platforms at the end of their production cycle triggers the need to develop a case study of best practice.</p>	<p>Category B.1 – legal barriers</p> <p>Factor B.1.1 Need to develop a coordinated network of national authorities on an international level. Sharing of best practice and experience among decommissioning issues in the Mediterranean, Atlantic and North Sea is missing.</p> <p>Factor B.1.2 Unclear health and security issues for visitors of the platform.</p> <p>Factor B.1.3 Unclear legal constraints for the implementation of the MU. Guidelines are in development (2017) by the Italian Ministry of Economic Development.</p> <p>Factor B.1.4 Lack of strong legal framework and guidelines concerning the decommissioning process. The lack of guidelines causes an unclear definition of criteria (environmental, security, social and economic).</p>
<p>Category D.2 – interactions with other uses</p>	<p>Category B.2 – administrative barriers</p> <p>Factor B.2.1 Decommissioned O&G platforms in combination with other uses will most probably require a new Environmental Impact Assessment procedure. Permissions need to be collected from 9 different authorities.</p> <p>Factor B.2.2 It is difficult to define and manage the administrative and temporal coordination, and the operative responsibility of the platforms after the ending of the extraction until their dismantlement.</p>
<p>Category D.3 – economic drivers</p> <p>Factor D.3.1 O&G companies are looking for cost effective solutions to reuse decommissioned platforms.</p> <p>Factor D.3.2 A high number of platforms (136) are Italian Offshore O&G platforms (93 within 12 nautical miles). In early 2020, 16 are ready for decommissioning (10 within 12 nautical miles).</p> <p>Factor D.3.3 The platform lifetime of 20-30 years requires a decision on what to do with non-productive wells. Reuse of the platform for energy installations (renewable energy, LNG), scientific infrastructure (monitoring, radio-broadcasting, artificial reef), commercial activities (aquaculture, tourism) or as MU (energy, aquaculture, desalination, monitoring) is seen as an interesting possibility and technically feasible opportunity.</p>	<p>Category B.3 – financial barriers / risks</p> <p>Factor B.3.1 An untested approach may be perceived as to high risk by operators and no real gain.</p> <p>Factor B.3.2 During the second life of the platforms (in combination with another), maintenances need to be sustained by the operator, otherwise economic feasibility becomes very low.</p> <p>Factor B.3.3 If maintenance costs are still significant, ultimately the infrastructure might need to be removed</p> <p>Factor B.3.4 At national level there is no certainty on the persistence of adequate financial incentives for the development of offshore renewable energy.</p> <p>Factor B.3.5 Companies currently involved in dismantlement-related activities are in favour of this type of solution even when this, on the whole, could not be the most convenient solution.</p> <p>Factor B.3.6 Scarce and/or unavailable data useful to correctly plan the activities in relation to economic sustainability.</p>



DRIVERS = factors promoting MU	BARRIERS = factors hindering MU
<p>Category D.4 – societal drivers</p>	<p>Category B.4 – barriers related to technical capacity</p> <p>Factor B.4.1 Current renewable energy options focus on the self-sustainability of the platform.</p> <p>Factor B.4.2 The design of platforms is an essential technical characteristic for the definition of a potential MU. Not all platforms are adequate to support MU concepts.</p> <p>Factor B.4.3 Size and dimension of a wind turbine on the platform needs to be carefully assessed, due to the weight and vibrations during operation.</p> <p>Factor B.4.4 Renewable energy devices for self-sustainability generate much more energy than required for the platforms, however, the amount of energy produced is not economically sustainable for a transfer on land.</p> <p>Factor B.4.5 The national grid is not well developed, therefore making more difficult to connect offshore renewables to the onshore grid</p> <p>Factor B.4.6 Concern of the quality and conditions of materials that have been operating in extreme environments for decades.</p> <p>Factor B.4.7 Decommissioned platforms require a higher frequency of monitoring and inspection of infrastructure.</p> <p>Factor B.4.8 Design of the platform may reduce options for MU combinations.</p> <p>Factor B.4.9 Risks associated with using reconditioned materials.</p>
<p>Category D.5 – environmental drivers</p>	<p>Category B.5 – barriers related to social factors</p> <p>Factor B.5.1 Civil society, if not adequately informed and involved, might prefer simpler solutions (removal) in contrast with not-well understood benefits and possible future risks</p> <p>Factor B.5.5 Renewable energy operators potentially interested in multi-use have no adequate information on possible benefits</p>
<p>Category D.6 – technical-operative drivers</p>	<p>Category B.6 – barriers related to environmental factors</p> <p>Factor B.6.1 Limited potentials of the study area for development of renewable energy from wind due to uncertain climate conditions.</p> <p>Factor B.6.2 Scarce existence and/or availability of data useful to correctly plan the activities in relation to impact assessment</p>



Table 4-10 MU combination: O&G decommissioning and Renewable Energy. Catalogue of factors: ADDED VALUES and IMPACTS

ADDED VALUES = positive effects of MU	IMPACTS = negative effects of MU
<p>Category V.1 – economic added value</p> <p>Factor V.1.1 Benefits for the engineering and service sectors of O&G in terms of re-activation and expansion.</p> <p>Factor V.1.2 Sectors involved in multiuse can expand in new economic and technical areas</p> <p>Factor V.1.3 Development of research and innovation competencies and job creation in various sectors of the blue economy.</p>	<p>Category I.1 – economic impacts</p>
<p>Category V.2 – societal added value</p> <p>Factor V.2.1 Improve the image of O&G companies through the fostering of renewable energy technologies on platforms.</p>	<p>Category I.2 – societal impacts</p>
<p>Category V.3 – environmental added value</p> <p>Factor V.3.1 Foster the low carbon economy and activities</p> <p>Factor V.3.2 In certain instances, in the vicinity of O&G decommissioned platforms and pipelines, commercial fishing (n.b. species-specific) could benefit substantially, with infrastructure acting as (SCI) ‘artificial reefs’; ‘aggregations’.</p> <p>Factor V.3.3 Hard infrastructure has a positive effect on biodiversity establishment.</p> <p>Factor V.3.4 The Adriatic Sea environment is a very suitable test case as it provides the right scale for prototyping of devices.</p> <p>Factor V.3.5 Installation of wind turbines on the decommissioned structures would significantly reduce environmental impacts on marine mammals during the installation phase.</p>	<p>Category I.3 – environmental impacts</p> <p>Factor I.3.1 Uncertainty on the cumulative effects that can potentially be generated by the combination of uses</p> <p>Factor I.3.2 High environmental risks during the decommissioning phase.</p> <p>Factor I.3.3 Potential presence of other chronic impacts, such as release of heavy metals from the infrastructure.</p> <p>Factor I.3.4 Continuous visual impacts vs. decommissioning, which may reduce visual impacts.</p> <p>Factor I.3.5 Seabed will not be pristine and may contain contaminants.</p> <p>Factor I.3.6 Difficulties to identify impacts due to lack of prior experiences.</p> <p>Factor I.3.7 Potential adverse effects of additional uses need to be addressed for marine mammals (especially dolphins).</p> <p>Factor I.3.8 O&G decommissioned platform extended with any other activity/structure/device can have potential adverse environmental effects that need to be assessed.</p>



ADDED VALUES = positive effects of MU	IMPACTS = negative effects of MU
<p>Category V.4 – technical added values</p> <p>Factor V.4.1 Oil & Gas structures are built to absorb the vibrations of drilling devices and can be also suitable for an offshore turbine (1-2 MW)</p> <p>Factor V.4.2 The installation of an offshore wind farm on the decommissioned platform can be considered feasible, when considering that a jacket can sustain a drilling tower of 1200-1500 tons, compared to the weight of a wind turbine of 250 tons.</p> <p>Factor V.4.3 Other options foresee the use of the O&G decommissioned platform for installation of energy storage devices, surrounded by mini-wind energy devices.</p> <p>Factor V.4.4 Flexibility of integration of second and third uses of the platform with other renewable energy devices, for instance extendable/orientable solar devices can be installed.</p> <p>Factor V.4.5 As alternative, the decommissioned O&G structure can be used as an energy storage facility for bigger OW parks in its surrounding.</p> <p>Factor V.4.6 Depending on the structural peculiarities of the O & G decommissioned platform, different types of turbines can be considered: Libellula or vestas</p>	<p>Category I.4 - technical impacts</p>



4.6 DABI for O&G decommissioning, Tourism and Aquaculture

Similar to the MU combination involving O&G decommissioning and renewable energies, the potential policy drivers leading to the development of this combination relate to the BlueMed Strategy that foresees the development of multipurpose platforms. Also the EUSAIR Strategy can have a positive effect on MU development.

The Emilia Romagna Region is one of the 20 top European tourist regions with a high proportion of domestic tourism (73 %; EC, 2017). The concurrence from other coastal regions and the need to diversify tourism activities is an important aspect. The development of MU aggregating different tourism activities is seen by stakeholders as a valuable solution and regional attraction. Similar to the other MU combination, this MU concept is also considered as a potentially economically valuable option to reduce decommissioning costs. Another important economic driver is the need for the decommissioning of 8 platforms within 12 nm and therefore at a feasible distance from the coast for other activities. Another horizontal driver is the increasing demand for fish food products.

The main barriers relate to the absence of a legal framework for the implementation of this MU and the unclear responsibilities among concessions, which are dispersed among different ministries and authorities. For the re-use of decommissioned platforms, there is no coordinated network of authorities sharing experiences and guidelines for best practices. Barriers related to economic aspects refer substantially to the fact that, during the second life of the platforms, the maintenance costs need to be sustained by the operator, otherwise economic feasibility becomes very low. In the case that maintenance costs are still significant, ultimately the infrastructure might need to be removed. The social acceptance of this MU is still unclear among coastal populations and potential conflict may rise with increasing concurrence from other tourism operators. Health and security issues should also to be considered for workers of the platform (approx. 10). Moreover, the tourism and aquaculture sector is not well informed about the benefits and potentialities of this MU.

Added values of this MU refer to the existing infrastructure and knowledge capacity of the Emilia Romagna region from the O&G sector, tourism operators and aquaculture associations. It is estimated that the construction for the re-use of the platform can result in 250,000 working hours. Also, the approximately 10 workers necessary for the maintenance of the platform will open perspectives for new qualified job profiles.

Moreover, the coastal areas of Emilia-Romagna are intensively populated by aquaculture installations (approx. 30 installations) located in vicinity of 3 nm, therefore, integrations with offshore platforms further offshore can reduce conflicts with other uses and reduce environmental pressure from the sector on coastal waters.

Environmental impacts remain to a large extent unclear, especially concerning the cumulative effects from the integrated use of the platforms. Other impacts relate to potential chronic impacts in the surrounding area, which may not be suitable for sea food production and the persisting visual impact, in contrast with the removal of the platform.

The analysis of perceived vs real barriers demonstrates similarities with the analysis performed for the MU O&G decommissioning and renewable energy combination (section 4.5). Real barriers refer mainly to the absence of a legal framework that enables the re-use of the platform, without physical removal of the installation and the uncertainty of the actual operating costs of the re-used platform under consideration of the second or third new use and its related maintenance costs. Real technical barriers also refer to the type of infrastructure/platform that limits the potential of its re-use.

Perceived barriers elicited through the desk research and interviews were identified on food safety concerns related to the aquaculture products deriving from the MU that can be subjected to chronic pollution. Another perceived barrier is related to the potential conflicts with other tourism operators that can be negatively affected by the instalment of such MU and the social acceptability of the installation, in particular related to the continuous visual impacts on coastal settlements.



Table 4-11 MU combination: O&G decommissioning, Tourism and Aquaculture. Catalogue of factors: DRIVERS AND BARRIERS

DRIVERS = factors promoting MU	BARRIERS = factors hindering MU
<p>Category D.1 – policy drivers</p> <p>Factor D.1.1 Transposition of the EU Offshore Directive on Oil&Gas activities</p> <p>Factor D.1.2 One key challenge of the BLUEMED Strategy R&I Agenda under enabling technology and capacity creation for the Mediterranean foresees multi-purpose offshore platforms in the Mediterranean.</p> <p>Factor D.1.3 EUSAIR Strategy can support the development of this MU</p> <p>Factor D.1.4 The high number of platforms at the end of their production cycle triggers the need to develop a case study of best practice.</p>	<p>Category B.1 – legal barriers</p> <p>Factor B.1.1 Need to develop a coordinated network of national authorities on an international level. Sharing of best practice and experience among decommissioning issues in the Mediterranean, Atlantic and North Sea is missing.</p> <p>Factor B.1.2 Unclear health and security issues for visitors of the platform.</p> <p>Factor B.1.3 Unclear legal constrains for the implementation of the MU. Guidelines are in development (2017) by the Italian Ministry of Economic Development.</p> <p>Factor B.1.4 Responsibilities among concessions are dispersed among different public authorities. Lack of clear procedures to apply for reuse.</p> <p>Factor B.1.5 Regulations of use of active O&G platforms for logistic purposes in aquaculture are unclear.</p>
<p>Category D.2 – interactions with other uses</p> <p>Factor D.2.1 Need for diversification of tourism activities on a regional level through the use of innovative tourism offers.</p> <p>Factor D.2.2 Regional authorities aim to move aquaculture facilities that are in proximity of coastal areas more offshore (e.g. outside 12nm), benefiting of the presence O&G decommissioned platform as support</p>	<p>Category B.2 – administrative barriers</p> <p>Factor B.2.1 Decommissioned O&G in combination with another use will most probably require new Environmental Impact Assessment procedure. Permissions need to be collected from 9 different authorities.</p>
<p>Category D.3 – economic drivers</p> <p>Factor D.3.1 O&G companies are looking for cost effective solutions to reuse decommissioned platforms.</p> <p>Factor D.3.2 Elevated number of platforms, 136 are Italian Offshore O&G platforms (93 within 12 nautical miles). In early 2020, 16 are ready for decommissioning (10 within 12 nautical miles).</p> <p>Factor D.3.3 The platform lifetime of 20-30 years requires a decision on what to do with not productive wells. Reuse of the platform in combination with aquaculture, tourism activities and/or environmental monitoring and research installations is seen as an interesting possibility and technically feasible opportunity.</p>	<p>Category B.3 – financial barriers / risks</p> <p>Factor B.3.1 An untested approach may be perceived as higher risk by operators and no real gain.</p> <p>Factor B.3.2 During the second life of the platforms (in combination with another) maintenance needs to be sustained by the operator, otherwise economic feasibility becomes very low.</p> <p>Factor B.3.3 If maintenance costs are still significant, ultimately the infrastructure might need to be removed</p> <p>Factor B.3.4 The second user of the reuse of the platform faces high economic costs concerning the maintenance of the platform. Potential re-use needs to indirectly involve former operator as it has the economic availability.</p> <p>Factor B.3.5 Scarce and/or unavailable data useful to correctly plan the activities in relation to economic sustainability.</p>



DRIVERS = factors promoting MU	BARRIERS = factors hindering MU
<p>Category D.4 – societal drivers</p> <p>Factor D.4.1 World food production needs to increase up to 60% until 2050.</p>	<p>Category B.4 – barriers related to technical capacity</p> <p>Factor B.4.1 Concern on the quality and conditions of materials that have been operating in extreme environments for decades.</p> <p>Factor B.4.2 The design of platforms is an essential technical characteristic for the definition of a potential MU. Not all platforms are adequate to support MU concepts.</p> <p>Factor B.4.3 Lacking data exchange amongst authorities and private sectors.</p>
<p>Category D.5 – environmental drivers</p>	<p>Category B.5 – barriers related to social factors</p> <p>Factor B.5.1 High protectionism from environmental lobbyists.</p> <p>Factor B.5.2 Difficulties to understand what constitutes as real or perceived social acceptance.</p> <p>Factor B.5.3 Health and security issues are still unclear for workers, food produced and surrounding uses.</p> <p>Factor B.5.4 Decommissioned O&G platforms can have an important role as marinas and can result in potential conflict among stakeholders in the tourism industry.</p> <p>Factor B.5.5 Touristic or aquaculture operators potentially interested in multiuse have no adequate information on possible benefits.</p>
<p>Category D.6 – technical-operative drivers</p>	<p>Category B.6 – barriers related to environmental factors</p> <p>Factor B.6.1 Potential aquaculture installation require a classification of waters around the O&G platform.</p> <p>Factor B.6.2 Potential presence of pollutants after decommissioning requires monitoring.</p> <p>Factor B.6.3 Scarce and/or unavailable data useful to correctly plan the activities in relation to impact assessment.</p>



Table 4-12 MU combination: O&G decommissioning, Tourism and Aquaculture. Catalogue of factors: ADDED VALUES and IMPACTS

ADDED VALUES = positive effects of MU	IMPACTS = negative effects of MU
<p>Category V.1 – economic added value</p> <p>Factor V.1.1 Benefits for the engineering and service sectors of O&G in terms of re-activation and expansion.</p> <p>Factor V.1.2 Sectors involved in the multiuse can expand into new economic and technical areas</p> <p>Factor V.1.3 Development of research and innovation competencies and job creation in various sectors of the blue economy.</p> <p>Factor V.1.4 Diversification of tourism offer on a regional, national and international level.</p>	<p>Category I.1 – economic impacts</p>
<p>Category V.2 – societal added value</p> <p>Factor V.2.1 Improve the image of O&G companies through the fostering of MU combinations linked with high intensity recreational areas</p> <p>Factor V.2.2 Availability of infrastructure and a specialized labour force in the region.</p> <p>Factor V.2.3 Development of qualified jobs.</p>	<p>Category I.2 – societal impacts</p>
<p>Category V.3 – environmental added value</p> <p>Factor V.3.1 Based on the example of the Paguro artificial reef, based on a decommissioned O&G platform, multiple decommissioned platform can generate a park for diving, recreational fishing and as a conservation area from commercial fishing activities.</p>	<p>Category I.3 – environmental impacts</p> <p>Factor I.3.1 Uncertainty on the cumulative effects that can potentially be generated by the combination of uses</p> <p>Factor I.3.2 High environmental risks during the decommissioning phase.</p> <p>Factor I.3.3 Potential presence of other chronic impacts, such as release of heavy metals from the infrastructure.</p> <p>Factor I.3.4 Continuous visual impacts vs. decommissioning, which may reduce visual impacts.</p> <p>Factor I.3.5 Seabed will not be pristine and may contain contaminants.</p> <p>Factor I.3.6 Nutrient release can have adverse environmental effects.</p> <p>Factor I.3.7 Potential adverse effects of additional uses need to be addressed for marine mammals (especially dolphins).</p>



ADDED VALUES = positive effects of MU	IMPACTS = negative effects of MU
<p>Category V.4 – technical added values</p> <p>Factor V.4.1 MSP is an essential tool to organize sea uses in and around potential decommissioned sites and to identify most suitable combinations on a case by case level.</p> <p>Factor V.4.2 Decommissioned platforms can be used as logistic facilities and installations for aquaculture.</p> <p>Factor V.4.3 Depending on the type of O&G platforms, they have electricity grid already connected to land that can be used for energy supply for the other planned uses (tourism + aquaculture).</p> <p>Factor V.4.4 In coastal areas, wave can cause physical damage to aquaculture farms.</p>	<p>Category I.4 - technical impacts</p>



5 RESULTS OF DABI SCORING: ANALYSIS OF MU POTENTIAL AND MU EFFECT

5.1 DABI scoring for Tourism and Fisheries

In Table 5-1 and Table 5-2, scored DABI tables are reported for the combination of Tourism and Fisheries. Factors are presented starting with the one with the highest absolute value. In Table 5-3, the average score for each category of DABI factors is reported.

The analysis of drivers indicates that legislative provisions, from an EU level to a regional scale, constitute the most important factors promoting MU, followed by the availability of EU funding, especially considering EMFF (see chapter 3 for a more detailed description). Other important factors are related to socio-economic issues, such as the role of FLAGs in promoting local diversification projects and the increasing demand for diverse tourism activities and for consuming local fish products caught with sustainable techniques. The overall analysis of drivers provides evidence for the relevance of the Policy, Economic and Societal categories.

As for barriers, the highest score is assigned to the existing complex procedures required to get licences for pesca-tourism discouraging operator initiatives. This factor is immediately followed by the presence of severe regulations which actually limit the development of the combination. A high score was assigned to the need of adaptation for fishing vessels to perform pesca-tourism, as well as to the need for funding and of harmonised legislation. The smallest score was assigned to competition with foreign coastal areas which could be more attractive than the Italian Adriatic coast. Therefore, the two most relevant categories of factors hindering the development of pesca-tourism are administrative and legal barriers. However, all the considered categories (economic, social and related to the technical capacity barriers) can be considered quite important, having an average score equal to or higher than 2.

The analysis of added values scores suggests that there is a need to assign great importance to the “cultural and professional growth of the economic sector of fisheries, with more informed and aware operators, able to create an enterprise network with more potential in the territory”, which has the highest average score (2.7). Remarkably, almost all the other considered added values have quite homogeneous scores, ranging between 2 and 2.5. The lowest score was assigned to the environmental benefit of the combination (1.3): a low contribution to the reduction of fishing efforts and to the sustainable management of fish stocks is hence expected by the consulted stakeholders. This surely depends on the typology of fisheries which could be more easily involved in pesca-tourism activities (small-scale fisheries and not trawling fisheries). Finally, all impacts (indeed few impacts were identified against a higher number of added values) have average scores lower than 2, with the highest score assigned to the risk of entrance of not-competent operators (not-professional fishermen) in activities of pesca-tourism (included in the societal category).

In conclusion, the average score of all barrier factors is almost equal to the average score of all drivers, indicating that, though important factors can help the development of the combination, it is currently hampered by significant obstacles. The average score of added values is higher than the average score of negative impacts, indicating an overall positive effect of the combination on the study area at large, if it was implemented.



