

pca

european journal of
postclassical archaeologies

volume 10/2020

SAP Società Archeologica s.r.l.

Mantova 2020

EDITORS

Gian Pietro Brogiolo (chief editor)

Alexandra Chevarria (executive editor)

ADVISORY BOARD

Martin Carver (University of York)

Matthew H. Johnson (Northwestern University of Chicago)

Giuliano Volpe (Università degli Studi di Foggia)

Marco Valenti (Università degli Studi di Siena)

ASSISTANT EDITOR

Francesca Benetti

EDITORIAL BOARD

Paul Arthur (Università del Salento)

Margarita Díaz-Andreu (ICREA - Universitat de Barcelona)

José M. Martín Civantos (Universidad de Granada)

Girolamo Fiorentino (Università del Salento)

Caterina Giostra (Università Cattolica del Sacro Cuore di Milano)

Susanne Hakenbeck (University of Cambridge)

Vasco La Selva (Università degli Studi G. D'Annunzio di Chieti e Pescara)

Bastien Lefebvre (Université Toulouse - Jean Jaurès)

Alberto León (Universidad de Córdoba)

Tamara Lewitt (University of Melbourne)

Federico Maretti (Università degli Studi Suor Orsola Benincasa di Napoli)

Dieter Quest (Römisch-Germanisches Zentralmuseum Mainz)

Andrew Reynolds (University College London)

Mauro Rottoli (Laboratorio di archeobiologia dei Musei Civici di Como)

Colin Rynne (University College Cork)

Post-Classical Archaeologies (PCA) is an independent, international, peer-reviewed journal devoted to the communication of post-classical research. PCA publishes a variety of manuscript types, including original research, discussions and review articles. Topics of interest include all subjects that relate to the science and practice of archaeology, particularly multidisciplinary research which use specialist methodologies, such as zoarchaeology, paleobotany, archaeometallurgy, archaeometry, spatial analysis, as well as other experimental methodologies applied to the archaeology of post-classical Europe.

Submission of a manuscript implies that the work has not been published before, that it is not under consideration for publication elsewhere and that it has been approved by all co-authors. Each author must clear reproduction rights for any photos or illustration, credited to a third party that he wishes to use (including content found on the Internet). For more information about **ethics** (including plagiarism), copyright practices and guidelines please visit the web site www.postclassical.it.

PCA is published once a year in May, starting in 2011. Manuscripts should be submitted to editor@postclassical.it in accordance to the guidelines for contributors in the webpage <http://www.postclassical.it>

Post-Classical Archaeologies' manuscript **review process** is rigorous and is intended to identify the strengths and weaknesses in each submitted manuscript, to determine which manuscripts are suitable for publication, and to work with the authors to improve their manuscript prior to publication.

This number will be entirely in **open access**. For more information on our open access policy please visit the web site www.postclassical.it.

How to **quote**: please use "PCA" as abbreviation and "European Journal of Post-Classical Archaeologies" as full title.

Cover image: Giorgio de Chirico, *L'archeologo*, 1927, Monaco, private collection [reproduced with permission of the Fondazione De Chirico].

"Post-Classical Archaeologies" is indexed in Scopus. It was approved on 2015-05-13 according to ERIH PLUS criteria for inclusion and indexed in Carthus+2018. Classified A by ANVUR (Agenzia Nazionale di Valutazione del sistema Universitario e della Ricerca).

DESIGN

Paolo Vedovetto

PUBLISHER

SAP Società Archeologica s.r.l.

Strada Fienili 39/a, 46020 Quingentole, Mantua, Italy

www.archeologica.it

Authorised by Mantua court no. 4/2011 of April 8, 2011

For subscription and all other information visit the web site www.postclassical.it.

	CONTENTS	PAGES
EDITORIAL		5
DOSSIER - ARCHAEOLOGY: FROM THE AGENDA 2030 TO THE WORLD POST-COVID		
G.P. Brogiolo, A. Chavarria Arnau Archeologia e sostenibilità nell'era post (?) COVID-19	7	
P. Gould Resilience and innovation: an economic contemplation on public-facing archaeology after COVID-19	21	
P. Gelabert Past diseases: present questions and future perspectives from an archaeogenetic approach	35	
C. Holtoft An archaeology for the future: from developing contract archaeology to imagining post-corona archaeology	57	
P. Everill <i>Quo vadis?</i> What next for British archaeology?	73	
D. Henson Archaeology's place in education: under threat or an opportunity?	91	
A. Rey da Silva Sailing the waters of sustainability. Reflections on the future of maritime cultural heritage protection in the global sea of development	107	
R.J. Williamson, M. Nevell, B. Humphrey-Taylor Increasing the resilience of cultural heritage using novel technologies: the perspective from a UK volunteer-led site	135	
C. Rynne Waterpower and sustainable energy in 19 th -century Europe and the USA. An archaeology of the water turbine	147	
RESEARCH - RETHINKING THE LATE ANTIQUE COUNTRYSIDE		
C. Corsi The villa-mansio in the Late Antique Mediterranean: between historiographical creation and archaeological impotence	165	
T. Lewit " <i>terris, vineis, olivetis...</i> ": wine and oil production after the villas	193	

N. Conejo	Coins and <i>villae</i> in late Roman Lusitania: collapse of the Roman currency economy?	219
A. Carneiro	Adapting to change in rural Lusitania: zooarchaeological record in the Horta da Torre Roman villa (Portugal)	247
R. Montagnetti, D. Pickel, J. Wilson, F. Rizzo, D. Soren	New research in the Roman villa and late Roman infant and child cemetery at Poggio Gramignano (Lugnano in Teverina, Umbria, Italy)	279
J.M. Nolla, M. Prat, A. Costa, N. Corominas, L. Palahí	La visualización de los visigodos en Gerunda y sus entornos. Datos significativos de un problema sin resolver	303
BEYOND THE THEME		
N. Tsivikis	Moving beyond the Invisible Cities of Byzantium	325
P. Todaro, G. Barbera, A. Castrorao Barba, G. Bazan	<i>Qanāts</i> and historical irrigated landscapes in Palermo's suburban area (Sicily)	335
S. Bianco, E. Allué, S. Riera Mora, A. Fernández, M. Soberón Rodríguez, C. Miró Alaix	The evolution of wood fuel exploitation in the El Born Market site (Barcelona, Spain) during the 15 th -18 th centuries starting from charcoal analysis	371
A.R. Staffa	La transumanza in Abruzzo fra tarda antichità e medioevo	401
P. Marcato	Analisi diacronica del paesaggio storico delle malghe di Brentonico (TN) tra XIX e XXI secolo	449
REVIEWS		
		473
E. Dodd, <i>Roman and Late Antique Wine Production in the Eastern Mediterranean: A Comparative Archaeological Study at Antiochia ad Cragum (Turkey) and Delos (Greece)</i> - by T. Lewit		
M. Cavalieri, F. Sacchi (eds), <i>La villa dopo la villa. Trasformazione di un sistema insediativo ed economico in Italia centro-settentrionale tra tarda antichità e medioevo</i> - by G.P. Brogiolo		
F. Grassi, J.A. Quirós Castillo (eds), <i>Arqueometría de los materiales cerámicos de época medieval en España</i> - by C. Citter		
G.P. Brogiolo, A. Chavarria Arnau, <i>Archeologia postclassica. Temi, strumenti, prospettive</i> - by A. Guidi		
C. Giostra (ed), <i>Migrazioni, clan, culture: archeologia, genetica e isotopi stabili</i> - by V. La Salvia		
E. Guttmann-Bond, <i>Reinventing Sustainability: How Archaeology Can Save the Planet</i> - by M. Fecchio		
I. Huivila (ed), <i>Archaeology and Archaeological Information in the Digital Society</i> - by L. Durjava		
C. Holtorf, A. Pantazatos, G. Scarre (eds), <i>Cultural Heritage, Ethics and Contemporary Migrations</i> - by A. Borsato		

Arturo Rey da Silva*

Sailing the waters of sustainability. Reflections on the future of maritime cultural heritage protection in the global sea of development

This paper reflects on a number of key pressing issues that maritime cultural heritage protection is facing in a world where all political agendas are looking into achieving sustainable development and growth within their economic, social and environmental domains. The urgent initial steps and actions the cultural heritage community need to take in order to align the development of maritime archaeology with the sustainable development priorities in the global sphere are identified here. The reflections below argue that eventually no development will be sustainable if maritime cultural heritage is not taken into account and the practise of maritime archaeology does not act as the connector between other marine sciences, society and policy makers.

