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ADDRESSING THE MULTI-USE CONCEPT WITH MARITIME SPATIAL PLANNING IN THE CROSS-BORDER REGION (BULGARIA)



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Authors: Margarita Stancheva¹, Hristo Stanchev¹

Contributors: Vesellina Troeva², Maria Georgieva³

(1) Center for Coastal and Marine Studies (CCMS), Varna, Bulgaria

(2) National Centre for Regional Development (NCRD), Sofia, Bulgaria

(3) Ministry of Regional Development and Public Works of Republic of Bulgaria (MRDPW)

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Ministry of Public Works,
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List of Acronyms

| | |
|----------------|---|
| AF | Analytical Framework |
| CCMS | Center for Coastal and Marine Studies |
| CMAS | Confédération Mondiale des Activités Subaquatiques |
| CPAs | Coastal Protected Areas |
| DABI | Drivers, Added values, Barriers and negative Impacts |
| DG MARE | Directorate-General for Maritime Affairs and Fisheries |
| EAFA | Executive Agency of Fishery and Aquaculture |
| EAMA | Executive Agency Maritime Administration |
| EASME | Executive Agency for Small and Medium-sized Enterprises |
| EBA | Ecosystem-Based Approach |
| EIA | Environmental Impact Assessment |
| EMFF | European Maritime Fishery Fund |
| EU | European Union |
| EUNIS | European Nature Information System |
| FLAG | Fisheries Local Action Group |
| GUE | Global Underwater Explorers |
| GVA | Gross Value Added |
| HERAS | Submarine Archaeological Heritage of the Western Black Sea Shelf |
| ICOMOS | International Council on Monuments and Sites |
| ISO | International Organization for Standardization |
| KEQs | Key Evaluation Questions |
| LSI | Land-Sea Interactions |
| MPAs | Marine Protected Areas |
| MRDPW | Ministry of Regional Development and Public Works of Republic of Bulgaria |
| MSFD | Marine Strategy Framework Directive |
| MSP | Maritime Spatial Planning |
| MS | Member States |
| MU | Multi-Use |
| MUSES | Multi-Use in the European Seas Project |



| | |
|---------------|--|
| NAS | Nautical Archaeology Society |
| NAUI | National Association of Underwater Instructors |
| NCRD | National Centre for Regional Development |
| NGOs | Non-Governmental Organisation |
| NIRD | Western Black Sea Cultural Heritage |
| NM | Nautical Mile |
| NUTS | Nomenclature of Territorial Units for Statistics |
| PADI | Professional Association of Diving Instructors |
| ROVs | Remotely Operated Underwater Vehicle |
| SCI | Sites of Community Importance |
| SEA | Strategic Environmental Assessment |
| SPAs | Special Protected Areas |
| SRIA | Strategic and Innovation Agenda |
| SSI | Scuba Schools International |
| TRL | Technology Readiness Levels |
| UCH | Underwater Cultural Heritage |
| VR | Virtual Reality |
| UNCBD | United Nations Convention on Biological Diversity |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |

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Introduction

This report has been developed under the **MARSPLAN-BS II project, WP2 Connecting cross-border with national MSP, Activity 2.4 Addressing the Multi-Use (MU) concept with MSP in the cross-border region**. It is focused to present how the MU concept could be considered and addressed with the commencing Maritime Spatial Planning (MSP) as a case study in the cross-border area of Bulgaria. Notably, the case study explores how the MSP can support a **‘soft’ MU combination of Tourism, Underwater Cultural Heritage (UCH) and Environmental Protection**.

The report follows the methodology and approach of the Horizon 2020 funded MUSES (Multi-Use in the European Seas) project¹ and the produced Action Plan of the project. For the Black Sea (Bulgaria and Romania) the MU concept is still novel and this activity presents the first pilot MU case study for Bulgaria, as well as for the Black Sea Basin.

1. Multi-Use (MU) concept and MUSES project Action Plan

Coastal and maritime activities have been expanding rapidly in response to increasing coastal habitation, advanced technologies and Blue Economy growth. At the same time, the global climate change and environmental pressures request more and more sustainable maritime uses, such as offshore renewable energy and aquaculture. Indeed, namely the expansion of maritime activities drives the increased demand for sea space and thus intensifies conflicts between maritime sectors and users, as well as puts more pressure on the environment. Therefore, spatial conflict resolution and sustainable use of marine resources are currently issues for all maritime countries, irrespective of what stage of the MSP process are they [1]. One way of conflict resolution is Multi-Use (MU) of the marine space or combining uses, both in close proximity, through joint operations, or on the same platform, which can reduce the space demand and potentially offer significant socio-economic and environmental benefits for different users and sectors. In the context and for the purposes of MUSES H2020 funded project the following definition for MU was developed [2]: ***Multi-Uses (MUs) mean a joint use of resources in close geographic proximity. This can involve either a single user or multiple users. ‘Multi-use’ implies a radical change from the concept of exclusive resource rights to an inclusive sharing of resources by one or more users.***

Thus, Multi-Use often does not come naturally, but has to be motivated by drivers and added-values. This means that **‘Multi-Use’** solutions are not exclusively better than **‘Single-Use’** options and it is crucial to consider specific local conditions in order to favour single – or multi-use in a certain case [3]. Within the MUSES project, MUs have been classified into two distinctive groups

¹ <https://muses-project.com/>



which are representative of the two main sectors, tourism and offshore renewable energy that are mainly driving the MU combinations in Europe [2]:

1) Combinations with tourism sector

2) Combinations with energy sector

At the same time, sectors use marine space differently. MUSES project identified that tourism sector is generally a driver for **'soft' MU combinations**, presented mainly in Southern Europe (Mediterranean and Black Sea), where a steady growth of tourism demand has been recorded over the last years. The term **'soft'** is used as these types of MU do not include infrastructural integration of fixed structures, rather are co-located or an existing infrastructure is used without major modifications (e.g. tourism and fishing). Such uses are also **'less industrial'** and usually more mobile and fleeting, comprising small-scale coastal areas, where tourism activities often take place [2]. The **'hard' MU combinations** mostly involve energy sector and the use of fixed or floating in a single place offshore structures and installations (e.g. renewable energy and aquaculture). These combinations are mainly developed in the northern part of Europe due to the availability of offshore energy resources in the Eastern Atlantic, North and Baltic Sea.

Spatial conflict prevention is particularly important in the case of **'hard'** uses as changing a situation after the fact is usually difficult [1]. The Multi-Use concept implies also the potential (including environmental, economic and societal benefits) in European sea basins and major barriers (inappropriate regulations, operational, environmental, health and safety, societal and legal aspects) stalling the transition of multi-use of ocean from a concept to real life recognition and practical implementation. The analysis undertaken in the MUSES project shows several examples of MU benefits [2]:

- **Contribute to more efficient use of ocean space and resources;**
- **Provide economic benefits to marine users from synergetic use;**
- **Enable certain use to happen at all (give a chance to certain used in spaces where their development otherwise would not be possible) – e.g. aquaculture only if combined;**
- **Provide alternative source of revenue for declining or restricted sectors;**
- **Diversify the sectors to ease the environmental pressures and provide alternative sources of recreation and well-being.**

The MUSES project main output is the published **Multi-Use Action Plan** with details and recommendations for implementing MU in the European sea basins [3]. Since 2007 the European Union (EU), its Member States (MS) and sea basins have gradually introduced a wide range of strategic policy frameworks, environmental protection, marine data and knowledge, marine and sea basin wide programmes and strategies to support the transition **from a single sector to a more integrated management approach**. Although major initiatives are the EU Integrated Maritime Policy (IMP) [4], and the EU Blue Growth Strategy [5] to seek for an increased coordination between different policy areas and cooperation of maritime players across sectors and borders, the only one policy document for MU implementation is still the **EU Maritime Spatial Planning Directive** [6]. It requires all EU MS when developing their Maritime Spatial Plans up to 2021 to



strategically consider the best co-location and co-existing of different maritime uses. However, even where MU combinations may produce significant benefits, multiple barriers relating to regulatory, financing, liability and insurance issues, environmental concerns, stakeholder perceptions, lack of appropriate skills, etc., still exist [3].

Results of the MUSES project show that MU needs to be proactively facilitated and incentivised through public regulatory bodies and respective support programmes, going beyond mere spatial planning solutions. The **Multi-Use Action Plan** has been produced in result of two years of systematic and extensive stakeholder involvement. The Action Plan is highly pertinent in the wider context of the MSP Directive, Blue Investment and Sustainable Development. It analyses the multi-use potentiality of ocean space, and suggests practical solutions on how to overcome regulatory and other non-technical barriers as well as how to minimise risks associated with MU development. The Multi-Use Action Plan aims to provide orientation recommendations and actions for further development of the MU concept. It builds on past, existing MU experiences and extensive discussion with stakeholders at sea basin and local level to ensure that recommended actions would be relevant, timely, and realistic. The MUSES Action Plan covers the following nine MU combinations which were found to be of highest relevance across Europe [3]:

- 1) **Tourism, fisheries & environmental protection**
- 2) **Tourism, underwater cultural heritage & environmental protection**
- 3) **Tourism and aquaculture**
- 4) **Offshore wind farm and tourism**
- 5) **Offshore wind farm and fisheries**
- 6) **Offshore wind farm and aquaculture**
- 7) **Oil and gas and decommissioning – repurposing**
- 8) **Offshore wave energy and aquaculture**
- 9) **Offshore wind and marine renewable energy**

The degree of connectivity between different maritime uses can vary with respect to spatial, temporal, provisioning and functional dimensions – ranging from two uses merely sharing the ‘same’ maritime space to shared platforms and other infrastructure. In the definition provided by the MUSES project, MUs are therefore not only limited to joint use of installations, but also encompasses joint activities. For each Multi-Use, the Action Plan details:

- (i) **the definition/ scope of the multi-use**
- (ii) **its state of development and future potential**
- (iii) **Drivers, Added values, Barriers and negative Impacts (DABI)**
- (iv) **logical framework and objectives, and**
- (v) **the action and recommendations required to further develop the Multi-Use.**



2. Methodological approach

The case study geographical scope includes the large coastal and marine protected areas/Natura 2000 sites and Kaliakra Natural and Archaeological Reserve in the Bulgarian cross-border area. The case study work follows, applies and adopts the MUSES project methodology, and the Multi-Use Action Plan recommendations, and will seek to identify the main drivers and barriers for MU implementation of **‘soft’ combination of Tourism, UCH and Environmental Protection** and potentials of MSP to overcome identified barriers. It is foreseen that the results from the case study and the MU methodology would be transferable and applicable to the national MSP planning. The MU analysis in the case study for the cross-border area of Bulgaria will consider the following four themes, defining the so-called **DABI approach**: **Drivers** = factors promoting MU; **Added values** = positive effects of establishing or strengthening MU; **Barriers** = factors hindering MU; **Impacts** = negative effects of establishing or strengthening MU.

An analytical framework (AF) [7] was developed at the beginning of the MUSES project to provide practical research tools necessary to examine the theoretical understanding and practical experience related to MU. This AF guided the process of information and data gathering at different levels (from a single country to a sea basin) as well as to structure the stakeholder engagement in order to ensure the needed degree of homogeneity to the analysis for different EU sea basins. Drivers and barriers were further defined in the AF and divided into **‘real’** and **‘perceived’** in order to differentiate between the sources of their origin [8]:

- **Perceived (or soft or societal/cultural) drivers** are those related to a stakeholder’s mind set. They result from stakeholder’s perception or understanding of a certain document, process, risk, situation or actor (including persons or entities). Examples of perceived drivers include, but are not limited to:

- A high awareness level in the general public of understanding the need to use sea space sparingly;
- Existence of MU concept in the various non-binding documents, reports and expertise;
- Prominent position in societal debates of the issues and problems that can result from MU application e.g. eutrophication, conflicts between various sectors, etc.

- **Real drivers** are ones that actually support MU approach as the result of conscious decisions at various decision-making levels, including private enterprises. Examples of real drivers include, but are not limited to:

- Legislation supporting MU;
- Financing incentives in support of the MU development;
- Highlighting MU benefits over their costs;
- Administrative requirements granting access to marine space with a preference towards MU;
- A sufficient level of technological readiness (TRL) supporting MU;
- Presence of MU and MU related targets in legally binding programmes and policies;



- Important economic role of sectors suitable for MU.
- **Real barriers** are the barriers that do actually hinder MU. Examples of real barriers include, but are not limited to:
 - Environmental and safety restrictions required by law, or compulsory standard requirements;
 - Insurance issues/policies, e.g. resulting in high insurance costs;
 - High costs of infrastructure or combined operations;
 - Barriers related to politics, including political targets and goals.
- **Perceived barriers** are the barriers related to a stakeholder's mind set. They result from stakeholders' perception or understanding of a certain document, process, risk, situation or actor (including persons or entities). Examples of perceived barriers include, but are not limited to:
 - Interpretation of directives, laws, regulations, guidelines;
 - Stereotyping potential partners/sectors as ideologically driven, incompetent or outdated;
 - Tradition, e.g. traditional fishing or aquaculture practices and equipment are to be preserved and do not allow for combination with other sectors. Hence, there is a lack of interest for cooperation between the different sectors;
 - A lack of trust and/or transparency, etc.

The application of DABI methodology to a certain case study analysis is aimed at providing [9]:
i) an evaluation of the potential to develop or strengthen MU at case study level; ii) a comparative evaluation of drivers and barriers, providing an estimation of MU potential; iii) an evaluation of the effect of MU development / strengthening at case study level; and iv) the overall effect of MU evaluation by comparing added values with impacts.

Following MUSES case study methodology [9], the adopted approach for the Bulgarian MU case study is mainly based on the in-depth desk research and active stakeholder engagement, including the following steps:

- **Geographic description and geographical scope of the analysis;**
- **Current characteristics and trends in the use of the sea;**
- **MU overview:** General background on real or potential MU in the area will be provided. National and or local projects and experiences will be described, as well as national and EU policy framework;
- **Drivers, Barriers, Added values, Impacts (DABI) to MU** will be described and commented. Final version of the catalogue of DABI relevant for the case study will be provided (finalised after validation and feedbacks from stakeholders). Comments and considerations will be provided;
- **Analysis of MU potential results from DABI scoring** will be described and commented. Results from stakeholder scoring of MU Drivers and Barriers and related estimation of MU potential will be given and commented. Other relevant comments and considerations on MU potential will be provided. Annexes can be used if needed;



- **Analysis of MU effect results from DABI scoring** will be described and commented. Results from stakeholder scoring of MU Added Value and Impact and related estimation of MU effect will be given and commented. Other relevant comments and considerations on MU effect (positive and negative) will be provided. Annexes can be used if needed;
- **Focus areas analysis** (certain characterising elements of the MU case study with the purpose to identify the needs for developing MU, impacts, both negative and positive, cumulative, barriers and enablers and actions to overcome barriers and maximise synergies);
- **Stakeholder involvement.** Detailed description of activities carried out to engage stakeholders will be given. Description of interviews or other engagement methods will be provided. According to MUSES project, the stakeholder engagement should be implemented in the context of the characteristics and needs of each specific case study. The case study of Bulgaria will carry out interviews and face-to-face meetings with relevant stakeholders as engagement methods. Interviews will be used for collecting stakeholder inputs on MU potential, evaluation of drivers/barriers to MU and added value/impact of MU;
- **Addressing the selected MU with MSP** (suggested actions/recommendations to overcome identified barriers to this MU).

3. Geographic description and geographical scope of the analysis

The study area is geographically located at the North Bulgarian coast to the border with Romania, and administratively - in the municipalities of Shabla, Kavarna and Balchik, which are part of Dobrich District. The geographical scope includes also the large coastal and marine protected areas/Natura 2000 sites and Kaliakra Natural and Archaeological Reserve. The area considered for this case study includes Bulgarian internal and territorial waters (1,440 km²), spanning along over 98.6 km of the coast. The maritime border of the study area is the territorial waters of Bulgaria - 12 nautical mile (NM) zone and the terrestrial border or the coastal area is defined by an administrative perspective at the basic administrative unit in Bulgaria i. e. coastal municipality (**Figure 1**).

The municipalities of Shabla, Kavarna and Balchik encompass a total area of 1,335 square kilometres² or they comprise 1.2 % of the country's territory. The study area is bordering Romania to the north, the Black Sea to the east, Aksakovo Municipality to the south, and Dobrich selska and General Toshevo Municipalities to the west. The coastline length of the three municipalities is 98.6 km [10]. The area is still low urbanised and low developed compared to the southern part of the Bulgarian coast. The Shabla area is a low plateau, slightly elevated and inclined towards the sea. It is a part of the so-called Moesian plate. The area is plain, uniform and gentle sloped to the SE-E direction with a height from 0 to 100 m above the sea level. The territory is part of Eastern

² Data for 2018 by National Statistical Institute: https://www.nsi.bg/sites/default/files/files/publications/ROO_2018.zip

Danube plain and Dobrudzha region – one of the most fertile lands, which explains the intensive agricultural land use in the study area.

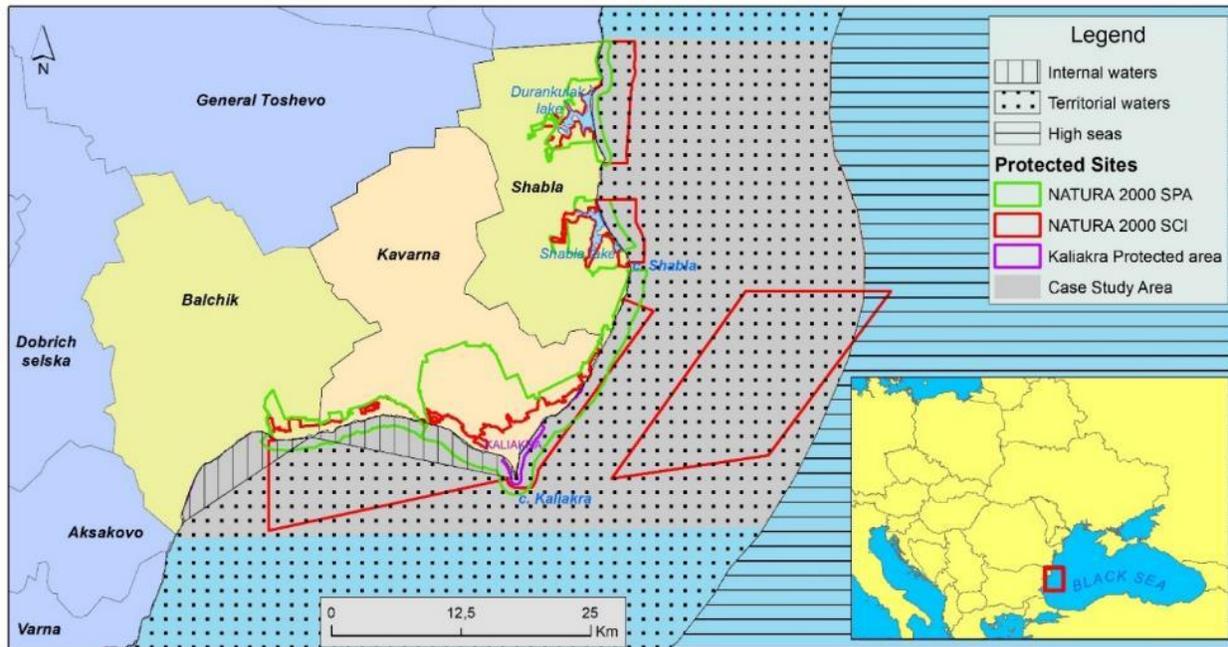


Figure 1 Cross-border case study area of Bulgaria (*Map produced by CCMS*)

The study area is distinguished with temperate continental climate, which is influenced by the Black Sea. Because of the flat terrain of the area, the strong winds are typical climatic element. The influence of the Black Sea Basin reaches up to 25-30 km landward. The average annual temperature in Bulgaria varies between 10°C and 14°C, with prevailing values between 11°C and 12°C [11]. There are three meteorological stations along the coast of the study area: Shabla, Kaliakra and Balchik [12]. For the study area, the average annual air temperature is 11.8°C (Shabla and Kaliakra) compared to Bulgarian southern coast (13.3°C). The lowest winter temperatures in the Bulgarian Black Sea coastal area were recorded for Shabla (average minimum temperature in January: + 0.6 ° C). The hottest months are July and August (average maximum July temperature of + 22.5 ° C).

The coast is mainly exposed to winds from the NE, E and SE that generate the most intense waves. The highest average monthly and annual wind values are registered for Cape Kaliakra station (located on the cape jutting 2 km into the sea). The highest wind speed values are recorded in winter (8.5 m/s). For Cape Kaliakra station calm weather days occupy just 8.6 %, comparing with Balchik, where the percentage of calm weather days is considerably more: 21 %. The existing coastline orientation and wind direction determine the wave regime. The significant wave height H_s (m) with one and ten return period is 6.29 – 8.70 for Cape Shabla and 7.13 – 10 for Cape Kaliakra [13].



Kaliakra's deep-seated cape divides the area in two parts (**Figure 1**): The first zone is located from the border with Romania on the north to Cape Kaliakra on the south, as the coastline has mainly eastern exposure and it is almost straight. It lacks large bays (there is only one small and shallow Bolata Bay), that is why the coast is open to the strong winds and sea waves and currents. A particular feature here is passing of the main Black Sea current along the coast, in a north-south direction, which is connected with the transboundary transport of pollutants, sediments and fresh water from the flowing rivers (mainly Danube River). The mean temperature of the uppermost quasi-homogeneous sea water layer is 12.5 ° C and it is the lowest in February (3.7 ° C) and the highest in August (21.9 ° C). Freezing of the sea was observed several times at every 100 years, being the largest in the winter of 1928-1929. In January 1932 and 1972, a large number of ice fragments were observed, caused by strong winds in the open sea. The average salinity of the surface layer of sea water in the region is 16.38 ‰ and it increases in depth and in a north-south direction. The lower salinity is at Shabla area and the high amplitude of its seasonal changes / from 13.8 ‰ in spring to 18.6 ‰ in autumn / are determined by seasonal nature of the Danube waters, i.e. it is influenced by the main sea current and the transboundary movement of fresh river waters. Storm phenomena are typical at the end of autumn and the beginning of winter and affect the dynamics of the sea water balance. A storm phenomenon was recorded in 1927, which covered the sand barrier and turned Shabla Lake into a bay. Almost all of the sea water characteristics described are determined by circulation of the surface sea currents in the north-south direction. Coastal water quality is observed at two monitoring points - near the village of Krapets and near Cape Shabla. The biological and ecological status of the waters is estimated to be "moderate, probably at risk" and show southward trends. The deteriorated quality is thought to be mainly due to the transboundary movement of pollutants from the main seaward north-south direction. Potential pollution risk can arise from 16 point sources representing discharges of treated wastewater³.