Table 5-1 MU combination Tourism and Fisheries: scored DABI table for Drivers and Barriers

DRIVERS = factors promoting MU			BARRIERS = factors hindering MU		
Factor	Category	Average score	Factor	Category	Average score
Factor D.1.1 Legislative provisions at EU level (e.g. Reg. 508/2014-FEAMP) national and regional (Emilia Romagna LR 22/2014; Veneto LR 10/2012 and DGR 646/2014) contributing to regulate pesca-tourism and ichty-tourism.	D.1 Policy/legal	2.5	Factor B.2.1 Complex bureaucratic procedures to get licences of pesca-tourism, discouraging operator initiatives	B.2 Administrative	-2.7
Factor D.3.1 Availability of EU funding, especially EMFF.	D.3 Economic	2.4	Factor B.1.2 Presence of severe regulations which limit the activity (e.g. motor-power limits, maximum number of people hosted on board, etc.).	B.1 Legal	-2.6
Factor D.3.4 Increasing demand for an experience-based tourism and responsible tourism	D.3 Economic	2.3	Factor B.4.2 Need for adaptation of fishery vessels for tourism activities, for example due to the small size of vessels and the requirements of hygiene and security standards	B.4 Technical capacity	-2.4
Factor D.4.1 Support by FLAGS which encourage local projects about diversification of fisheries.	D.4 Societal	2.3	Factor B.1.1 Lack of a national harmonized law for this MU and inhomogeneity among regional legal provisions.	B.1 Legal	-2.3
Factor D.3.3 Increasing demand for sustainable and local fish products. Relevance for seasonality and commercialisation of little-used species.	D.3 Economic	2.2	Factor B.3.5 Limited availability of funds to start the activity, also due to the difficulties of access to finances.	B.3 Economic	-2.3
Factor D.6.2 Capitalisation of experiences and good practices in the case-study area or in other Italian regions (e.g. organisation among cooperatives for the management of pesca-tourism or protocols for the sustainability of pesca-tourism)	D.6 Technic-operative	2.1	Factor B.3.4 Poor entrepreneurship and investment capacity of operators, also due to the medium-small size of enterprises and to their fragmentation over the territory.	B.3 Economic	-2.2
Factor D.3.2 Availability of regional funding (e.g. Veneto) for the touristic sector, specifically dedicated towards the development of an enterprise network (European Regional Development Fund - ERDF).	D.3 Economic	2	Factor B.3.3 Lack of a structured touristic offer finalised to promote MU and connection among different experiences (pesca-tourism and ichty-tourism).	B.3 Economic	-2.1
Factor D.5.2. Need for the co-management of fish stocks.	D.5 Environmental	1.9	Factor B.5.1 Disappearance of traditional jobs related to fisheries (e.g. Delta Po), relevant to develop the combination	B.5 Social	-2

DRIVERS = factors promoting MU			BARRIERS = factors hindering MU		
Factor	Category	Average score	Factor	Category	Average score
Factor D.5.1. Decrease in fish catches, which contributes to stimulate the research of synergies among fisheries and other economic sectors related to tourism in order to find alternative sources of income.	D.5 Environmental	1.3	Factor B.5.2 Resistance to change from fishing communities, due to cultural/tradition factors and to the limited comprehension of MU benefits. Positive experiences can help remove barriers.	B.5 Social	-2
Factor D.2.1 Significant presence of ports and marinas, being careful not to create dispersion or competition among localities.	D.2 Interaction with other uses	1	Factor B.3.1 Competition with traditional food distribution and accommodation facilities.	B.3 Economic	-1.9
			Factor B.4.1 Limited availability of specific skills possessed by fishermen, for example, concerning communication, public interaction, and foreign languages. Need for specific training.	B.4 Technical capacity	-1.9
			Factor B.3.2 Competition with other areas (e.g. Croatian coast) with greater environmental potential.	B.3 Economic	-1
DRIVERS average score		2.0	BARRIERS average score		-2.1
MU POTENTIAL			-0.1		

Table 5-2 MU combination Tourism and Fisheries: scored DABI table for Added Values and Impacts

ADDED VALUES = positive effects of MU			IMPACTS = negative effects of MU		
Factor	Category	Average score	Factor	Category	Average score
Factor V.2.1 Professional growth of the economic sector of fisheries, with more informed and aware operators, able to create an enterprises network with more potential in the territory.	V.2 Societal	2.7	Factor I.2.1 Risk of entrance of not-competent operators (non-professional fishermen), with a distortion of the real meaning of multi-use.	I.2 Social	-1.7
Factor V.1.3 Upgrade of the touristic offer: development of an offer dedicated to a new group of users, more interested in discovering the environmental and socio-economic characteristics of the area.	V.1 Economic	2.5	Factor I.2.2 Risk of an increase of tourism pressure in areas which are already overcrowded.	I.2 Social	-1.5



ADDED VALUES = positive effects of MU			IMPACTS = negative effects of MU		
Factor	Category	Average score	Factor	Category	Average score
Factor V.2.3 Cultural feedback for operators offering a multi-use experience; personal cultural growth.	V.2 Societal	2.5	Factor I.3.1 If not properly managed, pesca-tourism can lead to an overexploitation of fish stocks	I.3 Environmental	-1.4
Factor V.1.1 Integrative source of income for fishermen.	V.1 Economic	2.4	Factor I.1.1 Possible negative effects on other “conventional” tourism and food distribution sectors.	I.1 Economic	-1.3
Factor V.1.2 New and specialized job opportunities, whenever specific training courses are organized.	V.1 Economic	2.4			
Factor V.2.2 Contribution to the maintenance of local fishing tradition and to related cultural heritage	V.2 Societal	2.4			
Factor V.1.5 Increase of commercialization of local fish products, also due to the direct understanding of sustainable fishing practices. The direct commercialization of fish products is endorsed by fishermen and meets the expectation of an experience – based tourism.	V.1 Economic	2.2			
Factor V.2.4 Awareness of tourists and civil society about sustainable fisheries.	V.2 Societal	2.2			
Factor V.1.4 Overall increase of the attractiveness of coastal areas which offer pesca-tourism activity.	V.1 Economic	2			
Factor V.3.1 Contribution to the reduction of fishing efforts and to the sustainable management of fish stocks (How relevant? Factor also depending on the typology of involved fisheries).	V.3 Environmental	1.3			
ADDED VALUES average score		2.3	IMPACTS average score		-1.5
MU OVERALL EFFECT			0.4		



Table 5-3 MU combination Tourism and Fisheries: scored DABI for each category

DRIVERS = factors promoting MU		BARRIERS = factors hindering MU	
Category	Average score	Category	Average score
Category D.1 – Policy/legal drivers	2.5	Category B.2 - Administrative barriers	-2.7
Category D.4 - Societal drivers	2.3	Category B.1 - Legal barriers	-2.4
Category D.3 - Economic drivers	2.2	Category B.4 - Barriers related with technical capacity	-2.3
Category D.6 -Technical-operative	2.1	Category B.3 - Barriers related with economic availability / risk	-2.0
Category D.5 - Environmental drivers	1.6	Category B.5 - Barriers related with social factors	-2.0
Category D.2 - Interaction with other uses	1.0		
ADDED VALUES = positive effects of MU		IMPACTS = negative effects of MU	
Category	Average score	Category	Average score
Category V.2 - Societal added values	2.4	Category I.2. - Social impacts	-1.6
Category V.1 - Economic added values	2.3	Category I.3 - Environmental impacts	-1.4
Category V.3 - Environmental added values	1.3	Category I.1 - Economic impacts	-1.3



5.2 DABI scoring for Tourism and Aquaculture

In Table 5-4 and Table 5-5, scored DABI tables are reported for the combination of Tourism and Aquaculture. Factors are presented starting with the one with the highest absolute value. In Table 5-6, average scores are reported for each category.

The driver factors with the highest scores are related to the existence of a regional law (in particular for Emilia Romagna) and to the availability of European Funds, especially concerning the European Maritime Fisheries Fund EMFF, as already described in chapter 3. The lowest score was assigned to the presence of several ports and marinas in the study area. Relatively low scores were also assigned to the increasing demand for diverse/responsible tourism and to the increasing demand for local fish products. The overall analysis of drivers provides evidence, as for pesca-tourism, for the relevance of the Policy, Economic and Societal categories. Furthermore, for aquaculture, an added driving factor can be identified in the possibility of developing this kind of multi-use in various alternative or integrated ways.

The main barrier factors, according to the average assigned scores, concern legislation (restrictive regulation, lack of common guidelines and a lack of a national harmonized legislation), funding availability and the need for adaptation of aquaculture vessels which are often not suitable to perform touristic activities. All barrier factors have an average score ranging from 2 and 2.7, revealing a quite similar and relatively high importance of all the considered elements. The highest average score was assigned to legal barriers, even if all the other categories (administrative, economic and related to technical capacity) have a similar importance.

Concerning added values, the highest score was assigned to the possibility of creating new and specialized job opportunities, followed by (all with the same average score) the income integration for aquaculture farms, the increase in commercialisation of local fish products and the increase of awareness of tourists and civil society about sustainable aquaculture and its benefits. All the identified added values have however quite high importance, with an average score not lower than 2. Few impacts have been detected, probably also due to the poor experience available in the case study area for this combination.

In conclusion, the average score of all barrier factors is slightly higher than the average score of all drivers, indicating that, though important factors can help the development of the combination (firstly policy and funding opportunities), tourism activity in combination with aquaculture is currently strongly hampered by significant obstacles, more so than what is perceived for the combination of tourism with fisheries. Certainly, the aquaculture sector benefitted less from focussed initiatives aiming at promoting its diversification, at the EU, national and local levels. Notwithstanding this, the average score of added values is higher than the average score of negative impacts, indicating an overall positive effect of the combination, once it was implemented.

Table 5-4 MU combination: Tourism and Aquaculture: scored DABI table for Drivers and Barriers

DRIVERS = factors promoting MU			BARRIERS = factors hindering MU		
Factor	Category	Average score	Factor	Category	Average score
Factor D.1.1 Existence of a regional law (for Emilia Romagna) specifically regulating "Acquiturismo" (LR 22/2014).	D.1 Policy/Legal	2.5	Factor B.1.3 Restriction in the legislation or in its interpretation, which regulate the possibility of hosting tourists on board aquaculture vessels.	B.1 Legal	-2.7
Factor D.3.1 Availability of European Funds, especially the European Maritime Fisheries Fund EMFF (2014-2020)	D.3 Economic	2.4	Factor B.3.1 Limited availability of proper funds to start the activity, also due to the difficulties regarding access to finances	B.3 Economic	-2.7
Factor D.3.4 Possibility of applying and maintaining low (and hence competitive) concession fees for aquaculture spaces, also for activities pertaining to aquaculture-related tourism	D.3 Economic	2.3	Factor B.4.2 Need for adaptation of fishery vessels for tourism activities, for example due to the small size of vessels and the requirements of hygiene and security standards.	B.4 technical capacity	-2.7
Factor D.3.2 Availability of regional funding (e.g. Veneto) for the tourism sector, specifically dedicated towards the development of an enterprise network (European Regional Development Fund - ERDF).	D.3 Economic	2.2	Factor B.1.1 Lack of guidelines and of a common regulation of aquaculture-related tourism.	B.1 Legal	-2.6
Factor D.4.1 Support by FLAGS, which encourage local projects about the diversification of fisheries.	D.4 Societal	2.2	Factor B.2.1 Bureaucratic (license release) and administrative barriers limiting MU development.	B.2 Administrative	-2.6
Factor D.5.1 Possibility of developing multi-use in different alternative or integrated ways: activities similar to pesca-tourism, combination with diving /snorkelling, combination with recreational fisheries.	D.5 Technical-operative	2.2	Factor B.1.2 Lack of a national harmonized law for this MU and inhomogeneity among regional legal provisions.	B.1 Legal	-2.4
Factor D.3.3. Increase of demand for local fish products.	D.3 Economic	1.9	Factor B.2.2 Scarce cooperation among institutions and operators for MU development.	B.2 Administrative	-2.3
Factor D.3.5 Increasing demand for an experience-based tourism and responsible tourism	D.3 Economic	1.5	Factor B.3.2 Poor entrepreneurship and investment capacity of aquaculture operators, also due to the medium-small size of enterprises and to their fragmentation over the territory.	B.3 Economic	-2.1
Factor D.2.1 Significant presence of ports and marinas, being careful not to create dispersion or competition among localities.	D.2 Interaction with other uses	1.3	Factor B.4.2 Presence of few experiences and few good practices in aquaculture-related tourism.	B.4 technical capacity	-2.0



DRIVERS = factors promoting MU			BARRIERS = factors hindering MU		
Factor	Category	Average score	Factor	Category	Average score
			Factor B.4.3 Limited availability of specific skills possessed by fishermen, for example concerning communication, public interaction, and foreign languages. Need for specific training	B.4 technical capacity	-2.0
DRIVERS average score		2.1	BARRIERS average score		-2.4
MU POTENTIAL			-0.2		

Table 5-5 MU combination: Tourism and Aquaculture: scored DABI table for Added Values and Impacts

ADDED VALUES = positive effects of MU			IMPAIRMENTS = negative effects of MU		
Factor	Category	Average score	Factor	Category	Average score
Factor V.1.2 New and specialized job opportunities, whenever specific training courses are organized.	V.1 Economic	2.6	Factor I.3.1 Risk of the overexploitation of fish stocks, in the case of poorly managed recreational fisheries in combination with aquaculture	I.3 Environmental	-2.2
Factor V.1.1 Integrative source of income for aquaculture operators.	V.1 Economic	2.4	Factor I.1.1 Conflicts with other maritime activities if aquaculture needs more space for its development	I.1 Economic	-2.2
Factor V.1.4 Increase of the commercialization of local fish products, also due to the direct understanding of the local aquaculture practices.	V.1 Economic	2.4	Factor I.2.2 Risk of an increase in touristic pressure in areas which are already overcrowded	I.2 Societal	-2.0
Factor V.2.3 Awareness of tourists and civil society about sustainable aquaculture and its benefits.	V.2 Societal	2.4	Other risks to be specifically identified, due to the poor experience available in the case study area for this combination	I.5 Other	-1.4
Factor V.2.2 Cultural feedback for operators offering a multi-use experience; personal cultural growth	V.2 Societal	2.3			
Factor V.5.2 Potential development of multi-functional sites: aquaculture plants, equipped sites for diving/snorkelling, equipped areas for recreational fisheries, artificial reefs, small touristic infrastructures	V.5 Technical	2.3			

ADDED VALUES = positive effects of MU			IMPACTS = negative effects of MU		
Factor	Category	Average score	Factor	Category	Average score
Factor V.1.3 Upgrade of the touristic offer: development of an offer dedicated to a new group of users, more interested in discovering the environmental and socio-economic characteristics of the area.	V.1 Economic	2.3			
Factor V.2.1 Contribution to the maintenance of local aquaculture tradition and to related cultural heritage.	V.2 Societal	2.0			
Factor V.5.1 Realization of pilot activities which can be exported in other contexts	V.5 Technical	2.0			
ADDED VALUES average score		2.3	IMPACTS average score		-1.9
MU OVERALL EFFECT			0.2		

Table 5-6 MU combination Tourism and Aquaculture: scored DABI for each category

DRIVERS = factors promoting MU		BARRIERS = factors hindering MU	
Category	Average score	Category	Average score
Category D.1 – Policy/Legal drivers	2.5	Category B.1 - Legal barriers	2.6
Category D.4 - Societal drivers	2.2	Category B.2 - Administrative barriers	2.4
Category D.5 - technical-operative drivers	2.2	Category B.3 - Barriers related with economic availability / risk	2.4
Category D.3 - Economic drivers	2.1	Category B.4 - Barriers related with technical capacity	2.2
Category D.2 - Relation with other uses	1.3		
ADDED VALUES = positive effects of MU		IMPACTS = negative effects of MU	
Category	Average score	Category	Average score
Category V.1 - Economic added values	2.4	Category I.1 - Economic impacts	2.2
Category V.2 - Societal added values	2.3	Category I.3 - Environmental impacts	2.2
Category V.5 - Technical added values	2.1	Category I.2. - Social impacts	2.0
		Category I.5 - Other	1.4



5.3 DABI scoring for Tourism and Environmental Protection

In Table 5-7 and Table 5-8, scored DABI tables are reported for the combination Tourism and Environmental Protection. Table 5-9 reports the average score for each category of DABI factors, starting with the one with the highest absolute value.

The average score obtained by single drivers confirmed the substantial absence of single strong leading factor, but the analysis of drivers grouped by Category (Table 5-9) highlights the importance of interaction with other uses, i.e. marine protected areas already present in the area and the possibility to develop a valuable touristic offer building on synergies between MPAs and UCH sites. The “environmental” factor, i.e. the need to regulate the access and improve the protection of sites, ranked second according to groupings by Category.

Among the barriers (quite a high number - 13 - were listed), the administrative ones were evaluated as the most important, i.e. the lack of a common vision between sectors, the limited capacity of institutions to communicate advantages of MU and the absence of cooperation between authorities, institutions and operators. Conflicts among stakeholders represent a significant barrier also from a social point of view.

The overall balance between Drivers and Barriers gives sufficient explanation of the limited combination’s development, since the average score of promoting factors (2.3) is perfectly balanced by the several Barriers that were mentioned (average score -2.3).

Table 5-8 illustrates the scoring obtained for Added Values and impacts. Added Values appear to be surely more important than impacts both in total number and in average scoring (2.3 vs -1.8), indicating that a general positive effect is expected from the implementation of such a MU combination.

All Added Values scored nearly the same as well as their groupings by Category: 2.3 for Economic and Societal Added Values and 2.2 for Environmental ones. Maybe unexpectedly, the lowest score (2.0) was obtained by the possibility of establishing a synergetic collaboration between operators and end users finalized to more effective protection and sustainable use of the MPAs. Regarding Impacts, the fear for the possible aggravation of environmental impact in marine ecosystems due to raising the volume of touristic activities or to improper use of resources is felt as the most important one.

Table 5-7 MU combination: Tourism and Environmental Protection scored DABI table for Drivers and Barriers

DRIVERS = factors promoting MU			BARRIERS = factors hindering MU		
Factor	Category	Average score	Factor	Category	Average score
Factor D.1.1 - Support from Strategic documents (i.e. Blue Growth strategy), also at the macro-regional level (Adriatic Ionian Region) to promote sustainable tourism	D.1 - Policy	2.3	Factor B.2.1 – Limited coordination between institutions involved, moreover acting at different scales	B.2 - Administrative	-2.4



DRIVERS = factors promoting MU			BARRIERS = factors hindering MU		
Factor	Category	Average score	Factor	Category	Average score
Factor D.1.2 - EU is strongly encouraging Italy to identify new MPAs. At a regional level this is interpreted also as an opportunity to develop tourism sector	D.1 - Policy	1.9	Factor B.2.2 – Lack of cooperation (finalized to co-management and promotion of marine natural resources) between authorities in charge of environmental protection and tourism sector operators	B.2 - Administrative	-2.7
Factor D.2.1 - MPA already existing, i.e. the tegnùe, is worth being exploited	D.2 - Interaction with other uses	2.6	Factor B.2.3 – Complex administrative procedures	B.2 - Administrative	-2.3
Factor D.2.2 – Possibility to develop synergies between MPAs and UCH sites	D.2 - Interaction with other uses	2.6	Factor B.2.4 – Lack of a common vision between sectors and of synergies at a political level	B.2 - Administrative	-2.9
Factor D.3.1 - Increasing demand for sustainable eco-tourism and for activities related to the dissemination of environmental asset values (value of natural resources)	D.3 - Economic	2.4	Factor B.2.5 – inability of institutions to convince stakeholders about the added value of synergies	B.2 - Administrative	-2.6
Factor D.3.2 - Increasing demand for diving sites due to a growing interest by divers and operators of the sector	D.3 - Economic	2.3	Factor B.3.1 – Niche touristic sector whose potential has still not been properly evaluated	B.3 - Economic	-1.9
Factor D.4.1 – Possibility to identify links with environmental activities along the coast, creating an opportunity for growth for the overall area	D.4 - Societal	2.3	Factor B.3.2 - Lack of adequate financial incentives	B.3 - Economic	-2.1
Factor D.5.1 – Need to regulate and promote sustainable use of MPAs which at present occur in individual, fragmented and not-controlled ways	D.5 - Environmental	2.5	Factor B.4.1 – Limited understanding of benefits of MU to the goals of environmental protection	B.4 - Social	-2.1
Factor D.6.1 Capitalisation of experiences and good practices in the case study area or in other Italian regions	D.6 - Technical-operative	2.1	Factor B.4.2 – Lack of sufficiently diffused culture about environmental protection amongst the population (need to raise social awareness)	B.4 - Social	-2.4
			Factor B.4.3 –Conflicts instead of synergies between stakeholders working on the same subjects	B.4 - Social	-2.6
			Factor B.5.1 – Scarce transparency of the water column and seasonal restrictions to go diving	B.5 - Environmental	-1.6



DRIVERS = factors promoting MU			BARRIERS = factors hindering MU		
Factor	Category	Average score	Factor	Category	Average score
			Factor B.5.2 - Problems of compatibility between MPA high ecological requirements (due to their high vulnerability) and its touristic exploitation	B.5 - Environmental	-2.4
			Factor B.6.1 – Limited expertise in the field (i.e. divers trained in disseminating biological-naturalistic knowledge)	B.6 - Technical	-1.9
DRIVERS average score		2.3	BARRIERS average score		-2.3
MU POTENTIAL			0.0		

Table 5-8 MU combination: Tourism and Environmental Protection: scored DABI table for Added Values and Impacts

ADDED VALUES = positive effects of MU			IMPACTS = negative effects of MU		
Factor	Category	Average score	Factor	Category	Average score
Factor V.1.1 - Additional finance (from tourism) to environmental protection	V.1 - Economic	2.4	Factor I.1.1 – Possible conflicts with other maritime uses (transport, fisheries etc.)	I.1 - Economic	-2.0
Factor V.1.2 – Creation of synergies between stakeholders	V.1 - Economic	2.3	Factor I.3.1 – Possible aggravation of environmental impacts in fragile marine ecosystems due to raising the volume of touristic activities or to the improper use of resources	I.3 - Environmental	-2.4
Factor V.1.3 – Development of positive economic interactions (production chains) between coastal and marine activities	V.1 - Economic	2.3	Factor I.3.2 – Possible entry in the market of operators not interested in real MU, but only in business and exploitation of resources	I.3 - Environmental	-1.6
Factor V.2.1 - Diversification of tourism offer, targeting people motivated to know about the natural and socioeconomic resources of the area	V.2 - Societal	2.3	Other risks to be specifically identified due to the poor experience available in the case study area for this combination	Other	-1.4
Factor V.2.2 - Job creation, specialization and diversification, formation of new a type of professionals	V.2 - Societal	2.3			



ADDED VALUES = positive effects of MU			IMPACTS = negative effects of MU		
Factor	Category	Average score	Factor	Category	Average score
Factor V.2.3 – Overall increase in the attractiveness of the area, able to offer positive sustainable eco-tourism experiences (i.e. tegnùe are already a brand)	V.2 - Societal	2.4			
Factor V.2.4 – Educational benefits (raising awareness about environmental protection)	V.2 - Societal	2.1			
Factor V.3.1 – Effective collaboration of operators and end users for the management, protection and sustainable use of MPAs	V.3 - Environmental	2.0			
Factor V.3.2 – Raising of end users awareness implies benefits for present and future protection projects	V.3 - Environmental	2.4			
ADDED VALUES average score		2.3	IMPACTS average score		-1.8
MU OVERALL EFFECT			0.2		

Table 5-9 MU combination Tourism and Environmental Protection: scored DABI for each category

DRIVERS = factors promoting MU		BARRIERS = factors hindering MU	
Category	Average score	Category	Average score
D.2 - Interaction with other uses	2.6	B.2 - Administrative	-2.6
D.5 – Environmental	2.5	B.4 – Social	-2.4
D.3 – Economic	2.4	B.3 - Economic	-2.0
D.4 – Societal	2.3	B.5 - Environmental	-2.0
D.1 - Policy	2.1	B.6 - Technical	-1.9
D.6 - Technical-operative	2.1		
ADDED VALUES = positive effects of MU		IMPACTS = negative effects of MU	
V.1 - Economic	2.3	I.1 - Economic	-2.0
V.2 - Societal	2.3	I.3 - Environmental	-2.0



DRIVERS = factors promoting MU		BARRIERS = factors hindering MU	
Category	Average score	Category	Average score
V.3 - Environmental	2.2	Other	-1.4

5.4 DABI scoring for Tourism and Underwater Cultural Heritage

In Table 5-10 and Table 5-11 scored DABI tables are reported for the combination Tourism and Underwater Cultural Heritage. Table 5-12 reports the average score for each category of DABI factors, starting with the one with the highest absolute value.

Unlike in the previous case of Tourism and Environmental protection, in the combination of Tourism and UCH, one particular Driving Factor emerged in quite a clear way. In fact, all independently interviewed stakeholders decided to give the maximum score (+3) to the possibility of identifying itineraries with multiple interconnections with land and coastal historical sites, creating opportunity for the growth of the overall area (average score 3.0). The need to classify into categories is a bit critical for this factor, however due to its potential as a factor able to foster growth in the whole area and the diffuse consensus among different types of stakeholders, it was considered as a societal driver. Another factor that emerged from the workshop, especially in the discussion of the working groups, was the need to manage different uses of in the North Adriatic marine space due to its limited extension (average score 2.8). The possibility to develop synergies between touristic activities at MPAs and UCH sites ranked third (average score 2.7). Moreover, it seems interesting to note that all factors that are in some way “economically characterized” were given the lowest scores.

