

Sustainable governance of marine and coastal heritage

METHODS, TOOLS, AND APPROACHES



Edited by Jasper O. Kenter and Simone Martino





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Figure 1: Titanic mural, Belfast.

Front cover: men working in salt pans, Portugal.

Back cover: traditional fishing boats, Malta.

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Figure 2: Fishing boat, Denmark.

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Chapter 1: Introduction

Jasper O. Kenter, Simone Martino, Alyne E. Delaney and Elaine Azzopardi

Cultural heritage enriches our lives, shaping the ways we live and work and the places where we live, and contributing to our identities. It is a shared source of inspiration and prosperity, as well as providing social cohesion to our communities. Rooted in specific landscapes and seascapes, tangible and intangible heritage such as historic buildings, stories, traditions, language, and cultural practices connect people to each other. We inherit our heritage from the past, and it is our legacy to the future. Thus, the ways by which we understand, conserve and use our heritage matter greatly for our quality of life.

The cultural heritage of the sea is unique. Marine or maritime and coastal heritage (from here on marine heritage for brevity) is not just about the heritage of individual communities and cultures, because seafarers have traditionally connected localities, regions and countries. The heritage of coastal communities is diverse, yet also shares many practices and identities.

Coastal communities also experience many shared risks to their heritage. These include technical risks associated with heritage objects themselves; environmental risks, such as climate change and degradation of fish stocks; social and economic risks such as depopulation of rural areas with loss of knowledge and heritage, development pressures in intensely used coastal areas, and risks of overexploitation of heritage sites.

Marine heritage is typically closely associated with natural land- and seascapes, and biodiversity. Yet, for a large part, the management of natural and cultural heritage are managed in separate policy silos. New integrated approaches such as marine spatial planning and ecosystem and landscape

approaches provide new opportunities for better integration. However, this requires a common understanding of concepts, methods and tools to facilitate effective collaboration in research, policy and practice.

This handbook was developed by PERICLES, a European research project (Box 1). It is conceived as an accessible reference resource for policy makers and practitioners in the cultural and natural heritage sectors. It includes a range of focused chapters covering broad approaches to management and diverse methods and tools for understanding, valuing and managing cultural heritage, with an emphasis on the social and governance aspects of heritage.

Increasingly, research and practice envisage heritage not as static, but as a dynamic, changing phenomenon. This dynamism opens us up to more bottom-up approaches to heritage management, accepting that it is not just a technical, expert-based affair. How heritage is governed, including how it is interpreted and framed, and which (and whose) heritage is prioritised, present important questions for social debate.

To address this, PERICLES has worked with cultural heritage through three main lenses:

1) space, place, and identity; 2) risk, resilience and adaptation; and 3) deliberative and participatory governance. Attention to each of these themes is needed to make coherent decisions of how we can connect heritage and sustainable and inclusive governance. As such, approaches, methods and tools are needed that can address these themes in an integrated way, and this handbook seeks to provide an illustrative overview.

Throughout this handbook, we emphasise the importance of building shared values for heritage management through inclusive and empowered stakeholder and citizen participation to better understand different perceptions of heritage, how it is important to people, where and how it may be at risk and how this may impact society (thus moving away from purely technical views of risk), and how heritage should be managed. The emphasis on inclusion and participation supports the implementation of important policy frameworks for heritage, such as the Faro Convention on the Value of Cultural Heritage for Society (2005) and EU Council guidance (2014/C 463/01) on participatory governance of cultural heritage, which recognise the importance of multiple values in relation to heritage, the relationships between heritage and democracy, and the importance of shared valorisation.

Figure 3: Castle Stalker, Argyll, Scotland.





Figure 4: Fish salting craft industry in Kavala, Greece, 1950s. This activity was the domain of women workers. The work was seasonal, hard and underpaid but provided women with some income and a degree of independence.

tangible and intangible heritage through multimedia. Examples of implementation are given across diverse countries and resource requirements outlined to help in considering methods and tools, whether for bottom-up use by community groups or more top-down implementation to support assessments for specific policy or management considerations. Some of the tools also have relevance to businesses, illustrating where cultural heritage provides new opportunities, such as to demonstrate economic values of local heritage in supply chains. While the focus of this handbook and the examples given is on marine heritage, the methods and tools illustrated are often also relevant to terrestrial policy contexts for cultural and natural heritage governance, such as rural land use and urban planning, strategic environmental assessment and regional development.

The handbook is designed as a helpful tool for policy makers, practitioners and community heritage groups in identifying key challenges that cannot be solved through decisions imposed by the centralised level of management, but rather require consensus building through stakeholder engagement and participation, ideally at the levels where decisions impact communities. As such, the first part of the handbook introduces a series of approaches, such as a participatory approach to risk management, to facilitate the implementation of concrete actions,

including with consideration of a gender perspective.

The second part of the handbook outlines and exemplifies diverse methods and tools, including ethnography, participatory and deliberative methods, spatial tools, economic valuation, zoo-archeological and genetic tools, and digitisation. The handbook consistently illustrates involvement of communities through collaborative methodologies, such as using digital citizen science mapping tools to share knowledge and stories about

Box 1: Pericles

PERICLES (*PrEseRving and sustainably governing Cultural heritage and Landscapes in European coastal and maritime regionS*) is an EU Horizon 2020 project designed to support sustainable governance of cultural heritage in European coastal and maritime regions through the development of a broad-scope, theoretically grounded, multi-actor participatory framework. To achieve this, PERICLES formed a strong and diverse interdisciplinary consortium of research

institutions, universities, regional government and heritage partners bringing together practitioners and researchers from over 15 different disciplines. Building on three conceptual pillars: 1) Space, Place, and Identity; 2) Resilience and Adaptation and 3) Deliberative and Participatory Governance, PERICLES developed demonstrator projects in case regions across Denmark, Estonia, Greece, Ireland, France, Malta, the Netherlands, Portugal and Scotland to investigate diverse

aspects of maritime and coastal cultural heritage, its interactions with diverse sectors such as tourism, energy, fisheries, aquaculture, and diverse social, economic and environmental risks, from climate change and decline of fish stocks to overdevelopment. The diverse methodologies and tools applied, from film to ethnography to digital participation and policy analysis, are reflected in this handbook, with many chapters referencing the work done across demonstrators and case regions.

Chapter 2: Setting the scene – challenges and concepts for sustainable, integrated heritage governance

Alyne E. Delaney, Simone Martino, Jasper O. Kenter, Elaine Azzopardi

This chapter presents some key concepts to help support sustainable heritage governance and management. There are increasing efforts being made to overcome the separate silos of cultural and natural heritage towards integrated management across sectors. This includes sectors across a diversity of urban, peri-urban and rural contexts, from fisheries to tourism to naval defence.

Different policy venues, such as integrated coastal zone management, marine spatial planning and regional development provide diverse opportunities. Within policy contexts, challenges are also opportunities for community and stakeholder participation, which raises important questions on how to bridge multiple forms of knowledge and potentially conflicting values and interests. Here, key concepts include the notions of communities of practice and communities of meaning. One key application for participatory governance approaches is in addressing risks for developing resilience. There are, however, diverse ways to understand these diverse concepts; we introduce our understanding below.

The challenge of integrated participatory governance

A central challenge faced by heritage management is the impossibility of guaranteeing protection and valorisation for heritage that is neither legislatively protected nor integrated into

different policies and sectors. This is particularly true in coastal zones where the complexities of natural and human dynamics require a coordinated approach among policy makers, stakeholders and citizens to tackle different problems simultaneously (Guilan and Weiwei, 2021; Albotoush and Tan Shau-Hwai, 2019). An attempt to integrate cultural heritage management in other policies has been supported by Integrated Coastal Zone Management (ICZM). First attempts of ICZM in Europe date back to the end of the 1990s. However, despite over two decades of experience, recent studies have shown that the elements of integration proposed by the EU ICZM strategy, such as adaptive management and involving concerned stakeholders, have yet to be fully implemented in coastal management (Domínguez-Tejo et al., 2016). A number of cases of integration of cultural heritage into coastal management has been documented (e.g. Khakzad et al., 2015; Callegari and Vallega, 2002; Vallega, 2003; Callegari, 2003). However, the overall picture is one of ecological, socio-economic and cultural components remaining

in separate silos, preventing cultural heritage from being considered as an element of sustainable development.

In some of these cases, those involved in the decision-making of cultural heritage related both horizontally and vertically with those engaged in other aspects of the coastal system to encourage social awareness of the need to conserve coastal heritage. Public and private landowners, the scientific community, media and civic groups worked together to implement a monitoring plan to prevent and mitigate adverse anthropogenic impacts (Vallega, 2003). Coordination in such ways, implementing mechanisms that facilitate exchange of information between institutions, is promoted by the Council of Europe through the Technical Co-operation and Consultancy Programme (Council of Europe, 2018).

Countries such as Portugal, The Netherlands and Malta have promoted land use zoning schemes for the protection of cultural heritage, while Estonia is developing a transboundary ICZM plan with Finland, mapping heritage

rich villages and landscapes to promote the development of a recreational economy. These examples suggest that the inclusion of cultural heritage in ICZM is more easily achieved by planning. The compulsory requirement of the EU Directive 2014/89/EU on Marine Spatial Planning (MSP) has accelerated the inclusivity of cultural policies and actors' engagement within marine (and in some cases) coastal plans, filling the gap left by ICZM that rarely has acknowledged heritage issues to any significant extent. Both the EU ICZM policy and the MSP Directive (2014/89/EU) support the dissolution of policy and sectoral divisions between land-sea uses. However, while ICZM configures itself as a process for coordinating policies and sectors, MSP aims to regulate the spatial

and temporal aspects of marine activities. MSP, thus, can provide an important vector for consideration of marine heritage in policy. This can be achieved through using the Directive's role in developing marine plans as a crosscutting approach to heritage management by integrating social, ecological and physical dimension into planning (Tengberg et al., 2012; Khakzad et al., 2015).

The challenge of integrating multiple values

When decisions are made about heritage governance, implicitly or explicitly these will include a valuing of heritage, either versus other forms of heritage or, in integrated governance versus other things of importance.

Whereas valuing can be informal, valuation is a formal process of assessing the importance of something for the purpose of informing decisions (Kenter et al., 2015). Values include *transcendental values*: broad life goals and principles that transcend specific contexts, such as wealth, tradition, health or protection of the environment. They also include *contextual values*: opinions on the importance of worth of something in a specific context, such as the historic significance of a particular monument. Finally, values can refer to *value indicators*, such as monetary value, or a ranking. Chapter 6 provides further detail on the different ways heritage values can be understood.

Figure 5: Seaweed harvesting in Brittany.



Box 2: Citizen science

Sarah Knight

Citizen science entails the involvement of both scientist and non-scientist individuals in scientific inquiry. Citizen science approaches have many potential benefits, including crowdsourcing information and cost-effectively collecting large volumes of data and filling data-gaps, education and raising awareness, and the active involvement of citizen stakeholders in the production and analysis of research and decision-making. Citizen science can extend beyond data collection alone, it is a participatory method that is underpinned by co-creation, co-production, and co-delivery approaches. For example, citizen science can lead to the development of theories, practices, and tools that can build capacity locally and globally.

There is growing recognition of the meaningful contribution of citizen science data to the policy-making process. Evidence-based policy as a priority can be supported through citizen science efforts, capitalising on improved technologies and volunteer efforts. Citizen science also offers the possibility for interaction with policy, for example, by providing opportunities to develop and assess policy (European

Commission 2013). Citizen science approaches can address the recognition of inadequate stakeholder engagement in European maritime policymaking by enabling stakeholders as active participants in the activity, thereby increasing satisfaction and buy-in. The importance of including 'stakeholder' or 'traditional' knowledge and values in maritime policy has been recognised by the European Marine Board (Garcia-Soto et al. 2017), as a means of improving decision-making, enhancing trust, policy reputation and compliance. By providing opportunities for local communities to participate in initiatives that will influence the decision-making process, policy making becomes democratised, and outcomes are more likely to be successful and sustainable.

Citizen science projects in coastal areas have involved monitoring invasive species, mapping heritage at risk of erosion (www.scharp.co.uk), inventorying coastal species (www.capturingourcoast.co.uk), and capturing people's values and preferences in marine spatial planning within the PERICLES project. These approaches have been important for policy delivery; for example in 2011, the value in the UK of volunteer monitoring of the environment was valued at around £50 million (Defra 2011). Integrating citizen science into policymaking requires robust methodology, strong quality assurance, and institutional buy-in, but the benefits are potentially significant.

Further reading

- Skarlatidou, A., & Haklay, M. 2021. *Geographic Citizen Science Design: No one left behind*, London: UCL Press. <https://doi.org/10.14324/111.9781787356122>
- Garcia-Soto, C., Van der Meeren, G. I., Busch, J. A., ... Zielinky, O. 2017. *Advancing Citizen Science for Coastal and Ocean Research*. French, V., Kellett, P., Delany, J., McDonough, N. [Eds], Position Paper 23 of the European Marine Board, Ostend, Belgium. <https://www.marineboard.eu/publication/advancing-citizen-science-coastal-and-ocean-research>

Valuations can be qualitative, such as in landscape character assessment, quantitative but non-monetary, such as in multi-criteria analyses, or monetary (see Chapter 11), such as regional Gross Value Added. The Faro Convention emphasises the

importance of recognising multiple values, including the ways cultural heritage is important to society, and its intrinsic value.