The second zone is located west of Cape Kaliakra: the deeply jutting out into the sea cape has a strong influence on the sea wave regime. Approaching the coast, the sea waves are subject to transformation and refraction, and in the area of Cape Kaliakra, also to diffraction. Coastal wave currents form the general scheme of wave circulation in the coastal zone. The breakwaters and groins built in the area of Balchik town cross longitudinally the coastal wave currents and significantly change the coastal water circulation. Non-wave currents (mainly wind currents) form three zones: the first, immediately adjacent to the shoreline, is occupied by a stream directed south; in the second, up to the 50th isobaths to the east, a counter flow was developed; the third, located above the continental slope, is represented by the western branch of the main Black Sea current (the Devil's current).

The coast of the study area comprises a great variety of geomorphological features: large natural sand beaches, vast sand dunes, rapidly retreating loess cliffs and spectacular high limestone cliffs, coastal fresh/brackish lakes, wetlands, etc. Part of the area is low-laying and thus being vulnerable to climate change impacts and associated sea level rise, flooding and coastal erosion. Coastal

³ MARSPLAN-BS project: Component 1.1.1 - Elaboration of detailed studies for a complete analysis of the Romanian and Bulgarian maritime areas, <http://www.marsplan.ro/en/>



erosion is the major challenge for Shabla Municipality, as the loess cliffs here have some of the highest cliff erosion rates along the Bulgarian coast.

In the southern part of the study area, the underwater coastal slope and the depths are smaller, compared to the northern part. The steepest underwater slopes are south-east from Cape Kaliakra. In its northern part the Bulgarian shelf comprises a system of underwater sea terraces and smaller underwater sandy banks with depressions between banks. The nearshore underwater slope is presented mainly of limestones, sands and sandstones [14].

The study area accommodates valuable natural coastal and marine protected areas (Natura 2000) and wetlands, important Ramsar sites, such as: lakes of Durankulak, Shabla-Ezeretc and Shablenska Tuzla, Kaliakra Natural and Archaeological Reserve (Kaliakra Complex Natura 2000) which support a huge biodiversity of flora and fauna. The area includes also one of the most important wetlands, a migration corridor for many protected birds in Bulgaria, that host one of the rarest ecosystem types with a national and international conservational value. The study area is rich in remains of coastal and underwater cultural heritage. Added to ecosystem values, the region is also an archeologically important area, where numerous underwater and coastal archaeological sites from different periods have been discovered – Prehistory, Antiquity (ancient Greek, Hellenistic, Roman), Mediaeval (Early Byzantium, Bulgarian). Several shipwrecks and underwater caves in the study area attract many divers to visit and explore them. As the study area is still a low urbanised area compared to other overdeveloped coastal regions in Bulgaria, such conditions provide a good ground for development of nature-based, eco - and historical/cultural tourism [15, 16].

As mentioned above, a number of Coastal Protected Areas (CPAs) and Marine Protected Areas (MPAs), both Natura 2000 and nationally designated areas have been established in the study area. Kaliakra Natural Reserve was declared in 1960. Later, in 2007 several Natura 2000 sites, both Special Protected Areas (SPAs) under the Birds Directive⁴ and Sites of Community Importance (SCI) under the Habitats Directive⁵ with large marine areas have been established. Since 2017, in order to protect valuable marine habitats, Kaliakra Complex Natura 2000 has been extended with additional MPAs (**Figure 1**). In **Table 1** and on **Figure 2**, protected sites with marine parts in the study area are presented.

Table 1 Environmental protection in the study area

| Name and type of MPA | Year of establishment | Area (km ²) | Marine part (%) | Marine part (km ²) |
|---|-----------------------|-------------------------|-----------------|--------------------------------|
| Natura 2000 SCI " <i>Ezero Shabla - Ezerets</i> " | 2007 | 26.2 | 65 | 17.1 |
| Natura 2000 SCI " <i>Ezero Durankulak</i> " | 2007 | 50.5 | 75 | 37.9 |
| Natura 2000 SCI " <i>Kompleks Kaliakra</i> " | 2007 | 483.4 | 90 | 437.3 |
| Natura 2000 SPA " <i>Belite skali</i> " | 2012 | 41.6 | 41 | 17.1 |
| Natura 2000 SPA " <i>Kaliakra</i> " | 2009 | 161.7 | 34 | 55.4 |

⁴ https://ec.europa.eu/environment/nature/legislation/birdsdirective/index_en.htm

⁵ https://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm



| | | | | |
|---|------|------|----|-----|
| Natura 2000 SPA " Shablenski ezeren kompleks " | 2010 | 31.8 | 20 | 6.5 |
| Natura 2000 SPA " Durankulashko ezero " | 2010 | 33.6 | 29 | 9.7 |
| Kaliakra Natural and Archaeological Reserve | 1941 | 6.9 | 58 | 4.0 |

Data source: Ministry of Environment and Water⁶

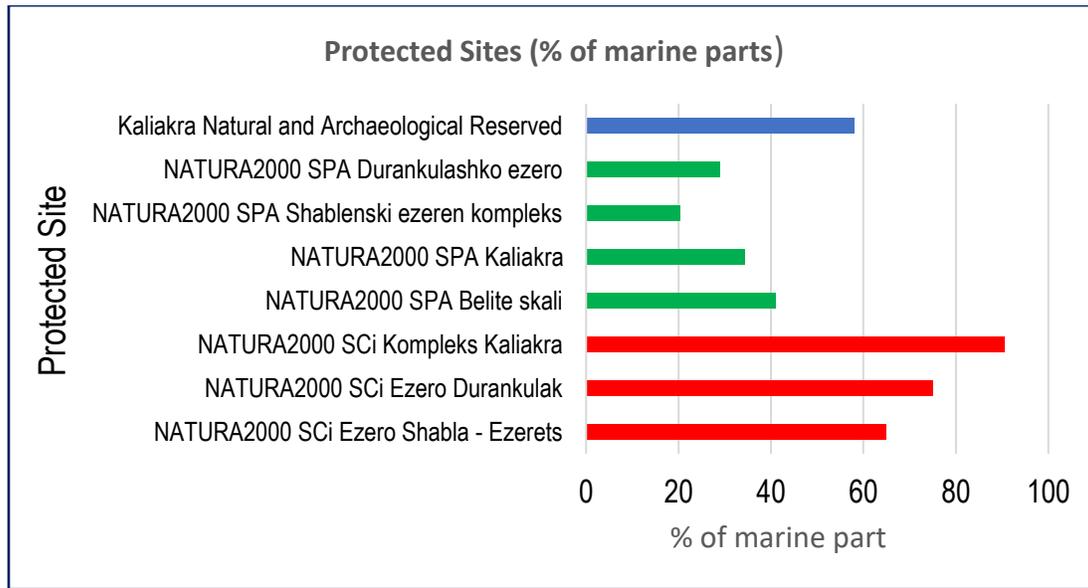


Figure 2 Protected sites (nationally designated and Natura 2000) in the study area

Kaliakra Natural and Archaeological Reserve has an area of 713,67 hectares. The reserve is also part of Natura 2000 SPA Birds Directive and SCI Habitats Directive. Cape Kaliakra is located 12 km east of Kavarna town (**Figure 1**). The coast here is steep with vertical cliffs reaching 70 m down to the sea. The rich history, the well-preserved landscape, and the beautiful panoramic views make Cape Kaliakra one of the most attractive tourist spots on the Black Sea coast. Cape Kaliakra and architectural complex on its territory has been announced as Archaeological Reserve since 2003 by a resolution of the Ministerial Council of Bulgaria. Kaliakra was settled by the Thracian tribes. The greatest prosperity of the cape is in the second half of the XIVth Century, when it was the capital of the so-called Karvun principality of the Bulgarian ruler Dobrotitsa. The merchant ships which mooring in ancient Tirizis used deep bay of Cape Kaliakra naturally protected of the north and east winds. It was first used during the Late Bronze Age. The underwater archaeological research in Bulgaria started in 1959, and the first expedition were around Cape Kaliakra [17]. Cape Kaliakra Reserve sits on the Via Pontica, a major bird migration route from Africa into Eastern and Northern Europe as it hosts many rare breeding birds (e.g. *Pied Wheatear* and *European Shag*). Other unusual breeding birds are *Saker Falcon* and *Lesser Grey Shrike*.

⁶ Data source: Ministry of Environment and Water, 2020:
<http://natura2000.moew.government.bg/Home/ProtectedSite?code=BG0002051&siteType=BirdsDirective>

Seabed habitat mapping and direct observations serve many purposes including the design of ecologically coherent MPAs networks, species distribution modelling, establishing monitoring programmes for seabed habitats and informing Maritime Spatial Planning⁷.

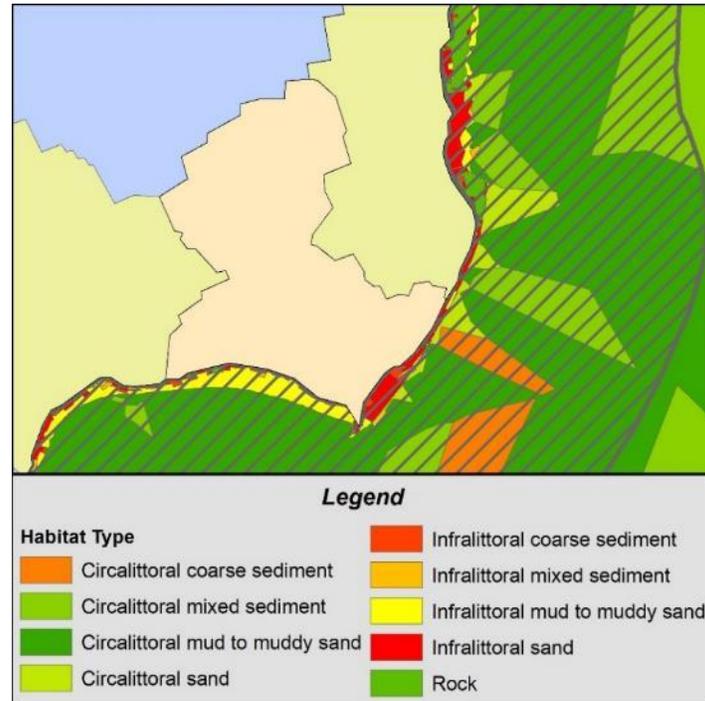


Figure 3 Seabed habitats mapping of the study area
(Map produced by CCMS, Data source: EMODnet Seabed Habitats⁸)

They are also indispensable for Member States to fulfil their legal obligations under the Marine Strategy Framework Directive (MSFD) [18], where full coverage of benthic broad habitats of all European seas is required. The first comprehensive habitat mapping of the Black Sea was completed in the framework of the EU SeaMap 2 Project [19]. As a result, habitat maps, following the EUNIS (European Nature Information System) classification system are available for the majority of the coastal zones of the Bulgarian Black Sea, including the cross-border case study area. A new version of the Black Sea broad-scale habitat map was released in 2019⁹ and it is freely available from the EMODnet interactive Map Viewer (**Figure 3**).

Black Sea correlation table used to translate Black Sea habitats to MSFD Benthic Broad Habitat Types has also been updated and is available as part of the EU SeaMap download package¹⁰ and

⁷ EMODnet Portal: <https://www.emodnet-seabedhabitats.eu/>

⁸ EMODnet Seabed Habitats: <https://www.emodnet-seabedhabitats.eu/access-data/download-data/>

⁹ <https://www.emodnet-seabedhabitats.eu/about/euseamap-broad-scale-maps>

¹⁰ EUSeaMap download package: <http://www.emodnet-seabedhabitats.eu/access-data/download-data/?linkid=1>



as an Annex to the EU SeaMap 2016 technical report¹¹. The habitat classification for the Black Sea used by EU SeaMap 2016 was reviewed by the Black Sea benthic habitat experts during a workshop held in Varna, Bulgaria in April 2018. The objective of the workshop was to identify areas of improvement for the broad-scale habitat map that was produced in EMODnet Phase 2 in the Black Sea. One key output was a revised list of habitat classes relevant for broad-scale habitat mapping. Some habitat classes that were defined in Phase 2 were renamed, other ones were removed and new ones were created. As a result, the EU SeaMap broad-scale habitat map and the MSFD Benthic Broad Habitat Types habitat maps in the Black Sea are substantially different from those that were produced in Phase 2, with improved spatial consistency across borders.

The presence of all important natural, historical and cultural sites along the coast and in the sea space of the study area provide favourable conditions for the development of tourism related MU combinations and should be taken into account when considering the potential of the selected MU of Tourism, UCH & Environmental Protection.

4. Current characteristics and trends in the use of the sea

The main features driving the economic development of the three coastal municipalities in the study area - Shabla, Kavarna and Balchik, are the existing valuable natural resources and favourable geographical location. **Those assets determine the key role of tourism and agriculture for the economic development of these municipalities.** The study area is a popular tourist destination for many nationals and foreigners as it is distinguished by beautiful landscape and existence of large natural sand beaches and dunes. There are also many archaeological remains on the land and on the sea bottom (such as wrecks, caves, reefs, landscapes, etc.) subject to cultural and historical tourism. Located here are some of the most attractive and visited tourist spots along the Northern Bulgarian coast, such as, Yaylata and Kaliakra natural archaeological reserves, Balchik botanical garden, one of the famous Bulgarian resorts – Albena Resort, as well as the smaller resorts such as Rusalka and White Lagoon.

Coastal and maritime tourism includes various forms such as beach, sun-bathing/swimming, camping, diving, surfing, etc. **The sector is significant for the case study area, with seasonal sun-sea and beach tourism driving the vast majority of tourist visits and nights spent.** For example, based on 2018 data from national statistic¹², Dobrich District (NUTS 3 level) in which case study area is located, accommodated 174 hotels (mostly in the summer), and the number of overnight stays amounted to 90 % of the whole year with a peak during the summer. The average occupancy of tourist infrastructure varies greatly: between 7 % in January, up to nearly 80 % in July and August. There is a large disproportion in the supply and implementation of tourist services between three municipalities. One of the largest sea resorts in Bulgaria (Albena Resort) is located in Balchik Municipality. Data from national statistic revealed that in 2018, in Albena Resort operated 36 hotels from all 174 in Dobrich district, or 21 %, with more than 17,500 bed places (30,532 in Dobrich district) or 57 %. In 2018 the number of overnight stays in Albena Resort

¹¹ EUSeaMap 2016 technical report: <https://archimer.ifremer.fr/doc/00388/49975/50583.pdf>

¹² Tourist data for 2018 by National Statistical Institute: <https://www.nsi.bg/en/content/6941/tourism>



reached 1.5 mln or 65 % of all overnight stays in Dobrich District, and thus accommodated 70 % of the whole revenue.

Despite small number of tourist infrastructure and low urbanisation of the study area, the existence of natural and cultural heritage sites is another precondition for attracting large number of tourists and visitors. For the period 2007-2018, circa 1,454,000 tourists visited the protected areas and historical sites in the municipality of Kavarna: Cape Kaliakra Natural and Archaeological Reserve, Yaylata Protected Site and Archaeological Reserve, and the Historical Museum in Kavarna, (according to data provided by Penko Georgiev, Director of Maritime Museum in Kavarna). The largest tourist flow was recorded for Cape Kaliakra with average number of 114,000 visits per year, or 94 % of all visits. A significantly lower number of visitors were recorded for the Yaylata Reserve with a mean value of 6,600 tourist visits per year and the smallest number of visitors occurred at Kavarna Museum with only 500 visits per year (**Figure 4**).

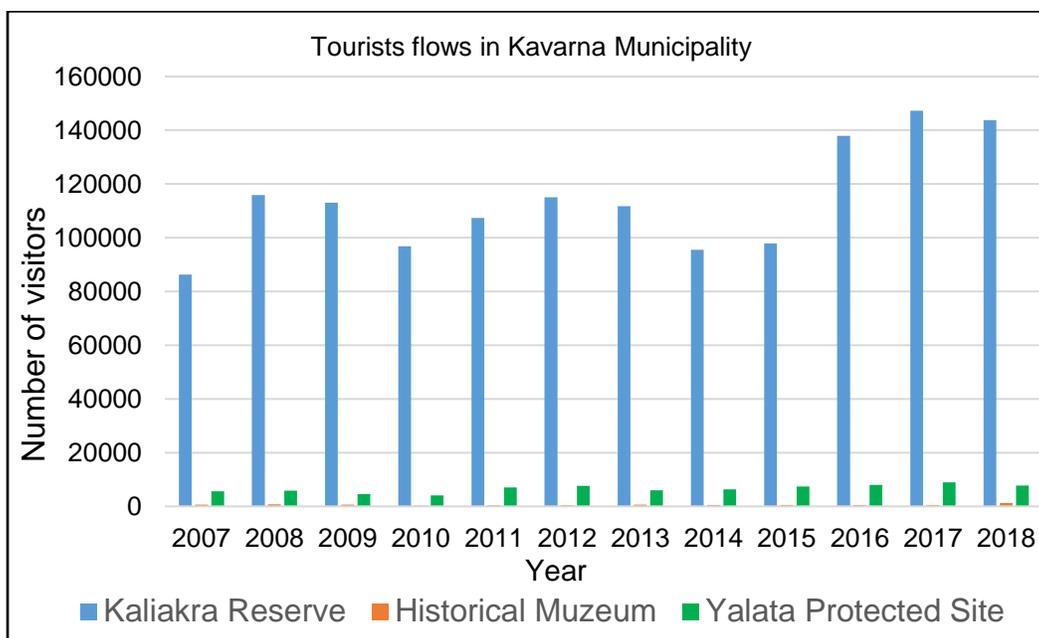


Figure 4 Tourist visits in Kavarna Municipality during 2007-2018
(Data source: Kavarna Maritime Museum)

Many other forms of tourism (e.g. wildlife tourism, eco-tourism, underwater adventure tourism, cliff rocky climbing, camping, historical and cultural tourism,) occur or have the potential to occur within the study area. Some future perspectives could include: development of balneo - and spa tourism in the area of Shabla Municipality; birdwatching or ornithological tourism is already developed, though insufficiently around the area of Durankulak and Shabla Lakes (**Figure 1**). This lake complex is a Ramsar site of international importance¹³, which has an initial eco-tourism infrastructure - a house - shelter for birdwatching and information center at Durankulak. The lakes

¹³ <https://www.ramsar.org/about-the-convention-on-wetlands-0>



are especially attractive for tourists in particular during migration and wintering waterfowl, as many birds, such as, pelicans, herons, cormorants and other species are gathered here and can be observed directly.

Numerous shipwrecks are located in the marine space of the study area both wood, older than 2000 years, and modern metal ones. These ship wrecks are subject to exploration from both researchers and tourists (scuba divers). The location of some of them is already known, nevertheless they still need to be further explored and protected for future generations. **Most of the discovered shipwrecks are located in MPAs (i.e. Kaliakra Reserve) and thus the study area implies the potential for MU combination of Tourism, UCH & Environmental Protection.**

Maritime tourism is mainly presented by activities such as yachting at Balchik and Kavarna, surfing, water skiing, diving and other water sports in the study area of the three municipalities. Several diving clubs have also operated in the study area. They also develop few accompanying activities, including training on scuba diving, maintenance or rental of diving equipment, organising recreational diving for scuba divers or less experienced tourists to interesting sites at the sea bottom. Wrecks are appealing to divers for a number of reasons, whether to see a piece of history long gone, or to observe nature Black Sea flora and fauna. Interesting sites for visitors are also rocky reefs, underwater caves, natural formations. Most of the wrecks lie between 15 and 50 m depth and can have small to medium strong currents present. Depths of up to 15 m are preferred for the less experienced scuba divers, because of safety of the tourists. Often, sunken objects are covered with mussels and Rapana (snails), and play the role of an artificial reef around which a rich fauna can be observed such as: common stingray, Black sea dragon, Black scorpionfish, Black sea crucian, Black sea crab, goby etc. Depending on the season and weather conditions, the sea water may be cold, with low visibility or strong currents and these preconditions often serve as barriers to scuba diving in the Black Sea.

Agriculture is other highly developed sector of the economy in the three municipalities, mainly due to the presence of large fertile lands in Dobrudzha area. Balchik town accommodates yacht and large fishing ports, while the port of Kavarna is serving for small fishing vessels and yachts. North of Cape Kaliakra, there is no existing port, only few boats at the pier of Shabla, which makes fishing in this part of the study area very difficult.

Fishery has been traditional livelihood in the study area for a long time ago. According to 2019 data by Executive Agency of Fishery and Aquaculture (EAFA)¹⁴, 1,854 fishing vessels have been registered in Bulgaria and 232 were registered in the study area: Shabla Municipality accommodates largest number - 89 vessels, followed by Kavarna - 74 and Balchik - 69. Thirteen traditional pound net fisheries are operating in the region, with only one located north of Cape Kaliakra and the others located in the sea area between Kaliakra and Balchik town, due to more favourable weather conditions (protected from strong E and NE wind waves). In Shabla Municipality fishery has been traditional livelihood for about 100 families, source of additional income and an integrated form of recreation for others.

¹⁴ Data source: Executive Agency of Fishery and Aquaculture, 2019: <http://iara.government.bg/?lang=en>



In recent years, numerous (17) mussel aquaculture farms have been established south of Cape Kaliakra and thus the region has emerged as one of the largest producers of black mussel cultivation in Bulgaria. In 2015, a mussel processing plant was set up into operation in the port of Kavarna town. It has the capacity to process all mussel production from the farms throughout the Bulgarian Black Sea. The total capacity is envisaged to reach 3,000 tons per year. The Rapana processing plant in Kavarna town has already been completed. Between Kavarna town and Cape Kaliakra, there is an approved plan for the construction of an aquarium for rainbow trout at a depth of 12-15 m.

Industry is the lowest developed sector in the study area and mostly presented by small and medium enterprises in manufacturing. The extraction of oil and gas has been produced since 1960s near Tulenovo village in Shabla Municipality and it is important for local economic and social development. For oil and gas exploitation, the operating company ‘Exploration and production of oil and gas’ has been granted with a 35-year concession. The concession territories are located south of Romanian border and south of Cape Shabla. According to recent information, the exploitation on gas and oil is in decline, and the company foresees to build a new tourist infrastructure on the oil and gas fields, such as golf courses and resorts.

5. MU overview

The use of the sea in the study area, has been mainly based on ‘soft’, nature-based and traditional activities, such as small-scale fishery and tourism (coastal and maritime), although the development of small ‘hard’ uses like oil and gas extraction, and especially aquaculture farms, have rapidly developed during the last years. Therefore, despite the potential of few combinations of uses, the concept of Multi-Use (MU) in the study area has not been yet implemented and not well known respectively. The existing MUs in the study area are more related to ‘soft’ or traditional uses of maritime space, such as tourism associated with Underwater Cultural Heritage (UCH) and environmental protection. The available information about this MU has been still limited, so the first steps undertaken in the case study were to overcome the lack of information, mainly based on desk analysis and stakeholder engagement [20, 21].

