Policy Challenges for Accessible and Sustainable Underwater Cultural and Natural Heritage: Bridging Governance, Technology and Blue Economy

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Abstract:

Accessible Underwater Cultural and Natural Heritage (UCNH) represents an important resource for socio-economic development in coastal regions, carrying both cultural and touristic value. Ancient and modern shipwrecks, submerged prehistoric settlements, and other cultural remains preserved beneath the sea or in freshwater environments offer valuable insights into human history while also serving as protective habitats for marine life. Despite this potential, the protection, documentation and accessibility of UCNH remain limited due to technological constraints, multiple governance frameworks and insufficient integration of underwater heritage into broader marine and cultural policies.

Recent initiatives have highlighted several structural policy challenges affecting the management and valorisation of UCNH. These include the limited integration of Underwater Cultural Heritage (UCH) into Maritime Spatial Planning frameworks, gaps in regulatory frameworks governing underwater monitoring technologies, insufficient and fragmented funding mechanisms for underwater archaeological research, and barriers related to accessibility and public engagement. At the same time, advances in digital and underwater monitoring technologies, including autonomous underwater monitoring systems, advanced imaging techniques and AI-based data analysis, create new opportunities for cost-effective documentation, monitoring and preservation of UCNH sites. Such technological developments require supportive policy frameworks capable of facilitating their safe deployment and long-term integration into heritage management practices.

In parallel, policy discussions around sustainable tourism and blue economy development increasingly recognise the importance of integrating cultural and natural heritage assets into regional development strategies. Optimising operational models, fostering collaboration among policymakers, researchers and local stakeholders, and promoting interdisciplinary approaches are therefore essential to ensuring both the protection and sustainable valorisation of UCNH sites.

Building on insights from recent initiatives and policy discussions, this paper identifies key policy priorities for improving the accessibility, protection and sustainable management of UCNH. These include the integration of UCH into maritime spatial planning and blue economy strategies, the development of dedicated funding mechanisms for underwater research and innovation, the establishment of regulatory frameworks for digital monitoring technologies, and the promotion of cross-sector collaboration between heritage, marine science and tourism stakeholders.

Keywords:

Underwater Cultural Heritage, Cultural Heritage management, sustainable tourism, blue economy

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