Recently there has been increasing emphasis on developing processes for

identifying shared values to support policy and management of landscapes and ecosystems, and much of this is relevant to heritage management more broadly. Importantly, research has demonstrated that shared values formed through social processes

are different from aggregated individual values (UK NEA, 2014). This means that bringing groups and communities together to form shared social values around management challenges often leads to different outcomes than desk-based approaches to assess social value, including through economic valuation, and these participatory processes can be perceived as more legitimate, reducing the risk of social backlashes to policy. However, processes for finding shared values need to be inclusive and representative, and power dynamics need to be actively managed through professional process design and facilitation (Kenter, 2016a). Chapters 6 to 10 discuss diverse processes for inclusive participation in more detail.

Communities of meaning and participation

Resilient solutions to coastal management strongly relate to the development of a sense of space, place, and identity (SPI) as it can support the development of strong social ties. PERICLES has pointed out the multiplicity of ideas in PSI. To briefly differentiate between them, we can say that space is mainly paired with time to indicate distance/proximity, while sense of place contributes to derive a sense of identity by association with a particular location or region, or recognize their dependence on a place in the fulfilment of goals or needs. Thus, sense of place, connects emotional, behavioural, and cognitive aspects of the relationship between people and the places where they live, work, recreate, or visit (Jorgensen and Stedman, 2006).

These elements are key to how people and communities see, understand and connect around and with heritage, contributing to a *community of meaning*, a

diversity of stakeholders who share a concern regarding the development of sustainable practices of cultural heritage (Ounanian et al. 2021). In the process of giving meaning to cultural heritage, the community of meaning (re)defines space and place that enlighten the discussion on management of cultural heritage and enable a closer examination of inclusion and exclusion in connection to cultural heritage, its designation, and the importance of context in transformative processes (Brennan, 2018).

Communities of meaning feed into *communities of participation*, the (possible) involvement of actors in the conceptualization of cultural heritage and through processes of inclusion and exclusion. This involvement of actors can range from indirect participation to forms of active and direct participation or deliberation. The latter leads to more reflected, shared and meaningful choices in defining and designating cultural heritage (Darbas, 2008) through the creation of public spaces where diverse forms of knowledge and values can be expressed. To realize effective inclusion, representativeness of different actors, and legitimate power-sensitive deliberations to manage cultural heritage practices, diverse approaches can be applied, such as citizen science (Box 2); co-creation and social learning (e.g. Blackstock et al., 2011; Bonacini, 2018); deliberative monetary valuation (e.g. Kenter, 2016b); Visual Problem Appraisal (Box 3); arts collaborations (e.g. Brennan, 2018); involvement of youth as holders of future heritage (e.g. Vanclay et al., 2004; Dollani, Lerario, and Maiellaro, 2016); and use of IT-based tools (e.g. Paskaleva-Shapira et al., 2008; Bonacini 2018). A range of methods and tools will be explored in Chapters 8-10.

Risk

Threats to cultural heritage can result in irreversible damage, often with broader economic, political, cultural and social effects (World Bank, 2017). These threats can be categorized under environmental and human-made risks. Environmental risk is seen, for example, through climate change that causes several threats to coastal cultural heritage in the context of sea warming, more frequent storm damage, rise in sea level, invasive species and altered currents. Typical human-made risks include coastal urbanization, development pressures from port expansion and the growth of tourism that can exacerbate the threats imposed by natural risk factors, reduce resilience to natural coastal changes and increase vulnerability to multiple pressures. Globally, increased coastal development, for instance, such as proposed port infrastructure or housing schemes, has required a higher level of flood protection, further exacerbating threats to heritage (Klein, 2002).

Coastal development uses cultural heritage to attract investments, jobs and income, but also brings pressures to remote areas with weak infrastructure and often sensitive natural environments. Spatial concentration of (over) development changes the fundamental character of heritage, altering its sense of authenticity and place distinctiveness, encouraging the reinvention of culture in a homogenised way for mass tourist consumption – so-called *McDonaldisation* of heritage (Howard and Pinder, 2003). These authors suggest that the cause of this homogenisation is partly a too narrow definition of heritage, in which nature, landscape, tangible heritage and artefacts are separated out for easy narration and untimely consumption by a less critical

public. A holistic approach based on the consideration of the whole environment as an interplay of nature, landscape, artefacts, activities, sites and people is advocated to increase resilience of both tangible and intangible heritage and reduce their vulnerability to other threats (Unesco et al., 2010; Hall et al., 2016).

Resilience

Resilience is generally understood as a key concept in managing risks. It is often conceived of as the ability to withstand and recover from shocks. However, more recent approaches to resilience propose strategies that go beyond this traditional view, and conceive of resilience as a dynamic capacity to adapt while remaining within critical thresholds, and responding to stresses by evolving new pathways (Folke et al., 2010). This is also known as *transformative resilience*, a deliberate and participative effort to steer systems towards new formations (Holtorf, 2018), in contrast to traditional *survival resilience*.

Due to its strong link to conservation and preservation, cultural heritage management is more closely aligned to survival forms of resilience, framed as the capacity of cultural heritage to survive external shocks and to be transmitted unadulterated to subsequent generations. Conversely, under a transformative approach, coastal heritage has been recast as a practice of redefining the coastline through the adaptive approaches of coastal realignment to adapt to climate change and enhance landscape values (the Dutch ways of managing cultural wet landscapes may have provided more biodiversity and ecosystem services than purely natural landscapes; Drenthen

Box 3: Visual problem appraisal to support integrated management

Pauline Tuyll van Serooskerken and Loes Witteveen

Visual Problem Appraisal (VPA) is a film-based learning strategy with ethnographic, deliberative and artistic aspects, which aims to enhance the analysis of complex issues and to facilitate policy design and interventions. VPA creates a space for social dialogue that enhances the inclusion of underrepresented stakeholders and increases the quality of problem analysis and policy design (Witteveen et al., 2009). A VPA consists of a series of filmed stakeholder portraits, accompanying documentaries and graphic materials. The documentaries sketch a specific place and context, and the stakeholders narrate about different aspects of the governance problem at hand, which often are 'wicked' problems that are difficult

to solve, due to incomplete information, uncertainty, high stakes and different values.

Through including diverse local inhabitants, VPA seeks a better understanding and more holistic view. Emphasis is on listening, reflecting, and deliberating instead of sending information, expressing single issue stakes and steering towards consensus. In doing so, it acknowledges and reflects complexity and diversity of knowledge and values. As such, VPA on marine heritage can connect to contemporary discussions about, for example, re-defining contested histories and decolonizing.

VPA is discussed in more detail in Box 6.

2009). Similarly, traditional but near extinct Scottish and Irish practices of seaweed harvesting are becoming rediscovered for diverse purposes from skincare products to biofuels, helping provide a counterweight to the social and economic fragility associated with rural coastal depopulation. Transformative approaches can only be effective where legitimacy amongst multiple social groups is built under effective forms of *participatory and deliberative governance* where power

structures that reinforce the status quo can be challenged. This may enhance the resilience of particular areas and allow heritage to adapt and contribute to the development of new social perspectives (Turner, 2016). Building on our discussion above, participatory methodologies such as Citizen Science (Box 2) and deliberative tools such as Visual Problem Appraisal (Box 3) that can gather diverse knowledges and perspectives support such transformative heritage approaches.

Chapter 3: The compass framework

Alyne Elizabeth Delaney

COMPASS is our term for what is envisioned as a diagnostic tool that heritage agencies, practitioners, researchers, and policy makers can use for preserving and utilizing cultural heritage. It was developed by the PERICLES project and consequently applied to its demonstrator projects.

The idea for COMPASS came about from reflecting upon the risks to coastal and marine cultural heritage. Coastal and marine cultural heritage (referred to from here on as marine heritage for brevity) is broad and encompasses both tangible and intangible aspects. Due to the nature of coasts and oceans, continuously in motion and impacted by natural movement, as well as its intangible nature, marine heritage is perpetually at risk. As these risks are likely to intensify in the future with anthropogenic climate change, there is an urgent need to build marine heritage

resilience. To do so, it was decided a reconceptualization of cultural heritage needed to take place. The marine heritage risk management paradigm used currently often narrowly focuses on the present and preservation, without considering debates about the contested nature of resilience, what resilience means, and how it may be achieved. Heritage is also not separated from cultural, societal, and political realities. COMPASS was thus developed to promote a broader and more dynamic framing of heritage management, shifting away from strict preservationist approaches and incorporating the complexity

of socio-political processes that steer heritage resilience.

The elusive nature and potential of marine heritage means it is often undervalued or misrepresented in coastal policies and practices. Coastal tourism policies can unconsciously bolster the reinvention of culture for mass tourist consumption, reducing local expressions of identity and authentic cultural narratives (Howard and Pinder 2003). Other marine heritage risks can be cumulative. For example, environmental and climate-driven risks, including sea-level rise, can result in the migration of coastal peoples away from

coasts, increasing the risk of local cultural heritage loss (Maldonado et al. 2013). The loss of such cultural heritage has wider cultural, economic, political, and social ramifications (World Bank 2017).

The increasing impact of climate change, which magnifies many threats to marine heritage means that coastal governments and heritage agencies are beginning to seek ways to strengthen the resilience of their coastal heritage (Dawson et al. 2020). Key for the resilience of marine heritage is reconceptualizing heritage management by rethinking the temporality of cultural heritage. Cultural heritage exists in four socio-temporal manifestations:

- *Extant cultural heritage* is the heritage we see and experience today.
- *Lost cultural heritage* is heritage which is lost, such as when the last speaker of a language dies.
- *Dormant cultural heritage* includes cultural heritage that is inactively could be preserved but inaccessible to the public; known about but not used. Consequently, it can be reactivated.

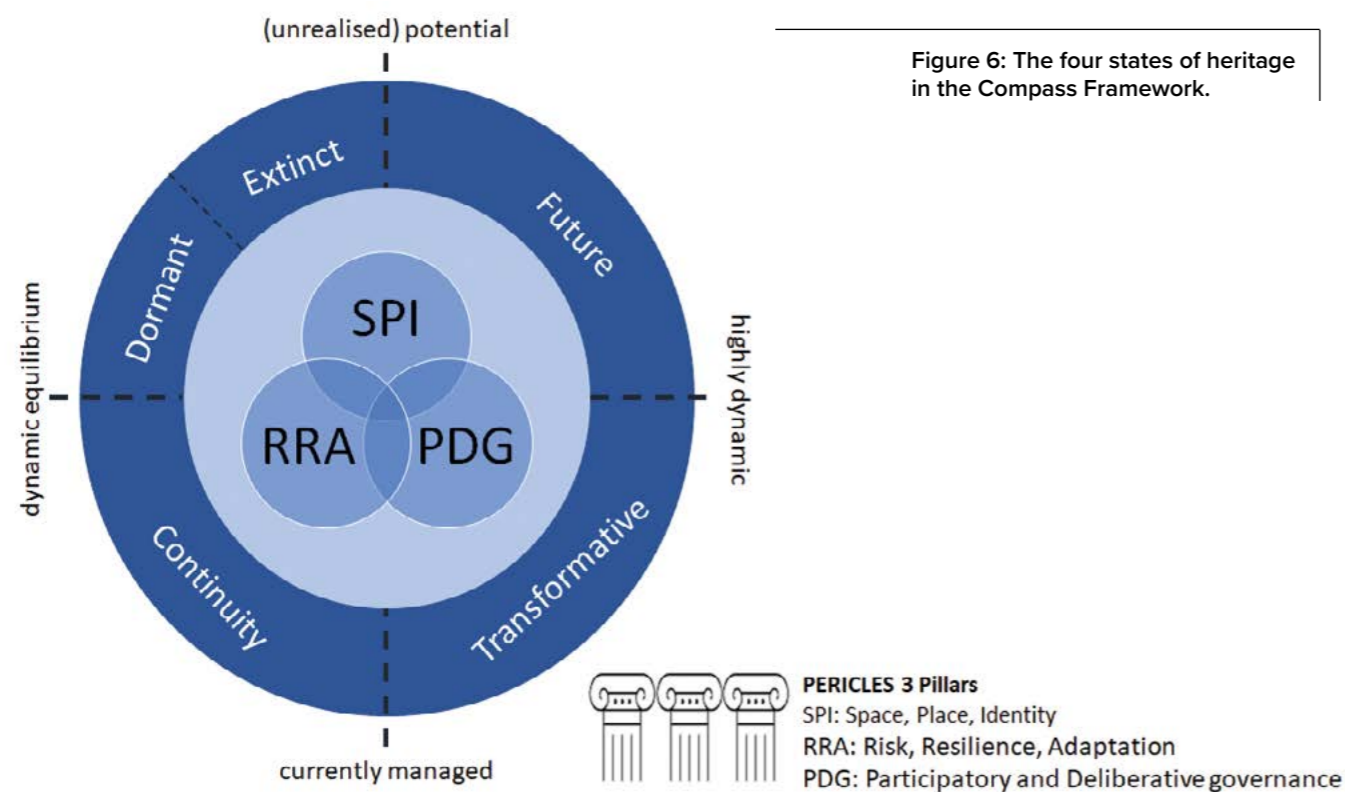
- *Potential cultural heritage* encompasses both the transformation of recognised heritage into something new, and the development of new heritage from things and practices that are not currently considered heritage.

