# Locus of Underwater Cultural Heritage (UCH) in Maritime Spatial Planning (MSP): A Data-Driven, Place-Based and Participatory Planning Perspective

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**Abstract.** During the last decade, the rising interest in the marine world has enriched the planning discourse with issues such as the protection, preservation, sustainable and resilient exploitation of marine resources. At the European level, Maritime Spatial Planning (MSP) has come to the forefront in this respect, as part of the EU blue growth strategy and a powerful tool for facilitating the transition from traditional maritime sectoral approaches to an integrated, place-based, data-driven, participatory and multi-dimensional new maritime planning rationale. Among the maritime resources concerned, Underwater Cultural Heritage (UCH) gains ground as a valuable asset in pursuing developmental objectives of coastal/insular communities. Towards this end, MSP endeavours need to successfully incorporate UCH management and compromise UCH-related uses with other sectoral ones in the sea. Along these lines, this paper aims at highlighting the context of sustainable and resilient UCH management within the MSP realm by innovatively integrating the conceptual framework for its understanding and the key methodological steps for its implementation. The aforementioned context is parallelized to current UCH management reality in order to explore UCH handling within MSP in practice; and illuminate successful UCH management in MSP approaches in selected countries/regions at the EU level.

**Keywords:** Underwater Cultural Heritage · Marine Spatial Planning ·
Sustainable coastal and insular communities · Participatory planning ·
Place-based approach

## 1 Introduction

Megatrends of the last few decades, such as the globalization, urbanization, resource-intensive developmental pathways, digital transition, overpopulation and lifestyle, have led to more demanding resource consumption patterns, with severe impacts on resource availability and sustainability objectives [1]. The already visible strain of continental reserves has shifted interest in ocean ones, bringing to the surface the *blue economy concep*t. This concept, already highlighted in the Blue Growth Strategy of the European

Commission [2], is getting flesh and bones as technological advances offer the means for gathering significant data about the marine environment at more and more greater depths, unveiling the benefits that can be reaped by the oceans and the abundance of their resources in comparison with the terrestrial ones [3]. Such an ascertainment has placed maritime resources at the epicenter of the discourse about a maritime-based sustainable future of humanity [4].

Marine world exploration, however, brings also to the forefront cultural resources of global significance that lay at the sea bottom and form the *Underwater Cultural Heritage* (UCH). UNESCO [5] defines UCH as all traces of human existence having a cultural, historical or archaeological character; and being partially or totally, period- ically or continuously, under water for at least 100 years. These may concern sites, structures, buildings, artifacts and human remains; vessels, aircraft, other vehicles or any part thereof, their cargo or other contents; and objects of prehistoric character. UCH constitutes an essential element of the marine world that bears social, environmental, cultural and economic value [6, 7]; and is currently highly appreciated as the *humanity's trace* in the marine world through centuries [7–13]. Nonetheless, UCH in many cases remains largely unknown, unexplored and, most importantly, unprotected, being thus placed at significant risk of degradation and even loss [14]. Deterioration of UCH state is further stressed by the lack of available data as to the exact location, current status, historical documentation as well as conditions of the surrounding environment, in which these submerged parts of heritage are laid [15, 16].

The growing interest in the blue economy and related maritime economic activities further threatens UCH integrity in multiple ways. In fact oceans, during the last decade, have become extremely crowded places due to the development of maritime economy. Thus, the need for managing conflicting interests and regulating maritime uses, includ- ing UCH-related ones, is rising. In response to this need, the European Union (EU) has published the 2014/89/EU Directive [17], introducing *Marine Spatial Planning* (MSP) as a powerful and essential spatial tool, capable of handling conflicts among sectoral interests and reconciling marine resource conservation along with maritime economic stakes. Based on an *ecosystem and place-based approach* and taking into account the distinct levels of the sea world (seabed, water column and ocean surface), MSP attempts to effectively organize a complex, highly complicated range of activities that are inter- woven in both sectoral as well as spatial and temporal terms [17, 18]. Furthermore, MSP presents a great chance for the preservation and sustainable exploitation of UCH in the blue economy realm.

Managing UCH, as a maritime asset serving multiple objectives – e.g., environmental protection; cultural heritage acquaintance, awareness and valuation; as well as authentic diving tourism experiences [19] – constitutes a challenging planning task and a distinct dimension of MSP duties. Along these lines, this paper aims at highlighting the context of sustainable and resilient UCH management within MSP, by firstly delimiting the con- ceptual framework for grasping UCH. Based on that, key methodological concerns for implementing UCH planning exercises in MSP studies are sketched and their practical implementation is explored. The structure of the paper has as follows: in Sect. 2, UCH management is framed by MSP's key principles that demarcate methodological adjust- ments/guidance of related planning processes; Sect. 3 elaborates on two MSP examples

(Finland and Estonia), in an effort to parallelize conceptual/methodological concerns with current practice; while, finally, in Sect. 4 discussion and conclusions are drawn.