As underlined in the introduction part, this MU case study of MARSPLAN-BS II project focuses on tourism sector as potential major driver for development of MU opportunities, namely the combination between **Tourism, UCH & Environmental Protection**. Within the context of the MUSES project, this MU has been defined as **the combination of touristic or recreational activities with the protection of underwater cultural heritage (UCH) and its adjacent marine ecosystems**. This can take the form of ‘dry footed access’, with land-based museums to display the richness of local UCH or use of glass bottom boats to reach the UCH locations [3]. It can also involve in situ access to scuba divers for viewing UCH sites and where relevant, this MU involves combined efforts to link environmental and UCH preservation measures.

The conservation and protection of UCH has increased over the past decades, especially with the adoption of the UNESCO Convention on the Protection of the Underwater Cultural Heritage in



2001 [22], designed to support countries for better protection for UCH through the application of specific principles and rules on cooperation and management. UCH sites (for example wrecks) are often located in the environmental protection areas (MPAs) or may act as artificial reefs and become a refuge for several marine organisms. Environmental protection measures can therefore be compatible with UCH conservation and at the same time the tourists can benefit from the MU's environmental and cultural values. Therefore, UCH has been used as a resource for tourism and recreation in environmental protection areas [20]. UCH is understood in MUSES project as '*all traces of human existence having a cultural, historical or archaeological character which have been partially or totally under water, periodically or continuously, for long [22] or shorter periods of time, usually designated as Historical Relevant Sites*' [23].

5.1 Desk research

Following the MUSES project case study methodology [9], a desk research analysis was used as a starting basic point to compile the preliminary catalogue of DABI factors for the MU combination of Tourism, UCH & Environmental Protection. All categories of factors were verified and scored afterwards with detailed stakeholder consultations via interviews and face-to-face meetings in the study area. Desk research first included analysis of past or ongoing projects related to this MU, scientific literature, technical reports or other available information on the MU. Next step was to analyse existing key EU and national legal and policy documents regarding this MU.

Two projects, jointly implemented by Bulgaria and Romania, having reference to this MU potential, have been screened. The first one is HERAS project¹⁵ (Submarine Archaeological Heritage of the Western Black Sea Shelf), funded under the Cross-border Cooperation Programme "Romania-Bulgaria 2007-2013" with duration 2013-2015. The purpose of this project was to explore the Western Black Sea continental shelf and identify underwater archaeological sites in order to promote them in the 'Scuba Diving' adventure tourist circuit. The adoption of the UNESCO Convention [22] on 2nd of November 2001 as the international treaty to save the underwater cultural heritage facilitates joint exploration of the multi-millenary history of the Black Sea western coast at Constanta and Kaliakra. HERAS project promoted scuba diving adventure tourism in the cross-border area of Bulgaria and Romania, and increased the tourism potential of the Western Black Sea, through the identification and promotion of common UCH. The project produced an **Underwater Heritage Tourism Management Plan**, aimed to support the development and promotion of integrated tourism products between borders, while supporting the preservation of coastal and marine protected areas. The plan includes UNESCO regulations regarding underwater exploration and a set of standards regarding recreational diving, standards recommended by the international certification agencies for diving centers and recreational divers (PADI, SSI, GUE etc.); safety regulations regarding recreational diving; practicing underwater tourism (shipwreck diving regulations; rules for protection of shipwrecks); protection of submerged cultural heritage.

¹⁵ HERAS project: <https://www.msp-platform.eu/projects/submarine-archaeological-heritage-western-black-sea-shelf>



A follow up project - Western Black Sea Cultural Heritage (NIRD)¹⁶, funded by the European Maritime Fishery Fund (EMFF) of the European Union and the European Commission DG MARE (2017-2018), also explored innovative ways to define and launch potential pathways for tourism competitiveness and sector diversification by introducing a new packages for diving tourists. The project has relation to the studied MU as it aimed to select, classify and joint the most attractive tourist transnational targets (wrecks, archaeological sites, artefacts, marine protected areas, submerged landscape and inland found exposed artefacts) in a new transnational tourist package. The main project output is the new transnational tourist package ‘**Western Black Sea Underwater Cultural Tourist Routes**’, proposing 4 transnational routes, three Western Black Sea underwater destinations and one on the shore destination: 1) Wrecks and Artificial Reefs; 2) Ancient Underwater Trade Route; 3) Natural Heritage Route; 4) Underwater Archaeological Artefacts Inland Route.

MUSES H2020 project has further identified that environmental protection and tourism are the key drivers for several MU combinations in the Black Sea (Bulgaria and Romania) [2]. In the Black Sea, due to various environmental issues, such as eutrophication, pollution from industrial and agricultural sources, biodiversity loss, coastal degradation, a number of important MPAs have been designated (both under national legislation and Natura 2000). Around 80 % of the Bulgarian Black sea coast and 7.8 % of the sea waters of Bulgaria are categorised as Natura 2000 protected sites. This provides economic and policy incentives for developing recreational and tourist activities in line with the environmental protection in these sites. **Soft uses such as sustainable tourism in MPAs can be seen as desired direction of Blue Growth in the Black Sea.** Coastal and maritime tourism is the most significant branch of this sector and it is still a rapidly growing part of the Bulgarian local economy: it contributed 66 % to Blue Economy jobs (48,300 persons employed) and 55 % to GVA (or 399 million Euro) in 2017 [24]. Many environmental protection and UCH sites with pristine marine environment and archaeological remains have also attracted large number of visitors. For instance, the Bulgarian marine protected area “Complex Kaliakra” offers various tourist attractions e.g. visits to archaeological sites, caves, golf and spa clubs, holiday resorts, etc., [16].

Next step in the desk research included the analysis of the main national or international legal and policy documents regarding this MU, single uses and activities in the maritime space of the study area and of national scope, such as MSP, sectorial legislation, municipalities development plans, and other relevant documents. However, the MU concept is still novel for the Black Sea and for Bulgaria, and very few documents are referred to the combination of maritime uses /activities and promotion of synergies between different uses and environment. The following main documents at national and EU level were analysed:

- **At national scope**

- **Cultural Heritage Act** [25]: regulates the preservation and protection of the cultural heritage of Bulgaria, including the UCH. Cultural heritage encompasses intangible and tangible immovable

¹⁶ Western Black Sea Cultural Heritage: <https://ec.europa.eu/easme/en/western-black-sea-underwater-cultural-tourist-routes>



and movable heritage as an aggregate of cultural values which bear historical memory and national identity and have their own academic or cultural value.

- **Regulation № H-7** from 12.06.2008 to perform diving and other underwater activities [26], issued by the Ministry of Defence, Ministry of Interior and Ministry of Transport, Information Technologies and Communications of Bulgaria. This document regulates the safety standards for diving activities and the requirement for taking preliminary permission for diving from the Executive Agency Maritime Administration in Bulgaria. However, this creates difficulties for tourist activities of diving centres: often the permission is given, but it is not possible to visit the site due to the bad weather. Moreover, the diving centres are not able to plan even in a short term the activity with tourists willing to dive.

- **Protected Areas Act** [27]: regulates the categories of protected areas, the assigned use thereof and the regime of protection and use, their designation and management. The purpose of this Act is to conserve and preserve protected areas as a national and universal human wealth and asset and as a special form of conservation of Bulgarian nature, conducive to the advancement of culture and science and to public welfare. The following categories of protected areas are defined under this Act: 1. strict nature reserve; 2. national park; 3. Natural monument; 4. managed nature reserve; 5. natural park; 6. protected site; protected territories include forests, lands and waters.

- **Environment Protection Act** [28]: One of the purposes of this Act is to regulate the social relations with regard to protection of the environment for the present and future generations and protection of human health. This purpose shall be achieved by means of regulation of the regimes of conservation and use of environment; control over the status and use of environment and of the sources of pollution and damage; environment management and of environmental factors; environmental impact assessment (EIA); designation and management of areas placed under a special regime of protection etc.

- **Tourism Act** [29]: regulates the social relations associated with the implementation of governance and control in tourism, the interaction of the State and municipalities in the implementation of activities related to tourism, as well as the participation of not-for-profit legal entities and natural persons in the said activities.

- **National Strategy for Sustainable Development of Tourism in Bulgaria 2014-2030** [30]. The Updated National Strategy for the Sustainable Development of Tourism in the Republic of Bulgaria covers the period 2014-2030. This document aims to determine the direction of development of Bulgarian tourism in accordance with the changes in the environment and the attitudes and characteristics of the tourists, as well as to lay a reliable basis for the sustainable development of the destination.

- Spatial planning in Bulgaria is regulated by **Spatial Development Act** [31]: defines the main possible ways of land use, and how they are determined. Different territories can be used such as urban areas, agricultural areas, forest areas, protected areas, and damaged areas to recover. This is determined by concepts and patterns of spatial development, and master plans. Under the Regulation № 8 of 14 June 2001 on the scope and content of spatial/master plans the boundaries of coastal strip, the boundaries of zone "A" and zone "B" according to the Black Sea Coast Spatial



Development Act (2007) and the territories and areas of the aquatory with the status of immovable cultural heritage are determined with the master plans of the municipalities along the Bulgarian Black Sea coast. There are still various unclear aspects related to competence, planning level, the extent of the rights of county governments in planning of marine areas (there are no municipality/administrative borders defined in the sea), spatial planning in the Exclusive Economic Zone, etc.). The municipalities in Bulgaria have no territory at the sea and the competence of municipalities as local decision-makers regarding the territorial sea is still undefined.

- **Black Sea Coast Spatial Development Act** [32]: aiming to creation of conditions for protection, sustained integrated development of the Black Sea coast; ensuring free public access to the sea shore; protection, preservation and rational use of natural resources; prevention and reduction of pollution; protection of the sea shore from erosion and landslides; and protection of the natural landscape as well as of cultural and historical heritage. The master plans of all coastal municipalities and the detailed spatial development plans have to contain the specialised schemes for the contiguous aquatory. The schemes shall reflect the coastal beach strip, sanitary zones; water sports development; underwater archaeology and underwater diving; coast protection and geo protection facilities and other facilities or sites related to tourist functions of the coast and commercial fishing; implementation of activities related to national security and defence.

- **Maritime Space, Inland Waterways and Ports of the Republic of Bulgaria Act** [33] promulgated State Gazette No 12/11.02.2000, last amended in State Gazette No 60/07.07.2020. The law regulates maritime spaces, inland waterways and ports of Republic of Bulgaria jurisdiction. Its goals are the Black Sea and Danube river utilisation, maritime and river connections facilitation, navigation safety, marine and river environment protection of navigation, ecological balance maintaining, port services accessibility, quality and effectiveness and navigation expenses reduction and stimulation. The national MSP development has been started and the Directive 2014/89/EU on establishing a framework of MSP was transposed in early 2018 in the national legislation by an amendment of the Maritime Space, Inland Waterways and Ports of the Republic of Bulgaria Act.

The MSP experience so far has been limited to involvement in EU funded projects with relation to MSP; the first pilot MSP project was MARSPLAN-BS to support directly the implementation of the EU MSP Directive in Romania and Bulgaria. No direct references to the development of MU have been made in the national legislation until the transposition of MSP Directive. Consequently, among all national documents, only this act is focused on the MSP and the combined use of the maritime space, respectively on the MU concept and vision. The MU concept is inherent in this act as it states that the maritime space of Bulgaria shall be used in accordance with the principle of integrated management of maritime activities. MSP shall include analysis of sea activities and organising these activities in a way which allows their co-existence to achieve the ecological, economic and social objectives, such as sustainable development, blue growth and sustainable use of natural resources. When developing national MSP all existing and future maritime uses and their impact on the environment and UCH shall be taken into account. All



remaining national legal framework is focused on sectoral development or single uses and activities at the maritime space.

- **Regional Development Act** [34]: regulates the planning, programming, management, resource provision, supervision, control and assessment of the implementation of the strategies, plans and programmes for conducting the state regional development policy; spatial development planning of the territory on national and regional level.

- **Development Plan of Shabla Municipality (2014-2020)** [35]: a guiding medium-term strategic and programme document outlining the goals and priorities for sustainable and integrated local development, taking into account the specific characteristics, capabilities, resources and potential of the municipality.

- **Development Plan of Kavarna Municipality (2014-2020)** [36]: a document for strategic planning of sustainable integrated development at local level (on the territory of the municipality). The municipal development plan sets out the medium-term development goals and priorities, taking into account the specific characteristics and potential of the municipality, on the one hand, and the strategic guidelines for regional and local development set out in the higher level planning and strategic documents.

- **Development Plan of Balchik Municipality (2014-2020)** [37]: a major strategic document that outlines the goals and priorities for sustainable and integrated socio-economic development of the municipality until 2020. The strategic framework is based on the available potential of the municipality of Balchik, determined by the current situation analysis and development perspectives, as well as the policies enshrined in the current EU, national and regional strategies.

- **EU/ International legal and policy documents**

- **UNESCO Convention** on the Protection of Underwater Cultural Heritage, adopted on 2nd November 2001 [22]. The convention seeks to improve international collaboration and conservation practices. It sets common principles such as the preservation *in situ* of cultural heritage when possible and prohibits the commercial exploitation of cultural heritage. Bulgaria and Romania acceded to the UNESCO Convention concerning the protection of the UCH and this poses great challenges, to meet the demands imposed by the Convention and to combine their efforts and expertise to develop a new joint Black Sea model for the protection of UCH.

- **Valetta Convention adopted in 1992** [38] on the protection of archaeological heritage establishes specific requirements for the protection of maritime heritage. Bulgaria adopted the convention in 2005.

- **Natura 2000 Ecological Network** [39]: Bulgarian MPAs network consists of 26 Natura 2000 zones. Some of these zones are mostly landward located, with narrow strip (up to 1 NM) in the sea water. Eleven zones are protected under the Birds Directive [40], 13 zones are protected under the Habitats Directive [41] and 2 zones are with protected status under both Directives. In Bulgaria there are 2 marine zones protected by national legislation: Kaliakra Reserve and Koketrais sand



banks). However, as of the beginning of 2020 no one management plan for these Natura 2000 zones has been approved or being operational.

- Bulgaria is one of the most biologically diverse countries in Europe and hence nature protection is among the major priorities of the national environmental policy. Biodiversity conservation activities at national level are combined with international ones. Bulgaria has signed and ratified a large number of global, European and regional conventions, examples of most important among them are:

- **Convention on Biological Diversity** [42];
 - **Convention on the Conservation of European Wildlife and Natural Habitats (Bern)** [43];
 - **Convention on Wetlands of International Importance especially as Waterfowl Habitat 1971 (Ramsar Convention)** [44];
- and others...

5.2 Stakeholder involvement method

Stakeholder engagement was defined to be one of the main sources of information in the MUSES project [7] and was the main source of information in all case studies for different basins in the project. Under the MARSPLAN-BS II project case study for Bulgaria, the preliminary catalogue of DABI factors identified during the desk research was evaluated and scored by different stakeholders/decision-makers in relation to the three sectors of combination: tourism, UCH and environmental protection by carried out interviews and face-to face meetings and discussions. Stakeholder scores provided a picture of perceived drivers/barriers/added value/impacts of MU. Moreover, experts and stakeholders were asked to identify additional factors according to their knowledge/experience. Stakeholder interviews included several main parts: presentation of the MARSPLAN-BS II project and identification of the stakeholder (including signing the MARSPLAN-BS II consent form), identification of MU and analysis of existence or potential existence, identification of drivers, added values, barriers and negative impacts (DABI) for the implementation of the MU and, mainly in some cases of cross-cutting stakeholders, presentation of key evaluation questions to focus area analysis.

6. Catalogue of drivers, barriers, added values, impacts (DABI) to MU

This section presents the catalogue of DABI factors for the studied MU of Tourism, UCH & Environmental Protection. Drivers/Barriers/Added values/Impacts (DABI) to MU were identified in this step. They were categorised by considering key issues for MU development, such as policies, administrative/legal aspects, environmental and socio-economic constrains, technical capacity, and knowledge gaps (technology, environmental impacts, etc.). The analysis also identified the real vs perceived barriers, by comparing results from the desk research with stakeholder perception.



For the case study of Bulgarian cross-border area DABI factors catalogue was based on the MUSES project case study methodology [9]. DABI factor catalogue was pre-identified for the selected MU based on the desk research and then discussed with stakeholders during the interviews. Interviewed stakeholders were asked to confirm the pre-selection of DABI and to add missing/additional DABI factors according to their local/regional knowledge and expertise. DABI factors for the combination Tourism, UCH & Environmental Protection for the cross-border area (**Table 2**) were analysed by 13 stakeholders from the investigated sectors. All pre-identified factors were considered to be applicable to the cross-border area of Bulgaria. There were some recommendations given by the interviewed stakeholders to all categories (mostly by scuba diving centres and one from environmental organisation). Few new suggestions emerged to the barriers *related with technical capacity*, which however were not included in the final catalogue as most of the interviews had been already conducted at that time. For example: *Tourists may need specialised skills (e.g. certificates/licenses for diving). Comment: the lack of specialised skills can have a positive effect, since their acquisition is part of the package; Design of new equipment (sea-bed observation vessels) and high-quality innovative technologies to survey large vessels in depth. Comment: introduction of new technologies will benefit the problem with inaccuracy of the location of the underwater cultural sites (the unknown location is a factor that also may hinder the development of this MU).*

No other factors were added to the drivers and barriers and no other factors were added to the added values and effects. Detailed DABI factor identification and detailed scoring for the selected MU are presented in Appendix 1.

Table 2 Final catalogue of DABI factors for the MU Tourism, Underwater Cultural Heritage & Environmental Protection for the cross-border area of Bulgaria

| DRIVERS = factors promoting MU | BARRIERS = factors hindering MU |
|--|--|
| <p>Category D.1 – policy drivers</p> <p>Factor D.1.1 Support system for tourism destination and products</p> <p>Factor D.1.2 HERAS Project UCH Management Plan that promotes sustainable tourism development and environmental protection.</p> <p>Factor D.1.3 MSP as policy driver to support UCH protection and tourism, and new MPAs</p> <p>Factor D.1.4 Support from EU and regional strategic documents (i.e. Blue Growth Strategy, Strategic and Innovation Agenda (SRIA) and Common Maritime Agenda for Black Sea Basin)</p> | <p>Category B.1 – legal barriers</p> <p>Factor B.1.1 UNESCO Convention on the Protection of the UCH</p> <p>Factor B.1.2 National and regional legal framework</p> |
| <p>Category D.2 – interactions with other uses</p> <p>Factor D.2.1 Multiple synergies between UCH, tourism and environmental protection</p> | <p>Category B.2 – administrative barriers</p> |



| | |
|---|---|
| <p>Factor D.2.2 Development of local museums, exhibitions on Black Sea history and diving opportunities</p> <p>Factor D.2.3 MU combination of tourism, UCH and environmental protection at sea could be potentially linked with environmental/nature and cultural related touristic and other activities on the coast</p> <p>Factor D.2.4 Synergy with small scale fishery</p> | <p>Factor B.2.1 Need of preliminary authorisation for diving clubs issued by Executive Agency of Maritime Administration in Bulgaria</p> <p>Factor B.2.2 There are zones of military shipwrecks forbidden for visits by tourists/divers</p> <p>Factor B.2.3 Lack of approved and operational management plans for MPAs (Natura 2000)</p> <p>Factor B.2.4 Lack of project / strategy for safeguarding and valorising UCH sites</p> <p>Factor B.2.5 Limited coordination between institutions involved, moreover acting at different scales</p> |
| <p>Category D.3 – economic drivers</p> <p>Factor D.3.1 Financial incentive systems</p> <p>Factor D.3.2 Increasing eco-tourism options as blue growth opportunities</p> <p>Factor D.3.3 Need to diversify tourism sectors</p> <p>Factor D.3.4 Need to extend the tourist season by other activities</p> <p>Factor D.3.5 Increasing demand for diving sites due to a growing interest by divers and operators of the sector</p> <p>Factor D.3.6 Increasing number of designated/managed sites to be explored</p> <p>Factor D.3.7 Increasing target groups for visiting UNCH and MPAs</p> | <p>Category B.3 – financial barriers</p> <p><i>Factor B.3.1 Lack of full understanding of benefits of this MU – benefits from the development of related touristic activities</i></p> <p><i>Factor B.3.2 Lack of adequate financial incentives</i></p> |
| <p>Category D.4 – societal drivers</p> <p>Factor D.4.1 Harmonise the protection of UCH and MPAs</p> <p>Factor D.4.2 Prevent the destruction of underwater archaeological sites/shipwrecks, etc.</p> <p>Factor D.4.3 Societal and political promotion of protection of the UCH and MPAs as natural and cultural heritage</p> | <p>Category B.4 – barriers related to societal factors</p> <p>Factor B.4.1 Limited availability of experiences and good practices in the case-study area, especially in order to make people (and interested stakeholders) understand the real benefits of MU as well as to UCH itself</p> <p>Factor B.4.2 Lack of public awareness on protection and value of UCH and environmental protection</p> |
| <p>Category D.5 – legal drivers</p> <p>Factor D.5.1 UNESCO Convention on the Protection of the UCH (2001)</p> <p>Factor D.5.2 Valetta Convention (1992) on the protection of archaeological heritage establishes</p> | |



| | |
|---|---|
| <p>specific requirements for the protection of maritime heritage</p> <p>Factor D.5.3 National legislation on management of UCH</p> <p>Factor D.5.4 Regional legislation focused on management of archaeological heritage</p> <p>Factor D.5.5 UNCBD & Natura 2000</p> <p>Factor D.5.6 National legislation focused on conservation and management of natural resources (nationally designated protected areas)</p> <p>Factor D.5.7 Regional legislation focused on conservation and management of natural resources (Black Sea Commission)</p> | |
| <p>Category D.6 – environmental drivers</p> <p>Factor D.6.1 Need to expand environmental conservation (creation of new MPAs)</p> <p>Factor D.6.2 Increasing awareness of the value of natural resources</p> <p>Factor D.6.3 Need to reduce tourist pressure on the coast</p> <p>Factor D.6.4 Need to reduce fishers</p> <p>Factor D.6.5 Need to reduce free divers</p> <p>Factor D.6.6 Need for approved and functional management plans for MPAs</p> | <p>Category B.6 – barriers related with environmental factors</p> <p>Factor B.6.1 Restriction/dependence on weather conditions for diving</p> <p>Factor B.6.2 Problems of compatibility between MPAs high ecological vulnerability and its tourist exploitation</p> <p>Factor B.6.3 Decreased visibility for diving due to eutrophication, sediment turbidity, strong currents and other</p> |
| <p>Category D.7 – technical drivers</p> <p>Factor D.7.1 Preservation of UCH in situ is the first option and public access shall be promoted</p> <p>Factor D.7.2 System for visitor control of UCH and MPAs</p> <p>Factor D.7.3 Capitalising experience gained and good practices in the cross-border area</p> <p>Factor D.7.4 Technological developments have increased the capacity to access UCH</p> | |
| <p>other categories to be eventually identified</p> | <p>other categories to be eventually identified</p> |
| <p>ADDED VALUES = positive effects of MU</p> | <p>IMPACTS = negative effects of MU</p> |
| <p>Category V.1 – economic added values</p> <p>Factor V.1.1 Increase of local revenues from tourist services</p> | <p>Category I.1 - economic impacts</p> <p>Factor I.1.1 Possible conflicts with other activities, except scientific, with authorization, such as fishery, maritime transportation, etc.</p> |



| | |
|--|---|
| <p>Factor V.1.2 Diversification of tourism sector and extend of tourist season</p> <p>Factor V.1.3 Additional finance (from tourism) to environmental protection</p> | |
| <p>Category V.2 – societal added values</p> <p>Factor V.2.1 Education and public awareness about UCH and its respective history</p> <p>Factor V.2.2 Prevent the destruction of UCH sites</p> <p>Factor V.2.3 Establishment of an ecosystem service by MPAs for UCH sites</p> | <p>Category I.2. - societal impacts</p> <p>Factor I.2.1 Risk of looting/stealing from underwater archaeological sites/shipwrecks and destruction of their contexts</p> <p>Factor I.2.2 Risk of congested diving sites</p> <p>Factor I.2.3 Risk of damage to the UCH sites and MPAs caused by inexperienced divers</p> <p>Factor 1.2.4 Risk of damage to UCH and MPAs caused by illegal bottom trawling</p> |
| <p>Category V.3 – environmental added values</p> <p>Factor V.3.1 Lower impact use of environmental and cultural resources</p> <p>Factor V.3.2 Education and public awareness about environmental protection of MPAs</p> <p>Factor V.3.3 Effective collaboration of tourist operators and end-users for the management, protection and sustainable use of MPAs</p> <p>Factor V.3.4 Archaeological artefacts may have created habitat for marine species and serves as artificial reefs</p> | <p>Category I.3 - environmental impacts</p> <p>Factor I.3.1 Disturbance of habitats by using modern geophysical technology to explore UCH</p> <p>Factor I.3.2 Disturbance of habitats by using high-technology scuba diving equipment</p> |
| <p>Category V.5 - technical added values</p> <p>Factor V.5.1 More frequent presence of tourists and divers can avoid irresponsible and intrusive access and unauthorized activities</p> <p>Factor V.5.2 Creation of specialised professions (e.g. diving guides specialised in UCH)</p> | |
| <p>Category V.6 – governance added values</p> <p>Factor V.6.1 Reinforcement of the national/regional public budget for UCH and environmental protection</p> | |
| <p>other categories to be eventually identified</p> | <p>other categories to be eventually identified</p> |