Given the temporal nature of marine heritage, and to get away from the “presentness” trap – whereby heritage is thought of in its present state – steering processes should be considered in cultural heritage management. These processes include continuity, discontinuity, and transformative.

- *Continuity steering processes* are those strongly aligned to the preservation paradigm and seek to steer marine heritage so that the status quo is continuously replicated. When under threat from risk, this is often the default response.
- *Discontinuity steering processes* focus on conditioning marine heritage such that it becomes lost or dormant and focuses attention on how we make decisions about what should be lost and how. “Managed ruination”

- (Howard and Pinder, 2003) is an example with tangible cultural heritage.
- *Transformative steering approaches* view cultural heritage as being sustainable only to the extent that it can adapt to stresses and continues to develop rather than remain static (Holtorf 2018).

With this inclusion of temporality into cultural heritage, our reconceptualization of heritage management is a first step in countering the “presentness” trap in marine heritage management. It provides a useful analytical framing through which to understand processes beyond the “preserved/not preserved dichotomy” and raises questions about the contested nature of marine heritage, ethical questions around loss and transformation and the democratisation of cultural heritage management. By reframing these mechanisms as being temporal processes we can develop a better understanding of what heritages are being made resilient, how cultural heritage is being erased – whether deliberate or not, what cultural heritage might be useful in the future in a different form, and how this could be best realised.



Further reading

- Delaney, A.E., Toonen, H., Kenter, J.O., Saimre, T., Azzopardi, E., Flannery, W. 2019. The PERICLES Three Pillars and Compass Frameworks: Synthesis Report to the European Commission (PERICLES D2.4). https://www.pericles-heritage.eu/wp-content/uploads/2021/08/PERICLES_D2.4_v1.0.pdf

Chapter 4: The landscape approach

Elaine Azzopardi

A Landscape Approach can be broadly defined as “a framework to integrate policy and practice for multiple land uses, within a given area, to ensure equitable and sustainable use of land while strengthening measures to mitigate and adapt to climate change” (Reed et al., 2015, p.1). The approach developed from the fields of conservation and landscape ecology to move away from siloed approaches to conservation issues, include social, economic and cultural concerns, and recognise that local community and stakeholder engagement is essential to a successful process. There are two main Landscape Approaches to heritage: i) the *Protected Landscape Approach*; and ii) the *Cultural Landscape Approach*.

The Protected Landscape Approach as defined by the International Union for Conservation of Nature (IUCN) is an iteration and implementation of a Landscape Approach that specifically includes cultural heritage protection as well as biodiversity and sustainable resource use (Brown et al., 2005). It is not intended to replace systems that designate protected areas but rather to complement this process. For example, it links to designations such as the IUCN Category V Protected Area which explicitly recognises human influence in producing a distinct landscape, and UNESCO’s World Heritage Cultural Landscapes (Brown et al., 2005).

The Cultural Landscape Approach described by Walter and Hamilton (2014) is a Landscape Approach based on “the construction of a conceptual model of environment that reflects the indigenous perceptions of landscape” (Walter and Hamilton, 2014, p.1). The cultural landscape framework is a co-produced one, developed following consultation with local communities during which they found that the conservation of cultural heritage was of greatest interest, as opposed to the focus on biodiversity of most conservation organisations (Walter and Hamilton, 2014).

The methodologies used in this approach are from archaeology and historical anthropology (Walter and Hamilton, 2014) and a tool within this framework is the *Cultural Heritage Module*. This tool essentially consists of a series of workshops where local stakeholders are taught basic recording and management skills to allow communities to develop their own management systems. This is then linked to participatory mapping of landscape features that provide cultural services and stakeholders design management programmes for important sites.

A Cultural Landscape Approach is also taken by Blue et al. (2014) in the Maritime Footprints project which combines archaeological and ethnographic methods (e.g. surveys, interviews and an overview of recent maritime traditions) to explore the changing maritime cultural landscape in Masirah, Oman. In this project, focus was on documenting local maritime traditions before they disappear rather than looking at resilience or means of preserving this heritage.

Landscape Approaches are process rather than project oriented and do not have a fixed end point but rather develop in real time. Constant monitoring and adapting of the approach is

essential, as is quality engagement of local stakeholders (Sayer et al., 2013). The following ten principles have been identified as underpinning Landscape Approaches (Sayer et al., 2013):

1. Continual learning and adaptive management
2. Common concern entry point
3. Multiple scales
4. Multifunctionality
5. Multiple stakeholders
6. Negotiated and transparent change logic
7. Clarification of rights and responsibilities
8. Participatory and user-friendly monitoring
9. Resilience
10. Strengthened stakeholder capacity



Figure 7: Iron age house, Isle of Lewis, Scotland.

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Chapter 5: The ecosystem approach

Simone Martino and Jasper Kenter

The Ecosystem Approach (EA) is a strategy for the integrated management of land, water and living resources that promotes conservation and equitable use of these resources. It was developed in the context of natural resource management, but over time there has been increasing emphasis on inclusion of cultural heritage. The EA has also informed ICZM and MSP, relevant for the management of marine heritage. The EA is increasingly embedded in intergovernmental, EU, national and regional territorial strategies for the management of diverse resources, holding a central position within marine governance in Europe.



Figure 8: Oyster Park, Locmariaquer (Gulf of Morbihan, Brittany).

The EA was coined by the Convention on Biological Diversity. It is implemented through 12 principles (CBD, 2004) stressing the connection between ecosystems and society. It reflects two key aspects of sustainability: 1. the sustainability of ecosystem functioning and use; 2. the equity by which nature's contributions to people are distributed, within

and between generations. Cultural heritage is mostly considered in two ways, as a benefit of ecosystems, or 'cultural ecosystem service' (e.g. the identities provided by natural landscapes or species), and as associated with the practices where people interact with ecosystems and which positively or negatively influence their conservation and sustainable use.

Key principles relevant to a heritage lens are that management of ecosystems is considered a matter of social choice at the most decentralised level appropriate, and informed by a plurality of knowledge, including scientific, local and indigenous knowledge. As such, traditional knowledge and

practices can play an important role in implementing the approach, as well as determining what outcomes are sought. Cultural heritage is thus considered in two ways, as a benefit of ecosystems, or 'cultural ecosystem service' (e.g. the identities provided by natural landscapes or species), and as associated with the practices where people interact with ecosystems and which positively or negatively influence their conservation and sustainable use.

However, the EA is also relevant to marine heritage practitioners as a 'boundary object', where it is used to underpin integrated management of the sea and coast. For example, FAO (2003) applied it to fisheries management to balance marine conservation, food and people's livelihoods for humans. Key EA principles are reflected in all relevant EU directives, from the Water Framework Directive (WFD) to the Marine Strategy Framework Directive (MSFD) and the Maritime Spatial Planning Directive (MSPD) (Söderström and Kern, 2017). The EA also underpins ICZM and MSP (Haines-Young and Potschin, 2011). For example, both ICZM and EA principles recognise the inherently dynamic nature of ecosystems and the uncertainties involved in any attempt to manage them. As with ICZM and MSP, the EA seeks to promote an integrated approach to management that operates across both natural and social systems, and between different ecosystems. All three approaches highlight the need for broad spatial, thematic and temporal perspectives, and cross-sectoral institutional structures that respect environmental capacity.

However, an important aspect of the EA, which is not always fully reflected in ICZM and MSP (Haines-Young and Potschin, 2011), is that ecosystems provide key services. Ecosystem services include provisioning services, such

as fish or medicinal compounds, regulating services, such as wave attenuation by kelp beds, cultural services, such as place identity and recreation, and supporting services that underpin other services, which are closely associated with ecosystem functions such as nutrient cycling. Cultural services thus provide a way of recognising the cultural significance of natural heritage. However, more recently, ecosystem services researchers have emphasised that culture is essential across all ecosystem services, and this is also reflected in the 'nature's contributions to people' framework developed by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) (Diaz et al. 2018).

An important insight derived from the EA is that management of the natural environment involves prioritising certain services over others. These choices are, explicitly or implicitly, based on values. As discussed in more detail in the next chapter, values can relate to our guiding principles, or our contextual values, where importance is ascribed to specific things, and their indicators. While the notion of ecosystem services has originally been associated with monetary indicators, there has been a burgeoning literature

on non-monetary assessment and sociocultural indicators of importance, including through methods such as participatory mapping, ethnographic interviews, deliberative workshops and local knowledge assessments (Kenter et al. 2014). This again provides opportunities for intersection and integration between assessments of the value of natural and cultural heritage, and their integration in decision making. These more diverse understandings of values, and deliberative and interpretive methods to assess them in non-monetary terms, can address one of the key challenges of integrating cultural heritage (and culture more broadly) within an ecosystem approach and ecosystem services framing (Hølleland et al. 2017). A second key challenge, integrating elements of cultural heritage that are relatively independent of ecosystems, such as human-built, material heritage, can be overcome through the mutual integration of both the Ecosystem Approach and broader heritage values within cross-sectoral decision making, including MSP and ICZM, as well as integrated risk assessment. Cross-sectoral integration through common heritage value and risk frameworks will be discussed in the following two chapters.

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Chapter 6: Heritage values – a framework for integrating heritage in valuations

Elaine Azzopardi and Jasper Kenter

Values-based approaches are increasingly emphasised in both the heritage and the environmental management sectors. However, in managing coastal landscapes and seascapes, cultural and natural heritage values are often managed separately as a result of engrained sectoral approaches that have developed along different paths. Common values frameworks provide a way to bridge natural and cultural heritage management.

Legitimate management towards sustainability must include diverse stakeholders and recognise and incorporate multiple values (Chan et al., 2016, 2018; Kenter, 2016b; Raymond et al., 2019; Stephenson, 2008). We outline here a common values-based approach and framework that can be used to link cultural and natural heritage within environmental valuation (Azzopardi et al., 2021). First, we drew on the environmental values literature to expand the understanding of heritage values; then we linked this new understanding to the Life Framework of Values, a recent approach that has arisen within an Ecosystem Approach context, yet which goes beyond the largely dualistic and instrumental perspective associated with ecosystem services. The resulting heritage values framework is depicted in Figure 10.

Life Frames

The Life Framework encapsulates the four main ways in which nature matters to people; how we live *from* nature, live *in* nature, live *with* nature and live *as* nature

(O'Connor and Kenter 2019). Living *from* frames the ways in which people are sustained by the environment including food, energy, shelter and livelihoods, education and inspiration. Living *in*, refers to how the environment forms the stage of our lives. In heritage terms this includes contributing to place identity. Living *with* refers to how we are one species among many and captures the way in which the more-than-human-world exists independently of us. In heritage terms it refers to how we live with the heritage of others. Living *as* refers to the way in which other species, ecosystems and biocultural diversity form webs of life that we feel part of e.g., as expressed through kinship through which natural entities are valued as extensions of our individual and collective selves. In heritage terms, *living as* refers to direct experience of oneness, or being an inseparable part of cultural landscapes or the natural world through heritage-related practices.

Types of values

Values, including values for cultural and natural heritage and the environment, include diverse types of individual and shared or collective values. A key conceptual distinction is

that between transcendental values that signify broad guiding principles, such as prosperity, health or protecting nature, and more specific contextual values that pertain to a specific object of value, e.g., the importance of a particular forest for its historical significance. Contextual values include intrinsic, instrumental or relational values. Intrinsic value is based on the inherent worth of an object, instrumental value refers to an object's value for the sake of something else. Relational values describe the importance of meaningful relationships. Intrinsic, instrumental and relational values are not mutually exclusive; something can be important for its own sake, for its benefits, and for relationships people have with it that are more than merely instrumental.

'Values' can also indicate the importance or worth of an object expressed through value indicators, which are expressions of value in different units, including qualitative indicators, and monetary and non-monetary quantitative indicators. Indicators of environmental value are often separated in economic values; biophysical or ecological values; and sociocultural values. Values are themselves only a part of the whole of the meaning of an

Figure 9: Processed fish, Kavala, Greece.