Regarding the Barriers that were proposed, they resulted in an importance perfectly equal to those of Drivers, both in terms of the total number (10) and in terms of average importance (Drivers average score = 2.4 vs Barriers average score = -2.4), giving some explanations of the very scarce development of the combination.

As for the case of Drivers, for Barriers all stakeholders considered that the lack of a “culture of the sea” and of a cultural-educational programme able to raise awareness about the value of UCH as the most important factor hampering the development of the combination (all interviewed subjects decided to give the maximum score, i.e. -3). The insufficient evolution of the legal framework and physical factors such as the scarce water transparency and possible conflicts with other uses were cited among the other most important factors.

Also, from the point of view of Added Values, the overall picture denotes some ideas quite clearly. In fact, all interviewed stakeholders convened about the fact that developing such MU would result in global cultural and educational benefits through raising awareness about the promotion and safeguarding of UCH (all stakeholders gave the maximum score, +3). Another important Added Value is represented by the possibility to improve the protection of the site through the co-management and co-monitoring of sites.

Regarding Impacts, the feeling seems quiet diffused that after implementation of this combination, some other activities would lose something. Actually, the item of conflicts emerges in all aspects of the analysis and permeates the discussion, probably suggesting the existence of a sort of frustration of UCH operators with respect to other sectors.



Finally, having a look at Table 5-12 it is possible to observe that most of the game takes place in the societal ground, which is considered the most relevant in three out of four sectors.

Table 5-10 MU combination: Tourism and Underwater Cultural Heritage scored DABI table for Drivers and Barriers

DRIVERS = factors promoting MU			BARRIERS = factors hindering MU		
Factor	Category	Average score	Factor	Category	Average score
Factor D.2.1 – Submerged sites of potential touristic interest existing, worth being exploited	D.2 - Interaction with other uses	2.0	Factor B.1.1 - Lack of guidelines/regulatory aspects	B.1 - Legal	-2.7
Factor D.2.2 – Possibility to develop synergies between MPAs and UCH sites	D.2 - Interaction with other uses	2.7	Factor B.2.1 - Lack of communication/coordination among the authorities dealing with UCH and tourism	B.2 - Administrative	-2.3
Factor D.2.3 – Need to regulate and promote sustainable use of UCH sites which at present occur in individual, fragmented and non-controlled ways	D.2 - Interaction with other uses	2.5	Factor B.3.1 – Niche touristic sector whose potential is still not properly evaluated	B.3 - Economic	-2.2
Factor D.2.4 – Limited marine space	D.2 - Interaction with other uses	2.8	Factor B.3.2 - Lack of adequate financial incentives	B.3 - Economic	-2.2
Factor D.3.1 – UCH site’s sustainable activities can contribute to the identification and mapping of other sites	D.3 - Economic	1.8	Factor D.4.1 - Limited availability of experiences and good practices in the case study area or in other Italian regions, especially in order to make people (and interested stakeholders) understand the real benefits of MU to UCH itself	B.4 - Social	-1.7
Factor D.3.2 - Increasing demand for diving sites due to a growing interest by divers and operators of the sector	D.3 - Economic	2.0	Factor D.4.2 – lack of a “culture of the sea” and of a cultural-educational programme able to raise awareness about the value of UCH	B.4 - Social	-3.0
Factor D.3.3 - Increasing demand for experience-based tourism	D.3 - Economic	2.3	Factor B.5.1 – Scarce transparency of the water column and seasonal restrictions to go diving	B.5 - Environmental	-2.7
Factor D.4.1 – interest in promotion (valorisation) and not only safeguarding of cultural heritage	D.4 - Societal	2.5	Factor B.5.2 – Conflicts with other uses of marine space (i.e. transport)	B.5 - Environmental	-2.7

DRIVERS = factors promoting MU			BARRIERS = factors hindering MU		
Factor	Category	Average score	Factor	Category	Average score
Factor D.4.2 – Possibility to identify itineraries with multiple interconnections with land and coastal historical sites, creating an opportunity for growth of the overall area (e.g. connections with Museums of the Sea)	D.4 - Societal	3.0	Factor B.6.1 – Limited expertise in the field (i.e. divers with archaeological knowledge and trained in disseminating historical humanistic knowledge)	B.6 - Technical	-2.0
Factor D.4.3 – Amateurs and volunteers groups and NGOs existing in the area are very motivated	D.4 - Societal	2.2	Factor B.6.2 – High vulnerability of sites due to their intrinsic fragility	B.6 - Technical	-2.2
DRIVERS average score		2.4	BARRIERS average score		-2.4
MU POTENTIAL			0.0		

Table 5-11 MU combination: Tourism and Underwater Cultural Heritage: scored DABI table for Added Values and Impacts

ADDED VALUES = positive effects of MU			IMPACTS = negative effects of MU		
Factor	Category	Average score	Factor	Category	Average score
Factor V.1.1 - Additional finance (from tourism) to site protection	V.1 - Economic	1.2	Factor I.1.1 – Possible entry in the market of operators not interested in real MU, but only in business and exploitation of resources	I.1 - Economic	-1.0
Factor V.2.1 - Diversification of tourism offerings, targeting people motivated to know about historical and socioeconomic resources of the area	V.2 - Societal	2.0	Factor I.1.2 – Conflicts with other uses (transport)	I.1 - Economic	-2.7
Factor V.2.2 - Job creation, specialization and diversification, formation of a new type of professionals	V.2 - Societal	1.8	Factor I.2.1 - Risk of looting and damage to UCH by increased touristic pressure	I.2 - Societal	-2.3
Factor V.2.3 – Co-management and co-monitoring of sites, resulting in enhanced protection of UCH, also given the present state of abandon or the improper management of sites	V.2 - Societal	2.5	Other risks to be specifically identified, due to the poor experience available in the case-study area for this combination	Other	-1.7
Factor V.2.4 – Educational benefits (raising awareness about promotion and safeguard of UCH)	V.2 - Societal	3.0			



ADDED VALUES = positive effects of MU			IMPACTS = negative effects of MU		
Factor	Category	Average score	Factor	Category	Average score
ADDED VALUES average score		2.8	IMPACTS average score		-2.0
MU OVERALL EFFECT			0.4		

Table 5-12 MU combination Tourism and Underwater Cultural Heritage: scored DABI for each category

DRIVERS = factors promoting MU		BARRIERS = factors hindering MU	
Category	Average score	Category	Average score
D.4 - Societal	2.6	B.1 - Legal	-2.7
D.2 - Interaction with other uses Economic	2.5	B.5 - Environmental	-2.7
D.3 – Economic	2.1	B.2 - Administrative	-2.3
		B.4 - Social	-2.3
		B.3 - Economic	-2.2
		B.6 - Technical	-2.1
ADDED VALUES = positive effects of MU		IMPACTS = negative effects of MU	
Category	Average score	Category	Average score
V.2 - Societal	2.3	I.2 - Societal	-2.3
V.1 - Economic	1.2	I.1 – Economics	-1.8
		Other	-1.7



6 FOCUS AREAS ANALYSIS

The following two sub-sections of chapter 6 address the focus area analysis for tourism driven MU combinations and for MU combinations involving the decommissioning of oil and gas platforms. . In both cases, questions and responses address all MU selected combinations (tourism with fisheries, aquaculture, environmental protection and UCH; oil & gas decommissioning with renewable energy, tourism and aquaculture).

6.1 Tourism driven MU combinations

6.1.1 KEQs for Focus-Area-1 "Addressing Multi-Use"

1) Is it possible to establish / widen / strengthen MU in the case study area? For which MU combination in particular? What needs would MU satisfy?

Yes, it is possible to establish/widen/strengthen MU in the case study area. While the tourism and fisheries combination is the most mature example of multi-use, tourism and UCH can be considered the less developed combination in the case-study area, mainly due to the lack of national or local initiatives aimed to valorise UCH and promote its fruition, beyond its mere protection.

On the contrary, legislation regulating fisheries & tourism and aquaculture & tourism specifically exists in the case study area. Moreover, training courses dedicated to fishermen have been organised to fulfil the legislative requirements. Furthermore, the presence of successful cases for both combinations in the case-study site or in other Italian and Mediterranean areas can encourage the development of similar initiatives. All these elements can act to widen and strengthen these two combinations in the future.

All combinations, if implemented, could help satisfying the increasing need for alternative and responsible tourism, strictly linked to local culture and traditions of the territory (experiential tourism). The combinations with fisheries and with aquaculture can also satisfy the increasing interest for local fish products caught with sustainable practices. Obviously, both pesca-tourism and aquaculture-related tourism can also partially satisfy the need for an integrative source of income for fishermen and for farmers which have recently experienced losses of revenue, due to imposed catch limits or natural calamities.

2) Is space availability an issue for MU development / strengthening in the case study area at present? Will space availability become an issue for your area in the future? For what elements space availability is / could become an issue?

The Northern Adriatic Sea is undoubtedly an area characterized by several and possibly conflicting economic activities. Though the tourism driven combinations explored in this work are not aimed to solve the existing conflicts, the presence of a strongly "crowded" area was considered in the general opinion of stakeholders as a driver to develop new initiatives for multi-use.

The same factor (conflict with other uses of the marine space) was also seen as a barrier (or as a possible impact) of the development of some combinations such as those involving UCH and environmental protection. Indeed, several interferences with other maritime uses (e.g. transport having the highest priority in the marine space) have been mentioned by some stakeholders



concerning the touristic exploitation of protected marine areas and UCH located along maritime transport routes.

Regarding the tourism and aquaculture combination, space availability was considered a possible concern by stakeholders only whenever aquaculture requires more space for its development.

3) Are there MU combinations and potentials that will share the same resources but in different times (e.g. reuse of an infrastructure after the end of its first life and original scope)? What are they?

No, for tourism driven combinations, resources are generally shared at the same time by the two sectors involved in the combination, because no specific reuse of infrastructures or other resources has been considered.

4) What would be the most important resources to be shared between uses (infrastructures, services, personnel, etc.)?

For all the MU combinations, marine space is the main resource potentially shared between tourism and the different explored sectors (fisheries, aquaculture, environmental protection and UCH). Concerning pesca-tourism and aquaculture-related tourism, the same actor (professional fisherman or aquaculture operators) have a dual license, both for fishing and for touristic activities. In this case, the same human resource performs two different activities, sharing their knowledge with people hosted on board. Also, infrastructures (i.e. fishing/aquaculture vessels, properly adapted for touristic activities or aquaculture plants equipped for the combination with recreational fisheries) can be somehow considered as shared resources between the two uses.

Tourism and environmental protection also share abiotic and biotic resources, as the submerged habitats and biodiversity they host are the main attractor for divers. For the combinations of tourism and environmental protection and tourism and UCH, human, infrastructure and economic resources could be shared among uses, in a scenario where touristic visits to the protected site can contribute to its promotion and safeguarding.

5) Are existing and/or potential MUs taken into account within the existing or under development Maritime Spatial Plans?

Following the transposition of the EU MSP Directive through the Legislative Decree 17 October 2016, n. 201, some initial MSP-related activities are currently being implemented in Italy, as the development of guidelines for addressing the preparation of MSP plans (currently under approval) and the identification of marine sub-regions where such plans will be elaborated. MU is not specifically mentioned in the MSP guidelines under approval.

Currently, no MSP plans are available for Italian marine areas, therefore also including the Northern Adriatic, but on-going projects (e.g. MIUR-RITMARE and EASME-SUPREME) are including MU in their analysis and will be most probably useful to stimulate the analysis and exploitation of MU potentials in the coming plans.

6) How are MUs connected or related to land-based activities?

All tourism driven combinations demonstrated a strong potential connection between sea and land-based activities, also due to the particular conformation of the case-study territory, characterised by the presence of an important and extended transition zone, which include the lagoons (Venice and Caorle), the Po river delta and connected wetlands. All these areas are of outmost importance from an environmental point of view and from a historical-archaeological point of view. Ancient traditions of fisheries and aquaculture (especially clam and fish farming) also characterize transitional waters of the case study area.

Indeed, pesca-tourism and aquaculture-related tourism can be connected to land through ichty-tourism, which is a hosting activity offered by fish operators in their home or in other facilities that they own. Icthy -tourism is hence a land-based activity which however can be connected with the maritime activity of “pesca-tourism” whenever the touristic offer includes a connection path between fishing at sea and food consumption on land. Other land-based activities that may be linked to pesca-tourism are the commercialisation of local fish products (0 nautical miles products) or involvement of fishermen as guides for visits to museums of the sea and navigation

Environmental protection and UCH can also benefit by a connection between sea and land, for example considering the development of itineraries involving activities at sea (diving) and activities on land (e.g. museums, environmental research sites working for marine species protection and recovery).

7) Is the needed knowledge and technology for MU development/strengthening in the case study area already available? What is the level of maturity of available knowledge? What is the level of readiness of available technology? Are there still research needs?

The tourism driven combinations considered in this case study can be categorised as “soft” and do not involve the use of special and innovative technology. However, the development of new technology was suggested by some stakeholders for specific uses; e.g. remote control of environmental protected or underwater cultural heritage sites could be useful to monitor visits and touristic activities and at the same time ensure regulation is fully applied in order to enable their proper preservation. The same technologies could be also used to enhance the touristic attraction of submerged sites through the diffusion of captured images and videos, which is particularly relevant for UCH sites of high archaeological value.

Rather than technology, the explored combinations require the introduction of some structural adaptation or cultural changes such as:

- Adaptation of the existing fishing vessels to perform touristic activities related to fisheries and aquaculture;
- A general upgrade of the skills of operators to communicate with tourists;
- A major entrepreneurship and investment capacity;
- An effective inter-sectoral cooperation amongst different institutions, and amongst public institutions and economic operators to effectively manage new experiences of MU.



8) *What action(s) would you recommend to develop / widen / strengthen MU in the case study area? What actor(s) do you see particularly important to develop / widen / strengthen MU in the case study area?*

According to stakeholder opinion, the main recommended actions to develop or widen the four tourism-driven combinations can be summarised in the following concepts:

- Strengthening the connections between sea and land, offering more attractive touristic paths exploiting all the potentialities of the coastal system of the Northern Adriatic, given also the importance of existing land-sea transitions systems (lagoons, wetlands, delta);
- Promoting integrated touristic offers involving at the same time more than one explored sector. The main opportunity could rely in the development of a network of tourism-related multi-use initiatives, enhancing their differences and specificities according to the vocations of the local territory;
- Upgrading the cooperation among different institutions, promoting cross-sector policies;
- Simplifying bureaucratic procedures to easily obtain MU licences;
- Creating specific networks, with major strength and visibility across the territory, major investment and management capacity.

Actors especially involved in MU development include both public institutions (mainly acting at regional and local levels) and economic operators of the various analysed sectors (touristic operators, diving clubs, fishermen and aquaculture enterprises/cooperative/associations). An important boost for pesca-tourism and for aquaculture-tourism come from the three FLAGs operating in the case-study area, supporting diversification projects in the field of fisheries and aquaculture.

6.1.2 KEQs for Focus-Area-2 "Boosting blue maritime economy"

1) *Do you see added values for society and economy at large and/or for local communities of developing / widening / strengthening MU in the case study area? What are the most important ones?*

Tourism related combinations may involve a growth in the attractiveness of the whole geographical area, enhancing social awareness on local traditions, cultural heritage and environmental resources while at the same time responding to the growing demand for "experience-based tourism". In turn, this can provide economic benefits and integrative income for local communities and some categories of workers such as traditional fishermen, operators of the aquaculture sectors, diving guides and operators, naturalistic and environmental guides, experts in marine ecology, history and archaeology, etc.

2) *Is it possible to quantify the socio-economic benefits related to MUs and how they (could) contribute to the sea economy at local and regional/national scale? What tools, knowledge, experiences are available?*

Some attempts were already made to estimate the possible integrative income for fishermen as was reported in the description of the combination for Tourism and Fisheries (Meneghello & Mingotto, 2016 – see chapter 3). Similar economic estimations could be performed for other sectors such as



aquaculture or those of tour operators organizing pesca-tourism and diving activities. However, MU should imply mutual advantages for all sectors involved, thus a scientific approach, able to evaluate environmental benefits to fish stocks, water bodies and marine habitats (i.e. measure of ecological status), and able to quantify the improvement in ecosystem services determined by the increase in protection, monitoring and control of MPAs, or capable to quantify benefits for conservation and valorisation of UCH sites is needed.

3) Would MU development / strengthening be an opportunity for job creation and / or job requalification in your area? (Y/N)

Yes, undoubtedly. The combination of Tourism with Fisheries and Aquaculture would favour the requalification of fishermen and aquaculture operators. In this respect, local institutions have already organized and executed special training courses. The combination of Tourism with Environmental Protection and Underwater Cultural Heritage would probably give greater rise to new types of professionals: not only “marine biologist” or “archaeological divers”, such new professionals could be specialist of didactic and dissemination with a specific diving license, collaborating with other specialists and researchers devoted to the production of contents to be considered and enjoyed during the tours.

4) Do you see possible elements of attractiveness for investors in developing / widening / strengthening MU in the case study area? What are these elements?

Implementation of tourism related MU for fisheries and aquaculture would probably favour the possibility to extend the “productive” period, since the “tourist-oriented” activities could be incrementally implemented during the season when actual catches tend to decline.

The development of business related to diving tours (both for MPAs and UCH sites visits) appears promising, given its present very low level of development and its positive potential as emerged also through the analysis described in chapter 5. Given the particular societal interest of the MU, especially in the case of UCH (see paragraph 5.4), investors could also benefit from a sort of social reward in that case that they could contribute to the protection and valorisation of natural resources and UCH.

5) What are possible investors interested in developing / widening / strengthening MU in the case study area?

Possible investors could be fishermen or aquaculture operators properly organized in associations, cooperatives or networks having greater investment and management capacity than single operators. Investors can benefit from the support of European Funds, especially through the role of coastal FLAGs. Regarding diving activities in MPAs and UCH sites, tour operators are the subjects that could more likely afford initial costs to define and organize specific offers as well as provide resources, equipment and infrastructure. Nevertheless, this effort would absolutely need to be supported by administrations and active operators such as NGOs. Other entities such as museum organizations, which are very often managed by public owned foundations acting as private entities, could also be interested in developing activities especially related to UCH sites and environmentally protected areas.



6) *Is there sufficient dialogue between the stakeholder sectors for developing / widening / strengthening MU? Would dialogue facilitation be an asset?*

For all combinations, the importance of further strengthening the existing dialogue and coordination among different institutions and among institutions and operators emerged from stakeholder engagement. Indeed, in most cases the existing dialogue was considered insufficient. Administrative barriers, such as complex procedures involving different local institutions to get licenses and poor coordination among institutions and operators were included among the most important barriers for pesca-tourism and for aquaculture-related tourism. For the MU combinations tourism & UCH and tourism & environmental protection, a severe lack of cooperation and coordination among stakeholders as well the absence of a common vision of development was clearly recognized. Therefore, dialogue facilitation would be warmly welcomed among all the explored sectors and related MU combinations.

7) *In order to promote MU development / strengthening in the case study area: (i) would the availability of a vision/strategy (e.g. at national or sub-regional level) be helpful? would a feasibility study including evaluation of alternative scenarios be helpful? would detailed projects on already identified simulations be useful? do you see other enablers?*

Regarding tourism, the need for the definition of a new offer is strongly felt. Such an offer must be clearly defined and well organized, able to emphasize the aspects and specificities related to sustainability, culture and tradition and environmental protection, which can be exploited to target the growing demand for “experience-based tourism”. In particular for the combination of Tourism and UCH, the necessity of defining a common vision as a starting point to share objectives and actions was clearly highlighted. Indeed, it became quite clear that it is important to have an overarching vision dealing with the entire offering of experience-based tourism, which could be built integrating the four different analysed MU combinations.

A feasibility study would be useful, in particular for MU combinations dealing with fisheries and aquaculture: preliminary economic development scenarios developed so far could be further analysed, taking into account also a possible and anticipated evolution of the legal framework. Such analysis would be useful to clearly understand to what extent the MUs have of real development. Regarding the combination of MPAs and UCH, of particular interest were the results of the comparison of the scenario considering full MU implementation with the zero options, since an overall improvement of natural resources’ as well as of cultural heritage’s protection is expected.

At present, there are no simulations and some of the combinations seem too poorly developed to proceed to the level of required for a detailed project. The feeling is that a detailed project could be useful mainly for Tourism and Fisheries which actually can already capitalize through in-situ field experiences.

Finally, all four combinations highlighted legal or administrative barriers as the most important ones, where some efforts should be concentrated at the implementation level (feasibility study, scenario analysis, detailed projects, etc.).



6.1.3 KEQs for Focus-Area-3 "Improving environmental compatibility"

1) What are / would be the environmental added values (= positive environmental impacts) of developing / widening / strengthening MU in the case study area?

The DABI analysis performed for the four tourism driven combinations highlighted some environmental benefits of developing MU in the case study area. A possible contribution to the reduction of fishing efforts and to the sustainable management of fish stocks emerged as an environmental added value of the combination between tourism and fisheries. This added value was generally assessed as low for the case study area, probably due the typology of fisheries which currently could be more easily involved in pesca-tourism activities (small scale fisheries and not trawling fisheries). The possible development of this combination could lead to complementary initiatives of environmental protection (e.g. collection of marine litter, education and awareness on environmental issues and promotion of sustainable fisheries), thus enhancing the environmental benefits of the combination.

A better environmental protection of marine areas is also expected from the implementation of the combination between tourism and environmental protection, even if the fear of possible environmental impacts of tourism is quite diffused. Measures to effectively control touristic fluxes in protected areas and educational initiatives to increase social awareness on environmental themes can favour the development of more responsible tourism activities, thus enhancing the environmental compatibility of the combination. In a potential scenario where mutual advantages for tourism and environmental protection were established, funds generated by tourism through organized touristic visits to biological protected sites could converge to measures of environmental protection and monitoring, furtherly improving the environmental benefits of the combination.

2) Which tools (conceptual, operational) are used or should be further developed and used to better estimate environmental impacts and benefits of MU?

Results from desk research and stakeholder engagement do not allow for the provision of answers to this question. Possible ways to evaluate environmental impacts and benefits of MU can be generally be found in the current procedures of Environmental Impact Assessments, as well as the application of some already available tools such as cumulative impact and conflict score tools (as for example those developed and applied within the EC DG MARE funded Adriplan project¹⁶), environmental modelling, methods and tools to quantify and assess ecosystem services.

3) Is saving free sea space for nature conservation a driver for MU the case study area? Are there evidences about the present and future benefits of reserving free sea space? What are they?

Saving free space for nature conservation was not identified among important drivers for the four tourism driven combinations. In all envisaged combinations, tourists move from the coast to the sea to experience alternative and more responsible and sustainable forms of tourism, possibly (currently in a very marginal way) relieving touristic pressure from the coast. A real MU implementation could

¹⁶ <http://data.adriplan.eu/tools4msp/>; accessed on 22.11.2017



lead to an optimisation of touristic flux to environmental protected areas or to UCH areas, currently performed as single and separate initiatives, probably leading to the enhanced management of marine space. However, preservation of free space was not a specific issue of relevance for the Northern Adriatic case study.

4) What practical actions would you undertake to link MU development / widening / strengthening to improved environmental compatibility of maritime activities?

Some practical actions to improve environmental benefits and environmental compatibility of the four envisaged combinations have been previously mentioned in the answer to question 1 of this Focus Area. For the combination between tourism and fisheries, complementary initiatives of environmental protection could be promoted during pesca-tourism trips (e.g. collection of marine litter, education and awareness on environmental issues and the promotion of sustainable fisheries).