## 2   Framing UCH Management Perspectives within MSP

MSP is a spatial tool in support of policy making as to the allocation, in a sustainable and resilient way, of competing economic activities/uses in the marine environment [20]. Its practice is challenging planners, so far accustomed to a more stable and easier to explore ground, the land. This holds even truer when comes to UCH and maritime uses, addressing UCH protection/preservation and sustainable exploitation in coastal and insular contexts. Below, conceptual and methodological issues, addressing planners' concerns for grasping UCH within MSP studies, are discussed.

### 2.1   Highlighting the Locus of UCH along the Key Principles of MSP

According to the United Nations (UN) [21] and UNESCO-IOC/European Commission [22], successful MSP outcomes are grounded in nine *commonly accepted principles*, featuring key concerns of the planning process and placing stakeholders and community engagement as an integral part. These are discussed below, in the effort to locate UCH within MSP.

*A. Multiple spatial scale (or multi-scale) approach to MSP*
This principle delineates the need for properly demarcating the spatial scale of an MSP endeavour in order to adjust for the unique attributes of each single marine environment (e.g. geographical features, existence of vulnerable areas), but also kind of maritime uses (e.g. intensity, synergies or conflicts among different uses) and diversifying legal/administrative jurisdictions in charge. According to the UN [21], the recommended spatial scales can range from the local to the regional/sub-regional or even national ones. In order for plans to be successful, actors from different spatial scales should share common visions and objectives; and display a sort of hierarchical relationship/cooperation for building consensus as to the action plans that are capable of reaching this vision. The multi-scale approach is quite essential when managing UCH that is of *glocal* (global and local) concern, since UCH is in many cases a heritage of global resonance and interest [5]. Achieving a certain balance among divergent hierarchical priorities at multiple spatial scales [23] implies *governance* and *engagement* of a range of actors and stakeholders (authorities, NGOs, businesses etc.) [24]. Thus governance and stakeholders' engagement lie at the heart of UCH management as a means for UCH location identification, exploration, excavation, documentation, conservation, valuation, sustainable and resilient exploitation according to local beliefs and experiential knowledge [13], monitoring and safeguarding; and are issues aptly pronounced in the 2001 UNESCO Convention [25].

*B. Integration*
The term accounts for different meanings and approaches. Thus, it may refer to the integration of:

- environmental, social, economic objectives in pursuing marine sustainability goals;
- sectors' perception for establishing synergies (e.g., UCH management and diving tourism/recreation) [26] and handling conflicts;
- vertically- (across different spatial levels) and horizontally-related (stakeholders, community, decision-making bodies, NGOs, etc. within a specific spatial level) actors' engagement for accommodating all stakes/interests in the planning process;
- land- and maritime-based planning endeavours for assuring harmonization and coherence among interacting parts of the same coastal system [27].

When it comes to UCH, integration further relates to the inseparable consideration of the:

- cultural (UCH) and natural dimension (marine environment) [13, 28]. UCH is inextricably linked with its hosting land and sea environment; it is largely interpreted by use of locational aspects of this environment; and is, in most of the cases, adjusted to or formed by such an environment, e.g., UCH as artificial reefs [29];
- tangible and intangible dimensions of UCH and their interconnection with elements of the terrestrial world, e.g., monuments, war installations, maritime museums.

In addition, the aforementioned interrelationships render synergies among a variety of stakeholders (in both vertical and horizontal terms) quite essential in order for conflicts between developmental and protection prospects to be eliminated; and a sustainable and resilient exploitation of UCH to be accomplished.

*C. Land-sea interactions*
Such interactions are of high importance in MSP studies, seeking to achieve the sustainable use of maritime resources. These may relate to natural processes embedding land-sea interaction (e.g. coastal erosion); land- and sea-related uses and activities (e.g. ports); outcomes of policy decisions for land and sea areas and respective planning-related land-sea interactions (e.g. areas designated for tourism or aquaculture activities). In case of UCH in particular, the neighboring coastal area largely determines the way UCH can be utilized, the pressures it receives by e.g. intense coastal activities, but also the linkages with land-based activities or even terrestrial cultural heritage sites. The relationship with the coastal land is also determined by the intangible elements attached to UCH, such as nautical stories, legends and myths that accompany the local (U)CH[1] narrative [7, 30].

*D. The MSP 'four dimensions' of reference*
MSP should include planning directions for all four marine dimensions, namely the: ocean surface, sea water column, seabed and time. Same holds for UCH management within MSP, where these dimensions can ensure: UCH protection and handling of conflicts with other uses, e.g., diving activities (all dimensions), surface observation/snorkeling (ocean surface), maritime transport [surface, seabed (anchoring)], material extraction (seabed), to name but a few. Time is also of high importance in the marine

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[1] (U)CH: the term refers to both UCH and land-based Cultural Heritage (CH).

environment, perceived both in a short term, demarcating the changing marine conditions (e.g. season weather); and a longer one, displaying alterations of the marine state (e.g. climate change, changing water texture) and related repercussions to UCH.