7. Results of DABI Scoring: analysis of MU potential and MU effect

The final identified factors (drivers, barriers, added values and impacts) were scored by 13 interviewed stakeholders. Results of scoring were aggregated into synthetic indexes. The scoring system and the evaluation method for MU potential and overall MU effect are described in **Table 3** and **Table 4** respectively. The detailed DABI scoring is given in Appendix 1.

Table 3 Method for analysis of MU potential (after MUSES case study methodology [9])

| | |
|--|--|
| <p>In order to evaluate MU potential the following steps were undertaken:</p> <ul style="list-style-type: none"> • scoring of drivers by stakeholders • calculation of the average drivers score (average scores by categories can be also computed to complement the analysis) • scoring of barriers by stakeholders • calculation of the average barriers score (average scores by categories can also be computed to complement the analysis) • MU potential estimation (the description on this point is given below). | |
| <p>Scoring of drivers (factors supporting/facilitating MU development/strengthening): to factors supporting MU a positive sign is attributed and the following scoring scale is applied:</p> | <p>Scoring of barriers (factors preventing /negatively affecting MU): to factors negatively affecting MU a negative sign is attributed and the following scoring scale is applied:</p> |
| <ul style="list-style-type: none"> • high priority score = +3 • medium priority score = +2 • low priority score = +1 • not relevant¹ score = 0 • Absent² score = 0 • I do not know³ no score is given | <ul style="list-style-type: none"> • high obstacle score = -3 • medium obstacle score = -2 • low obstacle score = -1 • not relevant¹ score = 0 • absent² score = 0 • I do not know³ no score is given |
| <p>MU potential was evaluated by averaging the average drivers' score and the average barriers' score. MU potential can assume values in the interval [-1.5, +1.5]⁴ where -1.5 reflects totally negative MU potential and +1.5 totally positive MU potential. The list of negatively and positively scored factors should be attached to this analysis as well. The case of MU potential = 0 can occur where there is a balance between factors promoting MU development and factors hindering it. The development / strengthening of MU will therefore depend upon which of them will prevail. The knowledge of positive and negative factors is very useful to address actions aimed at facilitating MU development.</p> | |
| <p>¹ It means that the factor is present, but it has no influence on MU potentials or MU effects.</p> | |
| <p>² It means that the factor is not present.</p> | |
| <p>³ It means that there is no knowledge about the factor</p> | |
| <p>⁴ The negative extreme -1.5, is calculated by applying a score of -3 to all barriers (B) and a score of 0 to all drivers (D), calculating their averages (respectively average of B = -3 and average of D = 0) and finally calculating the average</p> | |



of these averages which is -1,5. The reversed process is applied for the positive extreme +1,5 where all drivers got +3 and all barriers 0 and the average of the sum of their averages is +1.5 [45]

Table 4 Method for evaluation of MU effect (after MUSES case study methodology [9])

| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|------------|----------------------|------------|-------------------|------------|-----------------------------|-----------|-----------------------|-----------|------------------------------|-------------------|---|---------------|------------|-----------------|------------|--------------|------------|-----------------------------|-----------|-----------------------|-----------|------------------------------|-------------------|
| <p>In order to evaluate MU effect the following steps were undertaken:</p> <ul style="list-style-type: none"> • scoring of added values by stakeholders • calculation of average added values score (average scores by categories can be also computed to complement the analysis) • scoring of impacts by stakeholders • calculation of average impacts score (average scores by categories can be also computed to complement the analysis) • MU overall net effect estimation (the description on this point is given below) | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Scoring of added values (positive effects of implementing / strengthening MU): to factors representing benefits of developing or reinforcing MU a positive sign is attributed and the following scoring scale is applied:</p> | <p>Scoring of impacts (negative effects of implementing / strengthening MU): to factors representing negative effects of developing or expanding MU a negative sign is attributed and the following scoring scale is applied:</p> | | | | | | | | | | | | | | | | | | | | | | | | |
| <table border="0"> <tr> <td>• high added value</td> <td>score = +3</td> </tr> <tr> <td>• medium added value</td> <td>score = +2</td> </tr> <tr> <td>• low added value</td> <td>score = +1</td> </tr> <tr> <td>• not relevant⁵</td> <td>score = 0</td> </tr> <tr> <td>• Absent⁶</td> <td>score = 0</td> </tr> <tr> <td>• I do not know⁷</td> <td>no score is given</td> </tr> </table> | • high added value | score = +3 | • medium added value | score = +2 | • low added value | score = +1 | • not relevant ⁵ | score = 0 | • Absent ⁶ | score = 0 | • I do not know ⁷ | no score is given | <table border="0"> <tr> <td>• high impact</td> <td>score = -3</td> </tr> <tr> <td>• medium impact</td> <td>score = -2</td> </tr> <tr> <td>• low impact</td> <td>score = -1</td> </tr> <tr> <td>• not relevant⁶</td> <td>score = 0</td> </tr> <tr> <td>• absent⁷</td> <td>score = 0</td> </tr> <tr> <td>• I do not know⁸</td> <td>no score is given</td> </tr> </table> | • high impact | score = -3 | • medium impact | score = -2 | • low impact | score = -1 | • not relevant ⁶ | score = 0 | • absent ⁷ | score = 0 | • I do not know ⁸ | no score is given |
| • high added value | score = +3 | | | | | | | | | | | | | | | | | | | | | | | | |
| • medium added value | score = +2 | | | | | | | | | | | | | | | | | | | | | | | | |
| • low added value | score = +1 | | | | | | | | | | | | | | | | | | | | | | | | |
| • not relevant ⁵ | score = 0 | | | | | | | | | | | | | | | | | | | | | | | | |
| • Absent ⁶ | score = 0 | | | | | | | | | | | | | | | | | | | | | | | | |
| • I do not know ⁷ | no score is given | | | | | | | | | | | | | | | | | | | | | | | | |
| • high impact | score = -3 | | | | | | | | | | | | | | | | | | | | | | | | |
| • medium impact | score = -2 | | | | | | | | | | | | | | | | | | | | | | | | |
| • low impact | score = -1 | | | | | | | | | | | | | | | | | | | | | | | | |
| • not relevant ⁶ | score = 0 | | | | | | | | | | | | | | | | | | | | | | | | |
| • absent ⁷ | score = 0 | | | | | | | | | | | | | | | | | | | | | | | | |
| • I do not know ⁸ | no score is given | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>The overall MU effect was evaluated by averaging the average added value's score and the average impacts' score. MU effect can assume values the interval [-1.5, +1.5]⁸ where -1.5 reflects a totally negative effect of MU in the area and +1.5 a totally positive effect. The case of MU effect = 0 can occur where there is a balance between pros and cons of MU development. The knowledge of positive and negative factors is very useful to address actions aimed at maximizing added value of MU.</p> | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>⁵ It means that the factor is present, but it has no influence on MU potentials or MU effects.</p> <p>⁶ It means that the factor is not present.</p> <p>⁷ It means that there is no knowledge about the factor</p> <p>⁸ The negative extreme -1.5, is calculated by applying a score of -3 to all impacts (I) and a score of 0 to all added values (A), calculating their averages (respectively average of I = -3 and average of A = 0) and finally calculating the average of these averages which is -1.5. The reversed process is applied for the positive extreme +1.5 where all added value got +3 and all impacts 0 and the average of the sum of their averages is +1.5 [45]</p> | | | | | | | | | | | | | | | | | | | | | | | | | |

In **Table 5**, scored DABI tables are reported for the combination of Tourism, UCH & Environmental Protection. Factors are presented starting with the one with the highest absolute value. Below in **Table 6**, the average score for each category of DABI factors is reported.



Table 5 Final scored DABI factors for the MU Tourism, Underwater Cultural Heritage & Environmental Protection

| DRIVERS = factors promoting MU | | | BARRIERS = factors hindering MU | | |
|---|----------|---------------|---|----------|---------------|
| Factor | Category | Average score | Factor | Category | Average score |
| D.4.2 Prevent the destruction of underwater archaeological sites/shipwrecks, etc. | D.4 | 3.0 | B.4.2 Lack of public awareness on protection and value of UCH and environmental protection | B.4 | -2.2 |
| D.6.6 Need for approved and functional management plans for MPAs | D.6 | 2.9 | B.2.5 Limited coordination between institutions involved, moreover acting at different scales | B.2 | -2.2 |
| D.5.3 National legislation on management of UCH | D.5 | 2.8 | B.3.2 Lack of adequate financial incentives | B.3 | -2.1 |
| D.2.1 Multiple synergies between UCH, tourism and environmental protection | D.2 | 2.7 | B.2.3 Lack of approved and operational management plans for MPAs (Natura 2000) | B.2 | -2.0 |
| D.4.1 Harmonise the protection of UCH and MPAs | D.4 | 2.7 | B.4.1 Limited availability of experiences and good practices in the case-study area, especially in order to make people (and interested stakeholders) understand the real benefits of MU as well as to UCH itself | B.4 | -2.0 |
| D.4.3 Societal and political promotion of protection of the UCH and MPAs as natural and cultural heritage | D.4 | 2.7 | B.1.2 National and regional legal framework | B.1 | -1.9 |
| D.7.2 System for visitor control of UCH and MPAs | D.7 | 2.7 | B.2.4 Lack of project / strategy for safeguarding and valorising UCH sites | B.2 | -1.8 |
| D.2.2 Development of local museums, exhibitions on Black Sea history and diving opportunities | D.2 | 2.6 | B.3.1 Lack of full understanding of benefits of this MU – benefits from the development of related touristic activities | B.3 | -1.8 |



| | | | | | |
|---|-----|-----|--|-----|------|
| D.2.3 MU combination of tourism, UCH and environmental protection at sea could be potentially linked with environmental/nature and cultural related touristic and other activities on the coast | D.2 | 2.6 | B.6.2 Problems of compatibility between MPAs high ecological vulnerability and its tourist exploitation | B.6 | -1.8 |
| D.7.1 Preservation of UCH in situ is the first option and public access shall be promoted | D.7 | 2.6 | B.2.2 There are zones of military shipwrecks forbidden for visits by tourists/divers | B.2 | -1.7 |
| D.5.1 UNESCO Convention on the Protection of the UCH (2001) | D.5 | 2.5 | B.6.3 Decreased visibility for diving due to eutrophication, sediment turbidity, strong currents and other | B.6 | -1.7 |
| D.5.2 Valetta Convention (1992) on the protection of archaeological heritage establishes specific requirements for the protection of maritime heritage | D.5 | 2.5 | B.2.1 Need of preliminary authorisation for diving clubs issued by Executive Agency of Maritime Administration in Bulgaria | B.2 | -1.6 |
| D.1.1 Support system for tourism destination and products | D.1 | 2.5 | B.6.1 Restriction/dependence on weather conditions for diving | B.6 | -1.6 |
| D.1.3 MSP as policy driver to support UCH protection and tourism, and new MPAs | D.1 | 2.5 | B.1.1 UNESCO Convention on the Protection of the UCH | B.1 | -1.5 |
| D.5.4 Regional legislation focused on management of archaeological heritage | D.5 | 2.5 | | | |
| D.5.6 National legislation focused on conservation and management of natural resources (nationally designated protected areas) | D.5 | 2.5 | | | |
| D.6.2 Increasing awareness of the value of natural resources | D.6 | 2.5 | | | |
| D.7.3 Capitalising experience gained and good practices in the cross-border area | D.7 | 2.5 | | | |
| D.1.2 HERAS Project UCH Management Plan that promotes sustainable tourism | D.1 | 2.4 | | | |



| | | | | |
|--|-----|-----|--|--|
| development and environmental protection. | | | | |
| D.2.4 Synergy with small scale fishery | D.2 | 2.4 | | |
| D.3.4 Need to extend the tourist season by other activities | D.3 | 2.4 | | |
| D.3.1 Financial incentive systems | D.3 | 2.3 | | |
| D.3.7 Increasing target groups for visiting UCH and MPAs | D.3 | 2.3 | | |
| D.7.4 Technological developments have increased the capacity to access UCH | D.7 | 2.3 | | |
| D.3.2 Increasing eco-tourism options as blue growth opportunities | D.3 | 2.2 | | |
| D.5.5 UNCBD & Natura 2000 | D.5 | 2.2 | | |
| D.1.4 Support from EU and regional strategic documents (i.e. Blue Growth Strategy, Strategic and Innovation Agenda (SRIA) and Common Maritime Agenda for Black Sea Basin) | D.1 | 2.2 | | |
| D.3.3 Need to diversify tourism sectors | D.3 | 2.2 | | |
| D.5.7 Regional legislation focused on conservation and management of natural resources (Black Sea Commission) | D.5 | 2.2 | | |
| D.6.1 Need to expand environmental conservation (creation of new MPAs) | D.6 | 2.2 | | |
| D.3.5 Increasing demand for diving sites due to a growing interest by divers and operators of the sector | D.3 | 2.0 | | |
| D.3.6 Increasing number of designated/managed sites to be explored | D.3 | 2.0 | | |
| D.6.3 Need to reduce tourist pressure on the coast | D.6 | 1.7 | | |



| | | | | | |
|---|-----------------|----------------------|--|-----------------|----------------------|
| D.6.5 Need to reduce free divers | D.6 | 1.1 | | | |
| D.6.4 Need to reduce fishers | D.6 | 0.9 | | | |
| DRIVERS average score | +2.4 | | BARRIERS average score | -1.8 | |
| MU POTENTIAL | | | +0.2 | | |
| ADDED VALUES = positive effects of MU | | | IMPACTS = negative effects of MU | | |
| Factor | Category | Average score | Factor | Category | Average score |
| V.2.2 Prevent the destruction of UCH sites | V.2 | 2.8 | I.2.4 Risk of damage to UCH and MPAs caused by illegal bottom trawling | I.2 | -2.9 |
| V.1.1 Increase of local revenues from tourist services | V.1 | 2.5 | I.2.1 Risk of looting/stealing from underwater archaeological sites/shipwrecks and destruction of their contexts | I.2 | -2.5 |
| V.1.2 Diversification of tourism sector and extend of tourist season | V.1 | 2.5 | I.2.3 Risk of damage to the UCH sites and MPAs caused by inexperienced divers | I.2 | -2.2 |
| V.2.1 Education and public awareness about UCH and its respective history | V.2 | 2.5 | I.1.1 Possible conflicts with other activities, except scientific with authorization, such as fishery, maritime transportation, etc. | I.1 | -2.0 |
| V.5.2 Creation of specialised professions (e.g. diving guides specialised in UCH) | V.5 | 2.5 | I.2.2 Risk of congested diving sites | I.2 | -1.7 |
| V.6.1 Reinforcement of the national/regional public budget for UCH and environmental protection | V.6 | 2.5 | I.3.1 Disturbance of habitats by using modern geophysical technology to explore UCH | I.3 | -1.7 |
| V.1.3 Additional finance (from tourism) to environmental protection | V.1 | 2.3 | I.3.2 Disturbance of habitats by using high-technology scuba diving equipment | I.3 | -1.2 |
| V.3.2 Education and public awareness about environmental protection of MPAs | V.3 | 2.3 | | | |
| V.3.3 Effective collaboration of tourist operators and end-users for the management, protection and sustainable use of MPAs | V.3 | 2.3 | | | |



| | | | | |
|--|-------------|-----|------------------------------|-------------|
| V.3.4 Archaeological artefacts may have created habitat for marine species and serves as artificial reefs | V.3 | 2.1 | | |
| V.2.3 Establishment of an ecosystem service by MPAs for UCH sites | V.2 | 1.9 | | |
| V.5.1 More frequent presence of tourists and divers can avoid irresponsible and intrusive access and unauthorized activities | V.5 | 1.8 | | |
| V.3.1 Lower impact use of environmental and cultural resources | V.3 | 1.4 | | |
| ADDED VALUES average score | +2.3 | | IMPACTS average score | -2.0 |
| MU OVERALL EFFECT | | | +0.1 | |

Table 6 Final scored DABI categories for the MU Tourism, Underwater Cultural Heritage & Environmental Protection

| DRIVERS = factors promoting MU | | BARRIERS = factors hindering MU | |
|--|----------------------|---|----------------------|
| Category | Average score | Category | Average score |
| Category D.4 – Societal drivers | 2.8 | Category B.4 – Barriers related with societal drivers | -2.1 |
| Category D.2 – Relation with other uses | 2.6 | Category B.3 – Barriers related with financial drivers | -1.9 |
| Category D.7 – Technical drivers | 2.5 | Category B.2 – Barriers related with administrative drivers | -1.8 |
| Category D.5 – Legal drivers | 2.5 | Category B.1 – Barriers related with legal drivers | -1.7 |
| Category D.1 – Policy drivers | 2.4 | Category B.5 – Barriers related with environmental factors | -1.7 |
| Category D.3 – Economic drivers | 2.2 | | |
| Category D.6 – Environmental drivers | 1.9 | | |
| ADDED VALUES = positive effects of MU | | IMPACTS = negative effects of MU | |
| Category | Average score | Category | Average score |
| Category V.6 - Governance added values | 2.5 | Category I.2 - Societal impacts | -2.3 |



| | | | |
|--|-----|---|------|
| Category V.1 - Economic added values | 2.4 | Category I.1 - Economic impacts | -2.0 |
| Category V.2 - Societal added values | 2.4 | Category I.3 - Environmental impacts | -1.5 |
| Category V.5 - Technical added values | 2.2 | | |
| Category V.3 - Environmental added values | 2.0 | | |

As noted above, MU potential and total net effect from the combination of Tourism, UCH & Environmental Protection, are result of the analysis of interviews conducted with 13 stakeholders. **The resulting value of MU potential is + 0.2**, which means this MU has sufficiently good potential to be developed. Categories of drivers with more relevance to the MU are societal, relation with other uses, technical and legal drivers, while categories of barriers with more relevance to the MU are those related with societal and financial drivers. As with the most important potential among the societal drivers for the development of this MU has been scored ***Prevention of the destruction of underwater archaeological sites/shipwrecks***, to which driver all stakeholders gave the highest rating: + **3.0**. Other factors that should potentiate the MU are: *Need for approved and functional management plans for MPAs; National legislation on management of UCH and Multiple synergies between UCH, tourism and environmental protection.*

With the lowest potential are rated ***Need to reduce fishers*** and respectively ***Need to reduce free divers***, as well as ***Need to reduce tourist pressure on the coast***. These low estimates of driving factors might be related with the willingness of stakeholders to preserve their traditional livelihood in the field of fisheries, scuba diving and coastal tourism, sectors which are also key for the labour force and income of the local population. It is interesting to be pointed that among the legal drivers ***the MSP as policy driver to support UCH protection and tourism***, and ***Creation of new MPAs*** was highly rated by all stakeholders (+2.4 averaging score), which means that MSP may greatly potentiate and support the development of the surveyed MU. One of the interviewed stakeholders (from scuba diving club) gave the following recommendations for drivers that might support further the potential of MU, such as *improving coastal infrastructure; fees for visiting a certain underwater site of historical, archaeological or natural importance; placing floating markings on sunken ships*. These recommendations have not been included in the final DABI catalogue as most of other interviews were already conducted, however they could be assumed as important for further investigations of this MU combination. Another interviewed, a representative of research institute, drawn special attention to the several driving factors that are considered significant for this MU: *preventing the destruction of underwater archaeological sites/shipwrecks (the highest scored factor by all stakeholders); national legislation for the management of underwater cultural heritage and control system for visitors of underwater sites and marine protected areas*. It might be interesting to note that both categories with environmental drivers and barriers related to environmental protection were given the lowest scores.