For the combination between tourism and environmental protection, measures to improve environmental compatibility can include the establishment of a virtuous system where part of the income generated by tourism could converge to environmental protection or monitoring initiatives. This approach could be potentially applied to tourist experiences on land as well; part of the income generated by tourism experiences exploiting coastal naturalistic heritage and connected attractions (e.g. museums or centres for recovery of key species, as turtles) could be reinvested in environmental protection. A similar approach could be also be extended to the preservation of UCH; part of the income generated by visits to UCH sites, if regulated and managed in a structured way, could be reinvested to improve their preservation.

More generally educational initiatives to increase social awareness on environmental themes could increase the environmental compatibility of all the proposed combinations minimizing the current perceived concern about possible negative environmental impacts of inappropriately controlled tourism.

5) Are there win-win solutions triggering both socio-economic development and environmental protection already available for the case study area that MU should take up? What are they?

The presence of both socio-economic and environmental added values potentially addressed by MU combinations in the case study area has been identified in the DABI analysis of this work. The creation of new and specialised jobs is a socio-economic added value common to all the explored combinations. Similarly, the increase of the touristic attractiveness of coastal areas offering special and diverse initiatives of tourism is perceived as a generally socio-economic advantage of MU (e.g. *tegnùe* or pesca-tourism as a brand for local coastal economies). These socioeconomic benefits could go together with the identified environmental benefits of combinations which include a co-management of fish stocks, an increased awareness on sustainability of economic activities such as fisheries and aquaculture and an effective collaboration of operators and end users for the management, protection and sustainable use of MPAs and UCH sites.



6) *Is the environmentally friendly knowledge / technology for MU development/strengthening in the case study area available? Which is the level of readiness of available solutions? Are there still research needs on blue/green technologies for MU?*

As mentioned in the answer to the question 7 of Focus Area 1, the combinations considered in this work don't involve the use of special and innovative technology. This is also due to the fact that such combinations can be categorised as "soft" rather than "hard" combinations. Therefore, the question is not fully pertinent for tourism driven combinations explored in the case-study area. However, it can be concluded that all the needed technologies, which indeed is very limited, are available for these MU combinations and that specific investments could be done to improve environmental sustainability (e.g. green fuels for boat engines, 100% waste recycling systems, etc.). Important investments should be made on structural adaptation or cultural changes, as described in the answer to question 7 of Focus Area 1.

7) *Would be possible to promote MU through SEA/EIA procedures? What modifications would you suggest at your national/local level to promote MU through SEA/EIA procedures?*

No elements emerged from desk research and stakeholder engagement to provide an answer to this specific question.

6.2 MU combinations related to O&G decommissioning

6.2.1 KEQs for Focus-Area-1 "Addressing Multi-Use"

1) *Is it possible to establish / widen / strengthen MU in the case study area? For which MU combination in particular? What needs would MU satisfy?*

Yes, O&G decommissioning offers the opportunity to strengthen MU in the area, with mutual benefits for all sectors involved. This applies in particular to the aquaculture and tourism sectors, to increase income and diversify tourism offerings in the region. The reuse of decommissioned jackets to build artificial reefs, following a careful selection of suitable sites and capitalising on the existing experience of the *Paguro* site, would satisfy both touristic and environmental needs. Potential synergies with the energy sector, wind energy production in particular, are also evident.

2) *Is space availability an issue for MU development / strengthening in the case study area at present? Will space availability become an issue for your area in the future? For what elements space availability is / could become an issue?*

The case study area inside the Northern Adriatic Sea is already crowded by multiple human activities acting in a relatively small geographical area.

Oil and gas decommissioning is very much related to already existing gas extraction infrastructures and so it is more a matter of understanding regarding which of the platforms to be decommissioned has the best structural characteristics and optimal location to be converted into a MU.



Nevertheless, the potential MUs analysed need to be considered and specified in the framework of the on-going MSP process in the area (and Italian marine water in general).

This regards, in particular, the identification of new areas for aquaculture and wind farms that have to be suitable for the specific use (i.e. optimal growth rate and quality of farmed species, good wind potential, etc.) and not conflict with other uses of the area (e.g. fisheries, tourism, navigation, aggregate mining).

In this framework, the correct selection of sites for rigs-to-reefs solutions has to take into account not only their compatibility with other uses (e.g. trawling or navigation), but also the ecological coherence of the artificial structures introduced.

3) Are there MU combinations and potentials that will share the same resources but in different times (e.g. reuse of an infrastructure after the end of its first life and original scope)? What are they?

Yes, this is the main driver of combinations related to oil and gas decommissioning: after the end of production of gas platforms, other uses might reuse areas and infrastructures that were originally used by the oil and gas industry.

In a few cases (e.g. for research and/or environmental monitoring), a MU could be activated also with O&G platforms that are still operating.

4) What would be the most important resources to be shared between uses (infrastructures, services, personnel, etc.)?

For all the combinations, marine space is a fundamental resource to be shared. In addition to the geographical resource, the infrastructure itself (i.e. the platform) can be reused in place, in case of a touristic, aquaculture or renewable energy MU (marina, logistic purposes, support for surrounding structures), or it can be removed and be reused in a different place and act as an artificial reef.

5) Are existing and/or potential MUs taken into account within the existing or under development Maritime Spatial Plans?

Following the transposition of the EU MSP Directive through the Legislative Decree 17 October 2016, n. 201, some initial MSP-related activities are currently being implemented in Italy, as the development of guidelines for addressing the preparation of MSP plans (currently under approval) and the identification of marine sub-regions where such plans will be elaborated. MU is not specifically mentioned in the MSP guidelines under approval.

Currently, no MSP plans are available for Italian marine areas, therefore also including the Northern Adriatic, but ongoing projects (e.g. MIUR-RITMARE and EASME-SUPREME) are including MU in their analysis and will be most probably very useful to stimulate the analysis and exploitation of MU potentials in the coming plans.

6) How are MUs connected or related to land-based activities?

All the MU combinations with O&G decommissioning have potential strong connections with land-based activities and can actually benefit from the already existing infrastructure, ports, road networks and logistics available (e.g. the port of Ravenna and its O&G engineering and service district). This component is relevant for both MUs assessed.

Concerning the combination with renewable energy, the infrastructures have to be connected with land-based facilities (e.g. through already existing or new cables) for energy transportation and grid connection. O&G decommissioning and tourism, MU is of course very much related with touristic fluxes and infrastructures based on land, both for connections and logistics; in the same way aquaculture needs strong connections with processing and distribution activities.

Similar considerations can be given for the rigs-to-reefs combination, where activities related with tourism, diving, and education have to be foreseen in connection with logistic infrastructures based on land.

7) Is the needed knowledge and technology for MU development/strengthening in the case study area already available? What is the level of maturity of available knowledge? What is the level of readiness of available technology? Are there still research needs?

Engineering knowledge and technology related with oil and gas extraction and the necessary infrastructure is well established in the area given the historical presence of this activity. In relation to the existing platforms, it was stressed by stakeholders that there is a need to design O&G infrastructures that can be easily refitted for different MU opportunities when the life cycle is finished. This is currently not the case.

Available knowledge and practices have to be adapted, improved and developed in case MU combinations related with tourism propose complex solutions yet to be planned and realized in the area.

For the rigs-to-reef combination, the already existing example of the Paguro artificial reef is fundamental. Regardless, more knowledge is needed to implement technological solutions for the removal and replacement of the platform and the potential impact, and to study possible environmental impacts of all the phases of the process. Moreover, there is the need to develop decision support systems that can support the stakeholder community in the identification of the technically, environmentally, economically and socially most equitable decommissioning project.

Other possible reuses of decommissioned O&G platforms offer the possibility for research and innovation in different fields: e.g. aquaculture (multi-trophic, innovative techniques), energy (LNG, H2 storage, waves), biotechnologies, environmental monitoring and environmental research.

8) What action(s) would you recommend to develop / widen / strengthen MU in the case study area? What actor(s) do you see particularly important to develop / widen / strengthen MU in the case study area?

The establishment of a clearer, more complete and favourable legal and administrative framework is crucial for the development the MU. This is actually underway, thanks to the initiative of MISE.



A joint effort of central and local administrations, operators of the sector, key local stakeholders and research institutions is very important to create the conditions for a MU development that goes beyond some episodic and small scale experiments. This effort should take the form of a master plan, not only limited to the case study area, integrating and projecting in time, vision, objectives, actions, roles and resources.

National and international investors (e.g. in the wind energy sector) can also play an important role.

Finally, considering the potential of the MU to boost innovation and blue growth in the area, specific attention from national and EU research funding agencies is also very important.

6.2.2 KEQs for Focus-Area-2 "Boosting Blue Maritime Economy"

1) Do you see added values for society and economy at large and/or for local communities of developing / widening / strengthening MU in the case study area? What are the most important ones?

Yes. MU development has several socio-economic benefits on different spatial scales:

National level:

- the implementation of this MU can represent a best practice example on how to boost the blue economy in relation to clean energy and how different uses can be aggregated decommissioned of platforms;
- create new competences in the blue economy and create potentially attractive conditions for foreign investment.

Local level:

- development of new types of job profiles, support environmental education especially on an academic level, boost research and innovation on blue growth marine and maritime sectors;
- valorise and develop infrastructures and expertise presently available in the area, serving the O&G sector;
- create a regional attraction site of relevance for the entire Adriatic Sea basin;
- diversify tourism offering in the region and promote sustainable tourism development.

2) Is it possible to quantify the socio-economic benefits related to MUs and how they (could) contribute to the sea economy at local and regional/national scale? What tools, knowledge, experiences are available?

Within the national Forum the need to develop clear business plans stating the decommissioning, maintenance and operating costs of a potential MU development was emphasized. Desk research and interviews could not define quantitatively monetary benefits of specific MU combinations. However, projections on the MU combination related to O&G decommissioning and tourism and aquaculture show that the re-fitting of a new use would generate 250,000 working hours, which is comparable with the installation of 1.5 platforms. Estimations of operating expenditure for safe maintenance of infrastructures have been recently produced by MISE (Da Riz, 2017), ranging from 500 to 1.800 KEuro per platform.



3) *Would MU development / strengthening be an opportunity for job creation and / or job requalification in your area? (Y/N)*

Yes. In particular, MU would foster the development of jobs in the maritime engineering, renewable energy, infrastructure maintenance, tourism (e.g. diving, boating, recreational fishing and environmental education) and aquaculture sectors. For MU related to O&G decommissioning and tourism and aquaculture, it is estimated that on a single platform about 10 persons could be employed permanently.

4) *Do you see possible elements of attractiveness for investors in developing / widening / strengthening MU in the case study area? What are these elements?*

Yes, provided that the uncertainty on the legal and administrative constraints of the re-use of platforms are solved and liabilities are clarified.

Attractiveness for investors depends on the specific conditions of their reference markets: e.g. tourism trends, incentives for renewable energy, prices of seafood, etc.. Economic sustainability and attractiveness for investors could also be influenced by national and local socio-political aspects.

5) *What are possible investors interested in developing / widening / strengthening MU in the case study area?*

O&G operators and investors can have interests, which are not necessarily purely economic, in promoting MUs. This is the case for example of ENI, which is promoting studies and initiatives on the subject, in collaboration with other companies, research institutions and local administrations.

Investors from the tourism, aquaculture and energy sectors have their own interests in promoting MU in the area, becoming the new concessionaire of the area and owner/user of the infrastructures. At this stage, rules to manage such complex scenarios are not well defined, and will hopefully be solved by the new legislation / guidelines under development.

6) *Is there sufficient dialogue between the stakeholder sectors for developing / widening / strengthening MU? Would dialogue facilitation be an asset?*

Up to now, dialogue and initiatives have been quite limited and scattered. The “Forum on the future of Platforms” represents in this sense a valuable initiative for aggregating different sectors on the definition of potential MU opportunities in the case study area, with some concrete results expected in short time (i.e. the guidelines under approval). The Forum is also promoting the connection at an international level, with countries that share similar problems and are testing practices and solutions.

The BLUEMED Initiative, through its Strategic Board and the Coordination and Support Action coordinated by CNR, will also promote the involvement of stakeholders on the subject, from its R&I perspective.



7) *In order to promote MU development / strengthening in the case study area: (i) would the availability of a vision/strategy (e.g. at national or sub-regional level) be helpful? would a feasibility study including evaluation of alternative scenarios be helpful? would detailed projects on already identified simulations be useful? do you see other enablers?*

Yes, the availability of a vision/strategy/action plan at sea basin/sub-basin level would be very useful: MUSES could strongly contribute to this result.

Such vision/strategy/action plan has the chance now to be embedded in the MSP plans to be completed and adopted by March 2021.

More specific feasibility/demonstration studies/projects on specific areas and sectors would also be very powerful to demonstrate feasibility and added value of the approach: the case study offers a context (drivers, pool of uses, trends, actors, expertise, etc.) and specific platforms that could promptly and effectively respond to this need.

The support from EU, national and local administration to stimulate a proactive attitude from all stakeholders involved is a key enabling factor.

The establishment of the new National Technological Cluster on Blue Growth fostering public-private partnerships on research and innovation can stimulate this MU development that is already included in its provisional Action Plan.

6.2.3 KEQs for Focus-Area-3 "Improving environmental compatibility"

1) *What are / would be the environmental added values (= positive environmental impacts) of developing / widening / strengthening MU in the case study area?*

MUs related with Oil and Gas decommissioning can promote offshore wind farm installation in the area, therefore contributing to the achievement of EU and national objectives on renewable energy.

When decommissioned platforms are converted into artificial reefs (rigs-to-reefs), the environmental added value is the protection of biodiversity, by creating habitats for various species, protecting and supporting nursery areas for some species, creating new and integrating already existing protected areas.

Such reefs, as reconverted platforms, can be used for environmental education and environmental research in connection with touristic activities.

2) *Which tools (conceptual, operational) are used or should be further developed and used to better estimate environmental impacts and benefits of MU?*

Various effects have to be taken into consideration when evaluating the environmental benefits of O&G decommissioning; the biodiversity enhancement generated from the rigs-to-reefs option, the potential negative environmental impacts due the new artificial structures and their evolution in time. Moreover, specific evaluations should be conducted on the uses introduced (e.g. wind farms, fish farms) during their design phase and environmental impact evaluation.

Tools for environmental monitoring (e.g. evaluation of good environmental status) can be applied, as well as stakeholder interviews (in order to discuss on any possible effects) which can be seen as a useful approach for the estimation of the impacts.

3) Is saving free sea space for nature conservation a driver for MU the case study area? Are there evidences about the present and future benefits of reserving free sea space? What are they?

For the MU combinations related to decommissioned oil and gas platforms, saving free space is not the main concern, as oil and gas platforms are already present in a well spatially defined area and the uses in combination with them would be implemented in these areas.

4) What practical actions would you undertake to link MU development / widening / strengthening to improved environmental compatibility of maritime activities?

The practical actions to improve environmental compatibility mainly concern the social awareness of the environmental topic. Thus environmental education activities for both operators and tourists/visitors can be carried out.

5) Are there win-win solutions triggering both socio-economic development and environmental protection already available for the case study area that MU should take up? What are they?

The Site of Community Importance SIC IT4070026 "Relitto della piattaforma Paguro" (Paguro gas platform wreck), as already mentioned in this report. It is an existing example of win-win solution triggering both socio-economic development and environmental protection. It is currently an artificial reef acting as refuge for fish, thus protecting and enhancing the biodiversity. Considering the socio-economic aspects, this SCI represents the destination of intense diving activity, thus enhancing the touristic aspect, increasing the employment in the tourism sector and the income due to these activities.

The other potential MU combinations can absolutely contribute to the new job profiles, new income and environmental benefits.

6) Is the environmentally friendly knowledge / technology for MU development/strengthening in the case study area available? Which is the level of readiness of available solutions? Are there still research needs on blue/green technologies for MU?

Technologies for MU development are readily available. As already illustrated, MU can also promote research on innovation solutions in different sectors (e.g. energy, aquaculture, biotechnologies, environmental monitoring).

7) Would be possible to promote MU through SEA/EIA procedures? What modifications would you suggest at your national/local level to promote MU through SEA/EIA procedures?

We don't see how SEA/EIA procedures can promote MU, except for the need to have thorough but fast procedures during the design and permitting phases.

7 STAKEHOLDER ENGAGEMENT AND LOCAL STAKEHOLDER PROFILES

This chapter includes three sub-chapters:

- The first two provide a detailed description of activities carried out to engage stakeholders, respectively for the analysis related to MU combinations of the coastal and maritime tourism driver and to the decommissioning of oil and gas platforms.
- The third sub-chapter illustrates local stakeholder profiles, as emerged from the desk analysis and stakeholders interviews. Stakeholder profiles are elaborated on according to the methodology developed for MUSES task 4.1, and therefore referred to those sectors which are involved in the MU combinations analysed in the Northern Adriatic case study, specifically: tourism, fishery, aquaculture, environmental protection, underwater cultural heritage, oil and gas, and renewable energies.

7.1 Stakeholder engagement for Tourism driven MU combinations

In order to collect proper information on the current state and potential development of MU in the case study area, several stakeholders were engaged, according to their competence and expertise in each sector potentially interested in MU (tourism, fisheries, aquaculture, environmental protection, UCH). The engaged stakeholders come from public institutions, research institutes, the private sector, and NGOs, and are representative of both the Veneto Region and Emilia Romagna Region.

17 interviews (Table 7-1) and one final workshop were organised to address the objectives of this work. The aim of the interviews was firstly to get a general MU overview in the case-study area – both in terms of experiences and opportunities - and then to collect specific information to create the DABI catalogue. Information on past and on-going initiatives of multi-use in the case-study area, relevant technical reports, or suggestions about significant legislative acts were hence collected during the first phase of each interview. Then, information on DABI factors was gathered selecting one specific combination of multi-use according to the specific competence of each interviewed stakeholder. Suggestions about the main relevant actors for the selected combination were finally asked. This work led to basically confirm the strength of the four sectors which could positively combine with tourism in the case-study area and to a first, partially scored, DABI catalogue for the four selected combinations.

Table 7-1 Institutions interviewed in the first phase of stakeholder engagement of the Northern Adriatic case study

Institutions interviewed	Typology
Regional Agency for Environmental Protection – Emilia Romagna Region – ARPAE	Public institution
Association of Mediterranean aquaculture operators	Private sector
International Centre on Studies on the Tourism Economy – Ciset	Research institution
Consultant in archaeology	Private sector



Institutions interviewed	Typology
Emilia Romagna Region - Geological Seismic and Soil Service	Public institution
Emilia Romagna Region - Water, air and physical agents protection Service	Public institution
Emilia Romagna Region - Hunting and fisheries Service	Public institution
National Institute for environmental protection and research (ISPRA)	Public institution/Research institution
Museum of Natural History of Venice	Public institution/Research institution
University Ca' Foscari of Venice - Department of Environmental sciences, informatics and statistics (2 interviews)	Research institution
VeGAL - GAL Venezia Orientale	Composite (FLAG), including both public and private partners
Veneto Region – Soil protection department, plans and programmes for water quality	Public institution
Veneto Region – Direction for environmental assessment - environmental authority	Public institution
Veneto Region - Hunting and fishing project unit (2 interviews)	Public institution
Veneto Region - Regional strategy on biodiversity and parks project unit	Public institution

The workshop, held on 18th October 2017 in Venice, constituted the final step of the stakeholder engagement task (agenda included in Appendix 2), and it was a very important occasion to actively discuss all the selected combinations, both in separate working tables, during plenary sessions. The workshop was attended by 24 stakeholders acting with different competences and responsibilities in the whole case-study area. Some of which had been previously contacted for an interview.

A first general presentation of the MUSES project and associated objectives was performed, followed by a more specific presentation about the meaning and the potential of the four combinations identified, according to the main findings above described to interviewees via a wide desk research. A wide space for discussion (discussion session 1) was then left in order to collect the general opinion of stakeholders about the proposed MU combinations and indications of other tourism-related combinations not yet considered. The discussion highlighted the main existing problems hindering multi-use development, as well as the possible advantages of multi-use in the case study area.

A second discussion session split participants in four working tables (one table for each MU combination), where specific information on DABI factors were collected. For each working table, a number of 6-7 stakeholders participated in the discussion. Four final DABI catalogues were hence produced and scored individually by all participants. The last session of the workshop (discussion session 3) aimed to gather stakeholder opinion about ideas and proposals to widen and strengthen



the MU combinations and to overcome existing obstacles to its development. The results can be considered as the first useful elements toward the Action Plan to be performed within MUSES WP4.

Some materials were specifically prepared to underpin workshop discussion (Appendix 2, including:

- 4 posters, one for each tourist-related MU combination, were used during the first discussion session to collect stakeholder suggestions and opinions on proposed MUs;
- 4 posters, one for each MU combination, containing pre-compiled DABI catalogues (based on desk research and on interviews findings) were used during the discussion within working tables (discussion tables 2). The pre-compiled DABI catalogues were amended and finalised during the workshop. Finalised catalogues were then scored by participants;
- 1 poster was used in the final discussion session to collect ideas and concrete proposals to widen and strengthen MU in the case-study area.

A synthetic report (in Italian language) containing the main items discussed during the workshop both in plenary sessions and in working tables was prepared and sent to all participants.

Institutions that attended the workshop of the Northern Adriatic case study are listed in Table 7-2.

Table 7-2 Institutions participating to the workshop of the Northern Adriatic case studies. Note: more than one representatives participated to the workshop for some institutions

Institution	Typology
Argo Venezia – Subaqueous research group	Private sector
Association of Mediterranean aquaculture operators	Private sector
Chamber of commerce of Venice Rovigo and lagoon Delta	Public institution, representing private sectors
International Centre on Studies on the Tourism Economy - Ciset	Research institution
Consortium for small scale fisheries in Veneto (COVEPA)	Private sector
Emilia Romagna Region - Geological seismic and soil service	Public institution
Emilia Romagna Region - Water, air and physical agents protection Service	Public institution
Emilia Romagna Region - Hunting and fisheries service	Public institution
GAL Delta 2000 (FLAG Emilia Romagna)	Composite (FLAG), including both public and private partners
Isamar diving centre	Private sector
University of Architecture of Venice (IUAV)	Research institution
Museum of Natural History of Venice	Public institution/Research institution



Institution	Typology
SITMAR-SUB s.c. (Diving Club)	Private sector
University of Udine - Department of Humanistic Studies and Cultural Heritage	Research institution
University of Venice - Department of Environmental Sciences, Informatics and Statistics	Research institution
VeGAL - GAL Venezia Orientale	Composite (FLAG), including both public and private partners
Veneto Region - Genio civile di Rovigo	Public institution
Veneto Region- Direction for environmental assessment - environmental authority	Public institution

7.2 Stakeholder engagement for MU combinations related oil and gas decommissioning

Stakeholder engagement for the analysis of potential MU combinations related to the decommissioning of oil and gas offshore platforms has been carried out on the basis of the following main activities:

- Capitalization of stakeholder related activities performed within MUSES WP2, including desk research for identification of stakeholders and interviews to relevant national actors involved in decommissioning at the Mediterranean, national and case study specific local scales.
- The role of CNR-ISMAR as scientific stakeholder in the “Forum on the future of Platforms”, promoted by the Italian Ministry for Economic Development (MISE) – Commission of Hydrocarbons and Mineral Resources, allowed to identify the main national and international stakeholders acting at the local level in order to explore opportunities and barriers for the potential re-use of the platforms. The Forum in particular allowed having a direct contact with key stakeholders (decision makers, regional authorities, research and academic institutions, oil and gas operators, NGOs etc.) currently involved in the decommissioning sector.
- Within the Forum, key stakeholders have been iteratively engaged in the identification of key factors at the case study level with specific interviews with the Ravenna Offshore Contractors Association, the Emilia Romagna Region representatives and the University of Bologna, already involved in the MERMAID project- Innovative Multi-purpose Offshore Platforms.