*F. Knowledge-based projects*

MSP has to rely on high-quality spatio-temporal data, used for demonstrating the state of play of the marine environment. These data are coupled with empirical knowledge, emanating from actors' engagement and delineating expectations/priorities that need to be factored into the MSP (Fig. 1). Data and related sources, when implementing MSP, are also essential for monitoring/evaluating results and fueling relevant adjustments to both the MSP outcome and related policy paths (Fig. 1).
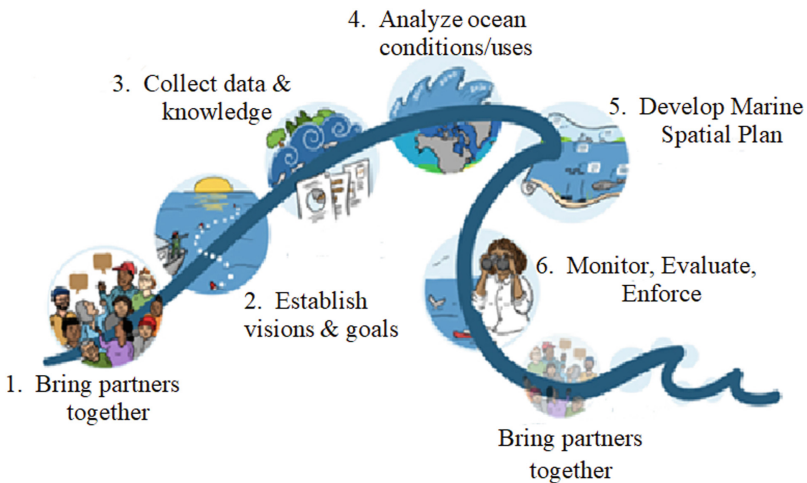


**Fig. 1.** The Marine Spatial Planning process, Source: Adapted from [31]

Data availability is also of utmost importance for *UCH management*. Gathering and interpreting data about UCH sites is a multi- and inter-disciplinary endeavour, shedding light on the: *tangible* attributes, e.g., current physical condition of submerged relics, state of the surrounding environment, location and depth, cargo in case of a shipwreck; and *intangible* ones, e.g., historical evidence/references, sinking conditions, human and material losses, to name a few [15]. Of course, gathering such UCH data is not an easy task; and despite the technological progress in the field of data collection, resulting crop still remains limited due to considerable time and cost constraints [32]. Considering that currently only 20% of the oceans are mapped [33], valuable data as to the location and current status of a large part of UCH is lacking, a deficit that places formidable barriers to their very protection at first and, subsequently, their sustainable management within MSP endeavours.

*G. Suitability and spatial efficiency*

During the last decade, attractiveness of marine resources has rendered oceans highly contested spaces. However, prioritizing uses in the sea space within MSP endeavours

is crucial for the sustainable exploitation of marine resources. Such a prioritization can be accomplished by the identification of immovable and non-renounceable resources that normally gain priority in marine space allocation [21]; and the multi-use of marine space by establishing synergies among uses. UCH, as an immovable and valuable to community heritage [34], gets high priority in marine space for in situ preservation and protection [5]. As stated also by Stancheva and Stanchev [35], UCH management allows multi-use of marine space by establishing the triptych of cultural heritage management, environmental protection and recreation/diving tourism.

### H. Connectivity

This is realized in terms of networking among, e.g., sectors or activities of the same nature; areas with similar characteristics or interrelated uses or functions, such as networks of protected areas; but also connections among marine stakeholders, establishing 'bridges' for sharing knowledge and coordinating maritime activities. Connectivity is essential among UCH-related activities, e.g., cultural and natural maritime protection and recreation/diving tourism, a fact also related to the aforementioned multi-use dimension. Spatial connectivity can strengthen common developmental directions of sites that have similar characteristics or fall into the same historical narrative (e.g. WWII remains in coastal/marine areas). It can support exchange of knowledge and good practices, thus broadening the benefits reaped in societal, environmental and economic terms. Speaking of stakeholders' connectivity, a robust, well-structured and impactful UCH management perspective presupposes networking and interaction among interested stakeholders, falling into UCH-related sectors, such as marine archeology, tourism, maritime and diving communities [36].