Keywords: maritime archaeology, marine cultural heritage, sustainable development, UNESCO, Agenda 2030, Ocean Decade

Questo articolo riflette su alcune questioni chiave che la tutela del patrimonio marittimo sta affrontando in un momento in cui tutte le agende politiche cercano di raggiungere lo sviluppo e la crescita sostenibile in ambito economico, sociale e ambientale. Vengono identificati i passi iniziali e le azioni che il settore culturale deve intraprendere per allineare lo sviluppo dell'archeologia marittima con le priorità di sviluppo sostenibile. Il contributo dimostra che nessuno sviluppo sarà sostenibile se il patrimonio marittimo non sarà preso in considerazione e se l'archeologia subacquea non agirà come un connettore tra altre scienze, la società e i decisori politici.

Parole chiave: archeologia subacquea, patrimonio culturale marittimo, sviluppo sostenibile, UNESCO, Agenda 2030, Ocean Decade

1. Introduction

“From now on culture should be regarded as a direct source of inspiration for development, and in return, development should assign to culture a central role as a social regulator” a theme underlined by the former Director-General of UNESCO, Federico Mayor Zaragoza, in 1988 on the

* Université Paris I Panthéon – Sorbonne, France, and Member of the International Committee on the Underwater Cultural Heritage (ICUCH) of ICOMOS, a.reydaasilva@gmail.com.

occasion of the World Decade for Cultural Development between 1988 and 1997 (1988, p. 5). The approach of culture to development is a current issue that is born alongside the decolonization processes and the change in geopolitical realities of the late 1970s (Wiktor-Mach 2019). It is in this period when the foundations and studies for the integration of culture in sustainable development policies begin to be established by international organizations and cooperation agencies (Maraña 2020).

Mayor Zaragoza's words would not materialize into seeing culture having an actual prominent place on the international agendas for sustainable development in the following decades. It would be other platforms, such as the First Universal Forum of Cultures in 2004, which would adopt programs with a focus on cultural development (Martinell Sempere 2020). Throughout this period, UNESCO – the United Nations agency in charge of education, science and culture –, within a scenario of dominant multilateralism, is already beginning to outline implementation strategies of its programs so that culture becomes an instrument essential in sustainable development policies.

In September 2015, the United Nations General Assembly approved the new Sustainable Development Agenda, the 2030 Agenda, which sets the guidelines for the political agendas of all Member States. This action plan, which replaces the previous Millennium Agenda, proposes achieving more equitable and environmentally friendly societies and raise awareness of the need to apply social and economic measures that do not jeopardize the use of existing resources. This Program establishes 17 ambitious objectives – Sustainable Development Goals (SDGs) – and 169 targets to be met around the three main dimensions of development: the economy, society, and the environment¹. Since then, the 2030 Agenda marks and redesigns the agendas of international cooperation and scientific research, as well as influencing the delineation of projects and the possibilities of funding schemes.

The SDGs suppose the foundations for a true global transformation in which the human dimension cannot be absent. However, culture, which should be the fourth pillar around which sustainable development occurs (Hawkes 2001), only appears specifically in target 4 of SDG 11 referring to Sustainable Cities and Communities, "protect and preserve the world's cultural and natural heritage", or in target 7 of SDG 4 referring to Quality Education, in which "a culture of peace and non-violence" is promoted as well as "the appreciation of cultural diversity and the contribution of culture to sustainable development". Despite the fact that the Sustainable Development Summit that drafted the 2030 Agenda did

¹ <https://sustainabledevelopment.un.org/> (accessed on 22 April 2020).

not take into account the previous work and studies on the important contribution of the cultural dimension to development, we must analyse this program from a critical perspective and work together to establish strategies that include culture in the actions of this roadmap².

Culture must then be arguably implemented as a driver and enabler of sustainable development in its three spheres, being a transversal transformative mechanism for the rest of the SDGs. Culture is the expression of the values of societal values and it is on these values that the 2030 Agenda is based in order to achieve human, economic, social and environmental progress in a holistic and inclusive way. To this end, UNESCO adopted "a more holistic approach [...] that better integrates the safeguarding of built and living heritage, promotion of the diversity of cultural expressions and support to the creative economy, demonstrating culture's transformative power in areas including education, gender equality, social cohesion, poverty reduction, human rights, migration and tackling climate change" (UN 2019), basing its role on assisting policy formulation, capacity development, as well as developing operational projects and monitoring their impacts and results.

Culture and heritage elements are symbols that identify us as individuals and as collectives. Respect for its diversity is as necessary as is biodiversity. Cultural resources, if properly protected and managed, including society in all phases of heritage processes, are transformative and can be passed on to future generations. This paradigm represents the evolution of the heritage process from a more "monumentalist" vision in its beginnings, to a more "anthropological" perspective (Wiktor-Mach 2019, p. 12).

However, we see in most States there is a systematic under-utilization of cultural resources – be they heritage, historical, archaeological, whether they are on land or underwater, whether they are movable, immovable or intangible – due to the lack of technical capacities and infrastructures, management and knowledge, as well as political will and legal mechanisms for their understanding and protection (UNESCO 2016).

On the other hand, the adoption of imminently western heritage precepts, both scientific and legal, in emerging and developing countries can negatively influence the traditional practice of many communities, causing the way of understanding and protecting culture to be confronted, and in occasions rejected locally. UNESCO's involvement in the 2030 Agenda means that the concept of heritage is re-conceptualized, increasingly being understood as a process that can support sustainable

² MARTINELL SEMPERE 2020. See document approved at the Sustainable Development Summit: <https://sustainabledevelopment.un.org/post2015/transformingourworld/publication> (accessed on 23 April 2020).

development in all its dimensions, and that will have important consequences for the use and prioritization of development practice by its main actors (Wiktor-Mach 2019).

On this path of sustainable development, oceans have a special role as they are key in the economic, socio-political and environmental dynamics that we have to face. The cultural heritage related to the marine environment is exposed to challenges and threats never seen before. The rapid growth of economic activities in this space, coupled with the advancement of underwater exploration technologies, can represent a unique opportunity for maritime archaeology, as well as presenting unparalleled threats that could wipe out the still largely unknown maritime cultural heritage. The effects of present unprecedented climate change, as well as the not yet clear effect the current COVID-19 crisis will have into cultural heritage and its social engagement, are also issues that will shape the future research strategies in maritime cultural heritage preservation studies.

In this article we reflect on the role of maritime cultural heritage on this path of sustainable development and present day challenges, the role of UNESCO as the international arena coordinator of actions and debates on its protection, as well as the crucial role of archaeology for the design of future strategies. With the concept of “maritime cultural heritage” we refer not only to archaeological sites found in coastal areas or underwater contexts, affected by marine dynamics, but also to the ancient traditions and practices of coastal communities, as well as their beliefs and intangible heritage, and the set of relationships between society, culture and environment.

Maritime cultural heritage has to be taken into account within sustainable development policies. Maritime archaeology, as a humanities-oriented social science that can apply methods and natural science approaches, studies the physical traces of cultural heritage, being found underwater or on land. The maritime archaeology of the 21st century must be a discipline that, being eminently social and anthropological, contributes to this sustainable future and serves as a bridge between the sciences, society and policy formulation.

2. Cultural heritage and the sustainable management of the oceans

The social, economic and cultural development of humanity has been closely connected to the sea since prehistoric times. The history of trade, communications or the world economy could not be understood today without what the sea has meant and contributed to its develop-

ment. As we run through the present century, we see how underwater archaeological sites, as well as those found on the coast or in intertidal areas, have to face new threats that challenge traditional epistemological, management and protection systems. If the first cause of destruction of underwater archaeological sites in the 20th century was looting and treasure hunting – which continues more quietly nowadays, and in regions where legislative frameworks still allow it – combined with a lack of public and political awareness, currently the one that is presented as the main threat is the very socio-economic growth of our society. At a time when the “Blue Economy” is in full expansion, positioning countries and large corporations in a fight for increasingly scarce natural resources, maritime cultural heritage is at risk of being greatly affected. It is inevitable that heritage is impacted and involved in this conflict over resources (Flatman 2009; Papageorgiou 2018).

On the other hand, the traditional conceptual separation between land and sea, influenced by the economic development discourses imposed since modern industrialization, has led to the cultural heritage found in underwater contexts or related to the sea being understood differently from that found on land. This has influenced both public perception and current academic research, as well as local, national, and global protection and management mechanisms (Henderson 2019). Likewise, this has affected at the international level the adoption of diverse legal instruments that separate bureaucratically, but also conceptually, this heritage from the terrestrial one, even if its main objectives were to equate its importance and highlight its diversity.

New technologies and technical means already allow access, as never before, on the one hand, to the acquisition of archaeological data that could not be thought of just a few decades ago. At the same time, they allow an increase in the exploration and exploitation of marine resources, with unpredictable impacts on archaeological sites due to not knowing exactly the expansion of the submerged cultural resource and its impact on society. The lack of studies on the impacts caused on cultural heritage, as well as the lack of appropriate indicators that allow them to be measured, are other reasons why we lack appropriate elements to better understand the extent of the impacts of these economic activities.