7.3 Stakeholder profiles

7.3.1 Tourism

The local stakeholders most relevant in the case study area are relative to beach and urban coastal tourism subsectors.

Commercial business organizations are represented by beach tourism and urban-coastal operators. Their overall attitude can be considered positive, even considering the large size of the sector and its good economic trend, most of them simply do not need MU. However, there are some specific contexts where operators are interested in developing a diverse tourism offer, and are open to create synergies with marine protected areas, UCH sites, scuba divers etc. These operators act at both the local and regional level.

Business support-consultancies are individual organizations, mainly acting at a regional level. They are represented by Regional Agencies for Tourism promotion for the Veneto and Emilia Romagna regions (they are present in all regions). Locally, FLAGs can work as support-consultancies for initiatives such as pesca-tourism. They are assumed to have a positive attitude towards the MUs, as MU can provide several environmental (eco-tourism) and socio-economic benefits (additional incomes and new job profiles). They have medium power, since they can provide knowledge about MU added values and support the development of MU initiatives. They have the power to influence indirectly through proposing MU projects. Research organizations are individual organizations acting at all levels. In the study area Ciset, a national research and consulting centre (participated by Ca' Foscari University of Venice and the Veneto Region) is established in Venice. Its research is focused on the economy of tourism. Also, the University of Bologna is active with educational programs on the economy of tourism, with its university course given in Rimini. These research and consulting centres on tourism are considered to have a positive attitude towards MU combinations. Research institutions are indeed interested in exploring innovative business models, including those introduced by MU. They hold knowledge of feasibility of initiatives and can support with cost-benefit and other analysis. They have low power in that their reach is limited to providing knowledge about MU added values and supporting the development of MU initiatives.

Regulators are regional institutions coordinated by the central public administration. They are assumed to have a positive attitude towards MU combinations with tourism, demonstrated by the existence of laws at regional levels (as far as Veneto and Emilia Romagna to regulate the MU combination of pesca-tourism (this was documented, although a larger survey was not possible due to time constraints). They have strong power, since they implement regulations and therefore can provide feedback to improve integrated policy.

The Ministry of cultural heritage and tourism, through the General Directorate for Tourism, coordinates as the policy maker of the sector. It promotes national tourism policies, interactions with the regional authorities, development of projects in the tourism sector, interactions with category associations and enterprises. In addition, Superintendences are the bodies of the ministry that work at the local level in order to identify, protect and control cultural heritage sites. The "Standing Committee of tourism promotion" recently instituted is also included among policy makers. It is a coordinating body composed of several public and private members including the representatives of the institutions, of central and local authorities and the most representative associations. Policy makers can act as driving forces by providing laws that create a framework for some MU activities. They have a strong power, since they make regulations.



Funding bodies act at the EU level, cross-border level, sea basin level, and sub-sea basin level. Diversification of tourism offerings and sustainable tourism is key for Interreg programs relevant for the study area such as Italy-Croatia, Adrion, Interreg Med. They act positively towards this MU, providing financial support for its development. They have strong power to directly policies directly, funding the development of this MU at the EU level.

7.3.2 Fishery and Aquaculture

The Ministry of Agriculture, Food and Forestry Policies (MiPAAF), through the General Directorate for Marine Fisheries and Aquaculture (DGPEMAC), is the public institution responsible for fisheries and aquaculture at a national level, also coordinating actions and activities with other ministries, regions and other stakeholders. Other public Institutions, acting at local (coastal municipalities) and sub-local or regional levels (Emilia Romagna Region, Veneto Region) mainly work as policy makers and regulators, through their specific departments which are competent in the fishing sector. Regions are responsible for administrative and bureaucratic issues such as the licensing system for granting state concessions, renewals, extensions and other authorization requirements. Both regions issued regional legislative acts specifically regulating the activities of pesca-tourism and aquaculture-related tourism. Their overall attitude toward MU is positive with a possible significant role also in helping the removal of the existing barriers related to legislative and administrative issues.

The three coastal FLAGs existing in the case study area (VEGAC, Chioggia e Delta del Po, Delta2000, see section 3.1.2) which bring together a wide range of local actors (fishermen, marine aquaculture workers, municipalities, scientists, institutions, individuals) can play a role in MU development as cross-sectoral clusters acting also as business- support consultancies. Their positive attitude towards MU is confirmed by projects already carried out within the 2007-2013 funding programme and by their strategic documents which encourage actions and projects which address the diversification of fisheries, especially involving tourism. Similarly, the role of the three currently existing FLAGs is relevant also for the combination of tourism and aquaculture. All the strategies developed by the three groups highlight the concept of diversification, including not only fisheries but also aquaculture. Providing support to diversification projects in the fisheries sector, FLAGs can directly influence MU development in the case study area, managing a quota of European funds.

Fishermen and aquaculture enterprises, partially clustered in cooperatives, consortiums and associations and operating along the Adriatic coast of Veneto and Emilia Romagna, are important commercial business actors in promoting the combination between fisheries and tourism or between aquaculture and tourism. Their general attitude is positive, mainly because pesca-tourism can offer an integrative source of income, with an overall probable low power in influencing decisions about MU. Recreational fishing operators as well the local section of the Italian Federation of Sport fishing, have a positive attitude toward novel typologies of MU combination, especially with the aquaculture sector. Hence, they can indirectly promote such a combination.

Research organizations (including universities and research institutions) have a positive, or in some cases, neutral attitude to MU opportunity. Providing knowledge to properly address MU potential, they have the power to influence decisions indirectly on MU development. They mainly act at a local scale but can participate in important national or international projects or networks useful to capitalise experiences and good practices from different areas.



7.3.3 Environmental protection

The Ministry of the Environment and Protection of Land and Sea (MATTM) is responsible for the protection of the marine biodiversity at a national level, supervising and coordinating the regional authorities (Emilia Romagna and Veneto Regions for the case study area). Regional authorities have an overall positive attitude towards MU, for example, establishing measures to promote the valorisation of biological protection zones, also encouraging touristic activities respectful of the natural environment. Being policy makers/regulators, they have the power to control and make decision, with a strong power at the regional level.

Municipalities generally have a positive attitude towards MU and sometimes are directly involved in the definition of special protected areas (e.g. “Oasi Marina città di Caorle”) or agreements with NGOs for the management of sites.

Research institutes and universities can help remove barriers (concern for environmental impact of tourism) providing knowledge to properly address MU. They can indirectly influence the process of MU development.

Civil associations and NGOs (e.g. “Tegnue di Chioggia”, “Gruppo Sommozzatori Caorle”), collaborating to manage biological protection areas have a positive attitude towards the combination between environmental protection and tourism, considering their effective collaboration with diving associations and the development of scientific, didactic, sports and recreational activities in protected areas.

The Institute for the Protection and Environmental Research (ISPRA) acts both as a research institution and a regulator at a national level, as they implement the policy on MPAs and Natura 2000 sites.

Diving clubs are also positively oriented toward MU, some of them are already involved in organizing guided tours and part of site maintenance and control. They use to collaborate with NGOs in charge of site management. Through their proactive stance, they are able to influence the process of MU development but they have not the power to control and make decisions.

Tour operators, hotels and camping sites all have quite a positive attitude toward MU and some of them already collaborate with diving clubs to include visits at MPAs in their touristic offer.

7.3.4 Underwater Cultural Heritage

The Ministry of Cultural Heritage and Tourism through its peripheral organization (Superintendence for Archaeology, Arts and Landscape) is in charge of the protection of UCH. What emerged so far by the present case study is a general scarce attitude to MU, due to a lack of vision and programming at the national level, a weak local organization dedicated to the Sea (Superintendence for the Sea was established only for the Sicilian Region), as well as to a sort of resistance motivated by a very precautionary approach for the sake of the protection of sites. Being a policy maker and regulator, the Ministry has the power to control and make decisions, with power at both the national and local levels (specifically through its peripheral organizations).

Research institutions demonstrated a moderate interest in developing MU. Besides the intrinsic historical and archaeological research, they may be interested also in developing new technologies to perform remote control of sites. At present they have no power to control and make decision at the local level.



Local NGOs (as for example “Archeoclub d’Italia”, “Associazione Paguro”, many amateurs and divers clubs) are the most proactive stakeholders, motivated both by their specific interest and by the urgent need of regulating access to sites. In general, they have no power to control and make decisions at local level. Their activities are regulated through specific agreements with local institutions, so their choices are limited to those explicitly foreseen in the agreements. The management and roles of UCH sites which are also MPAs, like e.g. the CIS of “Relitto della Piattaforma Paguro”, is described in sufficient detail also in the Site Management Plans.

Tour operators, hotels and camping sites all have quite a positive attitude toward MU and some of them already collaborate with diving clubs to include visits to MPAs and archaeological sites in their touristic offer.

Other, presently potential stakeholders are represented by the Naval history National Institute, the National Archives, managers of Museums of the Sea: Naval Museum in Venice, National Museum of Sea’s Archaeology in Caorle – recently inaugurated, 2014 – Archaeological Museum of Quarto d’Altino (Venice), among others (a project to realize an Archaeological Museum of the Lagoon of Venice is ongoing).

7.3.5 Oil and Gas

The Emilia Romagna region sub-area of the case study represents the biggest Oil and Gas engineering district in Italy and the key actors acting here at a local scale are the ones involved at the national and international level.

The key stakeholders identified and relevant in the case study area are, as already presented in the introduction, mainly decision makers, regional authorities, research and academic institutions, oil and gas operators, NGOs etc. They are currently involved in the decommissioning sector and participate on the “Forum on the future of Platforms”, promoted by the Italian Ministry for Economic Development (MISE) to support the analysis of options and solutions for future decommissioning platforms.

The newly constituted National Technological Cluster on Blue Growth is also a key actor at the local level, aiming to generate new opportunities for the technological development and innovation of the national marine and maritime industrial system by integrating public and private research. The national research organization, acting at the local, national and international scales, identified are: the Italian National Institute for New Technologies, Energy and Sustainable Economic Development and the National Research Council, Universities (e.g. Bologna University, etc.) and RSE (public-owned company who supports the Italian Ministry for Economic Development on O&G and decommissioning). The main regulators and policy makers relevant for the case study area are the Regions (Veneto and Emilia Romagna regions in the specific case study), which have to express their consensus on legislation originating from ministries, and the ministries themselves. The Ministry for Economic Development authorizes and controls decommissioning operations, while the competent authorities for the environmental impact assessment of offshore platforms and terminals, including decommissioning where applicable, are the Ministry of Environment, Land and Sea (responsible for the procedure and the final result), the Ministry of Cultural Heritage and Activities and Tourism and the Regions where the activity is taking place. In addition, the Ministry for Infrastructure and Transports is responsible through the Coast Guard for safety in operations. There are also some classification societies active in Italy and in the case study area for the O&G sector (e.g. RINA spa, DNV GL). Concerning funding bodies relevant in the case study area, decommissioning and potential



re-use / multi-use of decommissioned platforms is mainly based on private funds (O&G operators and other investors). The Ministry for University and Research is also providing funds supporting research and innovation in this field and could specifically promote MU-related projects. Finally, the main local intermediaries identified are: O&G operators, associated in Assomineraria, and ROCA, which is an association of offshore contractors based in Ravenna.

These actors are in general considered to positively act towards the development of these MUs, even if conditioned by legislative/administrative and economic barriers. They are interested in the MU development research areas of: new technologies, siting of new areas suitable for the development of the MU, Multi-use Platforms. They also see an opportunity to creatively differentiate their businesses, capitalising on their well-established expertise in O&G technologies. The attitude of regulators and policy makers in particular is considered to be both positive (open to promote feasibility studies that explore different and non-traditional options) and negative (preferring already consolidated solutions and also slowed down by the absence of a clear/smart regulation for licencing, implementation and monitoring). Finally, funding bodies are assumed to act positively towards this MU, providing financial support for its development. Their attitude is very case-specific, depending on the characteristics (e.g. location, type of re-use/multi-use, local acceptability) of the re-use/multi-use and its economic sustainability/interest.

The commercial business operators involved are considered to have strong power, directly influencing policy decisions due to their overall socio-economic relevance. They are very influential at the regional / local level since they control investments to the territories. Engineering companies, acting as business support-consultancies, are considered to have medium power, mostly at a local level, with the capacity to trigger reactions and influence decisions at a national level. They can support and influence policy and legislation (e.g. consultation phases and preparation of technical guidelines), but their power is mostly related to the influence they have on local communities and politicians, where they represent an important economic sector to safeguard. Research institutes are considered to have medium power, as they can provide the knowledge on options, potentials and technologies, but cannot directly influence policy and investments on decommissioning and MU. They support operators in developing feasibility studies, prototypes/pilot sites and technologies; promoting the sector and MU in particular as part of a wider strategy for R&I for blue growth; advisor of ministries and licensing authorities; and dialogue with local communities and decision-makers. Regulators and policy makers have strong power since they can implement regulations and make decisions. Funding bodies are considered to have strong power too, since they can fund the development of this MU related to decommissioning. Thus they have the power to directly influence policies and fund/co-fund projects and initiatives.

7.3.6 Renewable Energies

There are currently no offshore renewable energies installations (wind, wave, solar farms etc.) nor potential plans for their implementation in the case study area.

The key stakeholders identified are the ones identified at the national scale. They are mainly individual organizations, operating and lobbying through associations of engineering companies and professionals, but also individual research organizations, regulators, policy makers and funding bodies. The geographical scale of action is at the national and international scales.

Commercial business organizations are societies involved in the development of renewable energy technologies, installations, and productions for the specific MUs (offshore wind turbines,



photovoltaic panels, waves). Business support-consultancies are societies providing consulting support: e.g. RSE, doing research on wind resource assessment impact on the environment and the territory, technological innovations, integration issues in the electrical system, and also on wave energy. Among research organization, the newly constituted National Technological Cluster on Blue Growth acts at local, national and international levels to generate new opportunities for the technological development and innovation of the national marine and maritime industrial system by integrating public and private research. The Cluster has a specific technological trajectory named “Renewable energies from the sea”. Concerning regulators, and in particular in the environmental impact assessment of offshore wind farms projects, the Veneto and Emilia Romagna Regions are involved in the process by providing authorizations and approvals. The Ministry of the Economic Development (through the Electricity System Research Fund) is the national body in charge for funding. The Ministry for University and Research is also providing funds supporting research and innovation in this field and could specifically promote MU-related projects in the specific case study area.

The attitude of commercial businesses and business support-consultancies is not defined since the MUs with renewable energies are not explored yet in Italy and in the specific study area. Regardless, their attitude could be positive, provided that it can favour the permitting process and promote acceptance by local administrations and local communities, and therefore valorise their consultancy. Research organizations act as a positive driving force, as they can be interested in the MU development research areas of new technologies, siting of new areas suitable for the development of the MU, and multi-use platforms. Regulators are generally considered to have a negative attitude, as they act to impose barriers by blocking permissions. Policy makers are assumed to have a neutral attitude, depending on the possibility that MU makes new plants more sustainable and interesting from a socio-economic point of view. Funding bodies act positively, providing financial support for the development of this MU. Associations can positively act as a driving force by lobbying at the local, national and EU levels.

Commercial business organizations are considered to have medium power. As important economic operators in the energy sector, they can influence administrations in promoting offshore wind farms different ways (legislation, permitting, incentives, etc.). Business support-consultancies are considered to have low power. Whenever a prototype is built, they can have indeed more power to influence the policy directly. They can somehow influence administrations by promoting offshore wind farms in different ways (legislation, permitting, incentives, etc.). They can have an important role also in finding sound and innovative solutions and developing good projects. Research organizations have medium power, as they can provide the knowledge on the resource and technologies but cannot directly influence policy and investments in MU. They can support operators in developing prototypes and technologies by promoting the sector and MU in particular as part of a wider strategy for R&I for blue growth, and as an advisor of ministers and licensing authorities. Regulators and policy makers have strong power controlling and making decisions. Funding bodies are considered to have strong power to influence policies directly, since they are the funding bodies, and fund/co-fund projects and initiatives. Wind Energy Associations and Renewable energy associations are considered to have medium power as they act at different levels and have different type of stakeholder profiles. They can have a stronger power concerning their influence on the issue of permissions.



8 CONCLUSIONS AND RECOMMENDATION FROM THE CASE STUDY TO THE ACTION PLAN

The case study analysed the role of two sectors as major drivers for the development of MU opportunities in the Northern Adriatic: coastal and maritime tourism and decommissioning of O&G offshore platforms. The present chapter provides conclusions and recommendations for both drivers, building on desk research and stakeholder engagement.

8.1 Tourism driven MU combinations

Coastal tourism in Italy and along coastal areas of Veneto and Emilia Romagna is a very attractive business, involving a wide number of people, mainly attracted by the Northern Adriatic sandy coast, equipped with beach tourism facilities. The presence of art cities and areas of utmost importance from an environmental, historical and cultural point of view act as a further attractor of tourists along the coast. Indeed, a new form of tourism linked to the sea and its coasts have recently emerged and is getting growing interest: this can be denoted as “experience-based tourism” for which interest in and the experience of marine nature, maritime culture and local tradition constitute the central node of the touristic offer and experience.

Specifically considering this connotation, the Northern Adriatic case study of the MUSES project investigated the potential role of coastal and maritime tourism as a driver for MU development involving other sectors that could highly benefit from tourism-related multi-use. The MU overview performed through the desk analysis and stakeholder engagement led to the exploration of four tourism driven combinations: tourism and fisheries, tourism and aquaculture, tourism and environmental protection, tourism and underwater cultural heritage (UCH).

Pesca-tourism, meaning the boarding of people on fishing vessels with recreational and educational scopes, is the main expression of the combination between tourism and fisheries in the case-study area. The Veneto and Emilia Romagna Regions hosts several examples of scattered initiatives promoted by single fishery enterprises operating along the coast not only at sea but also in the extended transitional zones which characterize the study area (lagoons and river delta). Currently, this MU combination involves small scale fisheries which can be considered also the most promising sector for the further evolution of this MU combination in the future. On the contrary, trawling fisheries have the lowest potential, mainly due to security issues.

The MU combination between tourism and aquaculture can be potentially implemented in a similar way, by hosting people on aquaculture vessels to visit farming plants and learn about aquaculture techniques, culture and tradition, with educative and recreational scopes. However, it could also be developed through different experiences, involving sport fishermen or diving associations. Aquaculture plants function as attractive areas for several marine fish, mainly predators of farmed mussels, which can be caught by sport fishermen or observed through diving and snorkelling experiences, given the needed safety conditions are ensured.

Both combinations (tourism and fisheries and tourism and aquaculture) can highly benefit from the support of European Fisheries Funds (specifically EMFF) aiming to underpin the implementation of the Common Fisheries Policy, which encourages, especially through coastal action groups (FLAGs), initiatives for diversification of the fisheries and aquaculture economic sectors. Specific legislation also exists at national and regional levels for both combinations, effectively allowing implementation of pesca-tourism and aquaculture related tourism in the case study area. A high interest of tourist



operators was also reported by stakeholders involved in the case study analysis, especially considering the increasing demand for “experience-based tourism” and the general increased attractiveness of coastal areas offering pesca-tourism services.

However, several barriers (firstly related to restrictive regulations and bureaucratic procedures) still hamper the full implementation of such MUs. Hence, though successful cases exist and several added values have been identified against few impacts, a relatively small number of vessels are currently operating in the case-study area, with an overall low level of activity. What is mainly still lacking to fully boost combinations between tourism and fisheries and between tourism and aquaculture is a more structured organisation of fishermen or aquaculture enterprises and operators in clusters providing major investment and management capacity. Improved expertise and skills could also help to more effectively match the demand of the tourism sector, which indeed is a requirement common to all of the four discussed MU combinations. Existing training opportunities should be strengthened and better targeted to required technical, economic and communication skills.

The current status of development of the other two explored combinations (tourism and environmental protection and tourism and UCH), which are mainly diving related, appears quite limited and scattered in localized initiatives (e.g. diving visits to Paguro collapsed offshore platforms and protected tegnuè in front of Chioggia and Carole, representing the most remarkable experiences in the area), especially when compared to the potential targeted end users. What is mainly missing is an approach fully enabling combined protection and valorisation of marine protected areas and UCH sites through regulated touristic activities. The analysis of both combinations showed an equal balance between drivers and barriers giving sufficient explanations for the current stagnation of the sector. On the other hand, positive effects (added values) have been identified for both MU combinations, as diversification of the tourist offer, job creation, raising of social awareness on protection/preservation objectives and an increase of the overall attractiveness of the area able to offer sustainable tourism experiences (e.g. a sort of eco-tourism brand of the area). Several expected benefits are common for the two MU combinations; stakeholder engaged at the workshop highlighted that these could be further improved by linking the three sectors together (tourism, environmental protection and UCH).

Tourist engagement with protected areas and underwater cultural heritage sites is somehow limited by physical factors such as seasonality and scarce water transparency. However, it was stressed that people interested in “experience-based tourism” could really enjoy and profit from the particular geographic context the whole area offers, with positive effects also for those specifically interested in pure marine touristic experiences (as diving on naturalistic important areas and UCH sites of mainly wrecks).

The specific characteristics of the geographic context (e.g. strong land-sea interactions, extended coastline with sandy beaches, land-sea transition natural systems as coastal lagoons, presence of art and historic cities, maritime culture and tradition, an integrated mix of natural and historical/cultural attractions, etc.) was universally recognized as the best tourist asset of the case study area. Thus, the need to develop an integrated offer able to keep together different items, linking natural, environmental and historical resources as well as tradition and culture should be one of the main objectives to pursue with the aim of developing real tourist-related MU opportunities in the North Adriatic. Single offers of MU experiences (e.g., pesca-tourism or naturalistic visits to protected areas) might not have the strength to effectively attract the touristic demand, undermining efforts and



discouraging new initiatives. On the contrary, the creation of inter-sectoral networks able to propose special tourist itineraries linking different combinations across the study area can help increase the overall attractiveness of the coastal area, thereby better matching the touristic demand.

Such an objective will require the involvement of all actors from the national to local levels, implying an inter-sectoral cooperation among different institutions, and among public institutions and economic operators to effectively manage new experiences of MU. Stakeholders engaged in the case study recommended the creation of discussion platforms to develop a common understating of MU opportunities; platforms could be activated at different levels, from the vision/strategic level to the level dealing with the design of specific actions to be concretely implemented. Moreover, from the DABI analysis of all four MU combinations related with tourism, the most important barriers that emerged are those of a legal or administrative nature. Fragmentation of competences among different institutions or among different divisions/departments of the same institution, and lack of cooperation, still appear as important obstacles to policy support to MU development. Creation of ad hoc “Blue growth” offices or coordination mechanisms at a regional level could be highly beneficial from this perspective.

The importance of land – sea interactions in the promotion of tourism-related MU combinations is another element which clearly emerged from the analysis. Connections could be established between pesca-tourism or “acquiturismo” at sea and itchy-tourism on land, also favouring the commercialisation of local fish products (0 nautical miles products). Involvement of fishermen as guides to visit museums of the sea and navigation are other examples of this connection. MU combinations related to environmental protection and UCH can also benefit by a connection between sea and land, for example considering the development of itineraries involving activities at sea (diving) and activities on land (e.g. visit to museums, environmental research centres, centres dealing with marine species protection and recovery). Special emphasis was given for the UCH sector to possible itineraries linking diving activities at sea with documented ancient navigation routes, also considering the presence of old ports now located inland.