However, several barriers that hinder this MU also need to be considered, related mainly to societal barriers (***Lack of public awareness on protection and value of UCH and environmental protection***) and Administrative barriers (***Limited coordination between institutions involved, moreover acting at different scales***; and ***Lack of approved and operational management plans***



for MPAs, Natura 2000). Financial barriers are the second rated factor for hindering the MU, such as **Lack of adequate financial incentives**. For further development of this MU, it is needed to promote users' awareness of the benefits of environmental protection and to established financial instruments for MU. Other categories of barriers that hamper this MU are those, relating with legal and environmental factors.

Added values appear to be more important than impacts both in total number and in average scoring (**2.3 vs -2.0**), indicating that a general positive effect is expected from the implementation of such a MU combination. The MU overall effect given is quite low: **+0.1**, because there are some risks identified as negative impacts that attenuate the global value of added values, mainly related to societal impacts: **Risk of damage to UCH and MPAs caused by illegal bottom trawling and Risk of looting/stealing from underwater archaeological sites/shipwrecks and destruction of their contexts**. Unfortunately, such risks are common for the study area as illegal bottom trawling has been practiced for many years. Most affected by these negative impacts are local communities, mainly including fishermen and scuba divers, and vulnerability to protection of UCH and bottom habitats.

The highest ranked added values of MU are from category societal added values: **Prevent the destruction of UCH sites/shipwrecks (2.8)**, which is important and critical for the local/regional UCH operators and stakeholders, and from economic added values category, i. e. **Increase of local revenues from tourist services (2.5)**, as coastal and other forms of tourism generate the major sources for local income. Conscious management of tourism activities involving UCH can lead to win-win situations for both tourism and UCH protection as it raises public awareness and appreciation of the value of UCH sites while providing an income stream for better management of UCH sites. With an equal scoring rate of **2.5** are: *Diversification of tourism sector and extend of tourist season; Education and public awareness about UCH and its respective history; Creation of specialised professions (e.g. diving guides specialised in UCH) and Reinforcement of the national/regional public budget for UCH and environmental protection.*

Effective collaboration of tourist operators and end-users for the management, protection and sustainable use of MPAs is another highly scored added value, that represents the willingness of the local stakeholders for synergies and co-existence between tourism, UCH and environmental protection.

8. Focus Areas Analysis

This analysis is focused on certain characterising elements of the case study with the purpose to identify the needs for developing MU, impacts (both negative and positive, cumulative), barriers and enablers, and actions to overcome barriers and maximise synergies. Answers to the following questions are based on stakeholder engagement/survey and desk research, and divided into three focus areas.



8.1 Focus-Area-1 'Addressing Multi-Use'

Focus-Area '**Addressing Multi-Use**' analyses MU development potentialities with the main objective of identifying and evaluating possibilities for (additional) MU development, ways to overcome barriers, to minimise limitations and maximise synergies.

1. Is it possible to establish / widen / strengthen MU in the case study area? (Y/N) 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. Multi-Use is already existed to some extent, as different activities are carried out in the marine space of the study area and they may affect each other beneficially or negatively. These mainly include MU combinations among fishing, aquaculture, and tourism/UCH tourism. In particular, there is well developed MU regarding aquaculture and tourism. There is a lack of maritime transport in the study area. Diving activities are considered by one stakeholder's opinion as low represented in the MU for tourism, as the main forms of activities are: cultural, eco-tourism and recreational tourism, sport fishing and commercial harvesting of marine organisms (mostly mussels and Rapana). Thus, tourism and UCH can be considered by stakeholder opinion as less developed combination in the case study area (compared to the south part of Bulgarian coast), mainly due to the lack of national or local initiatives aimed to valorise UCH and promote its fruition, beyond its mere protection. The stakeholders recommended widening the MU combination between tourism and underwater archaeology.

2. Is space availability an issue for MU development / strengthening in the case study area at present? (Y/N)

Will space availability become an issue for your area in the future? (Y/N) For what elements space availability is / could become an issue?

The stakeholder answer is no: space availability is not an issue for the MU development / strengthening. The study area does not distinguish by existing and potential conflicting economic activities. Though the tourism/UCH driven combinations explored in this study are not aiming to solve the existing conflicts, the lack of 'crowded' areas was considered in the general opinion of stakeholders as a driver to develop such MU. The same factor (lack of conflict with other uses of the marine space) was also seen as a driver for the development of other combinations such as those involving UCH and environmental protection. Indeed, lack of interactions with other maritime uses (e.g. lack of maritime transport) is also considered by the stakeholders as a driver for the development of MU of Tourism, UCH & Environmental Protection, in relation to mutual benefits of tourism exploitation of UCH sites and protection of MPAs in the study area.

3. Are there MUs 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)? (Y/N)

What are they?



Yes, there are tourism driven MU combinations and potentials that will share the same resources in different times. Various touristic services may share some resources, for example boats/vessels, properly used for diving activities, trips along the coast to caves and for birds watching tourism (ornithological tourism). In this case, the same human resources performs two different activities, sharing their knowledge with people hosted on board. Tourism and extraction of mussels and Rapana (sea snails) or aquaculture farms can share technical infrastructure as well as expert resources. Also, re-use of aquaculture infrastructures (for black mussels) after their usefulness may become an artificial reef as a subject for scuba diving attracting tourists.

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

Tourism and MPAs also share abiotic and biotic resources, as the bottom habitats and biodiversity they host, are the main attractors for divers. For the combinations of tourism, UCH and environmental protection, human, infrastructural, technical base 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? (Y/N)

The answer is no and yes. Existing or potential MU has been taken into account to some extent in the elaborated Maritime Spatial Planning for Bulgaria, the MARSPLAN-BS II project is the first project that included a specific pilot case study for MU and analysis, and will be most probably useful to stimulate the analysis and exploitation of MU potentials in the national MSP plan.

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

All tourism driven combinations have a strong potential connection between sea and land based activities: aquaculture and tourism, UCH tourism activities are related to coastal tourism activities and together with the extraction of marine living resources, using the coastal infrastructure. Another example of such combination is construction of seafood processing factories: near the shore of Kavarna town a processing plant was built near the black mussel farm. It is not yet clear whether it is a positive or negative example of MU. There is also another mussel farm with restaurants based on the coast and this contributes to development of blue tourism and MU between aquaculture and coastal, beach and niche (food) tourism. 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. historical museums, natural reserves, beach tourism and coastal protected sites).

7. Is the needed knowledge and technology for MU development/strengthening in the case study area already available? (Y/N)



What is the level of maturity of available knowledge?

What is the level of readiness of available technology? Are there still research needs? (Y/N)

Yes, the level of available knowledge is considered as a medium by stakeholders. Yes, there is still need of more investigations and knowledge in particular for UCH sites and environmental protection. The level of readiness is also considered medium. The tourism driven combinations in the case study are 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 during the interviews for specific uses; e.g. remote control of environmental protected sites or UCH sites could be useful to monitor visits and touristic activities and at the same time ensure that regulation is fully applied in order to enable their proper preservation.

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, in order to develop or widen the MU combination of Tourism, UCH & Environmental Protection, the following recommendations were given: to optimise the legal framework concerning diving activities (facilitating the regime of access to water areas suitable for diving, strengthen control over the destruction of cultural, historical and natural values); campaigns to inform target groups about new opportunities and experience for MU in the area; increase available funding sources for the MU activities. Key actors especially involved in this MU development include public institutions/policy-makers (mainly acting at national and regional levels), branch organisations/associations, touristic operators, scuba diving clubs, research organisations/institutes.

8.2 Focus-Area-2 ‘Boosting Maritime Blue Economy’

Focus-Area ‘**Boosting Maritime Blue Economy**’ analyses those aspects of MU linked to the development of maritime Blue Economy.

1. Do you see added values for society and economy at a large and/or for local communities of developing / widening / strengthening MU in the case study area? (Y/N)

What are the most important ones?

Yes, the stakeholders see added values for society and economy at a large and for the local communities. Coastal and UCH tourism related combinations may involve a growth in the attractiveness of the whole geographical area, enhancing social value on local traditions, cultural heritage and environmental resources while at the same time responding to the growing demand for ‘experience-based tourism’. This in return can provide economic benefits and integrative income for local communities and widening of the categories of stakeholders from different sectors, that would benefit of the MU combinations, such as traditional small-scale fishermen,



aquaculture operators, diving guides and clubs, environmental, history and archaeology experts and museum guides, experts in marine ecology, 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? (Y/N)

What tools, knowledge, experiences are available?

Yes, the stakeholders considered that it is possible to quantify the socio-economic benefits related to the MUs. There is still need of comprehensive approach to estimate the socio-economic benefits of MU activities and an assessment of the mutual advantages that each MU should imply for all blue sectors involved. This will also require a good scientific approach and more trained/educated experts (good examples are SymNet¹⁷ and HERAS¹⁵ projects).

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

Yes, the development of MU combination of Tourism, UCH & Environmental Protection undoubtedly would be an opportunity for job creation and give rise to new types of specialised professions, such as diving guides, specialised in UCH or marine biology guides, or specialists/experts with a specific diving licenses.

4. Do you see possible elements of attractiveness for investors in developing / widening / strengthening MU in the case study area? (Y/N)

What are these elements?

Yes, the UCH tourism is considered by stakeholders as promising and attractive for investors/business development, this implies also building of marinas, renovation of touristic infrastructure, building of scuba diving infrastructure and providing resources/ equipment. Also, possible elements could be extraction of living and non-living resources and increase in benefits from activities related to MUs implementation.

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

Regarding diving activities in MPAs and UCH sites, tour operators and diving clubs/centres could be the most likely investors to define and organise specific offers as well as provide resources, equipment and infrastructure.

6. Is there sufficient dialogue between the stakeholder sectors for developing / widening / strengthening MU? (Y/N)

Would dialogue facilitation be an asset? (Y/N)

¹⁷Industrial Symbiosis Network for Environment Protection and Sustainable Development in Black Sea Basin (SymNet), Joint Operational Programme “Black Sea Basin 2007-2013”, www.projectsymnet.eu



For the MU of Tourism, UCH & Environmental Protection the existing dialogue was considered insufficient by the stakeholder engagement and they recommended further strengthening of the existing dialogue and coordination among different institutions, and among institutions and operators. This is pointed also as one of the major barriers that hinder the MU development. Administrative barriers, such as complex procedures involving different national, regional and local institutions to get licenses and poor coordination among institutions and operators/diving clubs were also marked as important barrier (for example the need of diving clubs to get permission before diving tours from the Executive Agency Maritime Administration). Therefore, all stakeholders considered that the dialogue facilitation would be an asset for the development of this MU.

7. In order to promote MU development / strengthening in the case study area,

- would the availability of a vision/strategy (e.g. at national or sub-regional level) be helpful? (Y/N)**
- would a feasibility study including evaluation of alternative scenarios be helpful? (Y/N)**
- would detailed projects on already identified simulations be useful? (Y/N)**
- do you see other enablers?**

The answer is yes to the four questions. Particularly, for combination of Tourism and UCH, the necessity of defining a national common vision or strategy as a starting point to share objectives and actions was clearly highlighted by stakeholders. Also, feasibility study including evaluation of alternative scenarios would be helpful for widening of the explored MU and generation of a common data base for MU and relevant models could support the evaluation of such alternative scenarios.

8.3 Focus-Area-3 'Improving environmental compatibility'

Focus-Area '**Improving environmental compatibility**' analyses aspects of MU linked to the protection of the marine environment and/or mitigate existing impacts.

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

As the MU implies also shared use of resources, infrastructures and re-use of materials, its development is a prerequisite for reducing environmental pressures. However, it should be taken into account that the development of MU might also lead to the attraction of new and expansion of existing economic activities, which in turn would have the opposite effect (impact on the environment). Also, increase in public awareness and education about environmental issues and sharing of good environmental practices together with improved protection of the environment are important added values highlighted by stakeholders during DABI scoring. An improved environmental protection of MPAs is also expected from the combination between tourism and environmental protection, even expectations of increased tourist fluxes. Measures to effectively control tourist fluxes in protected areas, educational initiatives to increase public awareness on environmental themes and observing legislation, can favour the development of more responsible



tourism activities, thus enhancing the environmental compatibility of the combination and balance in the use and conservation of MPAs.

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

Tools for environmental monitoring (e.g. evaluation of Good Environmental Status), more eco-friendly approaches and multidisciplinary investigations of marine environment can be applied.

3. Is saving free sea space for nature conservation a driver for MU in the case study area? (Y/N)

**Are there evidences about the present and future benefits of reserving free sea space? (Y/N)
What are they?**

The answer is yes, in particular for Tourism, UCH & Environmental Protection combination. As an example of evidences about present and future benefits of reserving free sea space the stakeholders pointed that environmental protection and good environmental status can be a MU driver for diverse categories of tourism, including UCH and its protection.

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

Improving the environmental compatibility of maritime activities would have a positive effect on the development of MU in the long-term. Given the financial vulnerability of the local economy, improving administrative compatibility could be mainly influenced by regulation and educational measures. Indirectly, product users' preferences can be used, such as attracting eco-tourists to the region, marketing eco-friendly / organic / bio-products. Increase of public awareness and interest on the environmental issues is pointed as another practical action to environmental protection.

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? (Y/N)

What are they?

Yes, in the long-term perspective. All environmental initiatives will have a positive contribution to future socio-economic development. Due to the status of the local economy, however, they must be accompanied by balanced compensation for economic activities. The presence of both socio-economic and environmental added values potentially addressed by MU combination of Tourism, UCH & Environmental Protection in the case study area has been identified in the DABI analysis of this study. The creation of new and specialised jobs is a technical added value that was highly scored in the stakeholder engagement, but at the same time it is also a socio-economic value. Similarly, the diversification of the tourist sector offering special and diverse initiatives of tourism



is perceived as a generally socio-economic advantage of MU (e.g. coastal tourism, nature-based and eco-tourism, historical tourism etc., as a brand for local coastal economies). These socio-economic benefits could be supplemented with 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? (Y/N)

Which is the level of readiness of available solutions?

Are there still needs on blue/green technologies for MU? (Y/N)

Although the answer is yes, as mentioned in the answer to the question 7 of Focus Area 1, the combination of Tourism, UCH & Environmental Protection explored in the present MU study does not involve the use of special and innovative technologies. This is also due to the fact that such combinations can be categorised as ‘soft’ rather than ‘hard’ combinations. The level of readiness of available solutions to development of the co-existent activities is evaluated as low. The blue technologies, such as aquaculture are perfectly combined with tourist activities and offers, e.g. blue tourism and can create additional jobs in the study area.

7. Would it be possible to promote MU through SEA/EIA procedures? (Y/N)

What modifications would you suggest at your national / local level to promote MU through SEA/EIA procedures?

The answer is no and yes, so no specific answer emerged from stakeholder participation to this question. Possible modifications suggested are more integrated efforts and coordination of different national and local institutions, and the need to have thorough Strategic Environmental Assessment (SEA) and Environmental Impact Assessment (EIA), but with more simple and fast procedures during the design and permitting phases, a more consistent legal and administrative SEA/EIA framework focused on MU and their development.

9. Stakeholder engagement and local stakeholder profiles

The section below presents detailed description of the stakeholder engagement methods used, as well as the analysis of stakeholder profiles in the cross-border area of Bulgaria (Shabla, Kavarna and Balchik municipalities).

9.1 Stakeholder engagement

Properly implemented stakeholder engagement may be the key to providing the full set of benefits of a transboundary Multi-Use case study, in the context of MSP [20]. The process of stakeholder engagement in the cross-border area of Bulgaria included different steps, starting with mapping of



stakeholders, invitation to participate and implementation of participation (face-to-face meetings and interviews). In order to collect properly information on the current state and potential development of MU of Tourism, UCH & Environmental Protection, several stakeholders were engaged, according to their competence and expertise in each sector potentially interested in the explored MU. The engaged stakeholders come from different institutions and organisations, such as public institutions (local administrations and museums), research institute, environmental organisations, private sector (scuba diving clubs/centres) and Fisheries Local Action Group (FLAG) (includes both public and private partners). The contacted stakeholders come locally both from Shabla, Kavarna and Balchik municipalities, as well as some are representatives at national/regional level (maritime/historical museums, research institute and scuba diving organisation).

Mapping of stakeholders

The first step of the identification of stakeholders for MU of Tourism, UCH & Environmental Protection in the study area started with searching of different sources of information: screening of past and on-going projects, focused on MU related issues, and the performed desk research particularly focused on UCH, (historical, naval and maritime museums), scuba diving clubs, environmental organisations/experts in the three municipalities, local authorities (decision-makers), etc. The coastal municipalities (local authorities), with their own local administration, have a power to take decisions at local scale.

Invited stakeholders

After preparing a preliminary list of potential stakeholders (22 persons/positions were selected), communication with them was launched in order to obtain their opinion on the MU. Two approaches were selected to connect with the stakeholders:

- i) Direct phone contact, brief introduction to the person on the objectives of the MARSPLAN-BS II project and the MU case study, followed by sending via e-mail a short summary of the project, the purpose of the study/survey and the forms of the interview (preliminary DABI catalogue sheets for all categories);
- ii) The second approach was to send all the materials directly by e-mail, without preliminary introducing them by phone calls.

Among the twenty two invited stakeholders, not all answered or answered positively to the invitation to participate and cooperate within the MARSPLAN-BS II project. The second approach was applied to eight stakeholders and they were contacted by e-mail only. Of these, only one (a representative of diving club) expressed interest and responded positively to the invitation for an interview. No response or feedback was received from the other seven stakeholders contacted solely by e-mail.

A much more successful approach seemed to be the first one: a direct phone call and introducing stakeholders with the purpose of the project and preliminary DABI catalogues. From all 14 persons contacted, 13 accepted the invitation and were interviewed (**Figure 5**).

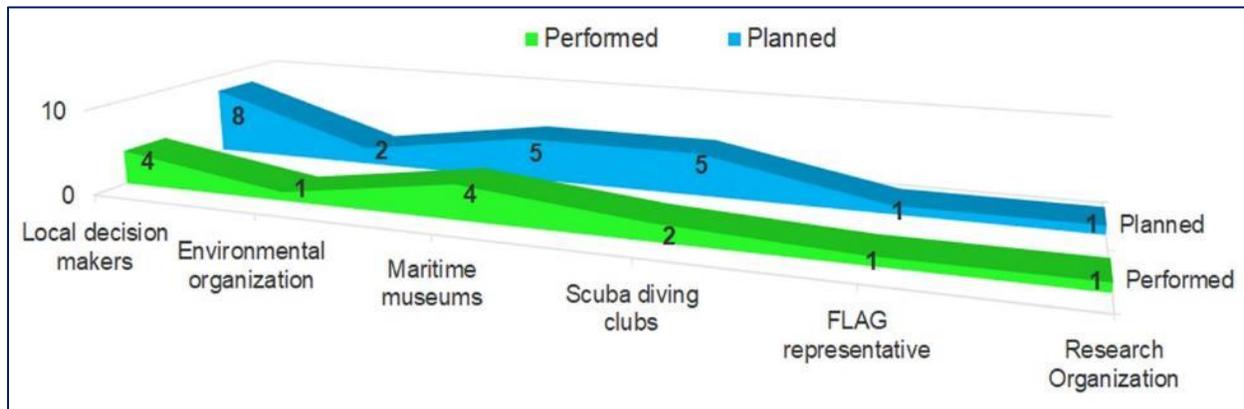


Figure 5 Number of planned and performed interviews

One of preliminary contacted by phone stakeholder (a representative of public institution) initially agreed to give a feedback, but later refused with the comments that the MU study is a needless exercise (i. e. not useful). Finally, the opinion was taken by 13 stakeholders, making almost 60 % of those contacted preliminary. With ten of the contacted stakeholders, face-to face meetings were performed by on-site visits in municipalities of Shabla, Kavarna and Balchik, while other three stakeholders submitted their completed and scanned catalogue sheets electronically.

Categories of stakeholders that accepted to participate in the study included decision-makers (at local municipality level), representatives of scuba diving clubs/centres, environmental organisation expert, FLAG representative, representative of research organisation, and representatives of maritime/historical museums and UCH experts.

Stakeholder engagement method

MUSES project methodology suggests few methods for DABI factors evaluation and scoring by stakeholders: by interviews, workshops or any other consultation methods [9]. For the present MU case study, interviews were selected as preferred stakeholder engagement method, because this method has been recognised as very relevant method for collection of information, opinions and feedbacks. Moreover, as conducting interviews is the most commonly used method for stakeholder analysis and participatory approach, this method has been considered as a comprehensive and efficient manner to collect data on stakeholders and their attributes [46]. Finally, we chose interviews as most prominent method to gather the information, as most of the identified stakeholders for the MU study are based in the cross-border area of Bulgaria, which is located a



long distance of Varna and it would be more time and cost-consuming to organise a dedicated workshop with selected stakeholders.

The individual structured interviews were prepared and supporting sheets (following MUSES DABI catalogues) and documents were adapted to the MARSPLAN-BS II project and the Bulgarian cross-border MU case study and context. The process of interviews included the following different steps:

- Presentation of the MARSPLAN-BS II project, objectives for the interview and the MU combination of Tourism, UCH & Environmental Protection, including distribution of the MARSPLAN-BS II Participant information sheet (Appendix 2) and preliminary DABI catalogue sheets;
- Collecting information about the stakeholders, including signing the MARSPLAN-BS II Consent form (Appendix 2), filling in information about the stakeholder on the corresponding sheet during the face-to face meetings (or asking to send the signed forms by emails).
- Distribution by e-mails of pre-identified DABI factors and request stakeholders to analyse in more details and to add missing factors at the same time that scoring was being filled.
- The key evaluation questions (KEQs) to collect their opinion on each focused area were distributed after DABI scoring to few selected stakeholders (these interviews were conducted as a second phase after DABI results evaluation in order to make links with the results of two DABI scoring results and focus area interviews).

Interviews were performed in Bulgarian, taking into account the nationality and availability of stakeholders and were performed in the end of November and mid-December 2019 (before Christmas Holidays in order to have all stakeholders available). Key evaluation questions or focus area interviews were performed in January 2020 (by e-mail).

Level of anonymity

Following MUSES case study methodology [9] all stakeholders were introduced with the MARSPLAN-BS II project and the MU case study, and requested to sign a Consent form (see Appendix 2), in which they pointed the level of anonymity willing to keep during the stakeholder engagement process. **Over half or 54% of all interviewed stakeholders agreed to be shared publically and to be identified as contributors in reports and other documents (Figure 6)** as well as almost half of them answered ‘yes’ to the quotations attributed to them.