Furthermore, it is in those areas where maritime archaeology is beginning to develop as an emerging discipline (Africa, Latin America and the Caribbean, or the Asia-Pacific region mainly), providing new research perspectives, where the oceans are less explored and less exploited, where the search for energy resources is increasingly intense (Flatman 2012a). Proving the relevance of cultural heritage in this growth scenario is one of the biggest challenges for the international community.

To achieve sustainable use of the oceans while seeking to preserve natural and cultural resources and biodiversity, as well as improve the lives of coastal communities, the 2030 Agenda included a Goal specifically dedicated to the Oceans. Thus, SDG 14 refers to the conservation and sustainable use of the oceans, seas and marine resources for sustainable development³ and establishes 10 targets. These targets seek to reduce marine pollution, strengthen marine and coastal ecosystems, minimize ocean acidification, regulate fishing exploitation, conserve at least 10% of coastal and marine areas, increase financing for Small Island Developing States (SIDS) and least developed countries for sustainable use of the oceans, increase scientific knowledge, as well as improve the conservation and sustainable use of the oceans and their resources by applying the international law reflected in the 1982 United Nations Convention on the Law of the Sea (UNCLOS). However, beyond mentioning ocean resources in a generic way, or tourism as one of the activities to be managed sustainably notably in SIDS and developing countries, cultural heritage is, once again, completely absent.

Maritime cultural heritage is essential for improving the productivity of the exploitation of marine resources, the sustainability of coastal and underwater ecosystems, as well as improving research and knowledge transfer capacities on human interaction with the oceans. SDG 14 recognizes the potential of the social and economic benefits that sustainable management of marine resources can provide.

The study of the cumulative impact of the interactions of human societies with their marine environment throughout history offers us a lot of information that is extremely important for understanding the changes and dynamics that we see in the present, and they help us to outline strategies for the future. The study of the maritime cultural landscapes – understood here as the result of interaction between human behaviour within the marine environment over time⁴ –, their transformations and the behaviour of the coastal communities, constitute an essential knowledge base to understand, for example, current climate change and design adaptation and mitigation strategies (Rockman 2012; Wright 2016). As Henderson stated, “if maritime archaeology is to progress, establish itself in modern practice, and realise its full potential, then it needs to respond to the 2030 Agenda” (2019, p. 2). Therefore, it is imperative that the maritime cultural heritage global community gets together and establishes strategies to actively integrate cultural heritage in the sustainable development agenda.

³ UNESCO 2018. <https://onu.org.pe/ods-14/> (accessed 19 April 2020).

⁴ Here, as Westerdahl states, “the study of maritime culture and its landscape ought to mean the

3. The United Nations Decade of Ocean Sciences for Sustainable Development 2021-2030

In 2017, within the framework of the 2030 Agenda, the United Nations established the Decade of Ocean Sciences for Sustainable Development (2021-2030), establishing that the Intergovernmental Oceanographic Commission (IOC) of UNESCO would be its coordinating body. This initiative proposes to establish a "common framework to ensure that ocean science can fully support the actions of countries to manage the oceans in a sustainable way and, more particularly, to achieve the 2030 Agenda for Sustainable Development"⁵. The ocean science sector is understood in this sense as those disciplines that study and provide data on the global marine environment. In the discussions that defined its objectives and its main actors, the social sciences and culture gained importance thanks to their contribution to knowledge of the ocean, as well as the relationship of society with its use and understanding.

The Decade aims to establish a transformative process of collaborative work between scientists, policy makers, managers and service users to ensure that ocean science knows how to better communicate and respond to the needs of society and the ecosystem. At the same time, it is intended to serve to establish platforms in which science, society and politics are in effective coordination. For this, the Decade establishes 6 main societal objectives based on real results seen in society, encouraging participatory approaches, linking new disciplines in multidisciplinary approaches, as well as articulating the natural, cultural and economic values of the oceans. These objectives seek: 1) a clean ocean, 2) a healthy and resilient ocean, 3) a predicted ocean, 4) a safe ocean, 5) a sustainably harvested and productive ocean, and 6) a transparent and accessible ocean.

During the First Global Planning Meeting of the Decade, organized at the National Museum of Denmark, in Copenhagen in the spring of 2019, a special session was held dedicated to underwater and maritime cultural heritage thanks to the support of the Carlsberg Foundation, the Honor Frost Foundation and the Danish National Commission for UNESCO. With the participation of numerous experts, many from the International Committee on the Underwater Cultural Heritage (ICUCH) of the International Council on Monuments and Sites (ICOMOS) and from UNESCO, the platform "Ocean Decade Heritage Network" (ODHN) was estab-

exploration of all kinds of human relationships to the sea, of very plausibly to any large body of water" (WESTERDAHL 2013, p. 754). Maritime culture covers then "all possible angles of man's relationship to the sea and the coasts" (WESTERDAHL 2011, p. 337).

⁵ <https://www.oceandecade.org> (accessed on 17 April 2020).

lished as a result of the debates and discussions of this event. ODHN's main objective was to "facilitate contact and communication between archaeologists, marine scientists, and related stakeholders" through a proactive action that integrates culture within the actions of the Decade, and explaining concerned stakeholders about the objectives of the Decade (Trakadas *et al.* 2019)⁶. Maritime archaeology is thus positioned within the discussions on the sustainability of the oceans, having been completely absent up to that moment.

The relevance of cultural heritage for the Decade is evident because only the scientific study of the maritime, underwater or land archaeological context, can show the behavioural evolution of human societies in their interaction with the marine environment. It is also an obligation of the States to protect the "objects of an archaeological and historical nature found at sea", cooperating among themselves to achieve this objective, as UNCLOS indicates in its article 303 (1), which is then emphasized and detailed by the UNESCO 2001 Convention on the Protection of the Underwater Cultural Heritage (the 2001 Convention). Cultural heritage contributes to the achievement of the societal objectives of the Decade. However, without the proper recognition that cultural heritage is an element of critical knowledge and necessary for sustainable development, it is possible that the initiatives carried out to achieve these objectives are not only not achieved, but are counterproductive for coastal societies (Henderson 2019).

Archaeology can show the responses given by coastal communities to, for example, changes in sea level rise, sedimentation processes, catastrophic events such as earthquakes or tsunamis, or simply understand the different systems of exploitation of marine resources used within local traditional systems to regional exploitation networks. Practices that have survived for centuries in balance between human needs and resource preservation and that face now major and disruptive pressures. Knowledge of this information is of utmost importance when it comes to designing forecasts and action strategies to achieve sustainable practices, in a safer and more predictable ocean, in an environment with a growing number of actors and uses. Likewise, a spatial and detailed analysis of the risks that the degradation of sunken ships and their cargoes pose to the environment and societies, as well as understanding how climate changes affect their preservation, contribute to having healthier and cleaner oceans. Heritage sites are markers for current and future environmental change (Mamber 2000). Finally, cultural heritage is an important factor for increasing productivity, especially through

⁶ www.oceandecadeheritage.org (accessed on 17 April 2020).

tourism, but also through the valuation and sustainable integration of traditional practices related to the use of marine space on the path of development, multiplying accessibility and transparency. However there is a lack of knowledge and understanding of the importance of the ocean in our cultural, social or environmental heritage (Borja *et al.* 2020), that requires an integrated effort in communication and education, through an increase of cultural heritage into ocean literacy initiatives.

The lack of integration of maritime archaeology within the marine science is still quite frequent in educational, academic and administrative terms, which makes it extremely difficult to find practical action models beyond sectoral approaches. States, which have the ultimate responsibility for the protection of their cultural heritage, rarely include cultural heritage within the national provisions that regulate activities in the marine space, despite the fact that international legislation aims at such integration. However, several projects have shown the potential of interdisciplinary approaches between marine science and archaeology, as noted in previous studies (Henderson 2019, p. 12; Trakadas *et al.* 2019, p. 155).

Among the more specific objectives of ODHN are: raising awareness in the broader cultural heritage community of the Decade; encouraging the participation of archaeologists and cultural heritage specialists not only in international efforts, but also in regional programs inspired by the Decade; as well as promoting joint work and interdisciplinary projects between archaeologists and cultural heritage specialist and the marine sciences. Since its establishment, maritime archaeologists and heritage experts have taken part in regional meetings organized in the sphere of the Decade representing the maritime cultural heritage spectrum. Some of these meetings were: GLOSS (Global Social Science Meeting), organized in Brest, France, in November 2019; the Ocean Decade Mediterranean Workshop, organized in Venice in January 2020; The Arctic Ocean Decade Policy-Business-Science-Dialogue Workshop, in Tromsø, Norway, January 2020; or The Oceans Science Meeting in San Diego, California, the US⁷. Showing that archaeology is relevant in the international debate on climate change and the use of natural resources is essential (Flatman 2012b).