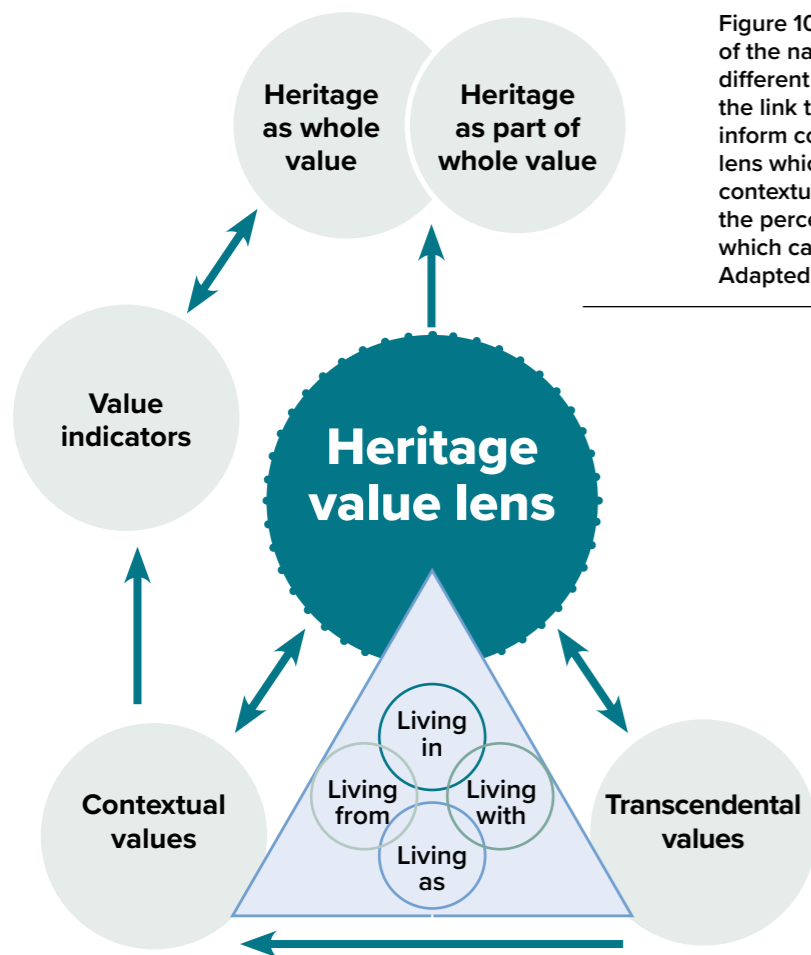


Figure 10: A new framework for the heritage values of the natural environment which shows how the different dimensions of heritage values interact and the link to Life Framework. Transcendental values inform contextual values, both shape a heritage value lens which in turn can influence transcendental and contextual values. A heritage value lens influences the perception of the heritage value of an object which can also be described by using value indicators. Adapted from Azzopardi et al. (2021).

forests which for centuries have been exploited by locals for agriculture and glass and iodine production. When a Natural Marine Park was established there, the kelp forests as well as the seaweed harvesting activities were both classified as co-dependent natural and cultural heritage that should be conserved. Participants valued the kelp instrumentally as something they made a living from, relationally in that they valued the activity of harvesting it which intimately linked them with their environment, and they also valued it intrinsically as something that should be conserved for its own sake. Because of this multiple basis of value, the frames of living *from*, living *with* and living *as* were all applicable in this case. If the kelp had only been managed as a resource to live from then the other important values would have been overlooked leading to conflict.

The Ria de Aveiro in Portugal is of great importance to biodiversity. It is also the site of centuries of human activity including shipbuilding, fishing, eel canning, seaweed gathering and salt production which have shaped the identity of the region but many of which have declined (Martins et al., 2013). Here again people valued both cultural and natural objects as heritage in multiple ways e.g., instrumentally as something to earn a living from, relationally as something that contributes to their identity and intrinsically as something that should be protected. The objects were also valued with a historical perspective i.e., for the past activities around

object (James, 2019). While value indicators facilitate the articulation of something difficult to express, the danger is of the value and/or the meaning of something being reduced to only that which can be expressed by indicators.

may be considered as a cultural ecosystem service amongst other ecosystem services. The links between heritage and the diverse value categories described above are shown in Table 1.

Applying the framework

The framework can be combined with participatory approaches to what people value as their heritage to inform management approaches. In the Pericles project, we found that people value biotic and abiotic elements of the natural environment as cultural heritage including beaches, rivers, coves, lagoons as well as specific species like eels, gannets, seaweed or wildlife more generally. But the basis of value and role of heritage became apparent on application of the framework.

For example, the Iroise Sea in Brittany is important for its kelp

Table 1: Key dimensions of heritage value (adapted from Azzopardi et al., 2021)

	Dimensions of heritage value	Description
a	Transcendental values and heritage	Broad principles and life goals that transcend specific situations can pertain to heritage. Examples of transcendental values applicable to heritage and the environment include: respect for tradition, unity with nature and living well alongside other species and the natural world.
b	Contextual heritage values	Values related to specific objects of heritage value.
	Instrumental	The benefits people obtain from heritage e.g., visitor revenue or use in deliberate national identity construction.
	Intrinsic	The non-instrumental and non-substitutable significance of a heritage object, without reference to relationships with people.
c	Relational	As <i>transcendental values</i> : the broad principles that define desirable relationships with heritage. As <i>contextual values</i> : the importance of non-substitutable, non-instrumental relationships with heritage objects, or of heritage relationships between people, or people and nature.
d	Heritage value as part of total value or as whole value	Heritage value can be a part of the total value of an object. For example, saltpan coastlines may have heritage value but in providing food and livelihoods, will also have instrumental and possible relational value independent of heritage value.
e	Heritage value indicators	Heritage value may be expressed in terms of an object's economic value, historic value, educational value, or aesthetic properties.
f	Heritage value lens	A heritage value lens is a perspective that identifies something as having heritage value in the first place. Value lenses are not value-neutral and different values shape a value lens. Thus, different people may have different heritage value lenses, which may change over time.

them. Here, heritage value was informed by a perspective of *living from* the lagoon in the past, current management actions can also be framed as *living from* by generating heritage-related tourism businesses, but they can also be framed in terms of *living with* or *living in* in the present. Thus, the historical *living from* frame still plays a large part in present place identity (*living in*).

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Chapter 7: Participatory risk assessment

Katia Frangoudes

As discussed in Chapter 2, marine heritage is at risk from a great diversity of environmental, social and economic pressures and drivers, from climate change to ‘McDonaldisation’ of heritage. Risk assessment allows sharing information about such risks and relates to the coordination of a management process. A risk assessment is part of a management strategy, particularly to identify and address, reduce and or eliminate potential threats. A risk assessment framework generally includes guidelines to identify key actors (both who are affected and those who can control risks) and steers towards prioritization of risks and defining related risk-management measures.

Risk identification, conducted with expert and non-expert stakeholders in four PERICLES case regions in Portugal, France, Denmark and Estonia, showed environmental threats, particularly those relating to climate change (e.g. sea level rise, flooding and coastal erosion) and storm damage, were perceived to be the highest threats to CMCH in all areas. Human risks that were identified primarily related to poor governance, weak protection, and on-site visitor pressures. Our gap analysis showed minimal difference in the perception of risks between expert and non-expert stakeholders. Building on this, PERICLES

developed a participatory risk assessment framework for sustainable management, conservation and use of coastal and marine cultural heritage. The framework represents the PERICLES understanding that risk assessment as a social process, with two distinctive characteristics:

1. Explicit reference to the tangible and intangible which informs our understanding of risk;
2. Facilitation of participation of a broad range of actors.

The framework can support communities, researchers and heritage managers who want to

implement a participatory approach to assess risks and management scenarios for marine heritage. It provides guidelines of the phases and processes to assist the assessment of risks, the evaluation of the state of marine heritage and the processes towards a sustainable use and management of the heritage, in a participatory way. A diversity of tools can be used to assess different risks. An example is presented in Box 4, highlighting the CACTUS tool to assess climate change related risks to heritage.

The risk assessment is presented as a process with two main phases, each with multiple steps (Figure 12). The assessment consists of **self-assessment** to

Figure 11: Erosion of coastal path, Locmariaquer, France.

Figure 12: Flowchart of the methodological steps for the PERICLES participatory risk assessment framework.

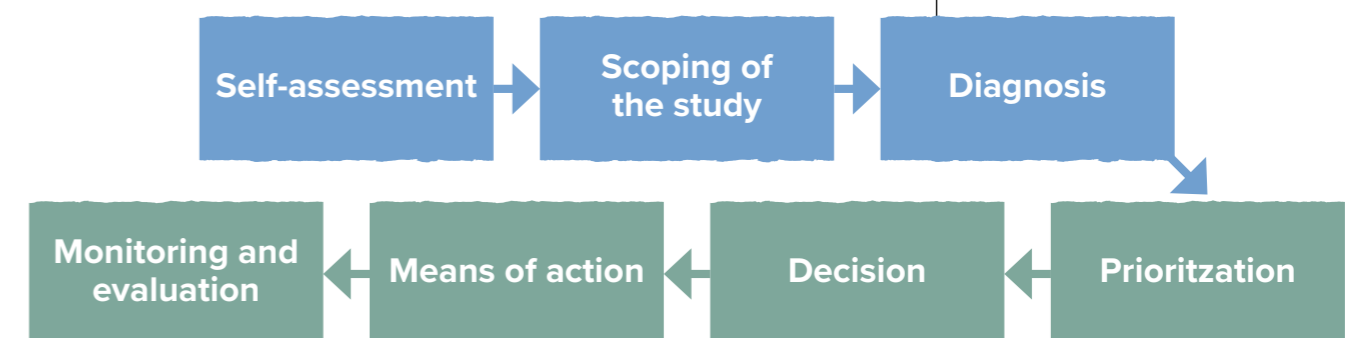




Figure 13: Tidal mill Kerouarc'h, Locmariaquer, France.

assess the level of knowledge of the assessor in the topic; **scoping of the study** to map the context and definition of risks, heritage at stake, actors and legal frameworks; **diagnosis** to evaluate risk, value and knowledge with stakeholders; **prioritisation** of actions to be implemented based on results of phase one and stakeholder discussions; **decision** on what risks are the most important to take action against; **means of action** to sustainably manage, conserve or use the heritage; and **monitoring and evaluation** to find out if the actions taken are contributing towards achieving the initial objectives set by actors.

A key recommendation in applying the framework is that communities (i.e., non-experts) should be able

to and encouraged to make risk assessments of their own heritage. It is also recommended that participation is encouraged at every step of the risk assessment process, and is assessed through constant reflection on representativeness, transparency, accountability, and power. This will be further discussed in the following chapters, particularly Chapter 9.

Further reading

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Box 4: CACTUS – a participatory tool to anticipate and prepare for climate change, applied to coastal marine heritage

Juliette Herry and Irène Béguier

The CACTUS tool (*Climate – Adaptation – Changes – Territories – Uses*) was developed by the European IMCORE project on the adaptation of coastal populations to climate change. This evolving tool, available publicly online, aims to improve the consideration of climate change in public policies and facilitate the implementation of concrete adaptation actions. The Regional Natural Park of Morbihan Gulf (PNRGM) and the AMURE research laboratory of the University of Brest (UBO) worked with institutional, economic, and other key actors of the Morbihan Gulf to develop the tool.

CACTUS is mainly intended for local authorities who wish to carry out actions to adapt to climate change, but it can also be useful for others, such as engineering firms and heritage managers. This tool enables local decision-makers and citizens to understand themes related to climate change and their interconnections, whether it is the change in species distribution areas, sea level rise, the consequences for shellfish farming or maritime built heritage. CACTUS encourages questioning climate issues and possible adaptation measures to mitigate vulnerabilities. It can thus be used when planning

coastal development and heritage management projects.

CACTUS is based on around fifty thematic sheets that can be adapted to changing themes. These sheets are about types of spaces (e.g., aquatic, coastal, natural, heritage, coastal paths), activities (e.g., shellfish farming, fishing, salt farming, shipyards, yachting, tourism, cultural) or cross-cutting subjects (e.g., biodiversity, landscape, water, health, energy, ICT). The generic impacts of climate change (e.g., sea level rise) are presented on each CACTUS sheet with a focus on their consequences with regard to the theme concerned. The core of CACTUS sheets is based on a non-exhaustive and evolving list of questions that examines possible courses of action and their implications. What should we think about to adapt? What adaptation choices are possible and feasible? What are their repercussions and their interdependencies with other issues? CACTUS compares alternatives and identifies needs for their implementation (knowledge, methods, funding). To support further consideration, each sheet is completed by documentary resources (e.g., studies, videos, websites, contacts). Through

cross-referencing the experiences of other regions, sheets are also helpful tool to inform deliberations within the context of participatory risk assessment. It presents issues, asks questions, makes connections, but it does not provide a ready-made solution. It provides regions the opportunity to explore adaptation choices that suit them in terms of their environmental, social, economic, technological and political implications.