### I. Cross-border cooperation

Although MSP can be seen primarily as a state-based process, cross-border cooperation is essential to ensure coherence of MSP plans; and coordinated action across coastal zones and marine regions. Cross-border cooperation addresses also the transboundary dimension of marine problems and challenges, the resolution of which requires common regional or sub-regional approaches [37]. This holds true for UCH management as well, taking into account that submerged cultural assets do not always originate from the country these are eventually detected. Especially when it comes to e.g., war shipwrecks, jurisdiction issues arise between the wreck's origin country and the country in which the wreck is sunk, being in charge for its preservation [38]. In such a context, cooperation between both sides is critical. Cross-border cooperation can also be perceived among regional, and/or local plans within a single national territory.

### G. Adaptive approach

This constitutes one of the most critical principles in MSP. It follows a process of interactive and repetitive planning cycles (Fig. 2) for continually improving maritime plans, policy outcomes and management practices. Each repetition of a planning cycle steps forward understanding, learning and knowledge gains with regard to goal achievements and inexpediencies. Steady monitoring of results of each planning cycle lies at the heart of the adaptive approach, resulting in data collection that is capable of drafting outcomes of the allocation of MSP uses and related maritime activities in the marine environment. Such data emanates from *field observation* and *experiential knowledge*, collected from

stakeholders who are active in the marine environment. The latter is quite valuable for monitoring and evaluating the performance of maritime uses, as these are allocated by the MSP.
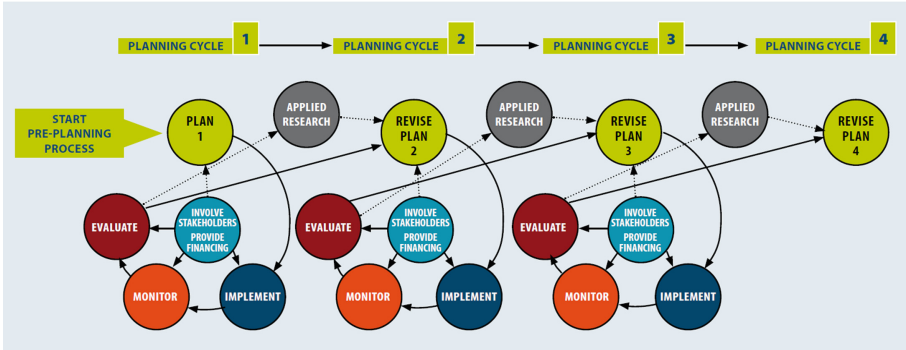


**Fig. 2.** The adaptive approach of MSP, Source: [21]

When it comes to UCH, the adaptive approach as a process of repetitive planning cycles (Fig. 2) can be regarded in alignment with the *Cultural Heritage Cycle* (CHC) (Fig. 3). CHC presents a participatory stepwise process that guides understanding, valuing, caring and enjoying cultural heritage, both in land and at sea; and a process that strengthens appreciation and awareness raising as to the value of UCH and desire to keep it intact [13, 39]. Furthermore, it broadens community's understanding as to the role of UCH for safeguarding local identity and pursuing sustainable development goals in coastal and insular regions; and renders local people the guardians of their UCH [30]. A better understanding and valuation of UCH can be a precious feedback in the MSP monitoring process, steadily improving results of each single planning cycle and providing a clearer, more powerful and motivating image of the true nature of UCH [30].
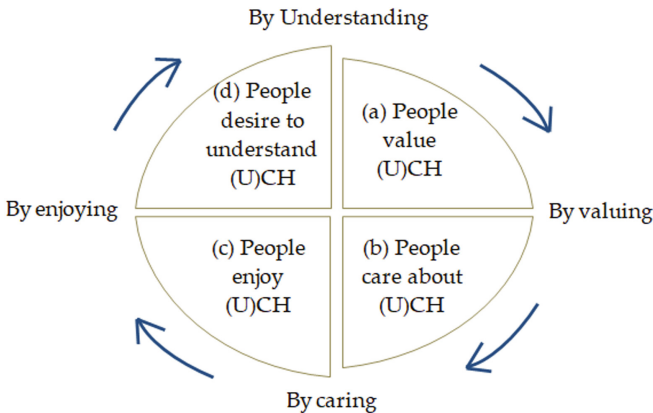


**Fig. 3.** The people-centered Cultural Heritage Cycle, Source: [13]

As stated by the Spanish Ministry of Culture [40], involvement of fishermen, divers and local inhabitants in the conservation of local marine sites has proved to be the most effective measure for UCH protection.

## 2.2 UCH Handling Within the MSP Context

Having described the way UCH can be embedded in the key MSP principles, some critical *methodological concerns* arise, when it comes to UCH management for serving local/regional sustainable development goals in coastal and insular regions, in harmony with the general directions provided by an MSP plan.