The importance of the maritime cultural heritage in the Decade has also been highlighted at the 7th session of the Meeting of the States Parties to the 2001 Convention, organized in Paris in June 2019, in which the strengthening of cooperation with the IOC in this field was encouraged as well as it commanded its Scientific and Technical Advisory

⁷ <https://www.oceandecadeheritage.org/news/> (accessed 22 April 2020).

Body (STAB) to make proposals for action within the framework of the Decade (UNESCO 2019a) (Resolution4/ MSP 7).

This interdisciplinary approach between marine sciences and social sciences, as well as the projection of archaeology as a connecting element between sustainable development and the oceans are two of the characteristics that already mark the position of the discipline on the global stage. The focus of archaeology is presented on this interaction of humanity with the environment and its ability to understand changes, resilience and adaptation. In the Decade, as well as in the 2030 Agenda in general, cultural heritage is what connects marine science with sustainable development (Trakadas *et al.* 2019).

4. Maritime cultural heritage and sustainable development: UNESCO's need for a paradigm change

International concern for the protection of that cultural heritage found underwater is institutionalized around the 2001 Convention, whose governing and advisory bodies form global governance on issues related to this heritage. Through its decisions and actions, a series of guidelines and best practices are outlined for the best study, protection and management of this underwater cultural heritage (UCH). The 2001 Convention offers specific guidelines for the protection of UCH, as well as for carrying out activities aimed at it. It creates a system of cooperation and gives specific instructions to the States to avoid, prosecute and punish looting and commercial exploitation, while promoting training in underwater archaeology, as well as it underlines the importance of *in situ* preservation as the first option to take into account, and encourages the public access to heritage (Manders 2012; Maarleveld *et al.* 2013).

National inventories of maritime cultural heritage are becoming increasingly urgent. They are an essential tool for managing and planning the most appropriate actions, mitigating possible negative impacts and positioning the cultural heritage with respect to other marine activities. For this, the 2001 Convention, in its article 22, calls on the States Parties to establish "[...] competent authorities or, where appropriate, will strengthen those that already exist so that they can prepare, maintain and update *an inventory of underwater cultural heritage* and effectively guarantee the protection, conservation, presentation, and management of underwater cultural heritage, as well as research and education" (emphasis added). However, economic activities in marine areas grow faster than the ability of governments to create the necessary capacities to prepare their national inventories.

The competent authorities in charge of maritime cultural heritage, where they exist, lack the necessary human and economic resources to face the impacts derived from the increasing activities taking place in the marine landscape. So far, UNESCO's actions to help States have advanced in capacity building, political awareness and harmonization of legislation, but the lack of long-term capacity development strategies, regional evaluation needs assessments⁸, have prevented UNESCO's impact from achieving global change in the way in which maritime cultural heritage is treated in major development policies.

The proper national application of the Convention contributes to sustainable development provided there is political will and effective coordination between the administrations and actors involved. On the other hand, the Convention has yet to prove its effectiveness in the notification, protection and coordination of activities to UCH carried out in the Exclusive Economic Zone, Continental Shelf or in the Area, outside the jurisdiction of the States⁹. Likewise, although the number of countries that ratify the Convention are increasing, it has to be ratified by a greater number of States to be effective widely, and to be able to offer protection wherever the heritage is, and whoever finds it¹⁰.

Convince governments and the general public that maritime cultural heritage is an enabler of growth not only socially and culturally, but also of economic well-being within development plans, such it is the environment, is one of the biggest challenges ahead.

4.1. UNESCO's assistance actions in the sphere of the Maritime Cultural Heritage

If the 2001 Convention managed to put the protection of underwater archaeological sites at the same level as that offered to heritage found on land, it would be appropriate that its scope should be also linked to the programmatic lines and actions framed under other culture programs. Cultural heritage has to be understood as one, just as there should be no distinction, in scientific and knowledge-creating terms, between land ar-

⁸ The only capacity development strategy carried out by the Organization in what appears to be a change in the way of assessing the situation in each region was commissioned by the UNESCO Office in Almaty for the Central Asia and Caspian Sea Region in 2019 (REY DA SILVA in press).

⁹ In 2018, Italy notified UNESCO about the discovery of UCH in the area of the sea between Italy and Tunisia known as Skerki Banks starting the first case of international cooperation under the 2001 Convention concerning heritage in International waters. See: http://www.unesco.org/new/en/culture/themes/underwater-cultural-heritage/dynamic-content-single-view/news/first_meeting_of_the_international_consultation_process_on_h/ (accessed 25 April 2020).

¹⁰ The 2001 Convention has been ratified by 62 States. The current list of States Parties can be consulted in <http://www.unesco.org/erila/convention.asp?KO=13520&language=E&order=alpha> (accessed 25 April 2020).

chaeology and maritime archaeology. The separation between sea and land has to be overcome, forming fronts for the promotion of cultural heritage in an integral way, as well as actions aimed at heritage as a whole, with a holistic vision that encompasses the land-coast-sea continuum.

In the field of international legal instruments, this should begin by carrying out joint implementation actions in common areas such as the fight against commercial exploitation, capacity development or the preparation of impact evaluations. Synergies between the 2001 Convention and other instruments such as the 1970 Convention on Measures to be Taken to Prohibit and Prevent the Illicit Import, Export and Transfer of Ownership of Cultural Property have been frequently highlighted (Clément 2006). This also should lead to greater coordination with the World Heritage Convention and initiatives such as the "World Heritage Marine Program"¹¹ from the World Heritage Centre, as well as a higher cooperation in the sphere of IOC and the Man and the Biosphere (MAB) Programme of UNESCO¹².

Many world heritage sites contain maritime archaeological remains in their nuclear or buffer zones, despite the fact that sites like shipwrecks are understood as movable property and, therefore, not covered by the World Heritage. Sites inscribed on the World Heritage List such as the Basque Whaling Station of Red Bay (Canada)¹³, the Prehistoric Pile-Dwellings (Germany, Austria, France, Italy, Slovenia and Switzerland)¹⁴, or the city of Byblos (Lebanon)¹⁵, among many others¹⁶, cannot be un-

¹¹ The Marine World Heritage Program is made up of those sites inscribed on the World Heritage list that suppose areas and marine ecosystems with exceptional universal value. Among them, 4 are registered as mixed properties, with natural and cultural characteristics, with a vision of the cultural landscape. This program has a Network of Local Managers who share capacities and leading solutions to management problems to achieve sustainable marine protected areas within the framework of the 2030 Agenda. A global conference of marine managers is organized every three years. Since 2011, the World Heritage marine program has studied ways to protect marine areas that correspond to the criteria of universal exceptional value of the 1972 Convention and that are located on the high seas, where no country has jurisdiction. In this sense, the cooperation mechanism of the 2001 Convention for international waters has been presented as a model, among other possibilities (FREESTONE *et al.* 2016).

¹² The MAB programme of "aims to establish a scientific basis for enhancing the relationship between people and their environments. It combines the natural and social sciences with a view to improving human livelihoods and safeguarding natural and managed ecosystems, thus promoting innovative approaches to economic development that are socially and culturally appropriate and environmentally sustainable", www.en.unesco.org/mab (accessed 25 April 2020).

¹³ <https://whc.unesco.org/en/list/1412/> (accessed 26 April 2020).

¹⁴ <https://whc.unesco.org/en/list/1363/> (accessed 26 April 2020).

¹⁵ <https://whc.unesco.org/en/list/295> (accessed 26 April 2020).

¹⁶ Jamaica presented 'The Sunken City of Port Royal' to the World Heritage Committee (WHC) for inscription in 2019. The file was returned to the State Party requesting to put more emphasis on the submerged remains of the city. In this Decision, the WHC recommends Jamaica to pay special attention to "Ensuring that the conservation and protection of the underwater archaeological remains, are guided by the principles for protection set out in the 2001 UNESCO Convention on the Protection of

derstood or managed without the study and protection of archaeological remains in relation to their aquatic or marine environment, whether submerged or on land. However, mentions of maritime cultural heritage assets are very few among world heritage dossiers, even absent in important coastal places. These concepts are only just beginning to be incorporated into the meetings of the World Heritage Committee, that starts recommending the Rules of the Annex to the 2001 Convention, as guidelines that States should follow in these cases¹⁷.

Perhaps one of the steps that can lead the way towards this understanding of cultural heritage in its entirety is the joint international assistance mission carried out by the ICOMOS, as an advisory body to the World Heritage Convention, and the STAB, the advisory body to the 2001 Convention, in 2017 to evaluate the World Heritage Site of the Ancient City of Nessebar (Bulgaria).

The Ancient City of Nessebar, inscribed on the World Heritage List in 1983, is an enclave located in the Black Sea that has its origins in the ancient Menebria. Since its foundation, some 3,000 years ago, it has been a very important city for both maritime trade in the Byzantine era as well as an important religious centre. Considerable remains of the Hellenistic period are still visible, such as the Acropolis, a temple of Apollo, an agora and the ruins of its Thracian fortifications, as well as wooden houses of the typical architectural style of the Black Sea area of the 19th century, which are part of the urban fabric of the modern city. In addition, the property already included, at the time of inscription, important archaeological remains that, without being specified at the time, were found in its buffer zone, submerged in the territorial waters that surround the Nessebar peninsula.