The CACTUS tool was used in the Gulf of Morbihan (Brittany), within the context of the PERICLES risk assessment framework, during a participatory workshop with the citizens of Locmariaquer municipality. The objective was to collectively reflect on how to mitigate the risks to marine heritage (tangible and intangible) in this context of climate change and increasing human pressures. The workshop tested the built heritage sheet, which aims to help municipalities identify heritage threatened by climate change and define actions for its safeguarding, management and governance. As a result of this workshop, adaptation action plans were identified for the municipality's oyster heritage and vernacular heritage (e.g., fountains, chapels, washplaces, tide mills, semaphores).



cross-referencing the experiences of other regions, sheets are also illustrated by adaptation actions already implemented. Thus, CACTUS aims to stimulate debate, which makes it a

Figure 14: Example of a CACTUS thematic sheet on the built heritage.

Further reading

- IMCORE project: <https://www.parc-golfe-morbihan.bzh/le-projet-imcore/>
- CACTUS: <https://outil-cactus.parc-golfe-morbihan.bzh/quest-ce-que-loutil-cactus>

Chapter 8: Ethnography

Alyne Elizabeth Delaney

Ethnography is a process whereby one uncovers and describes a culture or cultural attributes. Conducting ethnography can involve immersing oneself in a community or group to observe behaviours and interactions and knowledge through participant observation and qualitative interviewing. The key attribute which sets ethnography apart from other qualitative social science methods and viewpoints is that ethnographers seek to learn the insider's perspective (an 'emic' perspective). Rather than simply observing from the outside and categorizing what one uncovers as a "detached observer," ethnographers strive to understand people's cultural perspective. Ethnographic descriptions ideally include the sociocultural context – e.g., descriptions of people, places, languages, events, material culture, etc.; the key point is description and detail.

When thinking of cultural heritage, ethnography is particularly important. As a method and process, ethnography is conducted to discover emic perspectives and values of the local communities of meaning (see Chapter 2). Ethnography provides the descriptions and meanings of both tangible and intangible cultural heritage. Ultimately, this means ethnography is for the benefit of all – to share cultural heritage knowledge and artifacts with the public, from cultural members and researchers.

Ethnography is also the textual and audiovisual outputs of the research that the ethnographer produces afterwards. The data and final outputs are used, for example, in descriptions (e.g., museum exhibitions, tourism brochures) and management decisions. The traditional ethnographic output is a book monograph, but ethnography as a process and method also produces articles and film and informs other descriptions and designations. A good example is what goes into a UNESCO World

Heritage designation application. If one looks at the UNESCO designation of Kihnu Cultural Space¹, Estonia, for example, which was inscribed in 2008 on the Representative List of the Intangible Cultural Heritage of Humanity, its designation included an ethnographic description of the matriarchal society which includes its culture, communal lifestyle, local dialect, traditions, and music (Box 5). Though focused on intangible cultural heritage, this also includes the tangible heritage resulting from cultural heritage (e.g., weaving and clothing) as well as natural heritage of the island environment. Such designations could not take place without ethnography.

Strengths and limitations

Ethnography is a powerful method. The process of conducting ethnography provides the emic perspectives and details required for seeing, understanding, designating, and preserving cultural heritage. Ethnographic film provides the visuals to actually witness the intangible and tangible cultural heritage together,

often sparking interest and comprehension to an audience in a way that textual outputs cannot.

The limitations of ethnography stem not from what it can provide, but rather from managers' understanding and resource requirements (described below). When looking broadly, such as at the management of coastal landscapes, natural heritage and resources, the use of ethnography has tended to be relatively limited. In these situations, managers have, historically, tended to prefer quantitative data and methods.

Resource requirements

Ultimately, one of the most limiting factors to conducting and producing ethnography is available resources. Ethnography takes time. Qualitative interviews are a vital method used in ethnography and one needs time to conduct the interviews, and most especially transcribe and analyse the data. Quantitative surveys can be administered, but the questions should be based on data gathered from secondary data and qualitative interviewing.



Figure 15: Ladies of Kihnu, Estonia.

The length of time needed obviously means greater cost. Rapid assessment, such as used in Rapid Ethnographic Assessment Procedures (REAP) (Jones, 2017; Low, 2002), and other such time efficient methods can be used to reduce this. Ethnographic film provides additional and highly communicable detail and insight (Ranger et al. 2016), but at a significant additional cost.

Additionally, expertise is required for conducting interviews. Interviewing is a skill gained through experience. Ethnographers usually hold an MA or PhD degree, but this is not essential.

The technological and tool requirements of ethnography run from basic to technologically advanced. For conducting an ethnographic interview, all one really needs is pen and paper, but additional costs include audio or film recording and transcription

of recordings (via software and/or an external service).

Finally, qualitative analysis software is often used by ethnographers. A wide variety of programs exist, e.g. NVivo, MAXQDA, and Atlas.ti. Audio and visual content can also be included, in addition to text.

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1 <https://ich.unesco.org/en/RL/kihnu-cultural-space-00042>

Box 5: Intangible cultural heritage: living marine heritage of the small islands of southwestern Estonia

Alyne Elizabeth Delaney

What sets ethnography apart from other qualitative research – both as a process and an output – is the importance placed on descriptive, cultural details. These details provide the background needed to understand what is being said and what direction to move in the research.

As an output, ethnographic details are what gives life and a fuller picture to the research. If investigating, for example, intangible cultural heritage such as boat building techniques or island culture, one first educates oneself about the local activity and society. Knowing the local context is key for true understanding.

Isolation from continental Estonia helped the small islanders of Kihnu, Ruhnu and Manija develop unique cultures; their continued isolation helped preserve their culture over time. This was investigated in the “Living marine heritage of the small islands of southwestern Estonia” PERICLES case region. It encompassed the southwestern coast of Estonia, including the coast of Pärnu and Livonian Bay up to the Latvian border, and the islands of Kihnu, Ruhnu and Manija. The small islands have a very distinct and well-preserved culture and cultural heritage, with Kihnu being awarded UNESCO intangible cultural heritage status.

Building on existing ethnographic research, a greater understanding of the region was developed. Key informant interviews uncovered the importance of the sea for residents, as well as the islanders’ roles in local folk crafts, foods, and songs:



Figure 16: An Estonian seal hunter.

“...I have lived all my life in Pärnu, it is normal that I know what is the sea. When I don't have good energy or don't feel ok, then I go to the sea. And I take all of my energy from the sea...” – Fisheries Local Action Group representative (woman)

“Here, the herring and coastal fisherman are very linked. ... In Estonia ... there is quite a lot of coastline but in Pärnu [area] fish out ... 75% of the herring ... so here it is most intense, most people involved, and it has been a crucial link to fishing communities for a long time.” – Estonian Fisheries Association member

Background, ethnographic research also included participant observation on a coastal herring boat, and participation at a herring festival. With this ethnographic research as background, more focused PERICLES research on

the islanders and their heritage and connections with the sea took place, providing input for Estonia’s marine spatial planning and blue economic initiatives.

“I lived almost all my life in this island. ...our lifestyle is different compared the lifestyle on the mainland... many old traditions are still alive. ... Men were always a long time away from the island and that's the historical reason why women become very strong, very independent. Kihnu culture is interesting because we still wear traditional costumes as our everyday wearing... We have ancient folksongs still alive and dances.... Life is more difficult here to survive but it's treasure for Kihnu islanders. ... it's the best place in the world.” – Mare Mätas

Chapter 9: Participatory and deliberative approaches

Jasper Kenter and Laura Ferguson

Participation is a defining feature of good governance. All stakeholders should have the opportunity to participate in decisions, and there ought to be particular efforts to include marginalised or disadvantaged stakeholders. Participation can involve direct participation by citizens (citizen or public participation), or representation by affected stakeholders (stakeholder participation).

In the marine environment, including through the emergence of ecosystem and landscape approaches and institutionalization of ICZM and MSP, governance in the last two decades has seen a ‘deliberative turn’, where stakeholder participation and deliberation with stakeholders and the public has become an increasingly central aspect of management. In the cultural heritage sector, despite an ongoing rhetoric of participation, emergence of a genuine change in predominantly top-down practice still appears somewhat limited, the overall conservation practice remaining a largely professionalized, expert-led domain (Chitty, 2017).

However, participation, deliberation, and learning are essential in achieving heritage justice and central in transformative heritage by influencing who has control, whose imaginaries, narratives and values are included and the quality of process with regard to how diverse and potentially conflicting interests are managed, including with regard to risks, resilience and adaptation.

Participation and deliberation

Power and control in democracies is ultimately justified by its social legitimacy. The need for legitimacy as well as a desire to improve the quality of decision

making (both procedurally and in terms of outcomes) has led to different degrees of participation by citizens and stakeholders in heritage governance. The terms are sometimes used interchangeably, as both refer to themes like stakeholder involvement, democracy, and the rights and capabilities of those who are (to be) included in management processes. However, the two are not the same.

Participation refers to the degree to which citizens and stakeholders engage with a process of research or decision making, and the degree of ownership they have over this. This ranges from being tokenistic to more genuine consultation, partnerships, or full devolution of control to community groups.

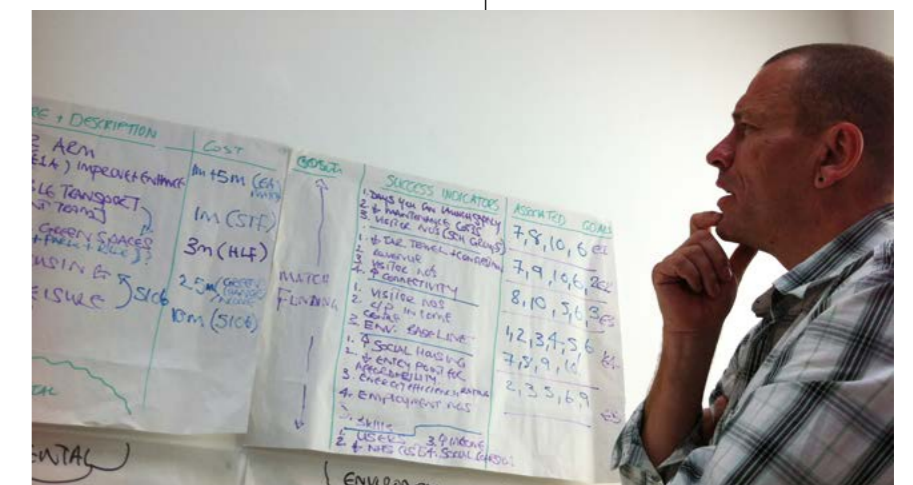
Deliberation occurs when people gain knowledge to form reasoned

opinions that they can express in dialogue with each other. Here, they may identify or evaluate options and apply insights from the deliberation to determine well informed contextual values and preferences in relation to these options (Kenter et al., 2016). Deliberation also enables different groups of people within society to learn from one another through their interactions with each other (this is sometimes termed ‘social learning’).

Application of participatory and deliberative processes

Deliberation and participation may be used at various points in decision-making processes, for example:

Figure 17: Deliberative workshop on marine values in Hastings, England.



- **exploratory phase:** understanding the sorts of challenges stakeholders are facing that the decision might be able to address; scoping the objectives and approach to ensure the outcomes of the decision are as relevant as possible to everyone involved in the decision;
- **evidence collection and analysis:** it may be useful to gather evidence with stakeholders through deliberation to elicit shared values, appraise options and better understand attitudes, perceptions and likely reactions to potential decisions among different groups;
- **interpretation of evidence:** whether evidence comes from stakeholders or other sources, it may be useful to engage stakeholders in the interpretation of evidence, making links and contributions to issues that might otherwise have been overlooked.

Participatory and deliberative governance and research can be achieved through a

wide range of methods and approaches, depending on the level of approach and participation sought. Most methods involve group work. Types of gathering include focus groups, consultations or hearings, citizen panels and deliberative workshops. There is also an increasing number of approaches for online participation, including through videoconferencing and online discussion groups. Broadly speaking, there are two types of deliberative methods: ‘deliberative’ techniques enable participants to exchange and consider evidence together and negotiate; and ‘analytical-deliberative’ techniques are more structured, integrating deliberation with formal analytical or technical tools, such as multicriteria decision analysis.

The value of group mechanisms is in their interaction and collaborative decision making, although the extent to which participation equates to sharing in governance varies between types. At the weaker end of the spectrum are the consultations and focus groups, at which participants can voice their opinions

but do not necessarily lead to policy creation. Deliberative workshops, a hybrid between consultation and research, provide participants with greater decision authority. They resemble focus groups but provide the opportunity for participants to find out more about the topic, consider relevant evidence and discuss with other participants before presenting their view.

Deliberative methods can also be linked to other approaches, such as spatial data gathering (participatory mapping), art and ethnography. For example, Sarky et al. (2017) used mapping and an iterative participatory process to address potential conflicts in managing heritage sites in Kurdistan. Brennan (2018) used a participatory art-science collaboration approach to develop a cultural map and empower local voices in marine management in Barra, Scotland. Recent developments of ethnographic deliberative approaches include the community voice approach,

Figure 18: Deliberative workshop on marine values in Hastings, England.



where film interviews feed into ethnographic documentary, which helps to include diverse voices in consequent deliberative work (Ranger et al. 2016); and Visual Problem Appraisal, a sophisticated approach which is explicitly geared towards deliberative stakeholder learning in policy (Box 6).