In particular, seeking to achieve sustainable and resilient exploitation of UCH in coastal and insular regions implies the need for a methodological approach that roughly consists of *three closely interrelated components* (Fig. 4), namely the: core component, representing steps of an *integrated and adaptive planning process*, accompanied by a *monitoring mechanism* for assessing and retrofitting the outcome of the planning process; and two essential for the core component pillars, being *spatial data analysis* and *public engagement* (Fig. 4, Pillar 1 and 2) [12, 13], also recognized as the bedrocks of well-documented and robust MSP decisions. These two pillars crosscut both compartments of the core component, i.e. the planning and monitoring process; provide essential information and valuable feedback for coping with the complexity and dynamic nature of the marine environment and land-sea / sea-land interactions; and guide well-informed and robust planning choices for sustainable and resilient UCH management. The way conceptual principles of MSP and CHC (Fig. 4) are instilled into the components of such a methodological framework is shortly discussed below.

More specifically, all *MSP principles* are infused into all concrete steps of the core planning component and accompanied pillars, addressing sustainable management of UCH and defining the way decision-making is taking place and policy directions are drawn. In more detail, the aforementioned principles frame choices as to the *spatial data* collection, processing and visualization for planning the sustainable exploitation of UCH within the MSP general directions. These data are used to unfold the current spatial context and the dynamics of the coastal and marine environment in which UCH is located. They strengthen knowledge as to the: natural and cultural attributes of land and marine environment; MSP uses allocated in the surrounding area and respective interactions, assessing whether these are in harmony or conflict with predicted UCH uses; and complementary uses, shaping an integrated and multi-use approach of marine space. Regarding the purely *planning steps* of UCH management, MSP principles highlight all those dimensions that need to be addressed in order for the most suitable planning decisions for allocation of UCH maritime uses and complementarity/appropriateness of their coexistence, but also potential reallocation of uses currently or potentially in conflict with UCH to be made. *Monitoring*, as an integral part of the planning discipline in general and MSP in particular is the mechanism for assessing and redefining UCH planning exercises and related policy decisions according to the dynamics of the wider marine environment. It is based on spatio-temporal data management and constitutes the means for initiating adaptive planning cycles. Finally, MSP principles frame the context of *community and stakeholders' engagement*, as a defining element of UCH management for demarcating who is going to be part at which stage of the planning process; what

kind of synergies is essential to be established; and what should be the role or power given to stakeholders in the planning process, ranging from pure awareness raising or consultation to co-design or co-decision.
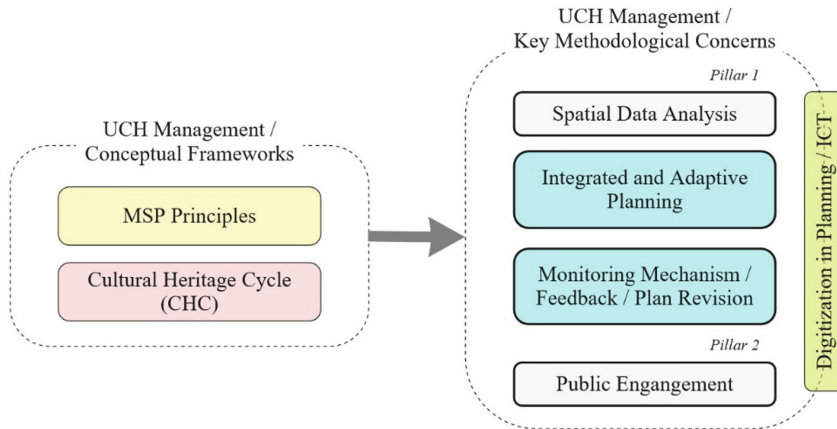


**Fig. 4.** Linkages between the conceptual and methodological framework for UCH management in coastal and insular communities, Source: Own elaboration

The *Cultural Heritage Cycle* is also a key asset from a methodological point of view of UCH management. It is strongly related to qualitative and quantitative *spatial data collection/analysis*, demarcating the value attached to tangible and intangible aspects of UCH as well as the prevailing attitude as to its protection/preservation. Distinct stages of CHC result in the: maturing of community with respect to the understanding, valuing, caring and enjoying cultural heritage and its surrounding environment (Fig. 3), both in land and at sea; and steadily broadening of willingness to keep it intact for the next generations, rendering thus locals the guardians of UCH. The *planning process* itself is also fueled by the deepening of knowledge on the local perception of UCH, guiding planning outcomes that fit well with the value system, historical paths and position of UCH in each single local context. Gradual awakening of the value of cultural heritage, as realized by the maturing process presented by the Cultural Heritage Cycle, goes hand-in-hand with the *monitoring process*. Indeed, assessment of the impacts of the UCH management plan, coupled with the gradually enhancement of UCH knowledge, awareness, appreciation and valuing, sharpens UCH consciousness, deepens willingness to engage in UCH planning endeavours and provides valuable feedback for further improving such planning outcomes (Fig. 2). Finally, proper integration of the Cultural Heritage Cycle in planning is strongly associated with the collaboration among planners, decision makers and local communities, broadening *public engagement* and resulting in community-driven UCH protection/preservation and sustainable exploitation plans [7, 12].