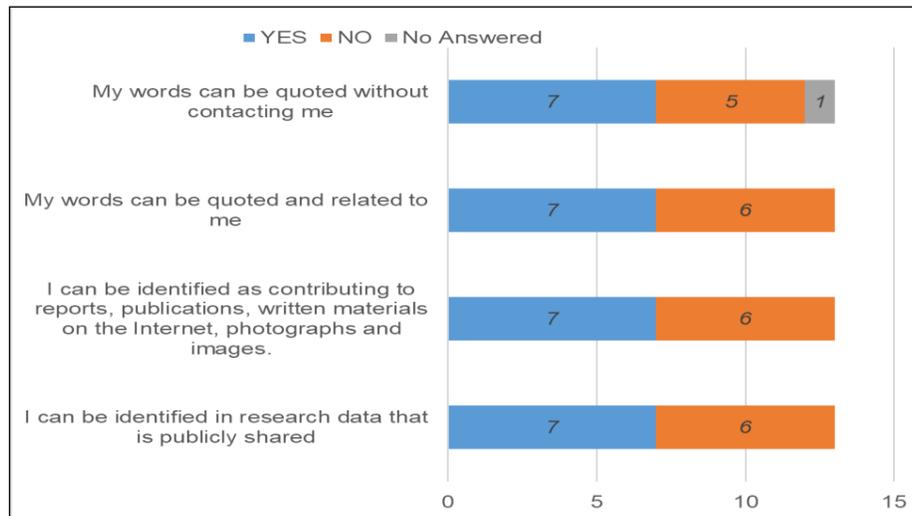


Figure 6 Level of anonymity required by stakeholders

9.2 Stakeholder profiles

The MUSES project chose to take a participatory approach to stakeholder analysis because they have an active role in the analysis, providing the information about their values, aspirations and interests, as well as practical details about how they can/want to support the Multi-Use [47]. An iterative process was used in the MUSES project to compile the stakeholder lists and formulate typologies and **this methodology has been adopted as well as for the MARSPLAN-BS II Bulgarian MU case study**. Stakeholder analysis has been conducted in parallel with MU barriers/drivers identification and evaluation. As new information was gained during the face-to-face meetings and interviews, stakeholder information has been updated and revised, with the purpose to deepen the analysis. The findings that have come out of the desktop phase of stakeholder analysis have been verified and revised through the selected participatory methods including interviews and face-to face meetings.

The elaboration of stakeholder profiles was based on the desk research (their involvement in the past projects related to MSP, as the first MARSPLAN-BS project) and on the information obtained during the stakeholder engagement process. Local stakeholder profiles have been organised in themes or sectors and categories of stakeholders (e.g. scuba diving clubs or decision-makers) following MUSES methodology for stakeholder profiles [47]. Elaboration on the following four attributes is provided for the explored MU combination and these attributes are meant to provide better understanding of stakeholder structures for the MU combination. Attributes are as follows in accordance with MUSES methodology:



- 1. Overall activity of stakeholders in relation to MU development and overall attitude towards MU;**
- 2. Geographical scale at which certain stakeholder has the power;**
- 3. Type and level of power;**
- 4. Organisation of stakeholders.**

Overall activity and overall attitude towards MU Tourism, UCH & Environmental Protection

Most of contacted stakeholders showed a reactive interest to the investigated MU as they accepted the invitation to participate in the MU study of the MARSPLAN-BS II project. One stakeholder at national level (a research centre) demonstrated negative overall attitude towards this MU. Others could not be classified in giving an overall attitude (positive or negative) as they did not respond to the invitation for participation in the study. All accepted invitation stakeholders had positive overall attitude in relation to the potential and the development of this MU combination as they act as driving factors for this MU (in particular scuba diving clubs/centres and museums). This positive relation was also the reason why these stakeholders took the time to give their expertise and opinions. Some organisations, such as maritime/naval museums and one national research institute are responsible for carrying out scientific studies and underwater explorations, and provide information about shipwrecks and other underwater relicts. In general, they have a strong interest in developing this MU combination. Promoting Bulgarian underwater heritage by museums also helps for the development of this MU combination. Scuba diving companies could be regarded as a driving force for the co-existence of tourism and UCH. They promote underwater diving near the Bulgarian Black Sea coast, including exploration of old and more-recent ship wrecks, remains/artefacts found on the sea bottom. National and international scuba diving companies create maps of suitable diving places, which is also beneficial for the joint implementation of these MU activities.

Geographical scale at which certain stakeholder has the power

Tourist operators, museums, scuba diving clubs, environmental stakeholders and decision-makers have mainly a local, but some of them regional/national scale of action, implementing policies and strategies. Policy-makers have power at national level and their acts and other instructions are applicable on the whole territory of Bulgaria. On the other hand, the geographical scale of power of museums is 'local or regional' because they mostly hold exhibitions of local/regional relevance (e.g. maritime museums in Kavarna and Balchik, and Naval Museum in Varna). Lastly, the activities of scuba diving clubs/centres could be also of national importance because they may attract tourists from all parts of Bulgarian coast as well as from abroad.



Type and level of power

National/governmental policy- and decision-makers are regarded as actors having a geographical scale of power to control and make decisions at national level, because their acts and powers are enforceable on the whole country territory. The Ministry of Regional Development and Public Works of Bulgaria as Competent Authority for Maritime Spatial Planning in Bulgaria could regulate avoiding conflicts and promoting synergies and co-existence between surveyed MU sectors and the development of this MU by creation of specific UCH and MPAs zoning and thus has a strong power to influence the MU combination (MSP helps in solving spatial conflicts and promote synergies between uses and uses-environment). The Executive Agency Maritime Administration (EAMA) as governmental agency to the Ministry of Transport, Information Technology and Communications of Bulgaria, issues permissions to diving clubs and thus has also strong power to promote or to hinder the UCH tourism and scuba diving practice.

Policy- and decision-makers at local level in Bulgaria are stakeholders of local relevance (coastal municipalities/local administrations) because their powers and adopted acts are applicable /enforceable only for its entities and citizens, which perform their activity located on the territory of the respective municipality.

The Ministry of Culture of Bulgaria is responsible for the protection of UCH. Being a policy-maker and regulator, the Ministry has a strong power to influence this MU, to control and make decisions at both national and local levels (specifically through its museums). The Centre for Underwater Archaeology is the competent authority in Bulgaria responsible for the protection and preservation of the UCH: a state cultural institute with a subsidiary budget to the general budget of the Ministry of Culture. The activities of the Centre for Underwater Archaeology are aimed at: investigation, recording and protection of UCH (Bulgarian Black Sea coast, rivers and lakes) by applying multidisciplinary scientific research methods; scientific processing and interpretation of the data and findings acquired as a result of underwater archaeological research; scientific/expert activities and consultancy in the field of underwater archaeological research; organisation of national and international events in the field of underwater archaeology; organisation of exhibitions, promotion of cultural heritage and publishing activities in Bulgaria and abroad; training in the field of underwater archaeology.

Museums at local or national/regional level are sub-ordinated by the superior policy-maker (Ministry of Culture of Bulgaria) and can promote their interests through it. Their level of power is medium because, for instance, decisions taken by museums are relevant only for themselves and are not binding other organisations or public authorities. Lastly, scuba diving companies (as commercial organisations) are more dispersed community and for this reason their power is categorised as 'indirect'. They can influence decision-makings either via local or national authorities or via associations or branch organisations. Their power is also medium because they cannot force those who are not linked to their activities to stick to the decisions/rules their governing bodies have taken/adopted. Their rules are applicable only to those that go beneath the sea surface. The tourism businesses that effectively could sell this MU have low power to influence. Diving clubs/centres are also positively oriented towards MU, some of them are already involved in organising guided tours and part of UCH site maintenance and control. Through their



proactive role, they are able to influence the process of MU development, but they do not have the power to control and make decisions.

The Ministry of Environment and Water of Bulgaria, being in charge for the protection of the marine biodiversity/MPAs at a national level, is another policy-maker with strong power, to influence (promote or hinder) the co-existence of Tourism, UCH & Environmental Protection. The process of implementation of Natura 2000 network is coordinated and managed by the Ministry of Environment and Water of Bulgaria, while nationally designated areas of conservation are managed by different institutions. However, as of the beginning of 2020 there is still lack of approved and operational management plans for Natura 2000 coastal protected areas and MPAs. Environmental organisations/green centres, collaborating in preservation of coastal and marine protected areas have a positive attitude towards combination between environmental protection and UCH tourism, considering their effective collaboration with diving companies and the development of scientific, sport and recreational activities in the protected areas.

Organisation of stakeholders

UCH tourism operators/scuba diving clubs are in general not clustered in any specific organisation as the MU is developed by local small enterprises. As one of the interviewed stakeholders commented *“namely the lack of a well-organised and functionally effective professional organisation of scuba diving clubs for underwater activities with recreational and tourist focus, is one of the crucial barriers for the development of MU of tourism and UCH”*.

For UCH, the decision-making is concentrated in the Ministry of Culture, although scuba diving clubs and associations may influence on decisions. Some of diving clubs/centres are grouped in the Bulgarian National Association of Underwater Activity, which however has a low power to influence decisions. Diving clubs/centres are the most proactive stakeholders, motivated both by their specific interest and by the urgent need of regulating access to UCH sites. In general, they have no power to control and make decisions at local level. Their activities are regulated by one document: the only one ordinance that is in force for scuba diving clubs in Bulgaria is the Regulation № H-7 from 12.06.2008 to perform diving and other underwater activities [26], issued by the Ministry of Defence, Ministry of Interior and Ministry of Transport of Bulgaria. According to it a preliminary permission for diving visits is required by EAMA. However, such request creates difficulties for tourist activities of diving centres: while waiting for an issued permission, the visits are often hampered due to the worsening of the weather conditions. Moreover, the diving centres are not able to plan even in a short term the activity with tourists willing to make diving.

As mentioned, the protection of MPAs is coordinated by the Ministry of Environment and Waters of Bulgaria, which has the power to promote or hinder the co-existence of tourist exploration of UCH sites and conservation of habitats in MPAs. Also, each municipality has its own environmental department in charge of ecology, which is sub-ordinated by the municipality and in general have no power to influence on this MU. Still missing operational management plans for Natura 2000 coastal and marine protected areas, create major barriers for development of this MU



combination as many illegal activities could be carried out, for example bottom trawling having a destructive impact, both on sea bottom habitats and UCH artefacts or old wooden shipwrecks.

10. Addressing the MU with MSP: suggested recommendations to overcome barriers

10.1 Analysis of DABI results and recommendations

DRIVERS AND ADDED VALUES

The MU case study survey in the Bulgarian cross-border area finds that the main driver for the MU combination of Tourism, UCH & Environmental Protection is ***Prevent the destruction of underwater archaeological sites/shipwrecks, etc.*** The MU therefore makes UCH sites with high importance for the local stakeholders, encouraging the protection and appreciation of their value and significance. This brings about possible mutual opportunities and advantages amongst UCH enterprises, diving clubs and tour operators, and associations (e.g. NGOs) involved in marine protection. The MU offers both ecological and economic benefits and opportunities. Other driving factors that should potentiate this MU are: ***Need for approved and functional management plans for MPAs (Natura 2000)***; and ***National legislation on management of UCH and Multiple synergies between UCH, tourism and environmental protection***, as well as ***Harmonise the protection of UCH and MPAs***; and ***Societal and political promotion of protection of the UCH and MPAs as natural and cultural heritage.***

It is important to underline that the highest ranked added values of MU are from category societal added values and same as the highest scored driving factor: ***Prevent the destruction of UCH sites/shipwrecks (2.8)***, which is important and critical for local/regional UCH operators and stakeholders. This has proven the stakeholder perception that the UCH is insufficiently protected and on the lack of strong protection/management measures, and UCH is under threat of being salvaged. The matter of protecting and managing UCH is not only a problem within Bulgarian sea waters, but is a subject of great dispute globally and the local stakeholders are completely aware with the importance of UCH protection.

Other benefits come from the increase of local revenues from tourist services, diversification of tourism sector and extend of tourist season; education and public awareness about UCH and its respective history; creation of specialised professions (e.g. diving guides specialised in UCH); and reinforcement of the national/regional public budget for UCH and environmental protection.

Effective collaboration of tourist operators and end-users for the management, protection and sustainable use of MPAs is another benefit, which represents the willingness of local stakeholders for synergies and co-existence between Tourism, UCH & Environmental Protection. Synergies with the tourism sector include development of local museums, exhibitions on Bulgarian maritime history and diving opportunities. The presence of UCH also protects the marine environment from other uses disturbing the seabed (e.g. trawling). Furthermore, archaeological artefacts may have



created habitat for marine species and serve as artificial reefs. Therefore, proper management of tourism activities involving UCH can lead to win-win situations for both tourism and UCH protection as it raises public awareness and appreciation of the value of UCH sites.

BARRIERS AND NEGATIVE IMPACTS

The key barriers to development of this MU are: ***Lack of public awareness on protection and value of UCH and environmental protection; Limited coordination between institutions involved, moreover acting at different scales; and Lack of approved and operational management plans for MPAs (Natura 2000).*** In the Black Sea, where the risk of theft is high, archaeological authorities are often reluctant to provide information about and facilitate access to UCH sites. In general, the number of tourists that can engage in this MU is limited to the ones having specialised skills and certification (e.g. ISO, PADI, CMAS, SSI, NAUI). This can limit the number and diversity of people who can engage in this MU. Also limited financial incentives for starting MU initiatives have been indicated by the stakeholders, but this is generally an issue across all EU sea basins. Existing experiences and results from UCH projects and relevant initiatives have not been well shared. The combination of these key challenges and problems have, in some cases, led to concentration of this MU activity to only a few UCH sites, which limit the number of visitors.

Negative impacts are mainly related to societal impacts: ***Risk of damage to UCH and MPAs caused by illegal bottom trawling and Risk of looting/stealing from underwater archaeological sites/shipwrecks and destruction of their contexts.*** Unfortunately, such risks are common for the study area as illegal bottom trawling has been practiced for many years. Most affected by these negative impacts are local communities, mainly including fishermen and scuba divers, and creating vulnerability to protection of UCH and bottom habitats. Conflicts between scuba diving and other uses are due to degradation of water quality or water visibility and a limited access to space. For example, diving will not take place in the vicinity of trawling, dredging or sediment dumping activities due to the creation of sediment plumes increasing turbidity and decreasing underwater visibility.

ACTIONS AND RECOMMENDATIONS TO OVERCOME BARRIERS FOR MU OF TOURISM, UCH & ENVIRONMENTAL PROTECTION

LEGISLATION, POLICY AND REGULATION

Although the Bulgarian coastal part of the Black Sea is one of the richest with ancient remains and UCH, the national legislation has also found difficult to effectively cope illegal activities or souvenir hunting/stealing from UCH sites/objects and their destruction, as well as degradation of valuable MPAs habitats. These are as much challenges in Bulgaria as elsewhere across the world.

The following recommendations in the context of policy regulation and legislation should be considered:



- **National legal frameworks with support of EU guidelines should be used to clarify and agree upon which areas can be accessed by tourists and which should be strictly protected.** It is essential that the UNESCO Convention on the Protection of the Underwater Cultural Heritage, adopted in 2001, as well as the processes leading to its ratification, is used to consider in-situ protection and approaches for opening sites to the public. Legislative and institutional frameworks should promote the integration of different institutions and authorities involved with this MU. For example, Bulgaria and Romania are two of the 10 EU Member States that have ratified the UNESCO Convention and have identified and promoted joint UCH sites. Through the HERAS project, a Cross-Border Management Plan for Underwater Heritage Tourism was developed. The enactment of cultural heritage framework is the most common mechanism through which underwater archaeological sites are protected [3]. The improved legislation to support this MU should also provide a more integrated approach across government, with all institutions and agencies more efficiently operating using a shared and centralised UCH strategy for ensuring that the correct rules and procedures are disseminated, interpreted and enforced consistently by the government and the public.

- **Develop a code of conduct to regulate tourist and diver activities at UCH sites.** Potential rules within such a code of conduct include not touching UCH objects and keeping within a certain distance from the site. This would include undertaking a complete and comprehensive review of the collection of rules protecting UCH.

- **Create or improve sub-national regulations and sectoral policies** focused on removing barriers to MU, targeting cross-border sector needs and opportunities.

- **Make use of other existing legal frameworks and policies such as MSP to regulate and promote UCH and MPAs management.** The MSP Directive is still the only one document that supports the MU concept as it requires from the EU Member States to seek opportunities for co-location of maritime activities when developing their maritime spatial plans. Therefore, MU should be explicitly encouraged in the commencing national and cross-border MSP, supporting a shift from a sectoral approach to a MU opportunity planning approach.

Key actors: Ministry of Culture of Bulgaria, Competent Authority for MSP in Bulgaria (Ministry of Regional Development and Public Works of Bulgaria), Ministry of Environment and Water of Bulgaria, regional and local authorities (coastal municipalities), International organisations such as International Council on Monuments and Sites (ICOMOS) and UNESCO; diving centres, environmental organisations, etc.

COORDINATION AND INTEGRATION

Limited coordination between institutions involved, moreover acting at different scales was identified during the DABI survey as one of the key barriers to development of the MU combination of Tourism, UCH & Environmental Protection. MU as a concept is still novel for government authorities, sectoral bodies and policy-makers and they must adjust policy, planning and management reforms in order to advance synergies between maritime uses that are usually managed under different sectoral institutions and owners. Therefore, **integration and**



coordination at vertical (across levels of governance) and horizontal levels (across sectors and policy topics) is needed. This may be achieved by setting up cross-sectoral platforms to guide the development of MU, involving continuous stakeholder engagement, exchange of knowledge and integration of new MU actors [3].

In this context several priority actions and recommendations may apply:

- *Early and continuous engagement of stakeholders is important to encourage public awareness and actions to promote this MU combination.* Early and continuous engagement between actors is important to encourage collective mentality and action to advance MU implementation.

- *Establish inter-ministerial committees for management and protection of UCH and MPAs.* UCH and MPAs management dimensions into various contexts should be promoted (e.g., spatial, environmental, economic, societal), thus constituting a step towards a multi- and inter-disciplinary interaction and cooperation among a variety of maritime activities. This will give an added value of diversified qualities and knowledge stock that are necessary for ensuring both protection/preservation and sustainable and resilient exploitation.

- *Establish working groups/ inter-sectoral committees to discover UCH sites and innovative ways of accessing and promoting UCH.*

- *Explore approaches to include professional divers and diving clubs/centres in controlled access and monitoring activities and co-management* to ensure UCH are properly managed and preserved. This can be initiated by organising workshops with these diving clubs demonstrating the features of the sites.

- *Develop relations between different countries (Bulgaria and Romania, and other Black countries) and national authorities* to address issues in relation to UCH theft and controlling imports of artefacts obtained from sea bottom.

- *Promoting innovative and sustainable use of UCH* to realise its full potential in contributing to the sustainable development and preservation of MPAs.

- *Promote cooperation between stakeholders from different sectors* to find common solutions for this MU combination. Implementing effective MSP entails the adoption of inclusive participatory planning processes that move beyond traditional top-down approaches.

Key actors: Ministry of Culture, Ministry of Environment and Water, Competent MSP Authority (Ministry of Regional Development and Public Works), NGOs, research/scientific community, scuba diving clubs/centres, sectoral organisations, local authorities (coastal municipalities), other relevant stakeholders.

PROMOTION AND DISSEMINATION

As pointed above, the Multi-Use (MU) of marine space and resources as a concept is still new to users, regulators, policy-makers, investors and various stakeholders. It is important that dedicated capacity needs (including know-how, training, logistics and public awareness) are provided for all



actors to boost and advance the MU in the MSP process. The following actions and recommendations on promotion and dissemination should be considered:

- ***Promote UCH by cooperation with other tourism operators and activities.*** This should include greater attention on tour and exhibition opportunities as well as films and publication in planning archaeological excavations.
- ***Promote submerged sites and providing responsible access to the public,*** selecting some UCH sites to open for visitors while leaving others closed (within or outside MPAs).
- ***Creating replica sites to steer tourists away from the original can help in safeguarding especially valuable UCH.***
- ***Organise information campaigns for tourists, and other associated marketing and informational activities*** such as tourism promotional websites, brochures, leaflets and special offers for tourists, for developing new business opportunities in the cross-border region.
- ***Develop a national and cross-border database on UCH and MPAs*** to be prohibited and share this information with the public.
- ***Create land-based museums of UCH with exhibitions for tourists*** which are not specially trained for diving.
- ***Promote synergies with other land-based activities*** by linking UCH sites to coastal sites, museums and local cultural values, to develop culture of the sea (e.g. historical underwater roads).
- ***Promote marketing and dissemination of good practices and information about the economic and social benefits of MU*** through existing cross-sectoral/MU platforms, regional and sea basin forums and networks.

Key actors: UCH authorities, local authorities (coastal municipalities), research/green centres, historical and maritime museums, scuba diving and archaeological teams.

RESEARCH AND TECHNOLOGY

The prevailing approach for UCH protection/preservation is mainly represented by the archaeological/historical viewpoint. This is framed by the respective protection legislation and research that mainly focuses on documentation/mapping of UCH as well as understanding the condition and formation of the site, i.e., the tangible UCH aspects. To fully grasp the UCH and surrounding site, research usually involves creation of inventories as well as building of local research and protection capacity, when possible [48]. This **‘silo’ approach**, i.e., a mono-disciplinary consideration of UCH that is mostly taken by marine archaeologists or heritage professionals, implies that UCH lacks a substantial link to society and its interpretation as a valuable cultural resource that can steer sustainable development objectives. **The transition from a ‘silo’ to a more integrated and cooperative UCH management approach**, embedding heritage managers to work into a **cultural planning process**.



Development of proper tools and technologies for identifying and assessing UCH sites seems to be a primary step for performance and operational applications for monitoring and management of UCH, including discovery, documentation, risk monitoring and preservation of heritage sites.

Digital technologies also provide new improvements in raising public awareness and access to UCH. Remarkable progress has been noticed in technologies that support wider communication of UCH objects to the public, e.g., Virtual Reality (VR) technologies and the latest three dimensional (3D) reconstruction techniques. The following are necessary actions/recommendations to improve research and technology in relation to UCH MU:

- *Develop projects to identify and discover UCH sites and potential for access in advancing this MU.* Such projects could help developing the sector and, in turn, could open a specific market niche for remote monitoring of UCH sites: implementing state-of-the-art, low budget digital records, analyses and disseminated data from the submerged sites. Dedicated boats, ROVs and technology which support real time experience of the UCH would be required for this. In addition, such projects will help to conserve, protect, and promote the UCH through the creation of a new tourist product and jobs in the tourist sector.

- *Undertake pre-evaluation to understand* which UCH sites need strict protection and which have potential for tourism activities and development, as well as whether access to UCH sites would be needed for a community's cultural development. This would help to prioritise activities for limited research budgets.

- *Exploration projects and knowledge* of existing UCH site locations and their suitability for touristic purposes, and legal, technical and financial prerequisites, are required to develop this MU.