Strengths and limitations

Participation in decision making processes can empower people and strengthen democracy. Participation can also be a tool in resolving, or even preventing, conflict over decisions. Input from multiple sources has numerous benefits, including improvements in quality of decisions, relationships and valuing of diversity, and greater capacity for managing problems (e.g., Beierle and Konisky, 2001).

Social capital, based on the degree of connectedness and standard of social relations, can be increased by participatory processes. Increased trust and shared values and norms can make governance more sustainable. The sense of shared ownership generated by participatory methods can foster creativity and increase the chance of successful policy implementation. Two-way learning processes can also be a driver of community development.

Despite these benefits, some instances of shared decision making have been declared unsuccessful (e.g., Berkes, 2004). Often, this is a result of failure during implementation, for example lack of community commitment during the process. Other issues that may result in complications include the subjectivity of public opinions, the homogenization of the group as a single entity in participatory and problems surrounding access to the participatory processes.

Consequently, the success of participatory and deliberative processes depends strongly on getting the right people in the room and ensuring the process is well managed (De Vente et al. 2016). The first can, perhaps counterintuitively, mean restricting or directing participation rather than opening it up to anyone who wants to participate – this means more effort can be geared towards participation of groups that are often underrepresented or already empowered interests; or more broadly, that an effort can be made to balance out different stakeholder groups to improve the quality of deliberation. To achieve this, for citizen participation, participants can be quasi-randomly sampled to ensure different social (age, social class, ethnicity, etc.) and geographic (rural, urban, etc.) backgrounds are represented. For stakeholder participation, rigorous stakeholder mapping and analysis is vital to ensure all relevant stakeholders are included (Reed et al. 2009). Other key factors of success are effective design and facilitation of the process.

Resource requirements

Cost and expertise requirements for participatory and deliberative approaches depend on: 1) the length of the process (e.g., number and duration of activities such as workshops); 2) the number of

participants and sampling methods, and potential additional costs of using a recruitment agency to achieve representative samples; 3) the complexity of the methods and process used and need for professional design and facilitation, or other professional skills, such as filmmakers; 4) the cost of moderators or facilitators (typically one facilitator for every 6-10 participants); 5) the cost of venues, materials, catering, travel, overnight accommodation, etc.; 6) technological requirements, such as recording, transcription, filming; 7) the depths of analysis, varying from basic note taking to full qualitative analysis. This means the costs can vary from €1000 for a basic participatory workshop with self-selected or stakeholder sampling to €100,000-200,000 for a fully-fledged citizens assembly or public dialogue.

Time requirements similarly vary. More emphasis on deliberation and learning can mean a longer process with multiple workshops and potential additional activities (e.g., interviews and surveys, self-study, photo collection, diary keeping, discussions with family and friends), and more elaborate design and analysis mean a longer overall timescale from inception to completion. Generally, the need for more elaborate deliberative processes is determined by the scale, complexity, and level of contestation of issues, and the number of stakeholders involved.

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Box 6: Visual Problem Appraisal

Pauline Tuyll van Serooskerken and Loes Witteveen

Visual Problem Appraisal (VPA) is a film-based learning strategy which aims to enhance the analysis of complex issues from different perspectives through a series of filmed interviews. Each interview gives an insight into a stakeholder's views, interests, preferences and values that are not necessarily familiar to

the observing audience. The diversity of stories unfolds during VPA workshops, in which voicing, and participation take place in a mediated way. These consultations are mediated because the stakeholders are not present in person but participate through the screening of their filmed interviews. The series of filmed stakeholder narratives create an arena for listening and observation, discussion and reflection about

a particular theme of interest, bringing a new dynamic in the governance process.

Who is this for?

VPA is applied in workshop settings focusing on learning and change. Participants in a VPA workshop (also called VPA users) are challenged to reconsider their expectation to be a neutral observer, expert or researcher and start to engage as a co-

constructor of knowledge. After watching the filmed interviews, the VPA users rethink their role and the problem at hand. In its design, the VPA is well-suited to facilitate argumentative consultation, learning, correcting and reconsidering.

When is it used?

Once complete, a VPA is applied in workshop settings focusing on learning and change. Participants in a VPA workshop (also called VPA users) are challenged to reconsider their expectation to be a neutral observer, expert or researcher and start to engage as a co-creator of knowledge. After watching the filmed interviews, VPA users rethink their role and the problem at hand. In its design, the VPA is well-suited to facilitate argumentative consultation, learning, correcting and reconsidering. VPA can be used in all stages of a policy-making process, however VPA is particularly useful in an early stage of a governance process. It can be used in workshop settings (on- and offline) to address a central governance problem.

The wide array of stakeholders, complex institutional governance settings and nature-culture divide in coastal zones are promising ingredients for the use of VPA. The idea to engage with stakeholders in governance processes is not new, yet often the same people participate, and there is stakeholder fatigue. Moreover, participation is typically aimed at informing and gathering stakes or consensus building, and less so deliberation. A VPA portrays different stakeholders in their specific environment, expressing their views, and as such demonstrates the diversity

of views rather than the existence of stakes or a dichotomy.

As a film-based tool, VPA can also be harnessed for 'virtual mobility' allowing policy makers, citizens, engaged communities and other VPA users to become acquainted with people in distant spaces. 'Distance' can be conceptualised beyond a physical distance (including maritime spaces such as fishing grounds and drilling platforms) and to unknown or inaccessible spaces resulting from time-bound (seasonal and historical) or socio-cultural distances such as gender, ethnicity, religion. Subtitling filmed interviews further increases accessibility and inclusion.

What are the outputs?

- Enhanced problem and policy analysis capacity and intersubjective consensus.
- Social learning; collective learning about social issues, problem framing and perceptions.
- Reduced self – referentiality

and increased commitment for concerned primary stakeholders.

Strengths and limitations

The strength of the VPA is the valuable impact it has on the users and workshop participants, as described in the outputs above. Limitations might be seen in the time requirements for production and use. It's not a 'quick fix'.

Resource requirements

Producing a VPA requires the expertise of a transdisciplinary team which blends competences such as process design, ethnographic interviewing, filmmaking, and subject matter expertise (e.g., marine heritage in the case of PERICLES). Making strategic use of VPA materials in governance arenas requires solid expertise on learning and transformation processes to achieve the envisioned quality of participation and deliberation. Using a VPA in a workshop has the minimum time frame of one full day, but the preferred time frame is several days.

Figure 19: Policy review workshop with the VPA Kerala's Coast, Cochin, February 2004.



Further reading

- VPA website: www.visualproblemappraisal.org
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Chapter 10: Gender analysis

Katia Frangoudes and Jordi Vegas Macias

Gender analysis is the systematic gathering and examination of information on gender differences and social relations in order to identify, understand and redress inequalities based on gender. Gender is a descriptive and diagnostic tool that serves to introduce a gender perspective into all aspects related to cultural heritage to strengthen gender equality.

The first World Heritage Convention in 1972² emphasised the concept of the “common heritage” of humanity and underlined the notion of the “universal value” of heritage. However, it didn’t pay attention to cultural communities and social groups. The convention was perceived as Europe-centrist by many countries not having monuments to be classified in the UNESCO list or not having the same definition of cultural heritage (e.g., Japan). In contrast, the 2003 convention on the protection of Intangible Cultural Heritage (ICH)³ assigned a central role to cultural communities, social groups and, in some cases, individuals, on who’s capacity and will the preservation of heritage depends. However, while social groups and cultural communities are explicitly included, the ICH convention is still gender blind.

Within this context, gender analysis can be an effective tool to improve the inclusivity of projects and activities related to cultural heritage.

Who is it for?

Gender equality in the domain of cultural heritage requires a profound transformation because cultural heritage tells us stories about people and society in the past and its relevance to the present. These stories inherited today were primarily created, identified, privileged and transmitted according to criteria defined by those in power: mostly men.

For example, men dominate in history books and art. Women have also been excluded from decision making processes related to heritage. One important reason for this is that collective beliefs about typical male and typical female roles have contributed to the creation of stereotypes that have limited or enabled opportunities for women and men to act within their cultural context.

Thus, at present, to address these historical and institutional inequalities, it is important to consider to what extent the process of creation, identification, interpretation, conservation and management of heritage is truly inclusive and participatory and does not reproduce or foster gender stereotypical roles. Heritage and creative expression have the potential to empower women and girls,

not only from a social, civic and political point of view, but also from an economic one. Achieving this requires systematically implementing gender analysis in heritage research, management and governance.

When is it used?

Gender equality became an objective of UNESCO and other institutions, including the Council of Europe and European Union, by opening cultural heritage to the role of women in the conservation and transmission of heritage. The European Heritage Strategy for the 21st Century has adapted gender equality as one of its objectives. European countries are thus asked to implement this principle in their implementation of heritage policies. PERICLES has undertaken gender analysis across all aspects of the project, including in terms of its researchers and in terms of its research, explicitly considering the differences between women and men in their interactions with heritage and considering women’s particular roles in the preservation and transmission of heritage.

The Council of Europe has developed a checklist to support this (Pape, undated). Suggestions include:

- Implementing impact assessments: assess how

² <https://whc.unesco.org/en/conventiontext/>

³ <https://ich.unesco.org/en/convention>

Figure 20: Fishmarket, Malta.

Chapter 11: Spatial approaches

Sarah Knight and Lars Bodum

Spatial approaches identify, explain, and predict patterns and connections across and between locations. By placing cultural heritage in a spatial context, we can attribute important and complex situational information by varying scales, identifying clustering or hotspots, observing geopolitical influences, and exploring both space and place in a representational and analytical way.

Spatial approaches bring together different datasets in a spatial context, providing unique insights, and revealing associations between different layers of objects. They facilitate accurate monitoring and can support detailed, open, and shareable data. Spatial approaches therefore empower decision-makers, supported by rich, contextual data, and spatial work environments and outputs are powerful communication tools that can help to facilitate discussions between authorities and citizens.

Traditionally, maps and cartography underpin spatial approaches, and these in themselves are powerful tools. They may assume an object-driven, tangible approach to cultural heritage. However, locations on a map are just one element of spatial approaches. Spatial methods also incorporate aspects of size, shape, and

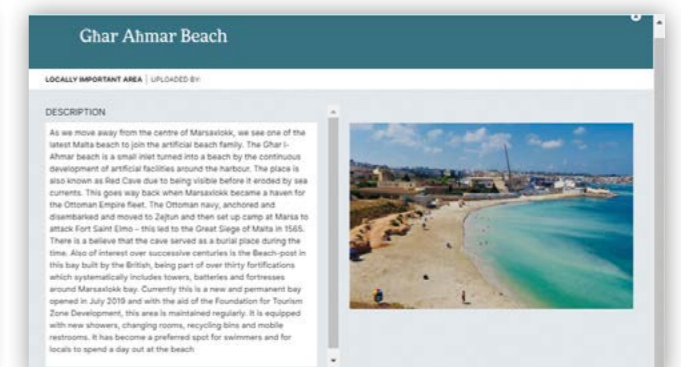
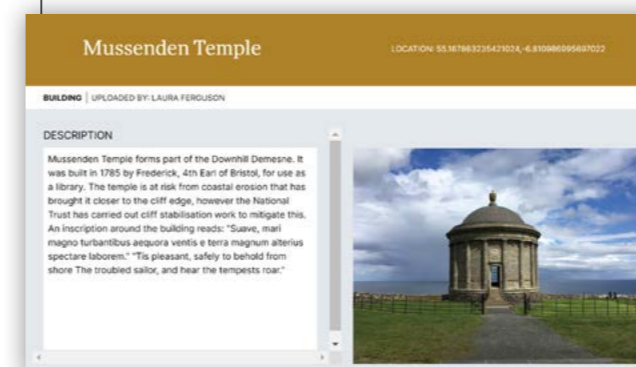
proximity, as well as holding a range of important attribute data relating to characteristics of each data node (e.g., number of visitors to a museum). Spatial approaches can also capture intangible cultural heritage, and by incorporating spatial and temporal processes simultaneously, spatial approaches allow cultural heritage to be viewed as process-driven, incorporating the dynamics of value-based decision-making (Zaninović et al., 2018). The relationships between cultural values, place attachment and sense of place are complex and can be captured using spatial approaches (Scannell and Gifford, 2010; Schröder et al., 2020). Spatial statistics gives the user a range of

analysis techniques that account for topographic, geographic, and geometric properties.

Both the Landscape Approach (Chapter 4) and the Ecosystem Approach (Chapter 5) inherently place cultural heritage in a broader spatial context, and spatial approaches can offer innovative, inclusive, and participatory methods to better understand spaces and places for different individuals, communities, sectors, and stakeholders (e.g., see Box 7). Spatial approaches may use existing spatial data for contextualisation but may also be used to create new data. Spatial data is used to inform key decision areas



Figure 21: Map Your Heritage portal trails function with map layout, showing trails and details of natural and cultural heritage.