Last, but not least, comes Information and Communication Technologies (ICT) as a significant enabler of effective UCH management [41]. Speaking of *spatial data collection/analysis*, ICT offer the means for collecting, elaborating, visualizing and communicating a vast amount of planning-related content. Crowdsourcing can also be a valuable mean for enriching tangible, but notably intangible aspects of UCH, thus enabling the placement of UCH within the right historical, value, social etc., context. Such a potential creates a more fertile ground for conducting *planning exercises*, a fact that is further enhanced by the ICT potential for opening up the planning exercise in the Web – e-planning [42] – and thus strengthening planners-community interaction at the various planning stages. Web-based Geographical Information Systems (Web-GIS), social networks, participatory platforms etc., constitute complementary valuable tools for broadening communicative and interaction potential; opening also up planning data to local communities [7]. ICT's role is also exceptional when it comes to the *monitoring stage*. ICT-enabled tools can support online monitoring of UCH site, but also gather feedback from stakeholders in order for continuously adjusting the UCH management plan. Furthermore, e-engagement can facilitate or even broaden potential for more active stakeholders' commitment at this stage.

All in all, sustainable management of UCH implies a local value-driven problem and, at the same time, an integral part of a highly controversial MSP process. Furthermore, handling of UCH is carried out within a highly dynamic environment – the marine one – and, in most of the times, in adjacent to lagging behind, from a developmental point of view, neighbourhoods, such as *remote coastal or insular regions.* Thus integrated, place-based, data-driven, and highly community-engaging planning procedures seem to be the prevailing option in handling UCH to the benefit of such regional contexts, but also society as a whole. Such procedures should be embedded into the MSP process, setting priority to the protection/preservation and sustainable exploitation of, among others, this particular marine cultural resource. Towards this end, integration of the conceptual principles of MSP and CHC into the methodological approach of UCH management seems to establish a rather more powerful and community-valued decision-making process.

## 3 Gathering Successful European Experiences of UCH Integration into MSP

The complexity of allocating maritime uses in a harmonizing and conflicts' alleviating way; and the need to establish multi-scale and multi-stakeholders' interaction across the different spatially-defined administrative levels, render spatial data availability/analysis and their unimpeded flow as well as multiple stakeholders' consultation the *bedrocks* for well-documented and robust MSP decisions, including UCH management decisions as well. Further to that, of crucial importance is the expansion of the participatory planning process beyond the stage of plan development, i.e., in plan evaluation, implementation and revision [20]. In both MSP and UCH management, this denotes a dynamic process for constantly reconsidering, adjusting and improving policy decisions as well as alleviating potential conflicts among maritime uses, based on proper and stable monitoring and feedback mechanisms. But how are the aforementioned attributes embedded in efforts

carried out at the EU level along the blue growth strategy and MSP; and in particular how UCH is integrated into MSP plans and aligns with the previously discussed conceptual and methodological ground? An effort to respond to this question follows in this section, by indulging into two examples of MSP from the European scene and the way UCH is managed within respective plans.

At present, most of the 22 member states of the EU, disposing a maritime border, have adopted MSP practices, adjusting key priorities to their own needs. According to data published in the European MSP Platform [43], 45% of these states have already adopted the final version of their national MSP plans, 36% of them are at the stage of MSP preparation and 18% have not yet embarked upon this duty. From a geographical point of view, the majority of already in place MSP plans concerns spatial units of the Baltic Sea, covering almost 78% of the Baltic countries.

Thus the MSP examples presented in the following refer to two neighboring countries of the Baltic Sea, namely Finland and Estonia. Assessment of the two case studies is conducted by use of the below presented *five criteria*, highlighting aspects of integrated, data-driven and participatory approaches in alignment with the key principles of MSP and having a specific focus on UCH. These have as follows:

- C1: Alignment with the multi-scale approach.
- C2: Integration/inseparable consideration of UCH and surrounding natural marine environment, tangible/intangible UCH dimensions as well as vertical/horizontal integration of UCH-related stakeholders.
- C3: Land-sea interaction with a focus on cultural assets.
- C4: Data-driven planning choices and maritime spatial plans.
- C5: Public and stakeholders' engagement for gathering empirical knowledge and enriching both the planning process and outcomes with local flavor.

### 3.1 Case Study Finland

Finland has taken the first steps in Maritime Spatial Planning in 2010, by chance of the Bothnian Sea Transboundary Pilot Project between Finland and Sweden (2010–2012). This experience has fueled work carried out in the first *Finland's MSP 2030*, in alignment with the MSP Directive [17]. This National Marine Spatial Plan is composed by three regional MSPs, following a *place-based approach* and covering both territorial waters and the Exclusive Economic Zone (EEZ) (Fig. 5a).