After several years in which the World Heritage Committee expressed its concern over the lack of an adequate management plan and, in 2017, "its concern over proposals for infrastructure projects, incompatible with values, attributes and vulnerabilities of the site, as well as the development approach based on mass tourism, which pose potential dangers for Outstanding Universal Value (VUE)" (Decision 41COM 7B.43)¹⁸, Bulgaria decided to invite an evaluation mission. Being a State

the Underwater Cultural Heritage" and also recommends the State Party to "invite an ICOMOS advisory mission to the site to provide advice in relation to Heritage Impact Assessments for underwater cultural heritage" (Decision 43 COM8.39, <https://whc.unesco.org/en/decisions/7402/>, accessed on 30 April 2020).

17 The World Heritage Committee adopted Decision 43COM7B.48 in 2019 urging Lebanon to "Exploring synergies with the UNESCO 2001 Convention on the Protection of the Underwater Cultural Heritage" with reference to the management problems evidenced by a Reactive Monitoring Mission to the country by the World Heritage Centre and ICOMOS, <https://whc.unesco.org/en/decisions/7586> (accessed 25 April 2020).

18 <https://whc.unesco.org/en/decisions/7044> (accessed 26 April 2020).



Fig. 1. Nautical graffiti of the 17th century Church of St. Spas, in the Ancient City of Nessebar, Bulgaria (photo: Author).

Party to the World Heritage Convention and the 2001 Convention, it decided to request the mission to the advisory bodies of both instruments, being the first of its kind. It would evaluate, for the first time, all the historical and archaeological remains within its integral dimension and cultural landscape, within the framework of two culture conventions.

The mission analysed the urban and port development projects that affected the Ancient city of Nessebar and its buffer zone, and evaluated their impact on its OUV and its conservation. In addition, it carried out an archaeological survey of underwater cultural remains and offered a preliminary analysis of their state of conservation, not only with respect to the provisions of the World Heritage Convention, but also with respect to the applicability of the Rules related to activities aimed at the UCH of the 2001 Convention. Equally, the medieval churches of the city were visited, which contained hundreds of nautical graffiti that tell us even more about the connection of the city with its marine environment and that, like the underwater remains, had not been inventoried nor studied and were in a very poor state of conservation (fig. 1). Bulgarian experts and site managers were also offered a training workshop on the

preparation of Heritage Impact Assessment for World Heritage sites with an important component of managing underwater and coastal cultural heritage (UNESCO and ICOMOS 2017; Rey da Silva 2019).

This joint mission shows us that one of the first steps that can be taken towards not only the greater presence of maritime cultural heritage within the management and sustainable development plans at the local level, but towards the reinforcement of culture in the 2030 Agenda since the international arena is to overcome the limitations imposed by international legal tools and work in complementarity.

If the global objective proposed by the international community is that all cultural conventions acquire universal status, would it not be logical for the international community to move increasingly towards actions that contribute to the fusion, if not legal, yes conceptual and operational, of cultural heritage management? In this sense, the joint action of UNESCO's conventions and programs on culture is more important than the differences in their mechanisms of national application. Their complementarity is in perfect harmony with the development of joint actions and comprehensive heritage approaches.

4.2. Time for a global evaluation

One of the great challenges in understanding the contribution of maritime cultural heritage to sustainable development is the ignorance of the global extent of this cultural resource – as well as the major focus of the international community on just archaeological sites found underwater. The challenge is even greater if we attend not only to the slow increase in the number of ratifications of the 2001 Convention, but also to its unbalanced national implementation.

According to the Internal Evaluation carried out on this normative instrument by the UNESCO Internal Oversight Service in 2019, the majority of States Parties lack the capacities, infrastructures and national mechanisms to successfully implement the Convention. Perhaps many have seen ratification as an end in itself, rather than as the beginning of a process (UNESCO 2019b). Perhaps this has been contributed by the absence of a detailed and evolving long-term strategy of ratification and implementation by the Secretariat – approved by the States Parties –, as well as the continuous lack of specialized human and financial resources, which has led to short term impacts and actions which continuously depend on the ability of the organization to mobilize external resources.

This is also due to the fact that the 2001 Convention, unlike other cultural conventions, does not have a mechanism for the periodic report-

ing and evaluation of the implementation by the States Parties¹⁹. This means that there are no concrete data that allow monitoring the results, identifying problems and assessing measures taken worldwide in relation to the protection of their submerged archaeological sites. Consequently, there are no global studies that, framed within the operational and technical principles of the Convention, design specific strategies to measure the contribution of the protection and management of maritime cultural heritage to sustainable development policies. Although the Convention encourages the transfer of knowledge and experiences²⁰, and the Secretariat makes progress visible through publications, conferences or initiatives such as the Registry of Best Practices concerning the Underwater Cultural Heritage²¹, there is no legal mechanism that makes such information exchange effective or obligatory. It is imperative, in my opinion, that the States Parties to the 2001 Convention become involved in the preparation of a Global Report on its application and impact as we approach 20 years since its adoption. Ideally, this reporting exercise should look into making it a periodical practice.

This Report should not only express the assessment that national authorities make of the implementation of the Convention and the situation in their countries, but should also include reports and studies carried out by UNESCO Accredited NGOs²², as well as the Universities and Research Centres members of the UNESCO UNITWIN Network of Underwater Archaeology²³ and other individual experts. The impacts of the Convention in the spheres of sustainable development – economic, social and environmental – through studies on local, national and international realities will help to outline better strategies for future action in the field of underwater archaeology and in the contribution of maritime cultural heritage to the global debate on oceans and sustainable development.

The acquisition of qualitative and quantitative information is critical to be able to identify gaps and strengths in the application of the Conven-

¹⁹ So far, the States Parties have been delivered, voluntarily and without specific format, voluntary reports to the Secretariat, the specific ones can be consulted on their website: <http://www.unesco.org/new/fr/culture/themes/underwater-cultural-heritage/the-heritage/country-reports/> (accessed 25 April 2020).

²⁰ Article 19 (2) of the 2001 Convention establishes that the States Parties "share information with other States Parties concerning underwater cultural heritage, including discovery of heritage, location of heritage, heritage excavated or recovered contrary to this Convention or otherwise in violation of international law, pertinent scientific methodology and technology, and legal developments relating to such heritage" (UNESCO 2001).

²¹ <http://www.unesco.org/new/en/culture/themes/underwater-cultural-heritage/underwater-cultural-heritage/best-practices-of-underwater-cultural-heritage/> (accessed 25 April 2020).

²² <http://www.unesco.org/new/en/culture/themes/underwater-cultural-heritage/partners/accredited-ngos/> (accessed 25 April 2020).

²³ <http://www.underwaterarchaeology.net/> (accessed 25 April 2020).

tion, as well as to design better implementation strategies. An organization that will prove to be capital in this type of evaluation is ICUCH, having an eminently advisory role in UNESCO and having members in all regions of the world that can account for the reality of their work areas in matters of training, research and management in light of the principles of the Convention and the 2030 Agenda.

5. Society and community-based approaches. The base for merging protection and sustainable development

Material archaeological remains are the basis on which interpretations of the behaviours of human societies in the past are based. These have a strong link with the marine, river or lake environment in which they are found, or in which they were conceived, even if those are very different today. However, maritime archaeological studies have long shown that heritage values, as well as their understanding, go beyond the materiality of the physical remains. The relationship between heritage and local and indigenous communities tells us of influences that define their identities, beliefs, and behaviours in the present. In this way, cultural heritage can be understood in its physical, cultural and immaterial dimensions, showing the elements that define the relationship of many societies with the marine environment.

Cultural heritage is socially valued as it is a symbol of identity in communities and countries. It offers answers to different questions in history, as well as being an important material element that links time and space with present societies, providing memory, resilience and elements of continuity.

With the adoption of the 2001 Convention, maritime archaeology acquires, we could say, international recognition as a discipline and utilises mainstream methodology for investigating underwater archaeological sites. The Rules of its Annex represent the international regulatory framework, heir to the 1996 ICOMOS Sofia Charter on the Protection and Management of the Underwater Cultural Heritage²⁴, for the activity of archaeologists (Maarleveld *et al.* 2013). At the same time, it implies the recognition that the archaeological process has a new component: the society (Nieto 2019). Heritage is the inheritance of current societies which must share its benefits, as well as preserve it for future generations. Thus, the public has the "... right to enjoy the educational and recreational benefits of responsible non-intrusive access to *in situ* under-

²⁴ <https://www.icomos.org/18thapril/underwater-eng.pdf> (accessed 25 April 2020).