More generally, the particular location and characteristics of the case study area allows for a number of tourist itineraries crossing the land-sea border, including the most important Italian coastal wetlands (Venice and Caorle lagoons, Po Delta, etc.) as well as touching world famous art cities like Venice but also smaller villages with historical maritime tradition (e.g. Caorle, Chioggia, Cesenatico, Cervia, just to mention some of them). This would enable the combination of pure marine touristic experiences (diving on naturalistic important areas and UCH sites, pesca-tourism and acquiturismo) with a wider “experienced-based tourist” offer along the coast, enhancing the attractiveness of the whole area for this specific tourist segment.

The workshop organized in October (see chapter 7) concluded with a final section aimed at gathering stakeholder opinion about concrete proposals to widen and strengthen the discussed MU combinations and to overcome existing obstacles to its development. Some cross-cutting elements have been integrated in the conclusions described above, while other specific issues are summarized in below table (Table 8-1



Table 8-1 Main suggestions gathered during the final session of the workshop

<p>All combinations with Tourism</p> <ul style="list-style-type: none"> • Creation of joint working tables between institutions and commercial sectors to complete the analysis of MU opportunities in the area and identify the resources to be valorised through MU • Creation and/or improvement of regional sectorial policies focused on removing barriers to MU and targeting cross-sector needs and opportunities • Creation of working tables between commercial sectors to develop project ideas to pilot / implement MU through already available opportunities • Identification of the best type of boats for developing MU in the Northern Adriatic Sea, considering the meteorological and marine conditions in the area and accomplishing requirements from commercial sectors (fishery, aquaculture) and the need to host tourists on board 	
<p>Tourism & Fisheries and Tourism & Aquaculture</p> <ul style="list-style-type: none"> • Creations of clusters of business operators to develop and implement MU, also including networks with local operators in the field of food supply (e.g. restaurants) • Creation of joint working tables between institutions and commercial sectors to discuss present barriers (mainly due to bureaucratic and administrative procedures) to MU and identify ways to remove them • Creation of educational opportunities for business operators in fishing and aquaculture to train them for MU • Identification of professionals specifically skilled to support fishery/aquaculture operators in working with tourists (e.g. interpreters experienced in this sector) • Creation of targeted opportunities for developing MU in the framework of regional European funds, also including opportunities for acquiring suitable boats 	
<p>Tourism & Fisheries</p> <ul style="list-style-type: none"> • Unification of health care legislation between pesca-tourism and ichty-tourism at least at the regional scale 	<p>Tourism & Aquaculture</p> <ul style="list-style-type: none"> • Recognition of aqui-tourism as a business activity in regional legislation
<p>Tourism & Environmental Protection</p> <ul style="list-style-type: none"> • Promote a change of attitude towards strategic and legislative instruments for marine ecosystems and biodiversity protection in order to exploit their potential as sustainable development opportunities • Creation of a network of protected areas for coordinated management in relation to MU development • Strengthen cooperation and synergies between cultural centres (e.g. museums) and MPAs in relation with MU development 	<p>Tourism & UCH</p> <ul style="list-style-type: none"> • Identification of actions needed to minimize interferences between maritime activities (including MU) and UCH • Preparation of a database of UCH for the Northern Adriatic sea, identifying the sites suitable for regulated touristic use and the sites where access is to be prohibited • Realization of a Web Platform on UCH for the Northern Adriatic Sea, serving as a knowledge sharing point and dialogue platform for all the operators in this sector
<p>Tourism & Cultural and Environmental values of the coastal-marine system of the Northern Adriatic Sea</p> <ul style="list-style-type: none"> • Promotion of an integrated touristic offer of the Northern Adriatic area, based on MU, including the interconnected system of rivers-lagoons-coastal waters, and targeting delocalization and reduction of seasonality in the touristic experience • Use of MU as an opportunity to promote the culture of the sea, including seamanship tradition, expertise, professions, historical marine routes etc. 	



8.2 MU combinations related to oil and gas decommissioning

Oil and gas activity (O&G) is an active and intense activity in Italy and especially in the Emilia-Romagna region, which contributes to the extraction of 48% of the natural gas at a national level.

O&G in the case study area is entirely made by methane gas extraction in the marine area of the Emilia-Romagna Region where there are 68 offshore platforms, most of them falling within 12 nautical miles. In the marine area of Veneto Region, only few O&G exploitation areas are defined but there are currently no platforms active for extraction.

The production activity has decreased in the last twenty years but, in the future, the maintenance of current production (around 53 kboed) is foreseen, with a possible expansion up to a maximum scenario of 120 kboed, together with around 2 billion euros in investments on existing plants.

In parallel, a dismissing plan by 2021-2022 is under way, with 8 platforms (within 12 nautical miles) planned to be decommissioned in the case study area.

This condition triggers the need for actions by decision-makers and operators to identify potential alternative solutions for the re-use of platforms, compared to just the simple removal of the platform. Economic drivers mainly come from O&G companies looking for cost effective solutions to reuse the platforms.

Oil and gas platforms can indeed be reused for different activities, such as aquaculture in combination with tourism activities: fishing, diving, gastronomic experiences, environmental education. In addition, decommissioned platforms can be used for supporting renewable energy devices: wave energy devices, wind energy propellers, solar panels.

The topic of reuse is currently under discussion through a permanent “Forum on the future of Platforms”, promoted by MISE together with the University of Bologna, with the participation of: national authorities (e.g. Ministry of Economic Development, Ministry for Environment, Land and Sea), regional and local authorities (e.g. Emilia Romagna-Region, Municipality of Ravenna), port authorities, competent authorities on navigation safety, O&G companies, operators on installation, maintenance and decommissioning activities, engineering companies, universities and research institutions, environmental agencies, environmental NGOs, and trade unions.

Various legal, administrative and procedural instruments are still missing or lacking clear indications, on how to deal with this issue. For this purposes, the Italian Ministry of Economic Development together with the Ministry for Environment, Land and Sea is preparing, according to Decree 104/2017, proposed a set of guidelines for oil and gas platform decommissioning and reuse, which was recently presented and discussed at the “Forum on the future of Platforms”.

In this case study, we have analysed and discussed O&G decommissioning together with two main multi-use combinations, i.e. a) renewable energy, b) tourism and aquaculture, through desk analysis, participation as stakeholders in the “Forum on the future of Platforms” and engaging stakeholders with interviews.

The MU combination O&G decommissioning and renewable energy can have several technical implementations, including the re-use of a decommissioned platform in combination with a single wind turbine or as an energy storage facility surrounded by several wind energy turbines. Other implementation opportunities for this MU can refer to the extendable solar energy devices on top of the structure or the implementation of tidal energy devices combination with the platform.

The MU combination O&G decommissioning, tourism and aquaculture refers to a decommissioned O&G platform re-used to support recreational activities (e.g. diving, recreational fishing,



environmental education, marinas, gastronomic experience) and functioning as structural and or logistical support for aquaculture installations.

Both combinations are not active in the areas, but there is a high interest in possible future implementation.

Another important reuse is the rigs-to-reef option, where decommissioned offshore oil and gas rigs can be converted into artificial reefs. In the case study area there is already one existing example (SIC IT4070026 "Relitto della piattaforma Paguro" - Paguro gas platform wreck) that can act as a good reference and a source of knowledge and good practice.

The development of multiuse can have several socio-economic benefits on different spatial scales.

At a national level, the implementation of this MU can represent a best practice example on how to boost blue economy in relation to clean energy and how different uses can be aggregated into decommissioning of platforms, create new competences in the blue economy and create potentially attractive conditions for foreign investments.

At a local level, possible benefits include the development of new types of job profiles; support environmental education; boost research and innovation and jobs on blue growth marine and maritime sectors; valorise and develop infrastructures and expertise presently available in the area serving the O&G sector; create a regional attraction site of relevance for the entire Adriatic Sea basin; diversify tourism offer in the region and promote sustainable tourism development; creation of habitats for various species both for hard substrata and original habitat; protection and support for nursery areas for some species; reduce conflicts with other uses and reduce environmental pressure from the sector on coastal waters.

A common major barrier for MU options with renewable energy and tourism and aquaculture is the economic sustainability of maintenance costs of the platform's second life that in general requires the economic availability of the former operator to be maintained. Another important barrier is related to the technical characteristics of the platforms that are a key element for the definition of their potential reuse.

Other general barriers are the lack of legal and administrative frameworks for the implementation of these MUs and a lack of coordination among national authorities sharing experience and guidelines for best practices on the re-use of decommissioned O&G platforms.

Environmental impacts remain to a large extent unclear, especially concerning the cumulative effects from an integrated use of the platforms. Regardless, various effects have to be taken in consideration: the uncertainty of the environmental effects during the decommissioning phase and the implementation of an additional new use; the potential negative environmental impacts due to their evolution in time; the biodiversity enhancement generated from the rigs-to-reefs option. Tools for environmental monitoring (e.g. evaluation of good environmental status) can be applied, as well as stakeholder interviews (in order to discuss on any possible effects) which can be seen as a useful approach for the estimation of the impacts.

A joint effort of central and local administrations, operators of the sector, key local stakeholders and research institutions is very important to create the conditions for a MU development that goes beyond some episodic and small scale experiments. This effort should take the form of a master plan, not only limited to the case study area, but also integrating and projecting in time, vision, objectives, actions, roles, resources. National and international investors (e.g. in the wind energy sector) can also play an important role.

Up to now, dialogue and initiatives have been quite limited and scattered. The "Forum on the future of Platforms" represents in this sense a valuable initiative for aggregating different sectors on the



definition of potential MU opportunities in the case study area, with some concrete results expected in the short term (i.e. the guidelines under approval). The availability of a vision/strategy/action plan at the sea basin/sub-basin level would be very useful: MUSES could strongly contribute to this result. Within the national Forum, the need to develop clear business plans stating the decommissioning, maintenance and operating costs of a potential MU development was emphasized.

At this stage, rules to manage such complex scenarios are not well defined, and will hopefully be solved by the new legislation / guidelines under development.

It is important that the potential MUs analysed are considered and specified in the framework of the on-going MSP process for the area (and Italian marine water in general) so that such a vision/strategy/action plan has the chance now to be embedded in the MSP plans to be completed and adopted by March 2021.

Finally, considering the potential of the MU to boost innovation and blue growth in the area, a specific attention from national and EU research funding agencies is also very important.



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APPENDIX 1 – SCORED DABI SHEETS



	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5	Interviewee 6	Interviewee 7		
Combination: Tourism & Aquaculture	Score	Score	Score	Score	Score	Score	Score	Factor average for all stakeholders	Category average (average of all factors averaged for all stakeholders)
DRIVERS									
Category D.1 - Policy/legal drivers									
Factor D.1.1 Existence of a regional law (for Emilia Romagna) specifically regulating "Acquiturismo" (LR 22/2014).	1	3	3	3	3	2		2,5	
Average	1,0	3,0	3,0	3,0	3,0	2,0			2,5
Category D.2 - Relation with other uses									
Factor D.2.1 Significant presence of ports and marinas, being careful not to create dispersion or competition among localities.	2	1	1	1	1	2		1,3	
Average	2,0	1,0	1,0	1,0	1,0	2,0			1,3
Category D.3 - Economic drivers									
Factor D.3.1 Availability of European Funds, especially the European Maritime Fisheries Fund EMFF (2014-2020)	2	2	2	3	3	2	3	2,4	
Factor D.3.2 Availability of regional funding (e.g. Veneto) for the touristic sector, specifically dedicated at the development of enterprise network (European Regional Development Fund - ERDF).	1	2	2	3	3	2		2,2	
Factor D.3.3. Increase of demand for local fish products.	2	1	3	2	2	1	2	1,9	
Factor D.3.4 Possibility of applying and maintaining low (and hence competitive) concession fees for aquaculture spaces, also for activities of aquaculture-related tourism	3	1	2	3	3	2		2,3	
Factor D.3.5 Increasing demand for an experience-based tourism and a responsible tourism	1	2	1	2	2	1		1,5	
Average	1,8	1,6	2,0	2,6	2,6	1,6	2,5		2,1
Category D.4 - Societal drivers									
Factor D.4.1 Support by FLAGs, which encourage local projects about diversification of fisheries.	2	2	2	1	3	3		2,2	
Average	2,0	2,0	2,0	1,0	3,0	3,0			2,2
Category D.5 - technical-operative drivers									
Factor D.5.1 Possibility of developing multi-use in different alternative or integrated ways: activities similar to pesca-tourism, combination with diving /snorkelling, combination with the recreational fisheries.	2	2	2	3	2	2		2,2	
Average	2,0	2,0	2,0	3,0	2,0	2,0			2,2

	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5	Interviewee 6	Interviewee 7		
Combination: Tourism & Aquaculture	Score	Score	Score	Score	Score	Score	Score	Factor average for all stakeholders	Category average (average of all factors averaged for all stakeholders)
BARRIERS									
Category B.1 - Legal barriers									
Factor B.1.1 Lack of guidelines and of a common regulation of aquaculture-related tourism.	3	2	2	3	3	2	3	2,6	
Factor B.1.2 Lack of a national harmonized law for this MU and inhomogeneity among regional legal provisions.	2	1	3	3	3	2	3	2,4	
Factor B.1.3 Restriction in the legislation or in its interpretation, regulating the possibility of hosting tourists on board aquaculture vessels.	2	3	3	3	3	2		2,7	
Average	2,3	2,0	2,7	3,0	3,0	2,0	3,0		2,6
Category B.2 - Administrative barriers									
Factor B.2.1 Bureaucratic (license release) and administrative barriers limiting MU development.	1	3	3	3	3	2	3	2,6	
Factor B.2.2 Scarce cooperation among institutions and operators for MU development.	2	1	2	3	3	2	3	2,3	
Average	1,5	2,0	2,5	3,0	3,0	2,0	3,0		2,4
Category B.3 - Barriers related with economic availability / risk									
Factor B.3.1 Limited availability of proper funds to start the activity, also due to the difficulties of the access to finance	3	3	2	3	3	2		2,7	
Factor B.3.2 Poor entrepreneurship and investment capacity of aquaculture operators, also due to the medium-small size of enterprises and to its fragmentation over the territory.	2	2	2	2	3	1	3	2,1	
Average	2,5	2,5	2,0	2,5	3,0	1,5	3,0		2,4
Category B.4 - Barriers related with technical capacity									
Factor B.4.2 Need for adaptation of fishery vessels for tourism activities, for example due to the small size of vessels and the requirements of hygiene and security standards.	3	2	3	3	3	2		2,7	
Factor B.4.2 Presence of few experiences and few good practices in aquaculture-related tourism.	2	2	1	3	2	2		2,0	
Factor B.4.3 Limited availability of specific skills, of fishermen, for example due to the communication public interaction, and foreign languages. Need for a specific training	2	2	2	2	2	2	2	2,0	
Average	2,3	2,0	2,0	2,7	2,3	2,0	2,0		2,2

	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5	Interviewee 6	Interviewee 7		
Combination: Tourism & Aquaculture	Score	Score	Score	Score	Score	Score	Score	Factor average for all stakeholders	Category average (average of all factors averaged for all stakeholders)
ADDED VALUES									
Category V.1 - Economic added values									
Factor V.1.1 Integrative source of income for aquaculture operators.	3	2	3	3	2	1	3	2,4	
Factor V.1.2 New and specialized job opportunities, whenever specific training courses are organized.	2	3	3	3	3	2	2	2,6	
Factor V.1.3 Upgrade of the touristic offer: development of an offer dedicated to a new group of users, more interested in discovering the environmental and socio-economic characteristics of the area.	2	3	2	2	3	2	2	2,3	
Factor V.1.4 Increase of commercialization of local fish products, also due to the direct understanding of the local aquaculture practices.	2	2	3	3	3	1	3	2,4	
Average	2,3	2,5	2,8	2,8	2,8	1,5	2,5		2,4
Category V.2 - Societal added values									
Factor V.2.1 Contribution to the maintenance of local aquaculture tradition and to the related cultural heritage.	1	3	2	2	2	2		2,0	
Factor V.2.2 Cultural feedback for operators offering multi-use experience; personal cultural growth	2	2	2	2	3	3		2,3	
Factor V.2.3 Awareness of tourists and civil society about sustainable aquaculture and its benefits.	2	3	2	1	3	3	3	2,4	
Average	1,7	2,7	2,0	1,7	2,7	2,7	3,0		2,3
Category V.5 - Technical added values									
Factor V.5.1 Realization of pilot activities, which can be exported in other contexts	2	2	2	2	2	2	2	2,0	
Factor V.5.2 Potential development of multi-functional sites: aquaculture plants, equipped sites for diving/snorkeling, equipped areas for recreational fisheries, artificial reefs, small touristic infrastructures	2	3	2	3	1		3	2,3	
Average	2,0	2,5	2,0	2,5	1,5	2,0	2,5		2,1

	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5	Interviewee 6	Interviewee 7		
Combination: Tourism & Aquaculture	Score	Score	Score	Score	Score	Score	Score	Factor average for all stakeholders	Category average (average of all factors averaged for all stakeholders)
NEGATIVE IMPACTS									
Category I.1 - Economic impacts									
Factor I.1.1 Conflicts with other maritime activities, if aquaculture needs more space for its development	3	2	2	3	1		2	2,2	
Average	3,0	2,0	2,0	3,0	1,0		2,0		2,2
Category I.2. - Social impacts									
Factor I.2.2 Risk of an increase of the touristic pressure in areas which are already overcrowded	2	2	1	3	2			2,0	
Average	2,0	2,0	1,0	3,0	2,0				2,0
Category I.3 - Environmental impacts									
Factor I.3.1 Risk of overexploitation of fish stocks, in case of not well managed recreational fisheries in combination with aquaculture	3	1	2	3	2			2,2	
Average	3,0	1,0	2,0	3,0	2,0				2,2
Category I.5 - Other									
Other risks to be specifically identified, due to the poor experience available in the case-study area for this combination	2	1	1	2	1			1,4	
Average	2,0	1,0	1,0	2,0	1,0				1,4

	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5	Interviewee 6	Interviewee 7	Interviewee 8	Interviewee 9			
Combination: Tourism and fisheries	Score	Score	Score	Score	Score	Score	Score	Score			Factor average for all stakeholders	Category average (average of all factors averaged for all stakeholders)
BARRIERS												
Category B.1 - Legal barriers												
Factor B.1.1 Lack of a national harmonized law for this MU and inhomogeneity among regional legal provisions.	-3,0	-3,0	-3,0	-3,0	-2,0	0	-2			-2	-2,3	
Factor B.1.2 Presence of severe regulations which limit the activity (e.g. motor-power limits, maximum number of people hosted on board etc.).	-3	-3	-3	-3	-2	-1				-3	-2,6	
Average	-3,0	-3,0	-3,0	-3,0	-2,0	-0,5	-2,0	-3,0	-2,0			-2,4
Category B.2 - Administrative barriers												
Factor B.2.1 Complex bureaucratic procedures to get licences of pesca-tourism, discouraging operator initiatives	-3	-3	-3	-3	-2	-3	-2				-2,7	
Average	-3,0	-3,0	-3,0	-3,0	-2,0	-3,0	-2,0					-2,7
Category B.3 - Barriers related with economic availability / risk												
Factor B.3.1 Competition with traditional food distribution services and accommodation facilities	-2	-1	-1	-2	-2	-3				-2	-1,9	
Factor B.3.2 Competition with other areas (e.g. Croatian coast) with higher environmental potential.	-2	-1	-1	-1	-1	0					-1,0	
Factor B.3.3 Lack of a structured touristic offer finalised to promote MU and connection among different experiences (pesca-tourism and itchy-tourism).	-2	-2	-2	-2	-2	-3	-2				-2,1	
Factor B.3.4 Poor entrepreneurship and investment capacity of operators, also due to the medium-small size of enterprises and to its fragmentation over the territory.	-3	-2	-2	-3	-2	-1	-3	-1		-3	-2,2	
Factor B.3.5 Limited availability of funds to start the activity, also due to the difficulties of the access to finance.	-3	-2	-3	-3	-2	-1				-2	-2,3	
Average	-2,4	-1,6	-1,8	-2,2	-1,8	-1,6	-2,5	-1,5	-2,5			-2,0
Category B.4 - Barriers related with technical capacity												
Factor B.4.1 Limited availability of specific skills, of fishermen, for example concerning communication, public interaction, and foreign languages. Need for a specific training.	-2	-2	-2	-1	-2	-1	-3	-2			-1,9	
Factor B.4.2 Need for adaptation of fishery vessels for tourism activities, for example due to the small size of vessels and the requirements of hygiene and security standards	-3	-3	-3	-3	-2	-2	-3	-1		-2	-2,4	
Average	-2,5	-2,5	-2,5	-2,0	-2,0	-1,5	-3,0	-1,5	-2,0			-2,3
Category B.5 - Barriers related with social factors												
Factor B.5.1 Disappearance of traditional jobs related to fisheries (e.g. Delta Po), relevant to develop the combination	-2	-2	-3	-2	-2	-1					-2,0	
Factor B.5.2 Resistance to change of fishermen communities, due to cultural/tradition factors and to the limited comprehension of MU benefits. Positive experiences can help removing barriers.	-2	-2	-2	-1	-2	-3	-2	-2			-2,0	
Average	-2,0	-2,0	-2,5	-1,5	-2,0	-2,0	-2,0	-2,0	-2,0			-2,0

	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5	Interviewee 6	Interviewee 7	Interviewee 8	Interviewee 9			
Combination: Tourism and fisheries	Score	Score	Score	Score	Score	Score	Score	Score			Factor average for all stakeholders	Category average (average of all factors averaged for all stakeholders)
BARRIERS												
Category B.1 - Legal barriers												
Factor B.1.1 Lack of a national harmonized law for this MU and inhomogeneity among regional legal provisions.	-3,0	-3,0	-3,0	-3,0	-2,0	0	-2			-2	-2,3	
Factor B.1.2 Presence of severe regulations which limit the activity (e.g. motor-power limits, maximum number of people hosted on board etc.).	-3	-3	-3	-3	-2	-1				-3	-2,6	
Average	-3,0	-3,0	-3,0	-3,0	-2,0	-0,5	-2,0	-3,0	-2,0			-2,4
Category B.2 - Administrative barriers												
Factor B.2.1 Complex bureaucratic procedures to get licences of pesca-tourism, discouraging operator initiatives	-3	-3	-3	-3	-2	-3	-2				-2,7	
Average	-3,0	-3,0	-3,0	-3,0	-2,0	-3,0	-2,0					-2,7
Category B.3 - Barriers related with economic availability / risk												
Factor B.3.1 Competition with traditional food distribution services and accommodation facilities	-2	-1	-1	-2	-2	-3				-2	-1,9	
Factor B.3.2 Competition with other areas (e.g. Croatian coast) with higher environmental potential.	-2	-1	-1	-1	-1	0					-1,0	
Factor B.3.3 Lack of a structured touristic offer finalised to promote MU and connection among different experiences (pesca-tourism and itchy-tourism).	-2	-2	-2	-2	-2	-3	-2				-2,1	
Factor B.3.4 Poor entrepreneurship and investment capacity of operators, also due to the medium-small size of enterprises and to its fragmentation over the territory.	-3	-2	-2	-3	-2	-1	-3	-1		-3	-2,2	
Factor B.3.5 Limited availability of funds to start the activity, also due to the difficulties of the access to finance.	-3	-2	-3	-3	-2	-1				-2	-2,3	
Average	-2,4	-1,6	-1,8	-2,2	-1,8	-1,6	-2,5	-1,5	-2,5			-2,0
Category B.4 - Barriers related with technical capacity												
Factor B.4.1 Limited availability of specific skills, of fishermen, for example concerning communication, public interaction, and foreign languages. Need for a specific training.	-2	-2	-2	-1	-2	-1	-3	-2			-1,9	
Factor B.4.2 Need for adaptation of fishery vessels for tourism activities, for example due to the small size of vessels and the requirements of hygiene and security standards	-3	-3	-3	-3	-2	-2	-3	-1		-2	-2,4	
Average	-2,5	-2,5	-2,5	-2,0	-2,0	-1,5	-3,0	-1,5	-2,0			-2,3
Category B.5 - Barriers related with social factors												
Factor B.5.1 Disappearance of traditional jobs related to fisheries (e.g. Delta Po), relevant to develop the combination	-2	-2	-3	-2	-2	-1					-2,0	
Factor B.5.2 Resistance to change of fishermen communities, due to cultural/tradition factors and to the limited comprehension of MU benefits. Positive experiences can help removing barriers.	-2	-2	-2	-1	-2	-3	-2	-2			-2,0	
Average	-2,0	-2,0	-2,5	-1,5	-2,0	-2,0	-2,0	-2,0	-2,0			-2,0