- *Support research and innovation development to improve the identification and analysis of UCH sites,* while also improving 'dry access' to tourists; e.g. use of underwater technologies to provide tourists with real time experience of underwater wrecks.

Key actors: UCH authorities, research centres, archaeological museums, diving centres.

FUNDING

In order to advance this MU, funding activities for national and EU funding programmes should be encouraged for development projects and protection of submerged sites.

- *Increase funding and investment* for innovative and technological solutions to advance multi-sectoral integration and understanding of this MU value chains.

- *Explore innovative financing methods for UCH management* and value development such as charged and controlled public visits; development of UCH related retail activities; and investments into UCH research, museums, underwater technology, etc.

- *Encourage targeted incentives for multi-sectoral integration,* moreover funding schemes directed towards single sectors to be adapted to consider this MU.



Key actors: Ministries, European Commission` DG MARE, DG Research and Innovation (other DGs), Operational Programmes, Black Sea Basin Programme (next programme period), Steering Group on Common Maritime Agenda for the Black Sea Basin, etc.

CAPACITY BUILDING

- **Capacity building on this MU**, including knowledge exchange between different stakeholders on environmental protection of MPAs and preservation of UCH sites.
- **Promote training schemes and courses, which also increase awareness and appropriate conduct of recreational divers.** Such courses and training should be supported and promoted and also include information about the circumstances and materials of the wrecks (and the UCH sites in general) to ensure that divers understand their value.
- **Organise trainings of trainers on UCH and MPAs:** training activities should be devoted to the education and training of managers, decision-makers, sectoral representatives to train further other relevant stakeholders. Such training and capacity building is an important to create employment in local coastal and maritime communities and ensure protection of the UCH sites and MPAs.

Key actors: UCH authorities, research centres, archaeological museums, scuba diving clubs/centres.

10.2 Addressing the MU with MSP: Recommendations

Spatial conflict resolution is an issue for all maritime countries, irrespective of what stage they are in the MSP cycle. During the planning stage, the task is to set out strategic choices for the sea. Here, MSP must prevent conflicts between sectors already present in the sea, and plan ahead for those that might arise through new and emerging blue sectors, although spatial conflict resolution during the planning phase is mostly anticipatory [1]. **MSP provides a way to integrate human activities without compromising protection values. It provides for operationalising an ecosystem approach through a planning process involving all stakeholders.** Through MSP, the stakeholders can put forward their vision for an area; identify where human activities (including shipping, fishing, aquaculture, or tourism) currently occur and where it might be desirable for them to occur in the future; and identify actual or potential conflicts between different uses and human activities and desired conservation outcomes. The resulting spatial plan can provide for sustainable use, while also conserving specific areas through MPAs and other appropriate measures in a manner that avoids potential conflicts [49].

Based on the Blue Growth strategy [5] as well as related policies and resources used for its implementation, the marine environment is gradually shifting to a place of opportunities and an attractive space for a variety of sectors, a fact that can generate opportunities, but also threats to UCH. **Maritime Spatial Planning can be used as a tool for protection and management of the UCH sites and MPAs.** This can be done through the creation of designated protection zones, special management measures and increased data availability and knowledge. Much of the UCH



sites are yet to be discovered and a level of uncertainty remains regarding the potential location of archaeological artefacts. In order to reduce the risks of damaging undiscovered sites, increased seabed surveying with an archaeological component could be undertaken. Another solution is to develop specific surveying requirements to be applied in areas with potentially historical remains prior to project development.

Several main findings emerged from the analysis undertaken in this case study:

- **MSP supports the MU concept and the MU can ease the implementation of MSP;**
- **MU concept also supports the concept of Circular Economy (industrial symbiosis) in the context of European Green Deal [50];**
- **MSP provides the needed policy to overcome barriers for MU development;**
- **MSP helps identifying areas suitable for MU combinations;**
- **MSP helps in solving spatial conflicts and promote synergies between uses and uses-environment;**
- **Using an ecosystem-based approach, MSP can also facilitate the development of coherent networks of MPAs to maximise their benefits;**
- **MSP can act as a transparent tool for early communication with stakeholders and resulting in more lasting solutions.**

Depending on the planning approach of the given Member State, MU concept can be promoted through identification of zones suitable for MUs, planning policies and guidelines on mitigation measures. Maritime Spatial Plans can directly support MU by assigning preference towards joint uses versus single uses and imposing certain conditions on the developer during the permitting process [3]. MSP is useful also in identifying knowledge gaps and advising future agendas (e.g. cumulative and in-combination impacts of the MU) as well as helping to clarify potential legislation and good practice for combining different uses in marine areas.

The priority recommendations to address identified key barriers for MU of Tourism, UCH & Environmental Protection with MSP are the following:

- ✓ **Ensure appropriate involvement of all relevant stakeholders early in the MSP process to advise suitable site selection, business opportunities and local benefits.** Considering innovative methods of stakeholder involvement contribute to better communication among sectors and identification of cross-sectoral opportunities. Public consultation alone is no longer appropriate. For example, implementing effective MSP entails the adoption of inclusive participatory planning processes that move beyond traditional top-down approaches.
- ✓ **Enhance cooperation between MSP Competent Authority, UCH authorities, diving centres, local authorities, tourism operators and business investors in order to potentiate sustainable development of this MU.**
- ✓ **Use cross-border consultation processes to exchange existing MU practices and lessons learned for UCH and MPAs, and to raise the public awareness.** This should



also be used as a platform to discuss ways of improving the management of UCH and MPAs in Bulgaria and Romania.

- ✓ **Apply an ecosystem-based approach (EBA) in MSP** to support the development of coherent networks of MPAs to maximise their benefits.
- ✓ **MSP can be used as a tool for protection and management of MPAs and UCH sites** through the creation of designated protection zones, special management measures and increased data availability and knowledge.
- ✓ **Data resulting from MSP process, especially data pertaining to the location and key information of UCH** are important for the development of this MU and selecting diving access to UCH sites/MPAs.
- ✓ **The MSP process should also consider and identify areas of cultural importance and cultural ecosystem services to support decision-making areas** for MUs that combines with tourism and UCH, also considering local priorities and support of communities.
- ✓ **MSP along with other coastal and marine area-based management approaches** (e.g. Integrated Coastal Management (ICM) or territorial planning/municipalities master plans) should be used as an opportunity to gather better information about MPAs and respective UCH sites with a view to **sustainable UCH/MPAs management** and for selection of sites that can be opened to tourists and such that must be strictly prohibited.
- ✓ **Black Sea Basin regional policy actors** (such as Steering Group on Common Maritime Agenda for the Black Sea, Black Sea Economic Cooperation (BSEC), Black Sea Commission) and funding programmes should consider suggesting and supporting the process of marketing this MU combination as a sea basin wide offer (e.g. **Black Sea as a cultural heritage destination**). MSP competent authorities in Bulgaria and Romania as well as local authorities should consider planning implications of such options.



Conclusions

The case study reveals the **MU combination of Tourism, UCH & Environmental Protection and MSP** as a **'win-win'** situation as the MSP facilitates the MU implementation and the MU can ease the implementation of MSP. **UCH benefits in most cases from the conservation measures of environmental protection areas while tourism benefits economically from both sectors.** The UCH sites provide shelter for fishes from fishing or other activities that can impact the sensitive seabed habitats. Tourists get access to UCH sites, which serve as a source of revenue for the local economy. It is important to note that this type of MU is very much site specific as well as depending on the physical and natural conditions of the maritime space.

Viewing the protection of UCH and MPAs as a common concern of humankind would require them to be governed in the future with less of an exclusive focus on national economic advancement, **rather than on cross-border and sea basin issues.** This would interpose a number of additional environmental and general principles, such as **sustainable development, precautionary and preservation management, polluter pays principle, public participation, capacity building, research and innovation, and transparency.**

For future perspectives the MU in the sea space should be facilitated and stimulated through public regulatory authorities and relevant supporting programmes. Significant capacity building efforts, changes in the basic legal frameworks, in the funding structures, and even in the research are needed - all this should be aimed at multidisciplinary actions and solutions supported not only by MSP, as well as by other relevant area-based management approaches.



References

- [1] s.Pro. 2019. Addressing conflicting spatial demands in MSP Considerations for MSP planners. Final Technical Study. Written by the European MSP Platform Under the Assistance Mechanism for the Implementation of Maritime Spatial Planning (Conducted for the Executive Agency for Small and Medium-Sized Enterprises/DG Maritime Affairs and Fisheries).
- [2] Lukic, I., Schultz-Zehden, A., Ansong, J. O., et al. 2018. Multi-Use Analysis, MUSES project. Edinburgh.
- [3] Schultz-Zehden, A., Likic I., Ansong, J. O., et al. 2018. Ocean Multi-Use Action Plan, MUSES project. Edinburgh.
- [4] COM. 2007. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. An Integrated Maritime Policy for the European Union. Brussels, 10.10.2007, COM (2007), 575 final.
- [5] COM. 2012. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. Blue Growth opportunities for marine and maritime sustainable growth. Brussels, 13.09.2012, /COM/2012/0494 final/.
- [6] EC (European Commission). 2014. Directive 2014/89/EU of the European Parliament and of the Council of 23 July 2014 Establishing a Framework for Maritime Spatial Planning. Retrieved from: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2014.257.01.0135.01.ENG%20.
- [7] Zaucha J., Bocci M., Depellegrin D., Lukic I., Buck B., Schupp M., Cana Varona M., Buchanan B., Kovacheva A., Karachle P.K., et al. 2016. Analytical Framework (AF) – Analysing Multi-Use (MU) in the European Sea Basins. Edinburgh: MUSES project.
- [8] Przedzimirska, J., Zaucha, J. et al. 2018. Multi-use concept in European Sea Basins, MUSES project. Edinburgh.
- [9] Bocci M., Ramieri E., Castellani C., De Pellegrin D., et al. 2017. Case study methodology, MUSES project. Edinburgh.
- [10] Stanchev, H., R. Young, and M. Stancheva. 2013. Integrating GIS and high resolution orthophoto images for the development of a geomorphic shoreline classification and risk assessment - a case study of cliff/bluff erosion along the Bulgarian coast. *J Coast. Conserv.*, 17: 719-728, [DOI 10.1007/s11852-013-0271-2](https://doi.org/10.1007/s11852-013-0271-2).
- [11] Climate Reference Book for Bulgaria. 1983. Vol. 3: Air temperature, soil temperature, frost. Sofia, 440 p. (in Bulgarian).
- [12] Climate Reference Book for Bulgaria. 1982. Vol. 4: Wind, Sofia (in Bulgarian).



- [13] Grozdev, D. 2005. Wind wave climate of the nearshore part of the Bulgarian Black Sea sector, PhD Thesis, Sofia, 180 pp. (in Bulgarian).
- [14] Peychev, V. 2004. Morphodynamical and lithodynamical processes in coastal zone, Publishing house “Slavena”, Varna, 231 p. (In Bulgarian).
- [15] Stanchev, H., Stancheva, M. Young, R. 2015. Implications of population and tourism development growth for coastal zone in Bulgaria. *J Coast. Conserv.*, 19(1): 59-72, DOI: [10.1007/s11852-014-0360-x](https://doi.org/10.1007/s11852-014-0360-x).
- [16] Stancheva, M., Stanchev, H., P. Peev, G. Anfuso, Williams, A. T. 2016. Coastal protected areas and historical sites in North Bulgaria - Challenges, mismanagement and future perspectives. *Ocean Coast. Manage.*, 130 : 340-354, <http://dx.doi.org/10.1016/j.ocecoaman.2016.07.006>.
- [17] HERAS Book. 2015. Submarine Archaeological Heritage of the Western Black Sea Shelf – HERAS project.
- [18] EC (European Commission). 2008. Directive 2008/56/EC of the European Parliament and of the Council of 17 June 2008, establishing a framework for community action in the field of marine environmental policy (Marine Strategy Framework Directive). Retrieved from: <https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX%3A32008L0056>.
- [19] EU SeaMap 2. Creation of a homogeneous seabed habitat map covering all European seas, MARE/2012/10 - LOT 3 Physical Habitats, Contract Number - SI2.657872, Knowledge base for growth and innovation in ocean economy: Assembly and dissemination of marine data for seabed, 2013-2016, <http://www.emodnet.eu/seabed-habitats>.
- [20] Vergílio, M., Calado, H., Caña Varon, M. 2017. Case Study 3B: Development of Tourism and Fishing in the Southern Atlantic Sea (Azores Archipelago – Eastern Atlantic Sea), MUSES Project.
- [21] Castellani, C., Carrer, S., Bocci, M., Ramieri, E., Depellegrin, D., Venier, C., Sarretta, A., Barbanti, A. 2017. Case Study 6: Coastal and Maritime Tourism and O&G Decommissioning as Drivers for Potential Multi-Use in the Northern Adriatic Sea. MUSES Project.
- [22] UNESCO. 2001. UNESCO Convention on the Protection of the Underwater Cultural Heritage. Available at: <http://unesdoc.unesco.org/images/0012/001260/126065e.pdf>, last accessed 26 March 2020.
- [23] Haponiuk, R. R. 2015. Underwater Cultural Heritage and Marine Spatial Planning: An integration approach. Thesis project of the 1st Edition of the Erasmus Mundus Master Course on Marine Spatial Planning – University Iuav of Venice, University of Azores and University of Seville.
- [24] European Commission. 2019. *The EU Blue Economy Report*. 2019. Publications Office of the European Union. Luxembourg.
- [25] Cultural Heritage Act. 2009. Promulgated State Gazette No 19/2009, last amended State Gazette No 1/03.01.2019



- [26] Regulation No H-7 from 12 June 2008 for performing diving and other underwater activity. State Gazette No 59/01.07.2009, last amended State Gazette No 14/18.02.2014.
- [27] Protected Areas Act.1998. Promulgated State Gazette No 133/1998, last amended by State Gazette No 1/03.01.2019.
- [28] Environment Protection Act. 2002. Promulgated State Gazette No 91/25.09.2002, last amended by State Gazette No 54/16.06.2020.
- [29] Tourism Act. 2013. Promulgated, State Gazette No. 30/26.03.2013. Last amended by State Gazette No 60/07.07.2020.
- [30] Updated National Strategy for Sustainable Tourism Development in the Republic of Bulgaria 2014-2030. 2018. Approved by the Council of Ministers by Decision No 65 of 02.02.2018: http://www.tourism.government.bg/sites/tourism.government.bg/files/documents/2018-01/nsurtb_2014-2030.pdf.
- [31] Spatial Development Act. 2001. Promulgated State Gazette No. 1/02.01.2001, last amended by State Gazette No 62/14/07/2020.
- [32] Black Sea Coast Spatial Development Act. 2008. Promulgated, State Gazette No. 48/15.06.2007. Last amended by State Gazette No 21/13.03.2020.
- [33] Maritime spaces, Inland waterways and Ports of the Republic of Bulgaria Act. 2000. Promulgated, State Gazette No. 12/11.02.2000. Last amended SG No 60/07.07.2020.
- [34] Regional Development Act. 2008. Prom. State Gazette No 50/30.05.2008. Last amended SG No 21/13/03/2020.
- [35] Development Plan of Shabla Municipality. 2014-2020. <http://www.strategy.bg/FileHandler.ashx?fileId=7457>.
- [36] Development Plan of Kavarna Municipality. 2014-2020. <http://www.strategy.bg/FileHandler.ashx?fileId=7444>.
- [37] Development Plan of Balchik Municipality. 2014-2020. <http://www.strategy.bg/FileHandler.ashx?fileId=7399>.
- [38] Valletta Convention, 1992. <https://www.coe.int/en/web/culture-and-heritage/valletta-convention>.
- [39] Ministry of Environment and Water. 2020. Project 'Information system for protected zones of the Bulgarian Natura 2000 network', Available at: <http://www.natura2000.moew.government.bg>.
- [40] Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds. Official Journal of the European Union, 26.01.2010:7-25.
- [41] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. Official Journal of the European Union L 206, 22.7.1992, p. 7.



- [42] CBD, 1992. Text of the convention, United Nations, retrieved in pdf from: <http://www.cbd.int/doc/legal/cbd-en.pdf>; last accessed on 06.12.2019.
- [43] Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention). 1979.
<https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=LEGISSUM:l28050&from=ES>
- [44] Convention on Wetlands of International Importance especially as Waterfowl Habitat (Ramsar Convention on Wetlands). 1971. <http://www.ramsar.org/>.
- [45] Kyriazi Z., Maes F., Degraer S. 2016. Coexistence dilemmas in European marine spatial planning practices. The case of marine renewables and marine protected areas. *Energy Policy*; 97: 391–399.
- [46] Pomeroy, R., Douvère, F. 2008. The engagement of stakeholders in the marine spatial planning process. *Marine Policy*, 32:816–822. <https://doi.org/10.1016/j.marpol.2008.03.017>.
- [47] Lukic, I., Lazic, M., Venier, C., Castellani, C., Papaioannou, E., Varona, M. C. 2017. Stakeholder profiles. MUSES project.
- [48] Argyropoulos, V., Stratigea, A. 2019. Sustainable Management of Underwater Cultural Heritage: The Route from Discovery to Engagement-Open Issues in the Mediterranean. *Heritage* 2019, 2, 1588–1613; [doi:10.3390/heritage2020098](https://doi.org/10.3390/heritage2020098).
- [49] OECD. 2016. The Ocean Economy in 2030, OECD Publishing, Paris. Available at: <http://dx.doi.org/9789264251724-en>.
- [50] COM. 2019. Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions, The European Green Deal, Brussels, 11.12.2019, COM (2019) 640 final.



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APPENDIX 1 SCORED DABI SHEETS

| APPENDIX 1 – SCORED DABI SHEETS | Interviewer 1 | Interviewer 2 | Interviewer 3 | Interviewer 4 | Interviewer 5 | Interviewer 6 | Interviewer 7 | Interviewer 8 | Interviewer 9 | Interviewer 10 | Interviewer 11 | Interviewer 12 | Interviewer 13 | | |
|--|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|-------------------------------------|---|
| Combination: Tourism, Underwater Cultural Heritage (UCH) and Environmental Protection | 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 system for tourism destination and products | 1 | 2 | 3 | 3 | 1 | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 2,5 | |
| Factor D.1.2 HERAS Project UCH Management Plan that promotes sustainable tourism development and environmental protection. | 1 | 2 | 3 | 3 | 1 | 3 | 2 | 2 | 3 | 3 | 3 | 3 | 2 | 2,4 | |
| Factor D.1.3 MSP as policy driver to support UCH protection and tourism, and new MPAs | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 3 | 2 | 2 | 3 | 0 | 3 | 2,5 | |
| Factor D.1.4 Support from EU and regional strategic documents (i.e. Blue Growth Strategy, Strategic Research and Innovation Agenda (SRIA) and Common Maritime Agenda for Black Sea Basin) | 2 | 1 | 3 | 3 | 2 | 2 | 2 | 3 | 2 | 2 | 3 | 0 | 3 | 2,2 | |
| Average | 1,8 | 2,0 | 2,8 | 3,0 | 1,5 | 2,5 | 2,5 | 2,8 | 2,3 | 2,5 | 3,0 | 1,5 | 2,8 | | 2,4 |
| Category D.2 – interactions with other uses | | | | | | | | | | | | | | | |
| Factor D.2.1 Multiple synergies between UCH, tourism and environmental protection | 3 | 2 | 3 | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2,7 | |



| | | | | | | | | | | | | | | | |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Factor D.2.2 Development of local museums, exhibitions on Black Sea history and diving opportunities | 3 | 2 | 2 | 3 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 2,6 | |
| Factor D.2.3 MU combination of tourism, UCH and environmental protection at sea could be potentially linked with environmental/nature and cultural related touristic and other activities on the coast | 1 | 3 | 3 | 3 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 2,6 | |
| Factor D.2.4 Synergy with small scale fishery | 2 | 1 | 3 | 3 | 2 | 3 | 3 | 2 | 2 | 3 | 3 | 1 | 3 | 2,4 | |
| Average | 2,3 | 2,0 | 2,8 | 3,0 | 1,8 | 2,5 | 3,0 | 2,8 | 2,3 | 3,0 | 3,0 | 2,3 | 3,0 | | 2,6 |
| Category D.3 – economic drivers | | | | | | | | | | | | | | | |
| Factor D.3.1 Financial incentive systems | 1 | 2 | 3 | 3 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | 0 | 3 | 2,3 | |
| Factor D.3.2 Increasing eco-tourism options as blue growth opportunities | 2 | 2 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 1 | 3 | 2,2 | |
| Factor D.3.3 Need to diversify tourism sectors | 2 | 2 | 2 | 3 | 2 | 2 | 3 | 3 | 2 | 3 | 2 | 1 | 1 | 2,2 | |
| Factor D.3.4 Need to extend the tourist season by other activities | 3 | 1 | 3 | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 2 | 1 | 2 | 2,4 | |
| Factor D.3.5 Increasing demand for diving sites due to a growing interest by divers and operators of the sector | 0 | 3 | 1 | 3 | 1 | 1 | 3 | 2 | 2 | 3 | 3 | 2 | 2 | 2,0 | |
| Factor D.3.6 Increasing number of designated/managed sites to be explored | 1 | 3 | 1 | 3 | 1 | 3 | 2 | 2 | 1 | 3 | 3 | 1 | 2 | 2,0 | |
| Factor D.3.7 Increasing target groups for visiting UNCH and MPAs | 1 | 2 | 2 | 3 | 1 | 2 | 2 | 3 | 3 | 3 | 3 | 2 | 3 | 2,3 | |
| Average | 1,4 | 2,1 | 2,0 | 3,0 | 1,4 | 2,1 | 2,6 | 2,6 | 2,1 | 3,0 | 2,7 | 1,1 | 2,3 | | 2,2 |
| Category D.4 – societal drivers | | | | | | | | | | | | | | | |
| Factor D.4.1 Harmonize the protection of UCH and MPAs | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 3 | 2,7 | |
| Factor D.4.2 Prevent the destruction of underwater archaeological sites/shipwrecks, etc. | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3,0 | |
| Factor D.4.3 Societal and political promotion of protection of the UCH and MPAs as natural and cultural heritage | 2 | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 2,7 | |
| Average | 2,7 | 3,0 | 2,0 | 3,0 | 2,7 | 3,0 | 3,0 | 2,7 | 2,7 | 2,7 | 3,0 | 3,0 | 3,0 | | 2,8 |



| Category D.5 – legal drivers | | | | | | | | | | | | | | |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Factor D.5.1 UNESCO Convention on the Protection of the UCH (2001) | 2 | 1 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 2,5 |
| Factor D.5.2 Valetta Convention (1992) on the protection of archaeological heritage establishes specific requirements for the protection of maritime heritage | 2 | 1 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 2,5 |
| Factor D.5.3 National legislation on management of UCH | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 2,8 |
| Factor D.5.4 Regional legislation focused on management of archaeological heritage | 3 | 2 | 3 | 3 | 2 | 2 | 3 | 2 | 1 | 3 | 2 | 3 | 3 | 2,5 |
| Factor D.5.5 UNCBD & Natura 2000 | 3 | 2 | 3 | 3 | 1 | 1 | 3 | 3 | 1 | 1 | 3 | 2 | 3 | 2,2 |
| Factor D.5.6 National legislation focused on conservation and management of natural resources (nationally designated protected areas) | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 2 | 1 | 3 | 2 | 3 | 2,5 |
| Factor D.5.7 Regional legislation focused on conservation and management of natural resources (Black Sea Commission) | 2 | 1 | 1 | 3 | 2 | 2 | 3 | 3 | 2 | 1 | 2 | 3 | 3 | 2,2 |
| Average | 2,4 | 1,9 | 2,7 | 3,0 | 1,9 | 2,4 | 3,0 | 2,7 | 1,7 | 2,1 | 2,7 | 2,4 | 3,0 | 2,5 |
| Category D.6 – environmental drivers | | | | | | | | | | | | | | |
| Factor D.6.1 Need to expand environmental conservation (creation of new MPAs) | 2 | 1 | 1 | 3 | 3 | 0 | 3 | 2 | 2 | 2 | 3 | 3 | 3 | 2,2 |
| Factor D.6.2 Increasing awareness of the value of natural resources | 1 | 3 | 1 | 3 | 1 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2,5 |
| Factor D.6.3 Need to reduce tourist pressure on the coast | 2 | 1 | 1 | 1 | 0 | 3 | 2 | 2 | 3 | 0 | 3 | 1 | 3 | 1,7 |
| Factor D.6.4 Need to reduce fishers | 0 | 1 | 1 | 1 | 0 | 0 | 2 | 1 | 0 | 2 | 2 | 1 | 1 | 0,9 |
| Factor D.6.5 Need to reduce free divers | 1 | 1 | 1 | 0 | 0 | 3 | 2 | 2 | 0 | 2 | 0 | 1 | 1 | 1,1 |
| Factor D.6.6 Need for approved and functional management plans for MPAs | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2,9 |
| Average | 1,5 | 1,7 | 1,2 | 1,8 | 1,2 | 1,8 | 2,5 | 2,2 | 1,8 | 2,0 | 2,3 | 2,0 | 2,3 | 1,9 |
| Category D.7 – technical drivers | | | | | | | | | | | | | | |