Fig. 2. Traditional marine activities and local communities engagement with the marine environment have long balanced the use of the natural resources with their subsistence and well-being, incorporating these practices under their socio-cultural tissue. In Sainte Marie Island (Madagascar) local redistribution network are still carried out by traditional canoe along more isolated communities (photo: Author).

water cultural heritage, and of the value of public education to contribute to awareness, appreciation, and protection of that heritage," declares the preamble to the Convention. Integrating society within the understanding and protection of maritime cultural heritages becomes an essential objective within its management. If heritage is in the public domain, then it becomes imperative that society understands, shares and feels involved in the value, enjoyment and safeguarding of these sites (Cohn 2000).

Traditional maritime cultural heritage management practices have typically excluded people from decision-making processes, led by authorities and experts. Society's access to heritage should not only be passive, visual, and knowledge-receiving but also society must be active in the valuation, interpretation and presentation processes. Likewise, cooperation with the community is essential to better protect archaeological sites. However, local communities are underrepresented in this process in which global society is undergoing a rapid process of change and development.

Maritime cultural heritage can make us understand the way in which local communities elaborate their practices and traditions, forming a landscape vision that helps us become aware of their culture and heritage (fig. 2). These communities are frequently seen under pressure from development plans and management models marked by western precepts, jeopardizing local sustainable practices, their beliefs, as well as the way in which cultural and natural resources are valued. The diversity of global governance is leading to the need for active involvement of local communities and indigenous peoples in global heritage policies (Henderson 2019; Wiktor-Mach 2019).



Fig. 3. Local Community Workshop in Sainte Marie (Madagascar), organized by UNESCO in cooperation with the African Centre for Heritage Activities (ACHA) in 2016 (photo: Author).

In this sense, the recent technical assistance mission of the STAB in Lake Atitlán (Guatemala) – which aimed at dialogue with indigenous communities and national authorities to define common objectives in the management of their underwater Mayan archaeological sites – means greater integration of communities in the scope of UNESCO's technical assistance missions (UNESCO 2019c). A paradigm shift could lead to UCH being better protected and valued by the society, reflected within development policies.

On the other hand, the workshop carried out with local communities on the Island of Sainte Marie (Madagascar) in October 2016, carried out by UNESCO and the African Centre for Heritage Activities (ACHA) as a consequence to the STAB mission to the Island in 2015 which aimed at evaluating the negative impact over its underwater archaeological sites caused by unethical endeavours (UNESCO 2015), shows the tensions between local communities and national authorities over heritage, and the limitations of international assistance responses in this regard. Engaging with different local stakeholders, from local fishermen, local divers or tourist guides, the study showed how, due to the lack of community involvement with heritage from the beginning, the underwater archaeological sites are being valued negatively, being understood as the heritage of “the others” and with an economic value in the market (fig. 3). What's more, the community's maritime cultural heritage, traditions and practices embedded into the landscape for centuries, are being challenged as development plans, and international cooperation actions do not often include their views. The ancestral protection provided to certain places in the sea where people had lost their lives, places where nautical accidents or shipwrecks occurred and where it is prohibited to fish without first proceeding to carry out certain acts in favour of the spirits, is being confronted by the younger

generations as it dragged the attention of foreign western institutions, being treasure hunters or UNESCO (ACHA 2016; Rey da Silva 2016).

Society is the one that defines the uses of its heritage, rebuilding it in each time and space. Today's society adds values or removes them depending on their emotional and cultural involvement with heritage. A society that is excluded from heritage dialogue is a society that will cease to value it, inevitably leading to its disappearance, and uncontrolled exploitation. For this reason, the incorporation of cultural heritage within sustainable development cannot be carried out without the participation of local communities in the design of projects and development policies. Through their cultural heritage, traditions and practices, as well as derived knowledge, can contribute significantly to sustainability.

This "democratization" of heritage goes through a common understanding of the values of maritime archaeological sites, in a constant dialogue between the al stakeholders (i.e. community, experts, competent authorities and political decision-makers). Dialogue that is only just beginning to take place within UNESCO. The insertion of society, no longer as a receiver of knowledge or a visitor to sites, but as a promoter of knowledge, participant of meaning and guardian of preservation is probably the main challenge maritime archaeology is facing in the coming decades.

6. A tool to sustainably managed and protect marine natural and cultural resources: Marine Spatial Planning processes

One of the main tools already at hand to achieve the objectives of SDG 14 and those of the Decade are the development of Marine Spatial Planning processes, in which cultural heritage stands as one more element within the myriad of interests in the development of activities at sea, and should dialogue in equal level of importance as the irreplaceable resource as it is.

The growing number of actors and economic activities such as the extraction of hydrocarbons and aggregates, trawling, farming, land reclamation, increased shipping, energy production, etc. they place greater pressure on the marine environment, threatening both its natural resources and biodiversity and its cultural heritage (Evans *et al.* 2009; Young 2015; Brennan *et al.* 2016; Papageorgiou 2019). These activities need to be regulated through a process of territorial planning, such as Marine Spatial Planning (MSP), which can be defined as "a public process of analysing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic, and social objectives that are usually specified through a political process" (Ehler, Douvere 2009).

MSP is not a process that ends with the realization of a unique model plan, but it is in continuous evolution and is learning and adapting to the situations of each moment. Through this process, an attempt is made to create an effective management system in which, with a participatory, adaptive approach and with short, medium and long-term objectives, all stakeholders related to the marine environment agree on their actions, in a coordinated way with an ecosystem-based approach and not a sectoral one. In this process, the result has to balance ecological, economic, and social objectives – and, we should add, cultural ones – to achieve a sustainable use of the environment, avoiding conflicts both between users and between users and the environment²⁵.

Although most countries already attribute certain areas of their maritime spaces to certain human actions (i.e. transport or extraction of natural resources such as oil or gas, among others), we rarely find coordinated actions among all sectors focused on the ecosystem itself where they are made. Much less do we see that the management of cultural resources is incorporated into these planning processes, beyond mentioning activities related to tourism, with a function mainly aimed at recreation and social benefit. When maritime cultural heritage is taken into account it is often through a series of coordinates on a map, with very broad measures and without a strategical approach that seeks synergies with other activities or designated specific cultural heritage areas (Alvater 2016).

Other International mechanisms require States to integrate cultural and natural heritage into planning processes. This is the case of the UNESCO Convention on the Protection of the World Cultural and Natural Heritage of 1972, or the 2001 Convention, which, although it does not mention planning processes, does require States to use “the best practicable means at its disposal”, which can be the spatial planning processes, “to prevent or mitigate any adverse effects that might arise from activities under its jurisdiction incidentally affecting underwater cultural heritage” (Firth 2013, p. 28).

Likewise, at the regional level, the European Convention on the Protection of Archaeological Heritage (Revised) of 1992 – applied to all those archaeological elements “whether situated in land or under water” –, or the recent European Directive of 14/89 / EU of 2014 on MSPs, create a series of obligations related to the integration of archaeological heritage

²⁵ The 10 steps underlined by IOC to achieve successful MSPs are: (1) Identifying need and establishing authority; (2) Obtaining financial support; (3) Organizing the process through pre-planning; (4) Organizing stakeholder participation; (5) Defining and analyzing existing conditions; (6) Defining and analyzing future conditions; (7) Preparing and approving the spatial management plan; (8) Implementing and enforcing the spatial management plan; (9) Monitoring and evaluating performance; (10) Adapting the marine spatial management process (UNESCO-IOC 2009, p. 18).

within spatial planning processes, ensuring that archaeologists and regional planners take a joint part in development policies²⁶.

Despite this, cultural heritage is largely absent from most MSPs. This is due to the complexity of factors of a natural, economic, social and political nature (Khakzad *et al.* 2015), to a lack of guidelines and research related to the value of maritime cultural heritage, as well as on its contribution to sustainable development. Although the integration of cultural resources within MSPs is necessary, and can benefit from an ecosystem and zone-based approach, the biggest challenge will be how to prioritize the preservation of cultural heritage sites over other economic activities in the planning process (Papageorgiou 2019).

Valuation tools, where the economic value derived from the preservation of maritime cultural heritage is integrated, may help interpreting its cultural significance in broader economic and social contexts. This may translate in a policy change as well as prioritizing heritage preservation over other economic activities (Claesson 2011).

At the IOC Regional Forum on MSPs in the Baltic, organized in Riga, Lithuania, in November 2019²⁷, a specific session on the integration of maritime cultural heritage into MSPs was organized on the initiative of the European Project Baltic-Rim. This pioneering project, which started in 2017, has the main objective of bringing archaeologists closer to spatial planners in the Baltic Sea area so that underwater heritage is integrated into MSPs for greater management and sustainable protection²⁸. In this session it was evident that there is an increasing awareness of the importance of cultural heritage in the design of sustainable management systems for the marine environment. However, the discussions also concluded that underwater archaeology still has many challenges ahead in identifying precise indicators that can quantitatively and qualitatively measure the contribution of its study, preservation and management for sustainable development in its economic, social and environmental spheres.