	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5	Interviewee 6	Interviewee 7	Interviewee 8	Interviewee 9			
Combination: Tourism and fisheries	Score	Score	Score	Score	Score	Score	Score	Score	Score	Score	Factor average for all stakeholders	Category average (average of all factors averaged for all stakeholders)
ADDED VALUES												
Category V.1 - Economic added values												
Factor V.1.1 Integrative source of income for fishermen.	2	3	3	2	1	3	3	2	3		2,4	
Factor V.1.2 New and specialized job opportunities, whenever specific training courses are organized.	1	3	3	3	2	3	2	2	3		2,4	
Factor V.1.3 Upgrade of the touristic offer: development of an offer dedicated to a new group of users, more interested in discovering the environmental and socio-economic characteristics of the area.	3	3	2	3	1	3					2,5	
Factor V.1.4 Overall increase of the attractiveness of the coastal areas which offer pesca-tourism activity.	2	3	1	3	2	1					2,0	
Factor V.1.5 Increase of commercialization of local fish products, also due to the direct understanding of the sustainable fishing practices. The direct commercialization of fish products is endorsed by fishermen and meets the expectative of an experience – based tourism.	2	3	3	3	2	2	2	1	2		2,2	
Average	2,0	3,0	2,4	2,8	1,6	2,4	2,3	1,7	2,7			2,3
Category V.2 - Societal added values												
Factor V.2.1 Professional growth of the economic sector of fisheries, with more informed and aware operators, able to create an enterprises network, with more potential in the territory.	2	3	3	3	2	3					2,7	
Factor V.2.2 Contribution to the maintenance of local fishing tradition and to the related cultural heritage	3	3	2	3	1	3	2	2	3		2,4	
Factor V.2.3 Cultural feedback for operators offering multi-use experience; personal cultural growth.	3	2	2	3	2	3					2,5	
Factor V.2.4 Awareness of tourists and civil society about sustainable fisheries.	3	2	1	3	2	2	2	2	3		2,2	
Average	2,8	2,5	2,0	3,0	1,8	2,8	2	2	3			2,4
Category V.3 - Environmental added values												
Factor V.3.1 Contribution to the reduction of fishing effort and to a sustainable management of fish stocks (How much relevant? Factor also depending on the typology of involved fisheries).	2	2	1	2	1	1	1	0			1,3	
Average	2,0	2,0	1,0	2,0	1,0	1,0	1,0	0,0				1,3

	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5	Interviewee 6	Interviewee 7	Interviewee 8	Interviewee 9		
Combination: Tourism and fisheries	Score	Score	Score	Score	Score	Score	Score	Score	Score	Factor average for all stakeholders	Category average (average of all factors averaged for all stakeholders)
NEGATIVE IMPACTS											
Category I.1 - Economic impacts											
Factor I.1.1 Possible negative effects on other "conventional" touristic and food distribution sectors.	-2	-1	-1	-2	-1	-1				-1,3	
Average	-2,0	-1,0	-1,0	-2,0	-1,0	-1,0					-1,3
Category I.2. - Social impacts											
Factor I.2.1 Risk of entrance of not-competent operators (not-professional fishermen), with a distortion of the real meaning of multi-use.	-2	0	-2	-2	-2	-2			-2	-1,7	
Factor I.2.2 Risk of an increase of the touristic pressure in areas which are already overcrowded.	-1	-1	-3	-2	-1	-1				-1,5	
Average	-1,5	-0,5	-2,5	-2,0	-1,5	-1,5			-2,0		-1,6
Category I.3 - Environmental impacts											
Factor I.3.1 If not properly managed, pesca-tourism can lead to an overexploitation of fish stocks	-2	-1	-2	-3	-1	0	-1			-1,4	
Average	-2,0	-1,0	-2,0	-3,0	-1,0	0,0	-1,0				-1,4

	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5	Interviewee 6	Interviewee 7		
Combination: Tourism & Environmental Protection	Score	Score	Score	Score	Score	Score	Score	Factor average for all stakeholders	Category average (average of all factors averaged for all stakeholders)
DRIVERS									
Category D.1 - Policy drivers									
Factor D.1.1 - Support from Strategic documents (i.e. Blue Growth strategy) also at macro-regional level (Adriatic Ionian Region) to promote sustainable tourism	3,0	2,0	1,0	3,0	3,0	2,0	2,0	2,3	
Factor D.1.2 - EU is strongly encouraging Italy to identify new MPAs. At regional level this is interpreted also as an opportunity to develop touristic sector	1,0	1,0	2,0	2,0	2,0	3,0	2,0	1,9	
Average	2,0	1,5	1,5	2,5	2,5	2,5	2,0		2,1
Category D.2 - Relation with other uses									
Factor D.2.1 - MPA already existing, i.e the tegnue, worth being exploited	3,0	3,0	3,0	3,0	2,0	1,0	3,0	2,6	
Factor D.2.2 – Possibility to develop synergies between MPAs and UCH sites	3,0	2,0	3,0	2,0	3,0	3,0	2,0	2,6	
Average	3,0	2,5	3,0	2,5	2,5	2,0	2,5		2,6
Category D.3 - Economic drivers									
Factor D.3.1 - Increasing demand for a sustainable eco-tourism and for activities related to the dissemination of environmental assets' values (value of natural resources)	3,0	2,0	2,0	3,0	2,0	3,0	2,0	2,4	
Factor D.3.2 - Increasing demand for diving sites due to a growing interest by divers and operators of the sector	3,0	3,0	2,0	2,0	1,0	2,0	3,0	2,3	
Average	3,0	2,5	2,0	2,5	1,5	2,5	2,5		2,4
Category D.4 - Societal drivers									
Factor D.4.1 – Possibility to identify links with environmental related activities along the coast, creating opportunity for growth of the overall area	2,0	2,0	2,0	3,0	3,0	2,0	2,0	2,3	
Average	2,0	2,0	2,0	3,0	3,0	2,0	2,0		2,3
Category D.5 - Environmental									
Factor D.5.1 – Need to regulate and promote sustainable use of MPAs which at present occur in individual, fragmented and not-controlled ways		3,0	2,0	3,0	3,0	3,0	1,0	2,5	
Average		3,0	2,0	3,0	3,0	3,0	1,0		2,5
Category D.6 - Environmental									
Factor D.6.1 Capitalisation of experiences and good practices in the case-study area or in other Italian regions	3,0	2,0	1,0	3,0	2,0	1,0	3,0	2,1	
Average	3,0	2,0	1,0	3,0	2,0	1,0	3,0		2,1

	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5	Interviewee 6	Interviewee 7		
Combination: Tourism & Environmental Protection	Score	Score	Score	Score	Score	Score	Score	Factor average for all stakeholders	Category average (average of all factors averaged for all stakeholders)
BARRIERS									
Category B.2 - Administrative barriers									
Factor B.2.1 – Limited coordination between institutions involved, moreover acting at different scales	2,0	1,0	3,0	3,0	3,0	3,0	2,0	2,4	
Factor B.2.2 – Lack of cooperation (finalized to co-management and promotion of marine natural resources) between authorities in charge of environmental protection and touristic sector operators	3,0	2,0	3,0	3,0	3,0	3,0	2,0	2,7	
Factor B.2.3 – Complex administrative procedures	3,0	2,0	3,0	2,0	3,0	2,0	1,0	2,3	
Factor B.2.4 – Lack of a common vision between sectors and of synergies at political level	3,0	2,0	3,0	3,0	3,0	3,0	3,0	2,9	
Factor B.2.5 – inability of institutions to convince stakeholders about the added value of synergies	3,0	2,0	2,0	3,0	3,0	3,0	2,0	2,6	
Average	2,8	1,8	2,8	2,8	3,0	2,8	2,0		2,6
Category B.3 - Barriers related with economic availability / risk									
Factor B.3.1 – Niche touristic sector whose potential is still not properly evaluated	3,0	2,0	1,0	2,0	1,0	1,0	3,0	1,9	
Factor B.3.2 - Lack of adequate financial incentives	3,0	1,0	2,0	2,0	3,0	3,0	1,0	2,1	
Average	3,0	1,5	1,5	2,0	2,0	2,0	2,0		2,0
Category B.4 - Barriers related with social factors									
Factor B.4.1 – Limited understanding of benefits of MU to the goals of environmental protection	2,0	2,0	1,0	3,0	2,0	3,0	2,0	2,1	
Factor B.4.2 – Lack of sufficiently diffused culture about environmental protection among population (need to raise social awareness)	3,0	1,0	2,0	3,0	2,0	3,0	3,0	2,4	
Factor B.4.3 –Conflicts instead of synergies between stakeholders working on same subjects	3,0	2,0	3,0	3,0	3,0	2,0	2,0	2,6	
Average	2,7	1,7	2,0	3,0	2,3	2,7	2,3		2,4
Category B.5 - Barriers related with environmental factors									
Factor B.5.1 – Scarce transparency of water column and seasonal restrictions to go diving	3,0	1,0	1,0	2,0	1,0	2,0	1,0	1,6	
Factor B.5.2 - Problems of compatibility between MPA high ecological requirements (due to their high vulnerability) and its touristic exploitation	3,0	1,0	3,0	3,0	3,0	2,0	2,0	2,4	
Average	3,0	1,0	2,0	2,5	2,0	2,0	1,5		2,0
Category B.6 - Barriers related with technical capacity									
Factor B.6.1 – Limited expertise in the field (i.e. divers trained in disseminating biologic-naturalistic knowledge)	3,0	2,0	2,0	1,0	2,0	2,0	1,0	1,9	
Average	3,0	2,0	2,0	1,0	2,0	2,0	1,0		1,9

	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5	Interviewee 6	Interviewee 7		
Combination: Tourism & Environmental Protection	Score	Score	Score	Score	Score	Score	Score	Factor average for all stakeholders	Category average (average of all factors averaged for all stakeholders)
ADDED VALUES									
Category V.1 - Economic added values									
Factor V.1.1 - Additional finance (from tourism) to environmental protection	3,0	2,0	2,0	2,0	3,0	2,0	3,0	2,4	
Factor V.1.2 – Creation of synergies between stakeholders	3,0	1,0	3,0	3,0	2,0	2,0	2,0	2,3	
Factor V.1.3 – Development of positive economic interactions (production chains) between coastal and marine activities	3,0	3,0	0,0	3,0	3,0	2,0	2,0	2,3	
Average	3,0	2,0	1,7	2,7	2,7	2,0	2,3		2,3
Category V.2 - Societal added values									
Factor V.2.1 - Diversification of tourism offer, targeting people motivated to know about natural and socioeconomic resources of the area	3,0	1,0	2,0	3,0	2,0	3,0	2,0	2,3	
Factor V.2.2 - Jobs creation, specialization and diversification, formation of new type of professionals	3,0	2,0	1,0	3,0	2,0	3,0	2,0	2,3	
Factor V.2.3 – Overall raising in attractiveness of the area, able to offer positive sustainable eco-tourisms experiences (i.e tegnue are already a brand)	3,0	3,0	2,0	2,0	2,0	2,0	3,0	2,4	
Factor V.2.4 – Educational benefits (raising awareness about environmental protection)	3,0	1,0	2,0	3,0	1,0	3,0	2,0	2,1	
Average	3,0	1,8	1,8	2,8	1,8	2,8	2,3		2,3
Category V.3 - Environmental added values									
Factor V.3.1 – Effective collaboration of operators and end users for the management, protection and sustainable use of MPAs	2,0	2,0	2,0	3,0	1,0	1,0	3,0	2,0	
Factor V.3.2 – Raising of end users awareness implies benefits for present and future protection projects	3,0	3,0	1,0	3,0	2,0	3,0	2,0	2,4	
Average	2,5	2,5	1,5	3,0	1,5	2,0	2,5		2,2

	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5	Interviewee 6	Interviewee 7		
Combination: Tourism & Environmental Protection	Score	Score	Score	Score	Score	Score	Score	Factor average for all stakeholders	Category average (average of all factors averaged for all stakeholders)
NEGATIVE IMPACTS									
Category I.1 - Economic impacts									
Factor I.1.1 – Possible conflicts with other maritime uses (transport, fisheries etc.)	2,0	2,0	3,0	1,0	1,0	3,0	2,0	2,0	
Average	2,0	2,0	3,0	1,0	1,0	3,0	2,0		2,0
Category I.3 - Environmental impacts									
Factor I.3.1 – Possible aggravation of environmental impact in fragile marine ecosystems due to raising the volume of touristic activities or to improper use of the resources	2,0	2,0	3,0	2,0	2,0	3,0	3,0	2,4	
Factor I.3.2 – Possible entry in the market of operators not interested in real MU, but only in business and exploitation of resources	2,0	2,0	1,0	2,0	2,0	1,0	1,0	1,6	
Average	2,0	2,0	2,0	2,0	2,0	2,0	2,0		2,0
Category I.4 - Other									
Other risks to be specifically identified, due to the poor experience available in the case-study area for this combination	2,0	1,0	1,0	1,0	1,0	2,0	2,0	1,4	
Average	2,0	1,0	1,0	1,0	1,0	2,0	2,0		1,4

	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5	Interviewee 6		
Combination: UCH & Tourism	Score	Score	Score	Score	Score	Score	Factor average for all stakeholders	Category average (average of all factors averaged for all stakeholders)
DRIVERS								
Category D.2 - Relation with other uses								
Factor D.2.1 – Submerged sites of potential touristic interest existing, worth being exploited	2,0	1,0	3,0	1,0	2,0	3,0	2,0	
Factor D.2.2 – Possibility to develop synergies between MPAs and UCH sites	3,0	3,0	2,0	2,0	3,0	3,0	2,7	
Factor D.2.3 – Need to regulate and promote sustainable use of UCH sites which at present occur in individual, fragmented and not-controlled ways	2,0	3,0	3,0	2,0	2,0	3,0	2,5	
Factor D.2.4 – Limited space of marine area	3,0	3,0	3,0	2,0	3,0	3,0	2,8	
Average	2,5	2,5	2,8	1,8	2,5	3,0		2,5
Category D.3 - Economic drivers								
Factor D.3.1 – UCH site’s sustainable fruition activities can contribute to the identification and mapping of sites	2,0	2,0	1,0	2,0	2,0	2,0	1,8	
Factor D.3.2 - Increasing demand for diving sites due to a growing interest by divers and operators of the sector	3,0	1,0	2,0	2,0	2,0	2,0	2,0	
Factor D.3.3 - Increasing demand for experience-based tourism	2,0	2,0	2,0	2,0	3,0	3,0	2,3	
Average	2,3	1,7	1,7	2,0	2,3	2,3		2,1
Category D.4 - Societal drivers								
Factor D.4.1 – interest in promotion (valorisation) and not only safeguard of cultural heritage	2,0	3,0	2,0	2,0	3,0	3,0	2,5	
Factor D.4.2 – Possibility to identify itineraries with multiple interconnections with land and coastal historical sites, creating opportunity for growth of the overall area (e.g. connections with Museums of the Sea)	3,0	3,0	3,0	3,0	3,0	3,0	3,0	
Factor D.4.3 – Amateurs and volunteers groups and ONG existing in the area and very motivated	3,0	1,0	1,0	2,0	3,0	3,0	2,2	
Average	2,7	2,3	2,0	2,3	3,0	3,0		2,6

	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5	Interviewee 6		
Combination: UCH & Tourism	Score	Score	Score	Score	Score	Score	Factor average for all stakeholders	Category average (average of all factors averaged for all stakeholders)
BARRIERS								
Category B.1 - Legal barriers								
Factor B.1.1 - Lack of guidelines/regulatory aspects	3,0	3,0	2,0	2,0	3,0	3,0	2,7	
Average	3,0	3,0	2,0	2,0	3,0	3,0		2,7
Category B.2 - Administrative barriers								
Factor B.2.1 - Lack of communication/coordination among the authorities dealing with UCH and tourism	1,0	3,0	2,0	3,0	2,0	3,0	2,3	
Average	1,0	3,0	2,0	3,0	2,0	3,0		2,3
Category B.3 - Barriers related with economic availability / risk								
Factor B.3.1 – Niche touristic sector whose potential is still not properly evaluated	2,0	2,0	3,0	2,0	2,0	2,0	2,2	
Factor B.3.2 - Lack of adequate financial incentives	3,0	2,0	3,0	2,0	1,0	2,0	2,2	
Average	2,5	2,0	3,0	2,0	1,5	2,0		2,2
Category B.4 - Barriers related with social factors								
Factor D.4.1 - Limited availability of experiences and good practices in the case-study area or in other Italian regions, especially in order to make people (and interested stakeholders) understand real benefits of MU also to UCH itself	3,0	0,0	2,0	2,0	2,0	1,0	1,7	
Factor D.4.2 – lack of a “culture of the sea” and of a cultural-educational programme able to raise awareness about the value of UCH	3,0	3,0	3,0	3,0	3,0	3,0	3,0	
Average	3,0	1,5	2,5	2,5	2,5	2,0		2,3
Category B.5 - Barriers related with environmental factors								
Factor B.5.1 – Scarce transparency of water column and seasonal restrictions to go diving	3,0	3,0	3,0	2,0	2,0	3,0	2,7	
Factor B.5.2 – Conflicts with other uses of the marine space (i.e. transport)	3,0	3,0	2,0	2,0	3,0	3,0	2,7	
Average	3,0	3,0	2,5	2,0	2,5	3,0		2,7
Category B.6 - Barriers related with technical capacity								
Factor B.6.1 – Limited expertise in the field (i.e. divers with archaeological knowledge and trained in disseminating historical humanistic knowledge)	2,0	1,0	3,0	2,0	2,0	2,0	2,0	
Factor B.6.2 – High vulnerability of sites, due to their intrinsic fragility	3,0	1,0	2,0	2,0	3,0	2,0	2,2	
Average	2,5	1,0	2,5	2,0	2,5	2,0		2,1

	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5	Interviewee 6		
Combination: UCH & Tourism	Score	Score	Score	Score	Score	Score	Factor average for all stakeholders	Category average (average of all factors averaged for all stakeholders)
ADDED VALUES								
Category V.1 - Economic added values								
Factor V.1.1 - Additional finance (from tourism) to sites protection	1,0	1,0	1,0	2,0	1,0	1,0	1,2	
Average	1,0	1,0	1,0	2,0	1,0	1,0		1,2
Category V.2 - Societal added values								
Factor V.2.1 - Diversification of tourism offer, targeting people motivated to know about historical and socioeconomic resources of the area	2,0	2,0	2,0	3,0	2,0	1,0	2,0	
Factor V.2.2 - Jobs creation, specialization and diversification, formation of new type of professionals	3,0	1,0	2,0	2,0	2,0	1,0	1,8	
Factor V.2.3 – Co-management and co-monitoring of sites, resulting in a better protection of UCH, also given the present state of abandon or not proper management of sites	2,0	3,0	2,0	3,0	3,0	2,0	2,5	
Factor V.2.4 – Educational benefits (raising awareness about promotion and safeguard of UCH)	3,0	3,0	3,0	3,0	3,0	3,0	3,0	
Average	2,5	2,3	2,3	2,8	2,5	1,8		2,3

	Interviewee 1	Interviewee 2	Interviewee 3	Interviewee 4	Interviewee 5	Interviewee 6		
Combination: UCH & Tourism	Score	Score	Score	Score	Score	Score	Factor average for all stakeholders	Category average (average of all factors averaged for all stakeholders)
NEGATIVE IMPACTS								
Category I.1 - Economic impacts								
Factor I.1.1 – Possible entry in the market of operators not interested in real MU, but only in business and exploitation of resources	0,0	0,0	2,0	2,0	1,0	1,0	1,0	
Factor I.1.2 – Conflicts with other uses (transport)	3,0	3,0	3,0	2,0	3,0	2,0	2,7	
Average	1,5	1,5	2,5	2,0	2,0	1,5		1,8
Category I.2. - Social impacts								
Factor I.2.1 - Risk of looting and damage to UCH by increased touristic pressure	3,0	1,0	3,0	2,0	3,0	2,0	2,3	
Average	3,0	1,0	3,0	2,0	3,0	2,0		2,3
Category I.3 - Other								
Other risks to be specifically identified, due to the poor experience available in the case-study area for this combination	0,0	1,0	2,0	2,0	2,0	3,0	1,7	
Average	0,0	1,0	2,0	2,0	2,0	3,0		1,7

APPENDIX 2 - MATERIALS FROM THE WORKSHOP HELD ON 18 OCTOBER 2017 IN VENICE



IL TURISMO COSTIERO E MARITTIMO COME DRIVER DEL MULTIUSO DELLO SPAZIO MARINO: CASO STUDIO NEL NORD ADRIATICO

Data: 18 Ottobre 2017 (10:00 - 17:15)

Sede: CNR-ISMAR, Venezia

Arsenale - Tesa 104, Castello 2737/F, 30122 Venezia

Obiettivi

Il workshop si propone di:

- Individuare opzioni di multi-uso dello spazio marittimo potenzialmente sviluppabili nell'area Italiana Nord Adriatica, con particolare riferimento alla combinazione del turismo con altre attività (acquacoltura, pesca, valorizzazione del patrimonio culturale subacqueo, protezione e valorizzazione di aree marine protette)
- Definire per ciascuna combinazione di multi-uso individuata gli elementi di DABI (Drivers (D), Barriere (B), Benefici (*Added-Value* – A) ed Impatti (I))
- Individuare gli attori principali che possono agire sugli elementi suddetti al fini di promuovere le opzioni di multi-uso
- Individuare le azioni (proposte preliminari) per la promozione delle opzioni di multi-uso.