UCH in the Finnish National Marine Spatial Plan is designated as one of the blue growth sectors. Known UCH sites are categorized and managed by means of regional zones, integrating both terrestrial and maritime sites and delimiting *zones of cultural significance*. These are clusters of nation-wide: valuable landscape areas, significant built cultural environments, UCH landscapes, traditional coastal fishing areas, etc.; but also entities related to maritime cultural heritage, e.g., military history, seafaring, traditional biotopes, landscape as well as coastal and archipelago areas [46]. Among the strategic objectives of the plan fall the protection/preservation of (U)CH, enhancement of cultural values, accessibility of cultural areas as well as integration of cultural and natural values, both in land and at sea. Stakeholders' engagement is grasped as a powerful tool for
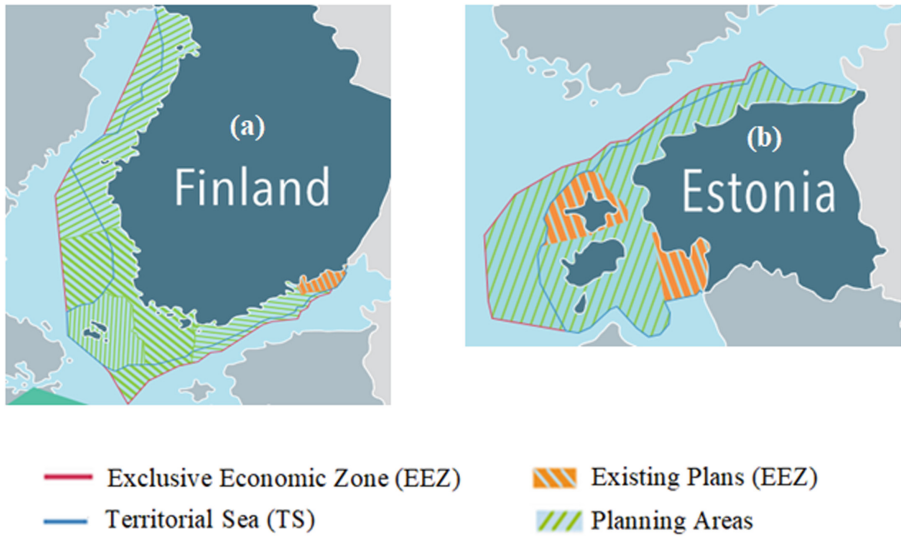
**Fig. 5.** National Maritime Spatial Planning of: (a) Finland [44] and (b) Estonia [45]

successful MSP and long-standing regional cooperation in Finland. Indeed, decision-making processes in the Finnish MSP have at their heart *participatory approaches*, including *consultation workshops* with local authorities and targeted stakeholders [47] as well as *public hearings* for the general public [44]. Based on these collaborative procedures, an interaction plan was prepared, providing an MSP overview and the chance for stakeholders and citizens' engagement in order for their involvement in all planning stages to be deepened [48]. Finnish MSP is also a subject of matter in the Baltic Cultural Heritage Committee [49], in which Finland is a member; and in the Working Groups on UCH and Coastal Heritage, addressing a holistic, cross-border cooperation in the Baltic Sea [50].

## 3.2  Case Study Estonia

Estonia is one more state of the Baltic Sea with previous experience in MSP. Since 2010, two pilot MSP plans were carried out (Fig. 5b) – one in the surrounding area of Hiiu Island and another one in the Pärnu Bay Area, around Kihnu Island – both driven by the growing interest in *offshore energy* [45]. These MSP Projects stimulated the government to establish, in 2011, legal processes resulting in MSP legislation; and have led to two legally binding *county plans* of Hiiu Island (2016) and Pärnu Bay (2017). In Hiiu MSP, designation areas for offshore wind energy were abolished by the National Court in 2018; while with regard to other topics the Hiiu MSP remains still valid.

The two aforementioned MSPs reveal differences as to the level of participation of interested stakeholders. In *Hiiu Island*, representatives approached stakeholders and invited them to take part in the leading group, engaged with the development of the MSP Plan. The planning process was thus led by a multi-scale steering board, consisting of members from different national authorities, sectoral stakeholders (energy, fisheries) and

local communities. In the *Pärnu Bay Area*, stakeholders were engaged in a participatory process, opened to anyone willing to participate at each single meeting; while through the Strategic Environmental Assessment (SEA) process, a transboundary participatory process with Latvia was implemented. The SEA results and the MSP plan were presented to Latvia when the planning proposal was drafted.

Within the aforementioned regional plans of Estonia, UCH is considered as an integral part of the local cultural identity and one of the blue growth sectors; and is grasped by means of natural and cultural, coastal and underwater as well as tangible and intangible dimensions, leading to the formation of *cultural clusters*. Finalized plans are the outcome of a *knowledge-based process* and *intensive data collection and analysis*, taking the form of *UCH thematic maps* and Impact Assessment Reports [51]. From a policy point of view, UCH sites are managed through the setting of guidelines and rules; and include processes of information exchange and collaboration with local communities and organizations, having a stake in coastal and underwater cultural heritage. In situ preservation prevails, taking the form of *diving parks* as a means of UCH protection [52].