Identifying those activities incompatible with the preservation of heritage is necessary for the realization of the MSPs, as well as for the design of specific regulations and sanctions (Papageorgiou 2019). The carrying out of national heritage inventories is extremely necessary in order to define the areas to be protected, and to analyse the possible negative impacts of activity and use, and is an essential requirement for the correct application of management instruments such as the 2001 Convention or the ICOMOS Sofia Charter of 1996.

²⁶ <https://www.coe.int/en/web/conventions/full-list/-/conventions/treaty/143> (accessed 25 April 2020).

²⁷ <https://vasab.org/event/3rd-baltic-msp-forum/> (accessed on 25 April 2020).

²⁸ <https://balticrimdataportal.eu/> (accessed 25 April 2020).

7. Final remarks and a call for action

Culture reinforces its role as vector of sustainable development, guaranteeing the effectiveness of actions in other sectors, prioritizing participatory processes and solutions, empowering local communities and respecting cultural diversity (UNESCO 2018). Despite this, cultural heritage is practically absent from the great development strategies of the international community, as was the case of the Millennium Development Goals promoted by the United Nations until 2015, or in the current 2030 Agenda and its SDGs.

Increasing competition for energy resources is driving the expansion of ocean exploration and exploitation, creating unprecedented pressures on the marine environment that irreparably threaten natural and cultural resources. Multipolar globalization, together with a decreasing hegemony of western values, will certainly influence the way in which cultural heritage and sustainable development converge (Wiktor-Mach 2019).

Technology has increased access, unimaginable a few years ago, to practically all parts of the ocean, which has provided archaeology with enormous possibilities for research and data acquisition, at the same time that it has increased the possibility to develop industrial activities throughout the marine environment. Technology must be a tool of archaeology, and yet at present we run the risk that archaeological praxis depends exclusively on it, relegating epistemological research to the background (Nieto 2019, p. 26).

In this supra-international environment, where sustainable development policies mark the political agendas of the international community, archaeology must reaffirm its role as social science while showing its contribution in defining future strategies. Strategies for adaptation to change in which the hybridity of communities makes cultural diversity more latent compared to shared, global heritage. The community of archaeologists and specialists in maritime cultural heritage must engage with marine science to motivate the creation of policies for the sustainable use of the oceans with clear social benefits. The maritime archaeology of tomorrow is a discipline that must combine technology, integration and public interpretation, as well as management of cultural resources. These elements cannot exist in isolation and must be executed in coordination (Cohn 2000).

UNESCO sees it as an essential component that Member States move forward together through the ratification and national implementation of the six culture conventions. The cultural conventions and their guidelines are unique normative bodies that provide States with solid guidelines for the implementation of national policies aimed at improving

the quality of life, managing cultural and natural heritage in a sustainable way, reinforcing social cohesion and creating economic, social and environmental benefits. However, an excessive sectoral approach and compartmentalisation of UNESCO's actions in the field of cultural heritage makes a paradigm shift urgent to more inclusive approaches, in which diverse interests and perspectives converge, to overcome the tension between heritage preservation and its use as a resource among local communities.

In this area, the protection of the maritime cultural heritage on the international agenda for sustainable development has collided with the complexity of demonstrating its specific contribution to it. This is due, on the one hand, to the fact that archaeologists and heritage managers have based their strategies on primarily sectoral approaches, prioritizing as a final result the study and preservation of maritime cultural heritage as an element to understand the past (Khakzad 2015; Henderson 2019; Papageorgiou 2019). A participatory approach together with the development of holistic studies between various disciplines and experts, in which archaeology is fully represented, is not only necessary, but essential if we want the values of the maritime cultural heritage, as well as its archaeological contexts, to survive to the transforming "tsunami" that the "Blue Economy" trends represent. How can archaeologists protect maritime cultural heritage without impeding the development of other activities and uses of the marine environment by society? The response that platforms like ODHN are trying to promote on a global scale goes through dialogue and engagement between archaeologists, marine science, and other actors within the marine industries that connects with policy-making (Evans *et al.* 2009; Trakadas *et al.* 2019). It is inevitable, as we are already seeing, that maritime archaeology on its global scale gets involved in the conflict of governments and industries for the exploitation of the oceans, where underwater resources are often understood as commercial comforts (Flatman 2009).

To conclude, I would like to point out some reflections on the future of maritime archaeology and the sustainable development, hoping that they can lead to strengthen the debate and urge for action:

Definition of Maritime Cultural Heritage. We need to broaden the concept of maritime cultural heritage in the international institutional sphere (in agreements, legal instruments or development agendas) so that it also includes maritime cultural landscape approaches. This will allow identification of the general relationships and associations between historical and archaeological sites, between those sites and the current natural and cultural context, as well as with current realities (Evans *et al.* 2009). This approach must consider the cultural landscape also in terms

of the uses and actions of society, as well as the significance that it is given (Firth 2013). As the 2001 Convention Evaluation pointed out "By presenting UCH as an integral part of the marine environment and highlighting its place in traditional practices of coastal communities, UNESCO can reach many stakeholders beyond the traditional circle of cultural heritage professionals" (UNESCO 2019d, p. 44).

Joint research and communication programs. The presence of maritime archaeologists as well as representatives of international organizations such as UNESCO and the Secretariat of the 2001 Convention, or ICUCH and other stakeholders, must take an active part in international meetings related to the 2030 Agenda. and, more specifically, with those programs dedicated to the oceans such as the UN-Oceans platform or the activities of the Decade. Archaeologists have to work in conjunction with marine science and in cooperation with the industries and economic activities that take place in marine environments.

An inter-sectoral approach within UNESCO must be a reality that results in collaborative programs between culture, education, and science that seek convergent models and synergies to preserve the marine cultural and natural heritage with a holistic vision, and turn them into agents promoting change at the political level.

Heritage and Ocean Literacy. Archaeology, as an eminently social discipline that is, constitutes an essential tool in the development of social education, understanding of our past and our shared heritage, as well as the distinguishing heritage of other societies, promoting a culture of tolerance and dialogue. Cultural heritage, understood as a process in continuous development (Smith 2006; Lowenthal 2015), with a multiplicity of actors and voices, can be a dynamic element of cohesion and understanding if its dissonant elements are also identified. The importance of heritage in the ecosystem of our oceans and in the societies that inhabit it, as well as the processes that compose it and the activities that threaten it, are not always understood by the majority of the population. It is necessary to improve the general public's familiarity with the ocean and its cultural heritage so that its knowledge is a promoter of positive social change.

Evaluating and Monitoring. After almost half a century of debates on international legislation on the protection of underwater cultural heritage, and almost 20 since the adoption of the 2001 Convention, we have no mechanism or study that assesses the impact of all the measures adopted, nor the extent of submerged cultural resources, or the impacts that development can have on them. It is necessary for the States Parties to the 2001 Convention, UNESCO and its related networks and stakeholders to agree to carry out a global evaluation, and to design strategies that are consistent with its results.

Valuation of Maritime Cultural Heritage. The ascription of an economic value not in itself to heritage, but to its significance within a network of interactions in a cultural, economic and political landscape can help it to be understood as a priority ahead of other merely economic activities. Studies aimed at the use of theories of environmental economics should be applied to different cases and archaeological areas with the aim of creating study and evaluation patterns applicable to the case of underwater cultural heritage.

"Heritage" communities and participation. We must continue to strengthen a cultural society at the local and global level. A widest possible alliance between all the actors related directly or indirectly to maritime cultural heritage will allow for a real integration of this dimension within development policies. Likewise, sustainability makes us address the protection of the evident relationship of cultural heritage and the ecosystems where they develop.

Actions aimed at the management and protection of maritime cultural heritage must involve society and communities in the creation of a heritage narrative, as well as in decision-making. This will contribute to the empowerment of the community, the construction of local identity, awareness of the value of heritage and the promotion of social cohesion. Similarly, through inclusive activities, the cultural resource can be energized to direct new economic opportunities, and a catalyst for social cohesion and environmental sustainability, can strengthen public awareness and provide local communities with safeguards of this heritage for the benefit of local sustainable development (Scott-Ireton 2007).

Acknowledgements

I would like to express my gratitude to Professor Xavier Nieto for proposing my name to write this article. I am also extremely grateful to Christopher Underwood, Athena Trakadas, and Jonathan Sharfman for their valuable comments when reviewing this paper. Finally, I would like to extend my gratitude to Alexandra Chavarria for her patience and help in the finalisation and editing of this paper. All mistakes in this article are my own.