Agenda

10:00-10:30	Registrazione
10:30-10:40	Introduzione e obiettivi del workshop
10:40-11:00	Il turismo costiero e marittimo come driver del multi-uso in Nord Adriatico (Dott.ssa Mara Manente – Università Ca'Foscari Venezia-CISET).
11:00-11:20	Il multi-uso nel Nord Adriatico: combinazioni di multi-uso individuate per l'area di studio
11:20-11:40	Coffee break
11:40-12:40	Discussione sulle opzioni di multi uso di interesse per l'area di studio (discussione plenaria)
12:40-13:30	Pranzo
13.30-15.00	Analisi degli elementi di DABI (attività di gruppo: suddivisione dei partecipanti in gruppi di lavoro a seconda della combinazione di multi-uso considerata).
15.00-15.30	Coffee break
15.30-16.00	Scoring degli elementi di DABI (attività individuale)
16.00-16.15	Reporting dai gruppi di lavoro
16.15-17.00	Verso l'Action Plan: individuazione di proposte di azioni per la promozione del multiuso (discussione plenaria)
17.00-17.15	Conclusione dei lavori e prossimi step



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combinare gli usi del mare:
**il turismo costiero e marittimo
come volano per il “multiuso”
dello spazio marino nel
Nord Adriatico**



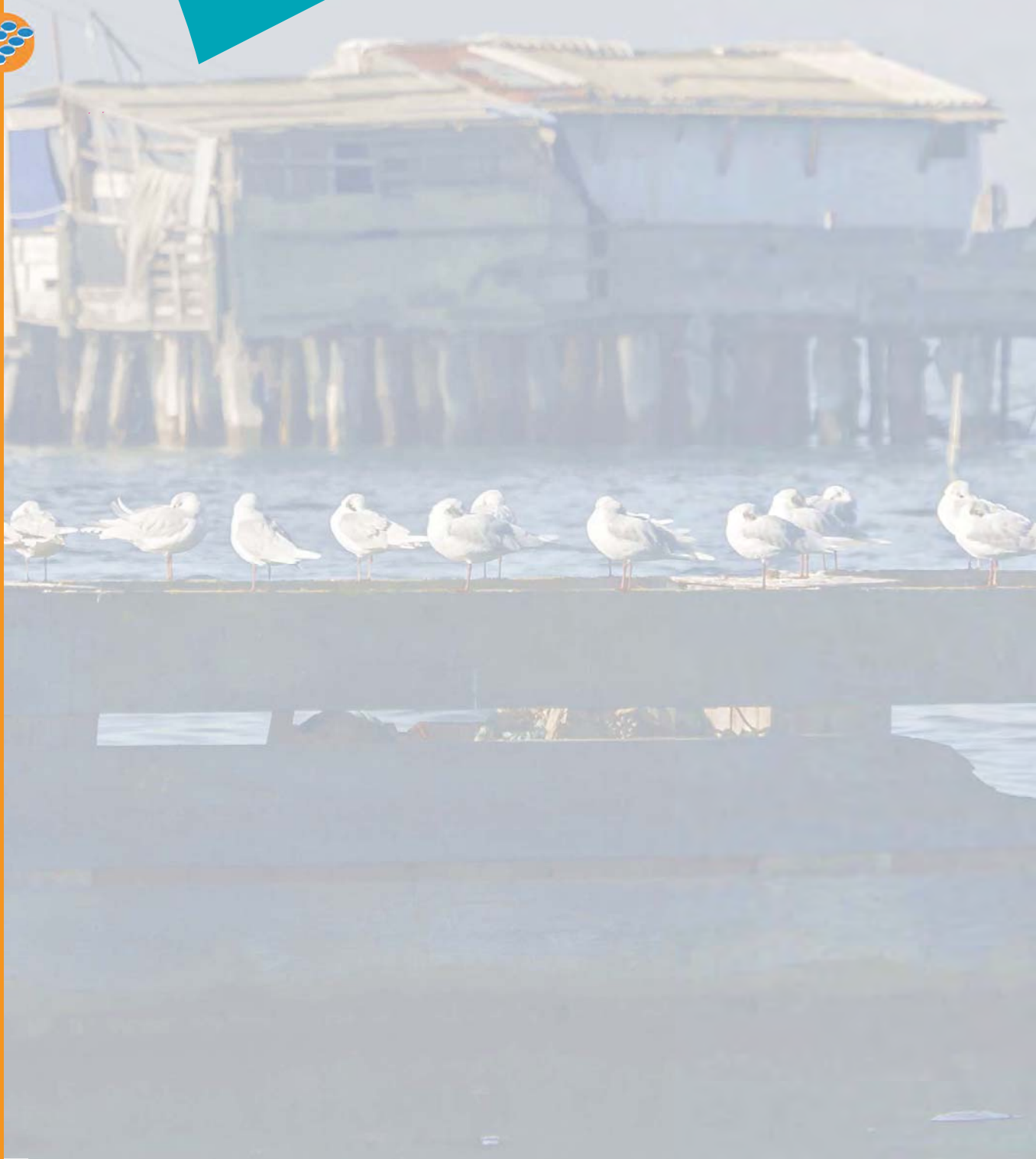
TURISMO E PESCA



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TURISMO E ACQUACOLTURA



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Nord Adriatico**



**TURISMO
E PROTEZIONE AMBIENTALE**

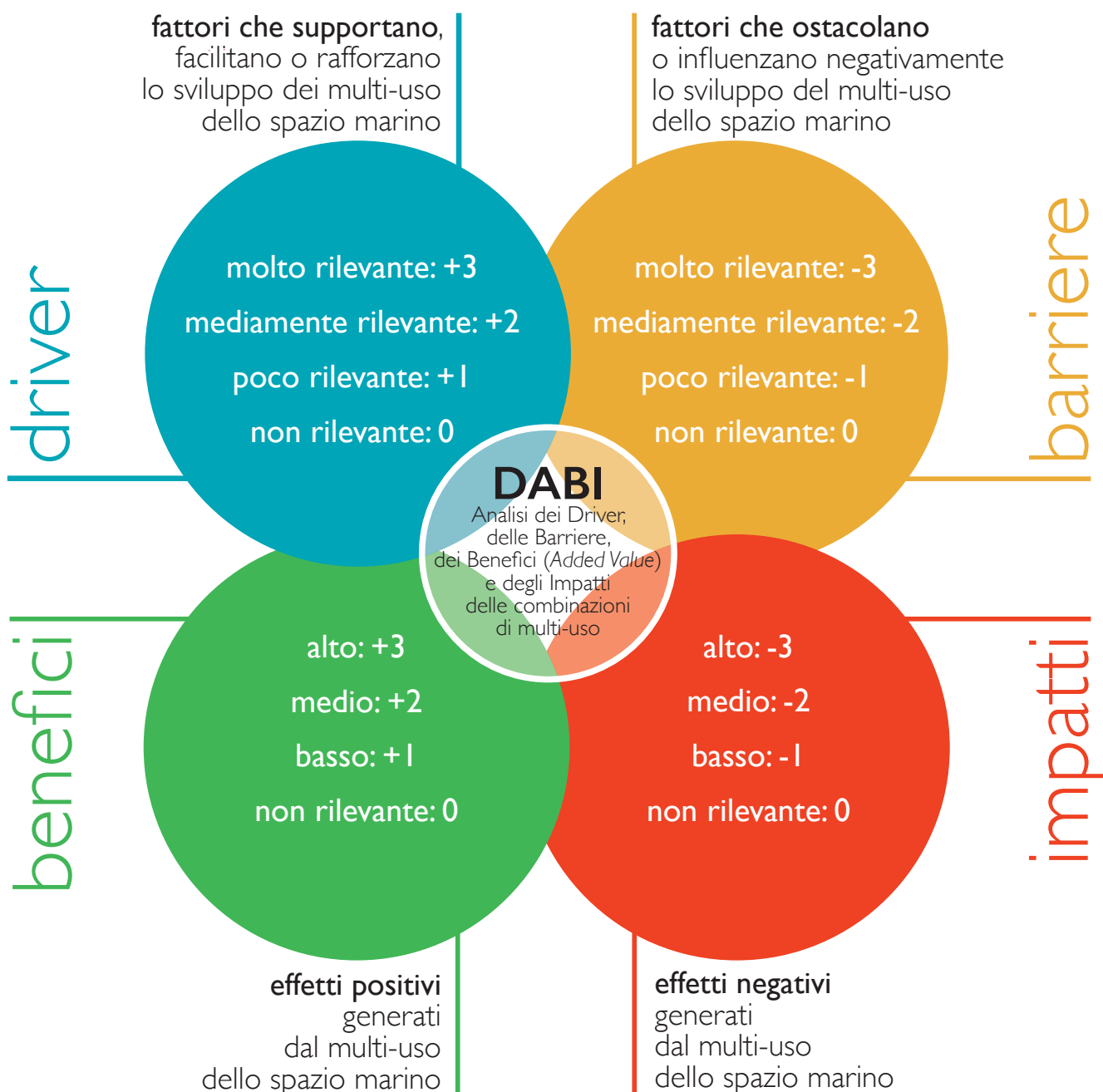


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**TURISMO E PATRIMONIO
CULTURALE SUBACQUEO**

combinare gli usi del mare:
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 come volano per il “multiuso”
 dello spazio marino nel
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dello spazio marino nel
Nord Adriatico**

turismo e
pesca

turismo e
acquacoltura

turismo e
protezione
ambientale

turismo e
patrimonio
culturale
subacqueo

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**il turismo costiero e marittimo come volano per il “multiuso”
 dello spazio marino nel Nord Adriatico**



driver
 benefici

Strumenti normativi vigenti a livello comunitario (Reg. 508/2014 sul FEAMP), nazionale e regionale (Emilia-Romagna LR 22/2014; Veneto LR 10/2012, DGR 604/2013 e DGR 646/2014) che contribuiscono a disciplinare i settori del pescaturismo e dell'ittiturismo.

Disponibilità di finanziamenti europei, in particolare Fondo Europeo per gli Affari Marittimi e la Pesca (FEAMP) 2014 – 2020.

Disponibilità di fondi regionali (es. Veneto) per il settore turistico specificamente dedicati allo sviluppo di reti di impresa (in particolare Fondo Europeo di Sviluppo Regionale - FESR).

Supporto dei FLAG (Fisheries Local Action Groups), anche attraverso progetti locali di diversificazione delle attività di pesca.

Aumento della domanda di prodotti ittici locali e sostenibili.

Aumento della domanda di “turismo esperienziale” e responsabile.

Capitalizzazione di esperienze e buone pratiche già sviluppate, prevalentemente in altre regioni italiane (es. organizzazione in cooperative per la gestione delle attività di pescaturismo o protocolli per la sostenibilità delle attività di pescaturismo).

Diminuzione del pescato, che contribuisce a stimolare la ricerca da parte dei pescatori di sinergie con altre attività connesse al turismo per trovare fonti alternative di reddito.

Necessità di una co-gestione sostenibile degli stock ittici.

Ampia disponibilità di porti e porticcioli.

Fonte integrativa di reddito per i pescatori.

Creazione di nuove professionalità e opportunità lavorative, qualora supportate da adeguata formazione specifica.

Crescita “culturale” del settore della pesca, con operatori più formati e consapevoli, in grado di costituire una rete di imprese con più forza sul territorio.

Innalzamento qualitativo dell'offerta turistica: sviluppo di un'offerta rivolta ad un nuovo segmento di utenti, maggiormente propenso a conoscere le caratteristiche ambientali e socioeconomiche di una determinata area.

Aumento complessivo dell'attrattività delle aree costiere che offrono esperienze di pescaturismo.

Aumento della commercializzazione di prodotti ittici locali, stimolato anche dalla conoscenza diretta delle pratiche di pesca sostenibile. La commercializzazione diretta (o a miglio 0) dei prodotti ittici è sostenuta da pescatori e si sposa con le aspettative del turista esperienziale.

Contributo alla conservazione delle tradizioni della pesca e del connesso patrimonio culturale.

Sensibilizzazione dei turisti e della società civile sulla pesca sostenibile.

Contributo alla riduzione dello sforzo di pesca e alla gestione sostenibile degli stock ittici (quanto rilevante? Dipendente anche dalla tipologia di operatori della pesca coinvolti).

Procedure burocratiche complesse per l'ottenimento delle licenze di pescaturismo, che possono scoraggiare l'iniziativa degli operatori.

Presenza di norme restrittive che limitano la capacità di sviluppo dell'attività (es. numero massimo di turisti imbarcabili, potenza massima del motore, etc.).

Turismo di nicchia con potenzialità reali ancora da valutare, anche a fronte dell'elevata competizione che caratterizza l'intero settore turistico.

Mancanza di un'offerta turistica strutturata finalizzata sia alla promozione del MU e sia alla creazione di connessioni tra esperienze diverse (es. pescaturismo e ittiturismo).

Limitata capacità imprenditoriale e di investimento degli operatori del settore della pesca, anche a causa delle dimensioni medio-piccole delle imprese e della loro frammentazione.

Limitata disponibilità di adeguati finanziamenti per l'avvio dell'attività, connessa anche con le difficoltà di accesso al credito.

Resistenza al cambiamento nelle comunità di pescatori, dovuta sia a fattori culturali/tradizionali che alla limitata comprensione dei benefici del MU. Le esperienze positive dei singoli possono aiutare a rimuovere tali barriere.

Limitata disponibilità di competenze specifiche da parte dei pescatori, per esempio inerenti la comunicazione, la relazione con il pubblico e l'uso di lingue straniere. Connessa necessità di formazione specifica.

Necessità di adattamento delle imbarcazioni da pesca per attività di carattere turistico, per esempio in relazione alle piccole dimensioni delle imbarcazioni o al soddisfacimento degli standard di sicurezza ed igiene.

Rischio di ingresso nel MU di operatori non competenti (non pescatori), che possono distorcere il significato del MU medesimo.

Se non correttamente gestito, il MU può portare ad un aumento della pressione sugli stock ittici.

Possibili effetti negativi su alcune componenti “classiche” del turismo e della ristorazione per spostamento in altri settori.

barriere
 impatti

combinare gli usi del mare:
**il turismo costiero e marittimo come volano per il “multiuso”
 dello spazio marino nel Nord Adriatico**



TURISMO E ACQUACOLTURA

driver benefici

Per l'Emilia-Romagna, esistenza di legislazione regionale che contribuisce a disciplinare il settore dell'acquiturismo (LR 22/2014).

Disponibilità di finanziamenti europei, in particolare Fondo Europeo per gli Affari Marittimi e la Pesca (FEAMP) 2014 – 2020

Disponibilità di fondi regionali (es. Veneto) per il settore turistico specificamente dedicati allo sviluppo di reti di impresa (in particolare Fondo Europeo di Sviluppo Regionale - FESR).

Supporto dei FLAG (Fisheries Local Action Groups), anche attraverso progetti locali di integrazione delle attività di acquacoltura.

Aumento della domanda di prodotti ittici locali.

Aumento della domanda di “turismo esperienziale” e responsabile.

Possibilità di declinare il MU in varie modalità tra loro alternative o integrate: esperienze simili al pescaturismo, combinazione con attività subacquea e snorkeling, combinazione con pesca ricreativa

Ampia disponibilità di porti e porticcioli.

Fonte integrativa di reddito per gli operatori dell'acquacoltura.

Creazione di nuove professionalità e opportunità lavorative, qualora supportate da formazione specifica.

Innalzamento qualitativo dell'offerta turistica: sviluppo di un'offerta rivolta ad un nuovo segmento di utenti, maggiormente propenso a conoscere le caratteristiche ambientali e socioeconomiche di una determinata area.

Aumento della commercializzazione di prodotti ittici locali, stimolato anche dalla conoscenza diretta delle pratiche locali di acquacoltura.

Contributo alla conservazione delle tradizioni dell'acquacoltura e del connesso patrimonio culturale.

Sensibilizzazione dei turisti e della società civile sull'acquacoltura sostenibile e sui relativi benefici.

Realizzazione di attività pilota del MU da esportare in altri contesti.

Potenziale sviluppo di siti/installazioni polifunzionali: strutture per l'acquacoltura, siti diving e snorkeling attrezzati, aree limitrofe dedicate a pesca ricreativa, piccole infrastrutture turistiche in loco, reef artificiali.

Mancanza di linee guida e/o di un regolamento comune per il MU turismo e acquacoltura.

Barriere di carattere burocratico (concessione di licenze) ed amministrativo che limitano lo sviluppo del MU.

Limitata cooperazione tra istituzioni e operatori del settore per lo sviluppo del MU e la comprensione dei suoi benefici.

Limitata capacità imprenditoriale e di investimento degli operatori del settore dell'acquacoltura, anche a causa delle dimensioni medio-piccole delle imprese e della loro frammentazione.

Turismo di nicchia con potenzialità reali ancora da valutare, anche a fronte dell'elevata competizione che caratterizza l'intero settore turistico.

Limitata disponibilità di adeguati finanziamenti per l'avvio dell'attività, connessi anche con le difficoltà di accesso al credito

Disponibilità limitata di esperienze e buone pratiche da capitalizzare.

Limitata disponibilità di competenze specifiche, per esempio inerenti la comunicazione o la relazione con il pubblico. Connessa necessità di formazione specifica.

Necessità di adattamento delle imbarcazioni utilizzate in acquacoltura per attività di carattere turistico, anche in relazione a dimensione e standard di sicurezza e igiene.

Rischio di sovrasfruttamento della risorsa ittica in caso di combinazione tra acquacoltura e pesca sportiva e in caso di mancata regolamentazione della seconda.

Conflitto con altre attività marittime, qualora lo sviluppo del MU porti ad un incremento dell'estensione dell'area utilizzata.

Impatti aggiuntivi del MU (rispetto all'uso singolo per attività di acquacoltura) da individuare nello specifico, date le caratteristiche isolate e numericamente limitate delle attività ad oggi sviluppate.

barriere impatti

combinare gli usi del mare:
**il turismo costiero e marittimo come volano per il “multiuso”
 dello spazio marino nel Nord Adriatico**



TURISMO E PROTEZIONE AMBIENTALE

driver benefici

Documenti strategici anche di valenza macro-regionale (es.Strategia e Piano EUSAIR) che individuano il turismo sostenibile come uno dei settori da sviluppare nell'area Adriatica.

Esistenza nell'area di aree marine soggette a protezione ambientale, e in generale di aree di elevato interesse naturalistico (es. tegrùe), da valorizzare anche in funzione della fruizione turistica.

Spinta della UE all'identificazione in Italia di nuove AMP per soddisfare i target internazionali. A livello regionale può essere interpretata anche come un'opportunità di sviluppo dell'ecoturismo, in particolare per AMP costiere.

Aumento della domanda di “turismo eco-sostenibile” e della comprensione del valore dei beni ambientali.

Interesse dei subacquei e degli operatori di tale settore per il MU, con conseguente aumento della domanda di siti di immersione.

Possibilità di capitalizzare esperienze e buone pratiche già sviluppate, sia nell'area di studio che in altre regioni italiane.

Necessità di regolamentare e valorizzare attività di fruizione che attualmente avvengono in modo spontaneo, isolato, frammentato e de-regolamentato.

Possibilità di sviluppare connessioni tra siti di immersione di valenza archeologico/culturale con quelli di valenza naturalistica.

Connessione con altre offerte turistiche di valenza ambientale ubicate lungo la costa (es. centri recupero tartarughe).

Potenziale disponibilità di fondi generati dal turismo per la protezione ambientale.

Sviluppo di un'offerta rivolta ad un nuovo segmento turistico, maggiormente propenso a conoscere le caratteristiche ambientali e socioeconomiche di una determinata area.

Creazione di nuove professionalità e opportunità lavorative, qualora supportate da formazione specifica.

Aumento dell'attrattività dell'area che offre esperienze positive di eco-turismo (per es. le tegrùe sono diventate un brand per promuovere il turismo costiero in alcune aree del Veneto).

Contributo dei fruitori/operatori (non solo turistici, ma anche per esempio dei pescatori) alla gestione attiva delle aree marine protette, alla tutela degli ecosistemi marini e all'utilizzo sostenibile delle risorse.

Sensibilizzazione dei turisti e della società civile sulla protezione ambientale.

Limitato coordinamento tra enti con competenze diverse ed agenti a scale differenti.

Limitata cooperazione tra gli enti responsabili della protezione ambientale e gli operatori del settore turistico ai fini della gestione e valorizzazione delle risorse marine.

Limitata comprensione dei reali benefici del MU per la protezione ambientale.

Turismo di nicchia con potenzialità reali ancora da valutare, anche a fronte dell'elevata competizione che caratterizza l'intero settore turistico.

Procedure amministrative complesse per la fruizione delle aree marine soggette a protezione.

Limitata disponibilità di finanziamenti specifici.

Limitata disponibilità di personale specializzato (es.guide subacquee con competenze biologico-naturalistiche).

Elevata vulnerabilità degli ecosistemi ed habitat marini, che determina la necessità di operare la fruizione secondo criteri stringenti (in termini di modalità e numero di turisti) di sostenibilità ambientale.

Scarsa visibilità delle acque del Nord Adriatico e condizioni ottimali per lo svolgimento delle attività subacquee limitate ad un periodo dell'anno.

Aumento dell'impatto su ecosistemi fragili (es.tegrùe),conseguente all'incremento della fruizione turistica o dovuto alla gestione impropria delle attività turistiche.

Rischio di ingresso nel MU di operatori non interessati ad entrambi gli aspetti della combinazione e che possono pertanto distorcere il significato del MU medesimo (solo fruizione e non protezione dei siti).

Conflitto con altre attività marittime in competizione per la stessa area di interesse del MU (navigazione, pesca, etc.).

Impatti aggiuntivi del MU da individuare nello specifico, date le caratteristiche isolate e numericamente limitate delle attività ad oggi sviluppate.

barriere impatti

combinare gli usi del mare:
**il turismo costiero e marittimo come volano per il “multiuso”
 dello spazio marino nel Nord Adriatico**



TURISMO E PATRIMONIO CULTURALE SUBACQUEO

benefici driver

- Esistenza nell'area di vari siti sommersi di potenziale interesse turistico, anche se spesso poco conosciuti.
- Contributo delle attività di fruizione sostenibile all'identificazione e mappatura dei siti sommersi da proteggere e valorizzare.
- Interesse dei subacquei e degli operatori di tale settore per il MU, con conseguente aumento della domanda di siti di immersione.
- Possibilità di sviluppare connessioni tra siti di immersione di valenza archeologico/culturale con quelli di valenza naturalistica.
- Interesse nel valorizzare e non solo proteggere i beni culturali.
- Interesse nel regolamentare le attività di fruizione che attualmente avvengono in modo spontaneo, isolato, frammentato e deregolamentato.
- Possibilità di sviluppo di itinerari terra-mare, per esempio lungo le rotte di navigazione storiche o in connessione con siti turistici a terra (es. museo del mare).

benefici

- Co-monitoraggio e co-gestione dei siti per una migliore protezione del patrimonio culturale sommerso, anche in relazione all'attuale stato di abbandono o non-gestione di alcuni siti.
- Potenziale disponibilità di fondi generati dal turismo per la protezione e conservazione del patrimonio culturale sommerso.
- Sviluppo di un'offerta rivolta ad un nuovo segmento turistico, maggiormente propenso a conoscere le caratteristiche ambientali e socioeconomiche di una determinata area.
- Creazione di nuove professionalità e opportunità lavorative, qualora supportate da formazione specifica.
- Sensibilizzazione dei turisti e della società civile sulla valenza e la protezione del patrimonio culturale sommerso.

- Attuale regolamentazione che può impedire o limitare la fruizione di alcuni siti di elevato interesse.
- Limitata cooperazione tra gli enti responsabili della conservazione del patrimonio culturale sommerso, gli operatori del settore turistico e/o associazioni culturali, necessaria per cambiare il paradigma da conservazione a valorizzazione/fruizione.
- Turismo di nicchia con potenzialità reali ancora da valutare, anche a fronte dell'elevata competizione che caratterizza l'intero settore turistico.
- Limitata disponibilità di finanziamenti specifici volti alla valorizzazione dei siti.
- Elevata vulnerabilità di alcuni dei siti archeologici/culturali sommersi dovuta allo loro intrinseca fragilità.
- Limitata disponibilità di esperienze e buone pratiche da capitalizzare, anche ai fini della comprensione dei reali benefici del MU (in particolare per la conservazione del patrimonio culturale sommerso).
- Limitata disponibilità di personale specializzato (es. guide subacquee con competenza archeologica).
- Scarsa visibilità delle acque del Nord Adriatico e condizioni ottimali per lo svolgimento delle attività subacquee limitate ad un periodo dell'anno.

barriere impatti

- Qualora non correttamente gestito, aumento del rischio di danneggiamento dei siti sommersi, in vari casi già oggetto di impatti e degrado.
- Rischio di ingresso nel MU di operatori non interessati ad entrambi gli aspetti della combinazione e che possono pertanto distorcere il significato del MU medesimo (solo fruizione e non protezione dei siti).
- Conflitto con altre attività marittime presenti nel sito (es. navigazione).
- Impatti aggiuntivi del MU da individuare nello specifico, data le caratteristiche isolate e numericamente limitate delle attività ad oggi sviluppate.