- women and men access, use and benefit from heritage;
- Assess how many women participate in activities and projects, and at what levels;
- Gender based discourse analysis;
- Choosing inclusive language when communicating, free from stereotypes and discrimination;
- Develop a zero-tolerance policy about all forms of violence against women;
- Ensure that decision-making, at all levels, is undertaken by both women and men, in all aspects of the implementation of the projects: in identifying heritage, defining projects, prioritising preservation, etc.;
- Make women visible: choose and encourage art works and cultural heritage produced equally by women and men;
- Support the production, distribution, and dissemination of women's work, and their participation to and enjoyment of heritage;
- Implement measures aimed at improving the status and working conditions of female artists, especially at the beginning of their career, so that professional equality between women and men is a reality in the cultural sector:

- facilitate access to funding, provide scholarships and mentoring to nurture women's creative talents and set up spaces where women can create and develop new skills;
- Implement gender budgeting: assess the concrete impact of any project on both women and men and ensure an equal allocation and use of the budget, without gender bias;
- Train staff and personnel in gender equality in formal and informal education;
- Collect gender segregated data;
- Bring a gender equality perspective to the monitoring and evaluation of the activities, assessing impacts on women and men.

What are the outputs?

When applied effectively, gender analysis supports the principle of equal opportunities in cultural heritage policies and can lead to an improvement of gender consideration and equality in heritage research and governance.

Strengths and limitations

Attention to diverse genders in the field of cultural heritage will facilitate integration into decision-making processes and

contribute to empowerment of women. However, gender analysis focuses on gender equality rather than (in)equalities more broadly. As such it may need to be complemented with consideration and analysis of diversity and inclusion across other social and cultural dimensions, including within the context of participatory governance (Chapter 9).

Resource requirements

Gender analysis is something that can be integrated across projects. Resource requirements will depend on the specific activities undertaken. Some activities require minimal resources, such as systematically monitoring participation of different genders across activities. Other activities, such as training, may require funding but this can often be costed within existing funding streams. When gender is considered explicitly as a specific dimension in planning heritage research and governance, this does not necessarily increase costs, but rather to changes in the perspectives taken, the questions asked, and the implementation of activities such as workshops and focus groups, that lead to an improvement in equality and inclusivity.

Further reading

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that affect coastal and maritime cultural heritage, such as heritage management policies, urban and rural planning decisions, natural heritage conservation, and tourism exploitation (McKeague et al., 2019).

Spatial Data Infrastructure (SDI) is the foundation for understanding how spatial approaches can work using spatial data in real world situations. Domain-driven reference systems, access to base maps and catalogues of more specific datasets are implemented in larger international and national organisations. Without these conventions, legislations, standards, and structures it would be almost impossible to run any digital service for a specific field. Many of the issues relating to spatial data and spatial infrastructure, such as managing spatial databases or running web maps, such as consistent projections or licensing, are solved through institutions such as the EU and/or various National Mapping Agencies. With the implementation of the INSPIRE directive⁴ in 2007, the EU paved the way for several important initiatives that have had a positive influence on the roll-out of digital spatial solutions and a general increase in tools that support spatial approaches.

There are many tools and methods used in spatial approaches. Such examples include the creation, use, and analysis of spatial data (e.g. EMODnet⁵), remote sensing techniques (Elfadaly et al., 2018) such as using satellite or LiDAR imagery to classify and detect change on the earth's surface, 3D digitisation of land- and seascapes (Campiani et al., 2019; also see Chapter 14), and Geographic Citizen Science Design (Garcia-Soto et al., 2017; Skarlatidou and Haklay 2021), such as the Map Your Heritage portal (Box 8).

4 <https://inspire.ec.europa.eu>

5 <https://emodnet.ec.europa.eu>

6 <https://www.coe.int/en/web/cultural-routes/home>

Who is it for?

Policymakers, heritage practitioners, heritage decision-makers, coastal and maritime developers and planners, geographers, IT staff, researchers and students, heritage exploitation industries such as tourism, creative industries, and citizens in general.

When is it used?

Spatial approaches can be used to facilitate stakeholder discussions, throughout the policy- and decision-making process, during research and teaching. For example, to support planning and development processes by identifying assets at risk from environmental processes and spatial developments in terrestrial spatial planning (Janssen et al., 2017) and maritime spatial planning (e.g., BalticRIM 2020; Papageorgiou, 2018; Schröder et al., 2020), cultural heritage digitisation (e.g., Campiani et al., 2019), and exploitation of heritage to promote economic growth (e.g., Cultural Routes of Europe⁶, Izi.Travel heritage tours – Box 9).

What are the outputs?

Dependent on the tools and methods used, outputs can include paper or digital maps, digital spatial data, statistics, spreadsheets, graphs, analysis outputs such as hotspot identification or risk/opportunity mapping, and spatial working environments.

Further reading

- Skarlatidou, A., Haklay, M. 2021. Geographic Citizen Science Design (A. Skarlatidou & M. Haklay (eds.)). UCL Press. <https://doi.org/10.14324/111.9781787356122>.
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Strengths and limitations

Key strengths of spatial methods include that they can facilitate discussion and deliberation, they can empower communities and decision makers, they can help contextualise issues and capture relationships, threats and opportunities. They can be integrated with participatory and deliberative processes (Box 7 and Chapter 9) and maps have a high degree of familiarity to people.

Limitations include that spatial approaches can require a specific set of technical skills in terms of development and analysis, and it can be challenging to fully capture intangible heritage. Online approaches can exclude those with poor broadband or digital skills.

Resource requirements

Time requirements depend on the approach and technical skills required. Physical maps can be harnessed straight away, whilst development of a customised online platform such as mapyourheritage.eu can take a year or more. In terms of cost, freely available open-source software is available (e.g. QGIS, RStats), though sometimes licensed software may be needed. Many online tools are free to use (e.g. mapyourheritage.eu, Izi.Travel, EMODnet, Google Maps). The main costs involved may thus be associated with expertise, which can include the advanced skills needed for data analysis e.g., GIS, spatial analysis.

Box 7: Practical participatory mapping in Vilsund, Denmark

Lars Bodum

There are many ways to engage stakeholders in mapping their contributions for the collection of cultural heritage stories and artifacts whether they are tangible or intangible. As an example, here we present three practical approaches that have been tested in a workshop with a group of local stakeholders (in the case of Vilsund in Denmark). The stakeholders themselves did not have to interact with apps, websites, mouse pointers or other digital interfaces.

1. We used an old topographic map (period depends on what type of cultural heritage you are interested in) and plotted it on an oversized poster to be able to mount it on the wall. In this case it was a 1:25.000 topographic map from the mid 1960's with historical references to former industries, infrastructures and place names in the size 1m (high) and 4m (wide). We then asked participants to write their personal stories on a post-it and place it at the correct specific geographic
2. We asked stakeholders to tell us where their relatives originated from. On a printed map of the area, they were asked to pinpoint or alternatively write down the name of the town they lived in themselves, the hometown of their parents, their grandparents, and their great-grandparents. All the places were geo-located through the plug-in Geosearch DK for QGIS and digitized on the map. Then it was possible to perform different forms of cluster analysis.
3. We gave each of the stakeholders a map with only the official place names plotted. Then we asked them to complement the map with names of places not shown in the map. After going through all the 32 maps we found 15 place names that could not be found in any of the

location. After the workshop all the post-its were digitized in mapyourheritage.eu as data points.



Figure 22: Large plots of old topographic maps can be used as background for more specific mapping from stakeholders in and around the area. Here made with post-it notes that are digitized afterwards. Credit: Lars Bodum.

official registers or maps from authorities. These names have not yet been verified, but it is an indication of what can happen in an area where the main occupations (former fisheries, farming and maritime industry) change over time.

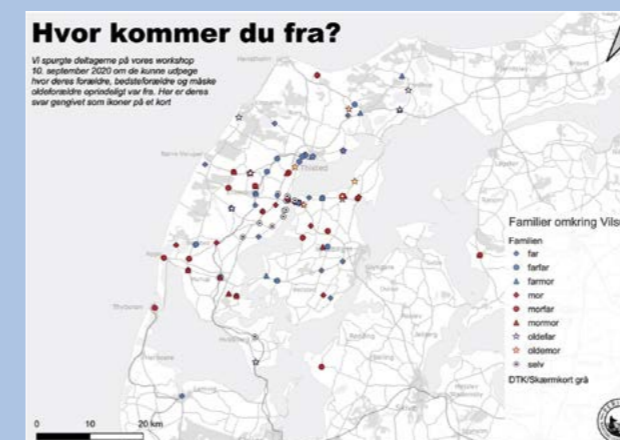


Figure 23: Map of "Where do you and your family originate". Getting stakeholders to map the place from where they themselves, their parents, their grandparents and their great-grand-parents originate from.



Figure 24: Map of "Overlooked place names in the area" where the stakeholders complemented the official place name databases with their own contributions. Those names could have a historic importance or just names that had lost attention over the years.

Box 8: Mapyourheritage.eu

Sarah Knight

The mapyourheritage.eu portal is an interactive, online cultural heritage mapping platform. This portal enables data collection and analysis of the distribution of tangible and intangible cultural heritage across our eight European case regions (Aegean Sea, Brittany, Denmark, Estonia, Ireland-Scotland, Malta, Portugal and the Wadden Sea). The aim of the portal is to allow users to better understand cultural heritage, particularly in the way that it is situated within marine and coastal land and seascapes. It provides an opportunity for citizens to engage with cultural heritage in an easily accessible and stimulating format, both as contributors and viewers, plus allowing for analysis of opportunities and threats in a spatially explicit way.

The portal is also an online space where stakeholders and citizens can review and engage with existing data on maritime and coastal natural, industrial, and cultural heritage, such as lighthouses, ports, designations of protected areas and windfarms. This existing data, provided through European-wide initiatives such as EMODnet as well as

locally managed resources, are seamlessly integrated with newly uploaded content, to provide context and improve visualisation for portal users. Ultimately the portal provides a platform for crowdsourcing, public participation, and engagement in cultural heritage data collection, creating new information relating to the location, description, and the human values associated with maritime and coastal cultural heritage across eight case regions in Europe. The concept of the platform was originally inspired by Sea Stories, an online, interactive cultural map of the seas around Barra, Scotland⁷.

The portal provides a space that enables users to upload photos, videos, sound recordings, and documents relating to a place on the map. Users can drop pins or draw areas to provide locations for their content, along with categories, tags, URL links and open text space to capture descriptions, stories, and values. Users can create and save maps and customise their view. We have designed a trails function to enable users to design routes across several locations.

The portal is also designed to encourage interaction between users, with the ability to comment on content as well as share items via various social media channels such as Twitter and Facebook. The platform is multilingual to reflect participation across the case regions (English, Greek, French, Danish, Estonian, Maltese, Portuguese, and Dutch).

Who is this for?

Mapyourheritage.eu can be used by anyone! It provides users from across the case study communities with an opportunity to highlight key locations and create narratives around the cultural heritage of these communities. We envisaged two key user groups for the portal:

Researchers, developers and planners: these users include academics, marine and coastal planners, and developers from sectors such as energy, aquaculture and tourism. They may be seeking to search and download data that PERICLES has gathered focusing on the ‘new’ data that PERICLES has added as well as interactions with background data.

Citizens and community groups, tourists, tourism agencies, creative industries: these users will be interested in exploring the interface in a way that is engaging and appealing. Their use may be more exploratory. These users can create their own appealing maps featuring ‘trails’ or other selections of heritage that stand out to them.

When is it used?

The portal can be used to better understand cultural heritage. New data will be made available from across Europe, which can be used both to investigate patterns of cultural heritage at the regional and large scale, and also to better understand its relation to marine ecosystems, habitats and natural environment features. The portal can be used to identify and prioritise heritage conservation, by identifying existing data on cultural heritage (mainly tangible) as well as newly crowdsourced data. It can support planning and development processes by identifying assets at risk from environmental processes and spatial developments. The portal can facilitate policy making as it collates existing data and hosts new data that can be used both within the cultural heritage sector for identification, prioritisation, and management, and more broadly within marine spatial planning. The portal can be used to exploit heritage to promote new economic activity. Custom maps and trails can be used for visitor attraction, as well as strengthening local communities’ links with their cultural heritage. Data on the portal can be consulted for new assets that can be used for opportunities in e.g., the creative sector, gastronomy, etc. Finally, the portal can be used in education settings to build capacity and promote stewardship.