References

- ACHA (AFRICAN CENTRE FOR HERITAGE ACTIVITIES) 2016, *Final Report. Maritime and Underwater Cultural Heritage - Ile Sainte Marie*, Madagascar.
- S. ALVATER 2016, *How to Integrate Maritime Cultural Heritage into Maritime Spatial Planning?*, Online: http://www.balticscop.eu/content/uploads/2015/07/W2_4_presentation_3_Susanne_Altvater..pdf
- A. BORJA, F. SANTORO, G. SCOWCROFT, S. FLETCHER, P. STROSSER (eds) 2020, *Connecting People to Their Oceans: Issues and Options for Effective Ocean Literacy*, Lausanne.
- M.L. BRENNAN, D. DAVIS, R.D. BALLARD et al. 2016, *Quantification of bottom trawl fishing damage to ancient shipwreck sites*, "Marine Geology", 371, pp. 82-88.
- S. CLAESSEN 2011, *The value and valuation of maritime cultural heritage*, "International Journal of Cultural Property", 18, pp. 61-80.
- E. CLÉMENT 2006, *The Provisions on Illicit Traffic in the UNESCO Convention 2001*, in L.V. PROTT (ed), *Finishing the Interrupted Voyage. Papers of the UNESCO Asia-Pacific Workshop on the 2001 Convention on the Protection of the Underwater Cultural Heritage*, Leicester, p. 167.
- A.B. COHN 2000, *A perspective on the future of underwater archaeology*, "Historical Archaeology", 34, pp. 18-21.
- C. EHLER, F. DOUVERE 2009, *Marine Spatial Planning. A Step-by-Step Approach toward Ecosystem-based Management*, Paris.
- A.M. EVANS, A. FIRTH, M. STANIFORTH 2009, *Old and new threats to submerged cultural landscapes: Fishing, farming and energy development*, "Conservation and Management of Archaeological Sites", 11, pp. 43-53.
- A. FIRTH 2013, *Marine Spatial Planning and the Historic Environment*. Online: http://www.fjordr.com/uploads/3/0/0/2/3002891/5460mainfinal_report_140213.pdf
- J. FLATMAN 2009, *Conserving marine cultural heritage: Threats, risks and future priorities*, "Conservation and Management of Archaeological Sites", 11, pp. 5-8.
- J. FLATMAN 2012a, *What the walrus and the carpenter did not talk about: Maritime archaeology and the near future of energy*, in ROCKMAN, FLATMAN 2012, pp. 167-192.
- J. FLATMAN 2012b, *Conclusion: The contemporary relevance of archaeology – Archaeology and the real world?*, in ROCKMAN, FLATMAN 2012, pp. 291-303.
- D. FREESTONE, D. LAFFOLEY, F. DOUVERE, T. BADMAN 2016, *World Heritage in the High Seas: An Idea Whose Time Has Come*, Paris.
- J. HAWKES 2001, *The Fourth Pillar of Sustainability. Culture's essential role in public planning*, Victoria.
- J. HENDERSON 2019, *Oceans without history? Marine cultural heritage and the sustainable development agenda*, "Sustainability", 11, 5080 [online].
- S. KHAKZAD 2015, *Integrated Approach in Management od Coastal Cultural Heritage*, Leuven.
- S. KHAKZAD, M. PIETERS, K. VAN BALEN 2015, *Coastal cultural heritage: A resource to be included in integrated coastal zone management*, "Ocean & Coastal Management", 118, pp. 110-128.
- D. LOWENTHAL 2015, *The Past Is a Foreign Country Revisited*, Cambridge.
- T.J. MAARLEVeld, U. GUÉRIN, B. EGGER (eds) 2013, *Manual for Activities Directed at Underwater Cultural Heritage: Guidelines to the Annex of the UNESCO 2001 Convention*, Paris.
- M.R. MANDERS 2012, *In situ preservation*, in *Training Manual for the UNESCO Foundation Course on the Protection and Management of Underwater Cultural Heritage in Asia and the Pacific*, Bangkok.
- M. MARAÑA 2020, *Cultura, desarrollo y sostenibilidad. Bases para la reflexión*, in A. MARTINELL SEMPERE (ed), *Cultura y Desarrollo Sostenible. Aportaciones al debate sobre la Dimensión Cultural de la Agenda 2030*, Madrid, pp 26-35.
- A. MARTINELL SEMPERE 2020, *¿Por qué los Objetivos de Desarrollo Sostenible no incorporan la cultura?*, in A. MARTINELL SEMPERE (ed), *Cultura y Desarrollo Sostenible. Aportaciones al debate sobre la Dimensión Cultural de la Agenda 2030*, Madrid, pp. 8-16.
- F. MAYOR ZARAGOZA 1988, *The World Decade for Cultural Development*, Paris.

- G. MOMBER 2000, *Drowned and deserted: a submerged prehistoric landscape in the Solent, England*, "International Journal of Nautical Archaeology", 29, pp. 86-99.
- X. NIETO 2019, *La evolución conceptual de la arqueología subacuática*, "Pyrenae", 50, pp. 7-29.
- M. PAPAGEORGIOU 2018, *Underwater cultural heritage facing maritime spatial planning: Legislative and technical issues*, "Ocean & Coastal Management", 165, pp. 195-202.
- M. PAPAGEORGIOU 2019, *Stakes and challenges for underwater cultural heritage in the era of Blue Growth and the role of spatial planning: implications and prospects in Greece*, "Heritage", 2, pp. 1060-1069.
- A. REY DA SILVA 2016, *Report on the UNESCO Community-based Workshop on Underwater Cultural Heritage in Sainte Marie Island, Madagascar (10-16 October 2016)*, París.
- A. REY DA SILVA 2019, *Bulgaria sets a precedent for joint Conventions actions*, "World Heritage", 90, pp. 70-71.
- A. REY DA SILVA in press, *Standardizing capacity-development in underwater archaeology: A Strategy for the Central Asian and Caspian Sea Region*, in C.J. UNDERWOOD (ed), *Heritage at Risk*.
- M. ROCKMAN 2012, *The necessary roles of archaeology in climate change mitigation and adaptation*, in ROCKMAN, FLATMAN 2012, pp. 193-215.
- M. ROCKMAN, J. FLATMAN (eds) 2012, *Archaeology in Society. Its Relevance in the Modern World*, New York.
- D.A. SCOTT-IRETON 2007, *The value of public education and interpretation in submerged cultural resource management*, in *Out of the Blue: Public Interpretation of Maritime Cultural Resources*, New York, pp. 19-32.
- L. SMITH 2006, *Uses of Heritage*, London-New York.
- A. TRAKADAS, A. FIRTH, D. GREGORY et al. 2019, *The Ocean Decade Heritage Network: Integrating cultural heritage within the UN decade of ocean science 2021-2030*, "Journal of Maritime Archaeology", 14, pp. 153-165.
- UN 2019, *Culture et développement durable. Rapport de l'Organisation des Nations Unies pour l'éducation, la science et la culture*, Paris.
- UNESCO 2001, *The Convention on the Protection of the Underwater Cultural Heritage*, Paris.
- UNESCO 2015, *Report and Evaluation, Mission of the Scientific and Technical Advisory Body to Madagascar*, Paris.
- UNESCO 2016, *La UNESCO, la Cultura, y su Contribución al Desarrollo Sostenible*, "Cultura y Desarrollo", 14, pp. 4-29.
- UNESCO 2018, *La Culture pour le programme 2030*, Paris.
- UNESCO 2019a, *Résolutions. Septième session. Conférence des États parties. Convention sur la Protection du patrimoine culturel subaquatique*, Paris.
- UNESCO 2019b, *Evaluation of UNESCO's standard-setting work of the Culture Sector - Part VI - 2001 Convention on the Protection of the Underwater Cultural Heritage*, Paris.
- UNESCO 2019c, *Report and Evaluation. Mission of the Scientific and Technical Advisory Body to Guatemala*, Paris.
- UNESCO, ICOMOS 2017, *World Heritage Property of the Ancient City of Nessebar, Bulgaria. Advisory Mission Report. 26 November-3 December 2017*, Paris.
- C. WESTERDAHL 2011, *Conclusion: The maritime cultural landscape revisited*, in B. FORD (ed), *The Archaeology of Maritime Landscapes*, New York, pp. 331-344.
- C. WESTERDAHL 2013, *The Maritime Cultural Landscape*, in A. CATSAMBIS, B. FORD, D.L. HAMILTON (eds), *The Oxford Handbook of Maritime Archaeology*, Oxford, pp. 735-762.
- D. WIKTOR-MACH 2019, *Cultural heritage and development: UNESCO's new paradigm in a changing geopolitical context*, "Third World Quarterly", 40, pp. 1593-1612.
- J. WRIGHT 2016, *Maritime archaeology and climate change: An invitation*, "Journal of Maritime Archaeology", 11, pp. 255-270.
- M. YOUNG 2015, *Building the blue economy: The role of marine spatial planning in facilitating offshore renewable energy development*, "International Journal of Marine and Coastal Law", 30, pp. 148-173.