D 5.1.1 - REPORT ON THEMATIC COORDINATION LINKED TO ACTION PLANNING

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5.1.1. ***Thematic coordination report summarising tool development and action planning at the four sites are produced by PP4, with the participation of the other partners.***
They include the main points agreed on with partners via bilateral, trilateral or joint online coordination meetings regarding WP activities.

The UnderwaterMuse Project, which started on 01.01.2019 and will end on 30.06.2022, comprises parts of Italian and Croatian territories and focuses on **Priority Axis 3 "Environment and Cultural Heritage"**-**Specific Objective 3.1 "Make natural and cultural heritage a leverage for sustainable and more balanced territorial development"**: conserving, protecting, promoting, developing natural and cultural heritage.

Its aims are based on important principles caming from the **Paris 2001 UNESCO's Convention on the Protection of Underwater Cultural Heritage[1]** and the **Faro Convention[2]**, incorporating them into the policy work as a guidance for the activities[3], in order to "increase the positive image of underwater archaeology and the involvement of the public in the awareness, the protection and enjoyment of the underwater cultural heritage": *It is necessary to engage, not only from a research perspective, but also as an ethical obligation to the local communities within the environments that archaeologists work. It is important to recognize the different values attached to the project by ourselves as heritage professionals, and the communities as «providers» of knowledge[4]*.

The Project is also coherent with **Blue growth long term strategy** and with the contribution of culture to local and reg. development[5], for which culture is a driver of local and regional economic growth, innovation and social cohesion. So, it aims to maximize economic growth and employment in tourist

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1 Rule 1: In situ preservation as first option; Rule 7: Public access to in situ underwater cultural heritage shall be promoted, except where such access is incompatible with protection and management.
2 Council of Europe Framework Convention on the Value of Cultural Heritage for Society, 27.10.2005.
3 Rey da Silva 2016.
4 Roberts, Benjamin, McCarthy 2016.
5 EC(2010), 2010/C 135/05.

sector, respecting Italian laws and Croatian Strategy concerning protection, conservation and sustainable economic use of cultural heritage[6].

From the historical / archaeological point of view, the Adriatic sea has been an unique basin, for millennia the priority transport link for people living on the seashore. Their transit left numerous traces in the seabed of the areas concerned by these ancient commercial routes, and ruins of landing places, harbors or inhabited villages by the sea remain.

Archaeological sites are an important tourist, economical and historical resource, yet a remarkable gap in the protection of underwater archaeological sites still exists.

Numerous sites along the Adriatic coasts are currently neglected and subject to constant destructions, illegal depredation, natural or anthropic destructive actions (trawling, modern harbour facilities, etc.).

The challenge of UnderwaterMuse — a unique case and a real challenge in the Adriatic area — is to implement joint strategies for developing coherent and sustainable plans that could fill this gap and reduce the lack of accessibility and knowledge, totally according to the principles of the 2001 Unesco Convention on the Underwater Cultural Heritage in situ conservation[7] , going beyond the natural and cultural heritage protection.

The practices are very different between the two countries, despite they had often work together on the field.

A starting point, unique experience in Italy, are the underwater parks of Baia (since 1998) and Gaiola (Naples) and there is a longer experience in policy protection, but still misses "concrete strategies of protection and development"[8] . Also the Region of Sicily, which has a Superintendence of the Sea, has fostered the creation of numerous archaeological trails and the publication of scientific and informative material, related to the underwater tourism[9].

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6 For a general summary of the International experiences on underwater cultural heritage protection and valorization, see IKUWA V.

[7] Maarleveld et al. 2013.

[8] Davidde Petriaggi, Ricci, Poggi 2016; Ricci, Petriaggi, Davidde Petriaggi 2016; Stefanile 2012; Stefanile 2016 with references; Stefanile, Agizza 2012; Secci, Stefanile 2016.

[9] Melotti 2007; www.regione.sicilia.it/beniculturali/archeologiasottomarina/itinerari.

In Croatia underwater archaeological sites are more developed: parks were created thanks to development projects of the sites through modular protective cages and diving centers authorized by the Croatian Ministry bring tourists to the sites, greatly increasing cultural tourism[10].

Acting only at the National / regional level is negative as it leads to a variety of regulatory and programmatic efforts towards what is actually a single common and shared resource, the Adriatic Sea.

UnderwaterMuse overcomes this fragmentation in cultural heritage protection with cooperation, pooling together resources, exchanging knowledge, sharing practices and working to guarantee accessibility towards natural-cultural sites offering marketable solutions, engage skilled professionals towards transmitting cultural heritage values in a dynamic age, motivate young people to acquire the knowledge to transform the silent past of a society in a captivating story.

Partners developed and enriched the 'UnderwaterMuse MAP', an innovative promotional GIS tool created for widing projects results applicability and transferability to the community and promoting underwater sites with accessibility standards. The 'UnderwaterMuse MAP', within which different regions stand to benefit from an efficient IT tool and sustainable tourist offer, is promoted at transnational, national and local level, in the Adriatic and beyond, guaranteeing its sustainability and transferability during and after its implementation.