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|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Factor D.7.1 Preservation of UCH in situ is the first option and public access shall be promoted | 1 | 3 | 2 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2,6 | |
| Factor D.7.2 System for visitor control of UCH and MPAs | 3 | 3 | 2 | 3 | 1 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 2,7 | |
| Factor D.7.3 Capitalising experience gained and good practices in the cross-border area | 3 | 2 | 1 | 3 | 2 | 2 | 3 | 3 | 3 | 3 | 2 | 2 | 3 | 2,5 | |
| Factor D.7.4 Technological developments have increased the capacity to access UCH | 1 | 3 | 1 | 3 | 1 | 2 | 2 | 3 | 2 | 3 | 3 | 3 | 3 | 2,3 | |
| Average | 2,0 | 2,8 | 1,5 | 3,0 | 1,5 | 2,5 | 2,8 | 3,0 | 2,5 | 3,0 | 2,8 | 2,8 | 2,8 | | 2,5 |

| | Interviewer 1 | Interviewer 2 | Interviewer 3 | Interviewer 4 | Interviewer 5 | Interviewer 6 | Interviewer 7 | Interviewer 8 | Interviewer 9 | Interviewer 10 | Interviewer 11 | Interviewer 12 | Interviewer 13 | | |
|--|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|-------------------------------------|---|
| Combination: Tourism, Underwater Cultural Heritage (UCH) and Environmental Protection | 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 UNESCO Convention on the Protection of the UCH | -2 | -2 | -3 | -1 | -1 | -1 | -1 | 0 | -3 | -3 | 0 | 0 | -3 | -1,5 | |
| Factor B.1.2 National and regional legal framework | -2 | -3 | -3 | -1 | -1 | -1 | -2 | -1 | -2 | -3 | -1 | -3 | -3 | -2,0 | |



| | | | | | | | | | | | | | | | |
|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Average | -2,0 | -2,5 | -3,0 | -1,0 | -1,0 | -1,0 | -1,5 | -0,5 | -2,5 | -3,0 | -0,5 | -1,5 | -3,0 | | -1,8 |
| Category B.2 – administrative barriers | | | | | | | | | | | | | | | |
| Factor B.2.1 Need of preliminary authorisation for diving clubs issued by Executive Agency of Maritime Administration in Bulgaria | -1 | -2 | -2 | -1 | -1 | -1 | -2 | -2 | -2 | -3 | -2 | -3 | 0 | -1,7 | |
| Factor B.2.2 There are zones of military shipwrecks forbidden for visits by tourists/divers | -2 | -2 | -2 | -2 | -2 | -2 | -2 | 0 | -2 | -3 | -1 | -3 | -1 | -1,8 | |
| Factor B.2.3 Lack of approved and operational management plans for MPAs (Natura 2000) | -2 | -2 | -2 | -2 | -2 | -1 | -3 | -3 | -2 | -2 | -2 | -3 | -1 | -2,1 | |
| Factor B.2.4 Lack of project / strategy for safeguarding and valorising UCH sites | -3 | -2 | -1 | -2 | -1 | -1 | -2 | -3 | -2 | -3 | -3 | 0 | -1 | -1,8 | |
| Factor B.2.5 Limited coordination between institutions involved, moreover acting at different scales | -3 | -3 | -3 | -1 | -2 | -2 | -3 | -3 | -1 | -2 | -3 | -3 | -1 | -2,3 | |
| Average | -2,2 | -2,2 | -2,0 | -1,6 | -1,6 | 1,-4 | -2,4 | -2,2 | -1,8 | -2,6 | -2,2 | -2,4 | -0,8 | | -2,0 |
| Category B.3 – financial barriers | | | | | | | | | | | | | | | |
| Factor B.3.1 Lack of full understanding of benefits of this MU – benefits from the development of related touristic activities | -2 | -2 | -1 | -2 | -1 | -1 | -3 | -3 | -1 | -3 | -2 | 0 | -3 | -1,8 | |
| Factor B.3.2 Lack of adequate financial incentives | -2 | -3 | -1 | -3 | -1 | -1 | -3 | -3 | -3 | -3 | -2 | 0 | -3 | -2,2 | |
| Average | -2,0 | -2,5 | -1,0 | -2,5 | -1,0 | -1,0 | -3,0 | -3,0 | -2,0 | -3,0 | -2,0 | -0,0 | -3,0 | | -2,2 |
| Category B.4 – barriers related societal factors | | | | | | | | | | | | | | | |
| Factor B.4.1 Limited availability of experiences and good practices in the case-study area, especially in order to make people (and interested stakeholders) understand the real benefits of MU as well as to UCH itself | -2 | -3 | 0 | -2 | -1 | -1 | -3 | -3 | -3 | -3 | -3 | 0 | -3 | -2,1 | |
| Factor B.4.2 Lack of public awareness on protection and value of UCH and environmental protection | -2 | -3 | 0 | -3 | -2 | -2 | -2 | -3 | -3 | -3 | -3 | -3 | -2 | -2,4 | |
| Average | -2,0 | -3,0 | 0,0 | -2,5 | -1,5 | -1,5 | -2,5 | -3,0 | -3,0 | -3,0 | -3,0 | -1,5 | -2,5 | | -2,2 |



| Category B.6 – barriers related with environmental factors | | | | | | | | | | | | | | | | |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------|-------------|--|
| Factor B.6.1 Restriction/dependence on weather conditions for diving | -3 | -2 | -2 | 0 | -1 | -1 | -2 | -3 | -2 | -3 | -2 | -1 | 0 | -1,7 | | |
| Factor B.6.2 Problems of compatibility between MPAs high ecological vulnerability and its tourist exploitation | -1 | -3 | -2 | -1 | -1 | -2 | -2 | -2 | -2 | -3 | -3 | -1 | -2 | -1,9 | | |
| Factor B.6.3 Decreased visibility for diving due to eutrophication, sediment turbidity, strong currents and other | -2 | -2 | -1 | -1 | -2 | -1 | -3 | -3 | -1 | -2 | -3 | -1 | -1 | -1,8 | | |
| Average | -2,0 | -2,3 | -1,7 | -0,7 | -1,3 | -1,3 | -2,3 | -2,7 | -1,7 | -2,7 | -2,7 | -1,0 | -1,0 | | -1,8 | |

| | Interviewer 1 | Interviewer 2 | Interviewer 3 | Interviewer 4 | Interviewer 5 | Interviewer 6 | Interviewer 7 | Interviewer 8 | Interviewer 9 | Interviewer 10 | Interviewer 11 | Interviewer 12 | Interviewer 13 | | |
|--|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|-------------------------------------|---|
| Combination: Tourism, Underwater Cultural Heritage (UCH) and Environmental Protection | 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 Increase of local revenues from tourist services | 2 | 2 | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 3 | 2,5 | |
| Factor V.1.2 Diversification of tourism sector and extend of tourist season | 3 | 1 | 2 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 2 | 1 | 3 | 2,5 | |



| | | | | | | | | | | | | | | | |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Factor V.1.3 Additional finance (from tourism) to environmental protection | 1 | 3 | 1 | 2 | 2 | 2 | 3 | 3 | 3 | 3 | 2 | 2 | 3 | 2,3 | |
| Average | 2,0 | 2,0 | 1,3 | 2,7 | 2,3 | 2,7 | 3,0 | 3,0 | 3,0 | 3,0 | 2,0 | 1,7 | 3,0 | | 2,4 |
| Category V.2 – societal added values | | | | | | | | | | | | | | | |
| Factor V.2.1 Education and public awareness about UCH and its respective history | 2 | 2 | 1 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 2,5 | |
| Factor V.2.2 Prevent the destruction of UCH sites | 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2,8 | |
| Factor V.2.3 Establishment of an ecosystem service by MPAs for UCH sites | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 3 | 0 | 3 | 1,9 | |
| Average | 1,7 | 2,3 | 2,0 | 2,7 | 2,3 | 2,7 | 2,7 | 2,7 | 2,0 | 2,7 | 2,7 | 2,0 | 3,0 | | 2,4 |
| Category V.3 – environmental added values | | | | | | | | | | | | | | | |
| Factor V.3.1 Lower impact use of environmental and cultural resources | 1 | 1 | 0 | 3 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 0 | 2 | 1,4 | |
| Factor V.3.2 Education and public awareness about environmental protection of MPAs | 1 | 3 | 1 | 3 | 2 | 2 | 3 | 3 | 2 | 3 | 2 | 2 | 3 | 2,3 | |
| Factor V.3.3 Effective collaboration of tourist operators and end-users for the management, protection and sustainable use of MPAs | 2 | 3 | 1 | 3 | 3 | 3 | 2 | 3 | 2 | 3 | 2 | 1 | 2 | 2,3 | |
| Factor V.3.4 Archaeological artefacts may have created habitat for marine species and serves as artificial reefs | 2 | 1 | 1 | 1 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 3 | 1 | 2,1 | |
| Average | 1,5 | 2,0 | 0,8 | 2,5 | 2,3 | 2,3 | 2,5 | 2,8 | 2,0 | 2,3 | 2,0 | 1,5 | 2,0 | | 2,0 |
| Category V.5 - technical added values | | | | | | | | | | | | | | | |
| Factor V.5.1 More frequent presence of tourists and divers can avoid irresponsible and intrusive access and unauthorized activities | 1 | 1 | 1 | 3 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 3 | 2 | 1,8 | |
| Factor V.5.2 Creation of specialized professions (e.g. diving guides specialized in UCH) | 3 | 1 | 2 | 3 | 3 | 2 | 2 | 2 | 3 | 3 | 2 | 3 | 3 | 2,5 | |
| Average | 2,0 | 1,0 | 1,5 | 3,0 | 2,0 | 2,0 | 2,0 | 2,0 | 2,5 | 2,5 | 2,0 | 3,0 | 2,5 | | 2,2 |



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| Category V.6 – governance added values | | | | | | | | | | | | | | | |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Factor V.6.1 Reinforcement of the national/regional public budget for UCH and environmental protection | 2 | 2 | 1 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 3 | 2,5 | |
| Average | 2,0 | 2,0 | 1,0 | 3,0 | 2,0 | 3,0 | 3,0 | 3,0 | 3,0 | 3,0 | 3,0 | 1,0 | 3,0 | | 2,5 |

| | Interviewer 1 | Interviewer 2 | Interviewer 3 | Interviewer 4 | Interviewer 5 | Interviewer 6 | Interviewer 7 | Interviewer 8 | Interviewer 9 | Interviewer 10 | Interviewer 11 | Interviewer 12 | Interviewer 13 | | |
|--|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|----------------|----------------|----------------|-------------------------------------|---|
| Combination: Tourism, Underwater Cultural Heritage (UCH) and Environmental Protection | Score | Score | Score | Score | Factor average for all stakeholders | Category average (average of all factors averaged for all stakeholders) |
| IMPACTS | | | | | | | | | | | | | | | |
| Category I.1 - economic impacts | | | | | | | | | | | | | | | |
| Factor I.1.1 Possible conflicts with other activities, except scientific research with authorization, such as fishery, maritime transportation, etc. | -1 | -3 | -2 | -2 | -1 | -2 | -2 | -1 | -3 | -3 | -2 | -1 | -3 | -2,0 | |
| Average | -1,0 | -3,0 | -2,0 | -2,0 | -1,0 | -2,0 | -2,0 | -1,0 | -3,0 | -3,0 | -2,0 | 1,-0 | -3,0 | | -2,0 |
| Category I.2. - societal impacts | | | | | | | | | | | | | | | |
| Factor I.2.1 Risk of looting/stealing from underwater archaeological sites/shipwrecks and destruction of their contexts | -3 | -3 | -3 | -2 | -2 | -3 | -2 | -2 | 0 | -3 | -3 | -3 | -3 | -2,5 | |
| Factor I.2.2 Risk of congested diving sites | -2 | -2 | -3 | -2 | 0 | -1 | -2 | -2 | 0 | -2 | -2 | -1 | -3 | -1,7 | |



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|--|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Factor I.2.3 Risk of damage to the UCH sites and MPAs caused by inexperienced divers | -2 | -3 | -2 | -2 | 0 | -3 | -3 | -3 | 0 | -3 | -3 | -2 | -3 | -2,2 | |
| Factor 1.2.4 Risk of damage to UCH and MPAs caused by illegal bottom trawling | -3 | -3 | -2 | -3 | -3 | -3 | -3 | -3 | -3 | -3 | -3 | -3 | -3 | -2,9 | |
| Average | -2,5 | -2,8 | -2,5 | -2,3 | -1,3 | -2,5 | -2,5 | -2,5 | -0,8 | -2,8 | -2,8 | -2,3 | -3,0 | | -2,3 |
| Category I.3 - environmental impacts | | | | | | | | | | | | | | | |
| Factor I.3.1 Disturbance of habitats by using modern geophysical technology to explore UCH | 0 | -1 | -3 | -1 | -2 | -2 | -2 | -2 | -1 | -3 | -2 | 0 | -3 | -1,7 | |
| Factor I.3.2 Disturbance of habitats by using high-technology scuba diving equipment | 0 | -1 | -1 | -1 | 0 | -1 | -2 | -2 | -1 | -3 | -1 | 0 | -3 | -1,2 | |
| Average | 0,0 | -1,0 | -2,0 | -1,0 | -1,0 | -1,5 | -2,0 | -2,0 | -1,0 | -3,0 | -1,5 | 0,0 | -3,0 | | -1,5 |



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APPENDIX 2

Consent Form for participation in Multi Use (MU) Study in MARSPLAN-BS II Project

| | |
|-------------------------------------|--|
| Participant (Name, Surname): | |
| Researcher (Name, Surname): | |

| |
|-------------|
| Tick |
|-------------|

1. I can confirm that I have read the “Participant information” for the above study. I have had the opportunity to consider the information on DABI factors Catalogue, to make suggestions and to evaluate the potential of MU.
2. I am content to participate and understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason and without penalty.
3. I understand that my personal details will not be revealed to people outside the project, unless I provide authority to do so.
4. I agree that my personal data collection, processing and storage is performed according to the provisions of the Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data for the purposes of MARSPLAN-BS II Project.

Please indicate whether you are willing for the information you provide to be made available to others. Once final data sets have been evaluated, personal data will be dissociated from the rest of the dataset and stored separately for the duration of the MARSPLAN-BS II project. At the end of the project, personal data will be erased:

| | Yes | No |
|---|-----|----|
| I may be identified in research data which is shared publically | | |
| I may be identified as a contributor in reports, publications, written web material, photographs and images | | |
| My words may be quoted and attributed to me | | |
| My words may be quoted without attribution to me | | |
| Comments: | | |

| | Participant | Researcher |
|-----------------------|-------------|------------|
| Name, Surname: | | |
| Signature: | | |
| Date: | | |
| Email: | | |



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Participant information sheet

Cross border Maritime Spatial Planning for Black Sea – Bulgaria and Romania - MARSPLAN-BS II Project

Study Title:

WP2 Connecting cross-border to national MSP, Activity 2.4 Addressing the Multi-Use (MU) Concept with MSP in the Cross-Border Region: TOURISM, UNDERWATER CULTURAL HERITAGE & ENVIRONMENTAL PROTECTION

Funding:

The project has been funded by the European Maritime and Fisheries Fund of the European Union under the Grant Agreement: **EASME/EMFF/2018/1.2.1.5/01/SI2.806725- MARSPLAN-BS II.**

Invitation:

We would like to invite you to take part in the MU research study. We have invited you as we believe that your contribution to the MARSPLAN-BS II Project will be extremely valuable and bring significant added value to our research. Before you decide, you may find it helpful to have some information on why the research is being done and what it would involve for you. Please take time to read the following information carefully. Ask questions if anything you read is not clear or would like more information. Take time to decide whether or not to take part.

Purpose of study:

MARSPLAN-BS II project aims to support the coordination of Bulgaria and Romania in the process of Maritime Spatial Planning, as required by the European Directive 2014/89/EU and to create a long-term mechanism for cross-border cooperation on MSP in the Black Sea Basin. The project coordinator is Bulgarian Ministry of Regional Development and Public Works. The project brings together an outstanding partnership of eight key Bulgarian and Romanian institutions and organizations: the two Competent MSP Authorities - Ministry of Regional Development and Public Works of Bulgaria and Ministry of Regional Development and Public Administration of Romania; National Center for Regional Development, Bulgaria; National Institute for Marine Research and Development “Grigore Antipa”, Romania; Center for Coastal and Marine Studies, Bulgaria; GeoEcoMar, Romania, Ovidius University of Constanta, Romania; and Nikola Vaptsarov Naval Academy, Bulgaria. One of the important project activities with relation to MSP are studies on Land-Sea Interactions (LSI) and Multi-Use (MU) of maritime space in the cross-border area of Bulgaria and Romania (large protected and Natura 2000 areas, MPAs in Kaliakra Natural and Archaeological Reserve in Bulgaria and Vama-Veche - 2 May Marine Reserve in Romania), analysing the MU combination between Tourism, Underwater Cultural Heritage (UCH) and Environmental protection.

Multi-Use (MU) means a joint use of resources in close geographic proximity. This can involve either a single user or multiple users. ‘Multi-use’ implies a radical change from the concept of exclusive resource rights to an inclusive sharing of resources by one or more users. Based on



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two years of systematic research and extensive stakeholder involvement, within the framework of the Horizon 2020 funded MUSES project, the Action Plan has been published with details and recommendations on how to overcome regulatory and other nontechnical barriers as well as how to minimise risks associated with Multi- Use development. The present study will follow the MUSES project methodology and Action Plan (catalogue DABI - **Drivers** = factors promoting MU; **Added values** = positive effects of establishing or strengthening MU; **Barriers** = factors hindering MU; **Impacts** = negative effects of establishing or strengthening MU) to evaluate the potential of MU combination of Tourism, UCH and Environmental Protection. The researcher will provide you with the needed information and will guide you on the catalogue interview in the work process.

Why have I been invited?

You have been identified as stakeholder that has knowledge and expertise in the scope of Tourism, Underwater Cultural Heritage (UCH) sectors and Environmental protection and/or giving recommendations for sustainable use of marine resources, that will assist us meeting the aims of our study which are briefly set out above.

Do I have to take part?

It is up to you to decide, the research is completely voluntary. We have provided information on this sheet on the study and the researcher will be happy to answer any questions that you may have. We will then ask you to sign a consent form to show you agreed to take part. You are free to withdraw at any time, without giving a reason and without prejudice or negative consequences.

What will happen to me if I take part?

The researcher will provide you with information on the following:

- How long you will be involved in the interview
- If there will be any follow up work after the interview
- The format of the interview and how information will be captured and recorded
- How your information be used in the project

Benefits of participating

The benefit of participating in this project is the knowledge and expertise you have will be used to help achieve a sustainable, multi-use of the marine environment, including reducing gaps in existing knowledge, identifying impacts and risks and maximising local benefits while overcoming existing barriers. One of the most relevant benefits for the project will be capturing contributions from real stakeholders, like you, that can strengthen the DABI Catalogue and evaluation of MU potential.

Will my taking part in the study be kept confidential?

All the information we receive from you, including your name and any other identifying information (if applicable), will be strictly confidential. Any information about you which is published will have your name and contact details removed so that you cannot be recognised, unless you have given permission to be identified on the consent form. Personal data collection, processing and storage is performed according to the provisions of the Regulation (EU) 2016/679 of the European



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Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data for the purposes of MARSPLAN-BS II Project.

What will happen to the results of the research study?

The information will be used by the project consortium to support the successful completion of the project. Any information or data generated by MARSPLAN-BS II project will only be made publicly available in an anonymised form, such that it will not be possible to disaggregate or identify any individual to which it relates (unless the owner of the data has given express permission for non-anonymised data to be made publically available).

Data Retention & Destruction

Once the final data sets have been evaluated, personal data will be dissociated from the rest of the dataset and stored separately for the duration of the MARSPLAN-BS II project. At the end of the project, personal data will be erased.

For further information and contact details:

1. General information about the MARSPLAN-BS II Project (<http://www.marsplan.ro/en/>).
2. Specific information about this research study: Dr. Hristo Stanchev, Center for Coastal and Marine Studies (CCMS), Varna, Bulgaria. Email: stanchev@ccms.bg.