According to the Amendment of the 2015 Planning Act, today MSP in Estonia is developed at the national level. The new Planning Act makes a clear distinction between terrestrial planning and MSP. The finalization of the MSP plan is the result of several *public discussions* and also *transboundary consultations* with national authorities of the neighbouring states of Finland, Latvia and Sweden. The plans' extroversion is also evident through the participation of Estonia in the Baltic Region Heritage Committee, recognising the need for UCH governance by adopting a multi-level, multi-scale and transborder approach. Worth noticing is also the fact that in the newly established MSP, *land-sea clusters* are also drawn, integrating coastal and UCH assets and supporting, within MSP, the land-sea and sea-land interaction principle.

## 4   Discussion and Conclusions

Completion of national MSP strategies at the European level – ought to be delivered already by March 31, 2021 [17] – displays a certain delay. This leads to a blurred image as to the way MSP is being carried out in the European seas; and what position UCH holds in this effort. Experience gained from the two MSPs in Finland (already in force) and Estonia (at the final stage, expected to be adopted in May 2022) unveils the interest of both states in preserving *underwater cultural and natural heritage*, being perceived as a distinct objective of related MSP plans. It also reveals certain convergences but also divergences with respect to the previously defined set of criteria.

More specifically, a certain deviation is noticed as to the *criterion C1*. Finland, in this respect, follows a more regional approach that is marked by collaborative schemes embedding local municipalities. On the contrary, Estonia pursues a more centrally-driven (national government) approach, apart from the two legally binding county-based regional MSPs of Hiiu Island and Pärnu Bay. MSPs in both states conform to the *integrated approach – criterion C2* – featuring (U)CH as an interwoven complex of tangible and intangible, land and underwater, natural and cultural dimensions. This aspect is also in favor of *C3 criterion*, considering *land-sea and sea-land interactions of UCH* and land-based cultural heritage in general, fulfilled by both states. In addition, *data analysis*

*and unimpeded information flow – criterion C4 –* are considered of high importance in both Finland and Estonia's MSPs; unfolding through deep insights into the current state of areas concerned, mapping of their attributes and intense use of GIS, both at the preparation and finalization stage. Finally, certain divergences between the MSPs of the two states appear in the way *stakeholders and citizens* are engaged in the process – *criterion C5*. In Finland, co-operation among stakeholders at the regional level is top priority and occurs at both the stage of analysis and the one of visioning and scenario building steps, engaging experts and the general public. Extroversion of MSP, however, is not so obvious at the stage of preparation. Nonetheless, the country's involvement in the Baltic Region Heritage Committee provides the ground for getting also feedback at the transnational level. In Estonia, stakeholders' engagement is accomplished at the national/regional and the transboundary level, with public engagement at the national/regional level being open at each single stage of the process. Compulsory public displays and discussions are also held at different stages of the MSP process.

In general, it could be inferred that UCH has not yet gained the eminent position it deserves within the MSP process [53]. As revealed by the studied examples, prevailing sectors in MSP still remain energy, maritime industry and logistics, fishing and aquaculture as well as tourism and recreation. However, the rising importance attached to UCH resources in society as a whole, coupled with academic research works and policy guidelines that shed light on respectful UCH management for serving local development purposes, are already noticeable trends; and are pushing forward the interest in UCH, properly valuing this resource within MSP; and managing it as an equally important maritime resource and in harmony with other maritime resources and related activities. Along these lines, keeping track with the conceptual frame of UCH management within MSP as well as its counterpart in the planning arsenal, presented in this paper, seems to be critical when dealing with UCH in MSP studies. In particular, the role of integrated, data-driven and place-based approach for UCH management is stressed; while same holds for collaborative planning as a means to overcome MSP complexity/conflicts; and properly grasp the value and position UCH should gain within such a marine spatial planning exercise. At present, MSP seems to present a priceless chance for effectively protecting/managing UCH, provided that this can be adapted to the multiple considerations and understanding of UCH; and shift from a process of purely allocating maritime uses for managing conflicts and establishing synergies, to a more creative one, socially- and culturally-sensitive, aiming to keep up with peculiarities of the marine world as well as the valuable for the community land- and sea-scapes, including the cultural ones [54]. Future research ambition of authors, as soon as relative MSP studies are accomplished, is a comparative study of the locus of UCH in practical MSP exercises in two quite distinct marine spatial contexts, such as the Mediterranean and the Baltic Sea, in order for a more robust UCH management approach to be established and assessment of MSP in UCH protection, preservation and sustainable exploitation to be grasped.

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