Repeatability in different areas is assured by the different typology of underwater sites chosen and the particular context of reference. The exploitation of the sites contributes to their full-scale protection, reintegrating them into the local economy as a living and viable economic tourist activity. At the same time, new demand of cultural heritage usage is arising by young generations substantially influenced by the information age and globalization.

The necessity of VR is also embracing the needs of a wider inclusion of diverse groups of people integrating creative thinking and innovative ideas in exploiting traditional cultural contents. An immersive VR approach renders underwater sites accessible to a wider public, including people with different kinds of disabilities.

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10 Zmaić 2009; Pešić 2011; Mesić 2008, 2014; see also Koncani Uhač et al. 2017.

The objectives are to transform the sites into underwater archaeological parks or eco-museums through innovative and / or experimental methodologies and techniques, reducing the loss of important cultural heritages, guaranteeing an economic spin-off with their tourist-cultural promotion, targeting local communities as long-term keepers of vitality at tourist destinations, promoting co-creative partnerships among tourism and cultural actors, public decision makers, creative companies, associations of citizens, facilitating exchange of information.

Building capacity for professionals already working in this field will help them adapt to a "museum for all" concept, in spite of limited organizational or financial resources, and training diving guides will improve the immersive experience of underwater sites.

The choosen underwater archeological sites — maritime landscapes of Torre Santa Sabina, Grado, Resnik / Siculi, Venice lagoon — are complex, multi-stratified and characterized by strong diversity.

UnderwateMuse pilot actions applied on those sample areas a methodological and technological protocol based on **research / knowledge**, **documentation / cataloging**, **conservation / restoration**, **widen enhancement / communication / accessibility** chain, using traditional and innovative tools, such as the holistic / contextual / diachronic / transdisciplinary vision of the *global archeology of landscapes*, in this case coastal / underwater / *water landscapes*.

Landscape archaeology / geoarchaeology is "*a coherent sub-discipline of human ecology, neither a form of natural science nor a form of archeology, but an integrated way of understanding humans in dynamic landscapes*" (Barker G., Bintliff J. 1999: 207): being able to tell the story of social groups in changing landscapes, recording their discontinuities, formative processes and identity characteristics is the primary goal of this systemic vision.

In this framework dictated by **Seascapes archeology**, the contribution of different techniques and innovative technologies was crucial; **methodologies and tools shared** and used in the various **pilot projects** were

1.   **areal mapping**

    Topographic survey

    UAV/drone

2. **underwater survey**

Direct/autoptic survey

Metal detector survey

Photogrammetric survey

Multibeam e Side Scan Sonar survey

Sub bottom profiler

ROV

Video-photo documentation

3. **Excavations**

Stratigraphic excavation, documentation and analysis

Finds recovery

Sampling, flotation and sieving

Archeometric analyses

Washing, consolidation and restoration

4. **GIS implementation**

UM portal

Interoperability with CartApulia (Puglia regional cultural heritage GIS); SiRPaC FVG - Geographic

Information System of the Cultural Heritage of Friuli Venezia Giulia; SIGECweb/VIR (National

MiBACT digital archives), etc.

5. **Data/metadata implementation and elaboration**

Cataloguing

Study of the archaeological materials

Spatial and regressive analysis (for example TSS coastal stretch)

Periodization and interpretation of the site and the historical events

Regarding the tools aiming at the **valorisation of the pilot-sites**, the UM partners have shared forms and design **solutions to make visible the non-visible and to take "under water" the non-divers to enjoy the UCH**, in particular using the **VR/AR as environment** for the development of 3D models of various wrecks and structures. Furthermore, we are considering the **in situ preservation as best option** (UNESCO Convention 2001) and the solutions' design for pluristratified and complex sites, such as the Torre S. Sabina ad Resnik archaeological parks/blue trails and the site Monitoring with Remote Control systems (also Grado2).

Regarding the **action plans** developed on the basis of the joint methodology and the tools defined in WP3

5. **VR/AR design to make visible the non-visible and to take "under water" the non-divers to enjoy the UCH**

   Various wrecks and structures 3D models (Grado1, Grado2, Venice lagoon's wrecks and structures,

   Torre S. Sabina1, Resnik structures, etc.).

6. **In situ preservation and solutions' design for pluristratified and complex sites (Torre S. Sabina, Resnik/Siculi)**

   Torre S. Sabina waterfront: feasibility study

   Archaeological parks/Blue trails: which solutions?

   ▪ Stratigraphy and archaeological materials in situ reproduction
   ▪ Signals, labels, tags and QR codes
   ▪ 3D Viewers and tablets
   ▪ Ships replicas
   ▪ Relocation of the archaeological items/context

   Non divers
   ▪ visiting shallow sites snorkelling
   ▪ taking guided tours in glassbottom boats.
   ▪ sailing in the area or travelling near the coast

- GPS route plans and mobile phones can supply information
- on archaeological sites in the vicinity.

We have to answer all these questions, but first of all we have to think of the valorization of our UCH in a logic of economic, environmental and social sustainability.

7. **Site Monitoring with Remote Control systems**