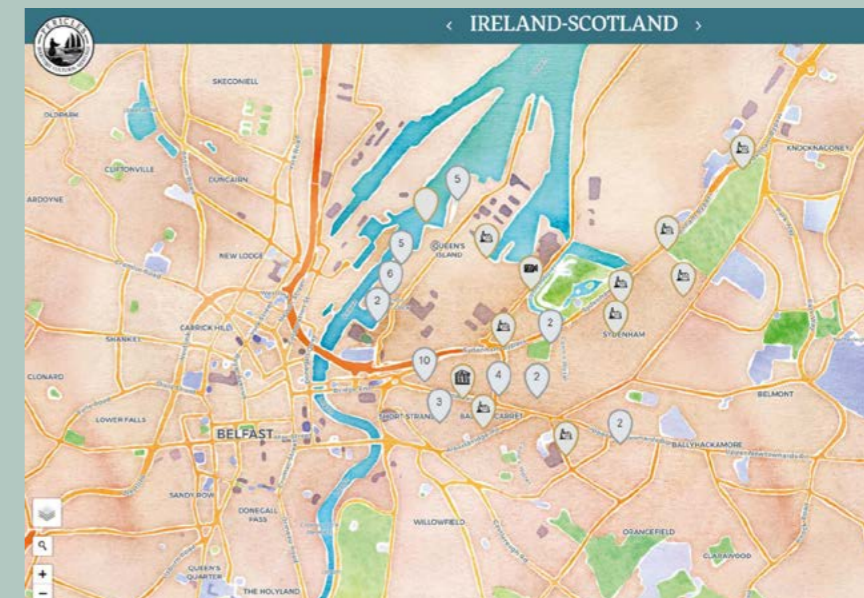


Figure 26: Cultural heritage content held in the mapyourheritage.eu portal for Belfast, Northern Ireland.

What are the outputs?

The web mapping interface is an aesthetically pleasing platform for users to interact with the content. Users can bookmark and print their own maps, share content on social media, and interact with other users using the commenting tools. Users can also download content from the portal in a variety of formats using the export tool. These can then be further integrated into other software platforms as required, e.g., spreadsheets, databases, and geographical information systems.

Strengths and limitations

Strengths of Mapyourheritage.eu include that it is easily and freely accessible. It allows users to contribute, explore, create, and share content on the map. It integrates ‘official’ datasets with user-uploaded content and captures and promotes intangible heritage, stories and values, as well as tangible heritage. It also includes advanced features such as trails, commenting, sharing and bookmarking features. A key limitation is that it is currently

available for the eight PERICLES case regions only.

Resource requirements

The portal is designed to be intuitive and easy to use and can be used straight away. Instructions are available on the PERICLES project website. Users can register for a free account to upload content. No specific expertise or type of browser (computer or mobile) is required.

Further reading

- Map Your Heritage portal: www.mapyourheritage.eu
- PERICLES portal information page: <https://www.pericles-heritage.eu/portalpage/>

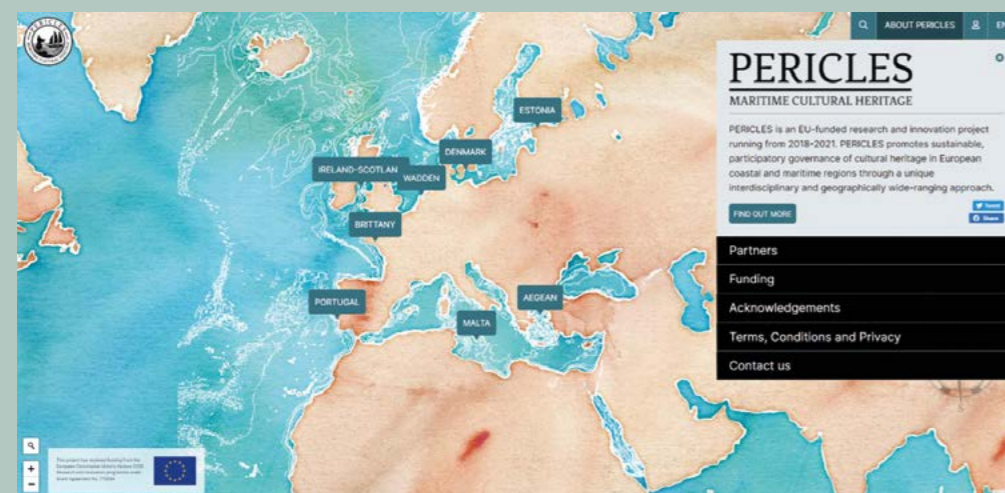


Figure 25: mapyourheritage.eu homepage.

⁷ www.mappingthesea.net

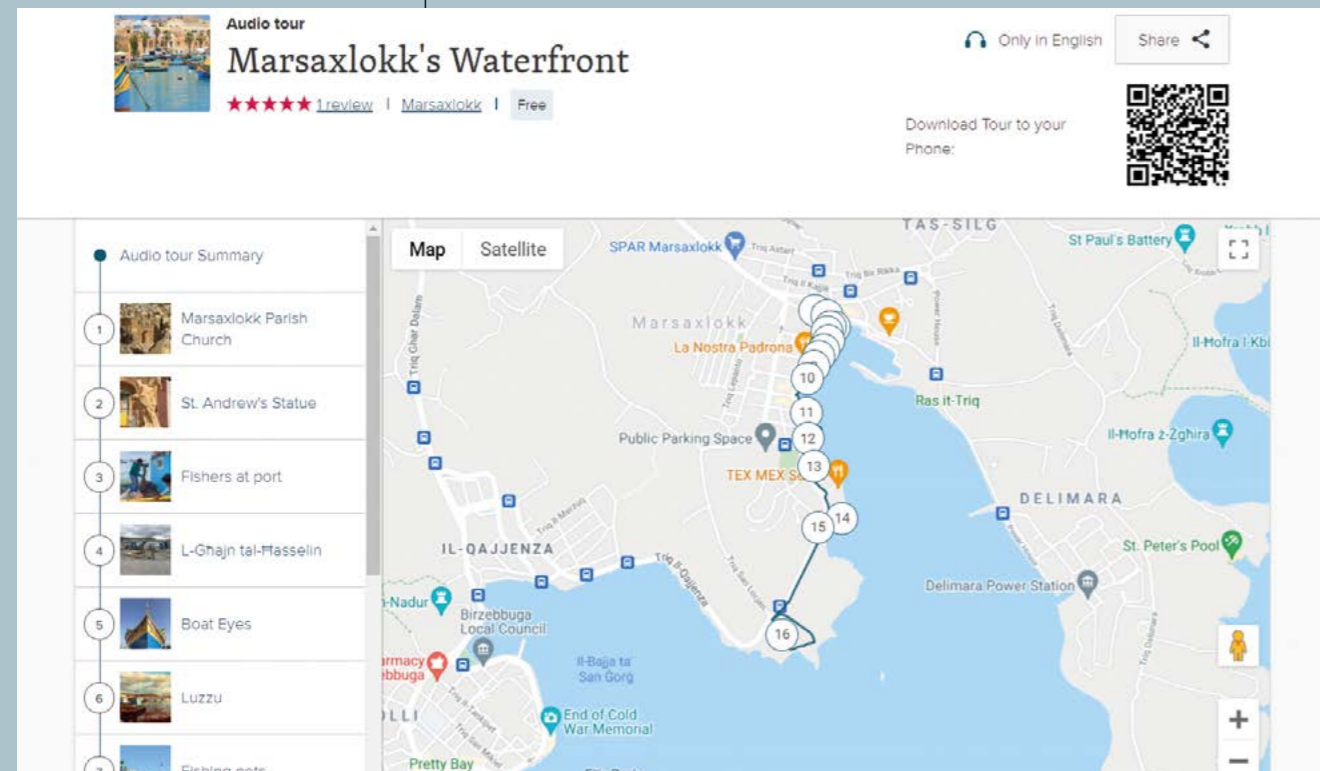
Box 9: Digital storytelling

Jordi Vegas Macias and Machiel Lamers

Digital storytelling is a tool that enables the production of digital media in order to capture stories in relation to marine heritage. In that sense, users connect through a ICT-based platform to share their stories and create imaginaries about tangible heritage elements such as buildings, objects, places; or intangibles such as practices, rituals, beliefs, poems, songs.

Amongst the different digital storytelling tools, izi.TRAVEL has been tested within the PERICLES project. Izi.TRAVEL provides an open and free platform to create digital user generated content in relation to cultural and natural heritage. At the same time, the interface of the platform allows for multiple users to participate in the co-production and management

Figure 27: The interface of the Marsaxlokk Waterfront tour from the izi.Travel storytelling platform.



of the content. The main aim of izi.TRAVEL is to record and geolocate stories on a map to produce audio guided tours – both in indoor spaces, such as museums, expositions and churches, and outdoor spaces, such as cities or nature areas.

Who is this for?

This particular tool can be used by various types of users, from experts in heritage, tourism, culture, nature conservationists, to enthusiasts willing to share or explain more about a particular place or heritage element. Other users can be practitioners willing to implement a participatory governance perspective for the management of local heritage resources. Due to the interface and openness of the platform, it is possible to crowdsource content with different types of stakeholders to co-produce

content through their stories. Lastly, digital storytelling can also be used from a research perspective, since it is a novel tool for action research to understand dynamics between stakeholders as well as governance arrangements and interventions around a particular case.

What are the outputs?

There are different outputs to be considered for this tool. First, the use of digital story-telling allows the possibility to capture stories and create quality content based on people's views and experiences on tangible and intangible marine heritage. Secondly, the technology of izi.TRAVEL can be used to transform and assemble stories into points of interests on a map and enables the possibility to create an audio guided tour. In that sense, the tool can support both heritage



Figure 28: Application of the tool promoting the digital audio guides.

preservation and development of tourism experiences.

At a governance level, it can be used to co-create content with multiple stakeholders that often do not have a voice in developing heritage-based experiences for tourism. The tool, together with a facilitator, can be used as an engagement platform to steer community involvement and participation in decision-making processes and mapping out local-based heritage that often is unseen.

At a research level, it can be used for different studies and purposes. It can be a more practical tool for a mapping exercise, or it can be a way to capture data and content to know more about narratives of cultural and natural heritage. At the same time, it can be used for action-research for researchers willing to moderate the processes of co-creating content and analyzing the different decision-making processes that can potentially shed light on other dynamics between participants.

In Pericles, the digital storytelling tool was firstly used as a platform for knowledge transfer. The participants from Malta involved in the project used it to identify and map marine heritage elements of the area of Marsaxlokk. The selected digital platform allowed participants to include photos, text and recorded voices to capture the identified heritage. Secondly, the selected digital platform offered the possibility to develop audio guides and tours. Thirdly, the digital platform was used as part of a participatory, decision-making and co-production process for user-generated content. With the support of online communication platforms (e.g. WhatsApp), the digital-storytelling platform was used as a means to include different perspectives together and work towards a common goal. Lastly, it was used for research as a process to understand the role of digital platforms for CMCH management.

Strengths and limitations

Digital storytelling provides space for communities, users

and enthusiasts to make their voices heard, and enables stakeholders to capture diverse types of content. izi.TRAVEL is well developed with guidance, tutorials and technical support. However, lack of digital competences and skills can form a barrier to participation.

Resources

Some time is required for audience planning and planning a potential associated participatory process (e.g. workshops – see Chapter 9). Costs depend on the amount of time and professional expertise invested in producing narratives and visual material, and to design and manage the digital tours. izi.TRAVEL is free to use.

Further reading

- Izi.TRAVEL website: www.izi.travel

Chapter 12: Economic valuation

Simone Martino and Jasper Kenter

Valuation of heritage means to assess its importance. Whereas valuing takes place informally continually, reflected in our daily choices, expressions and actions, valuation refers to more formal processes of weighing something, generally for the purpose of informing a decision process. Economic valuation seeks to assess the economic importance of heritage to people.



Figure 29: Anchovies, Kavala Market, Greece.

As outlined in Chapter 6, heritage values can refer to a wide diversity of transcendental and contextual values and value indicators. Economic valuation conventionally focuses on instrumental contextual values, although deliberative economic valuations can consider broader values (Kenter et al. 2015).

Economic valuations are used to guide public or private decisions. They may underpin commodification, but they do not necessarily lead to it. For example, a heritage asset can be governed as a public good rather than as a market commodity. Commodification may also result from a combination of cultural heritage with natural heritage, as

is the case with food and drink products protected by EU legal schemes of geographic indication. Heritage commodification can also happen in simpler forms either directly (ticket-able sites or events; handicraft, artisanal and other sellable goods; books,

tours, films and other forms of knowledge dissemination, etc.) or indirectly (heritage as the attraction that generates income through secondary services – tourism related or otherwise). Heritage can thus become a tool for places to use in the competition for tourists, residents, businesses, and investments.

Tourism as the most visible form of heritage commodification has grown in accord with globalization in the last few decades. Tourist destinations to find ways to set their ‘value offer’ apart, including through heritage. On the one hand this can be seen as an opportunity for the local communities to create an identity that best serves their interests and values, on the other hand this limits the spectrum of possible identities to market expectations.

Valuing, valuation and commodification can all be vehicles that support heritage as transformative. For example, the re-valuing of seaweed gathering in Scotland and Ireland has led to new social and economic opportunities. However, a profitable identity can also trap a community and resist change.

Conventional economic theory suggests that, without human preferences, heritage and other goods have no value (Parks and Gowdy, 2013). Economic value is thus, typically, the quantification in monetary units, or “exchange value” of the benefits received by the choice made; in other words, something is as valuable as what we might want to give up for it in exchange. For example, we might be willing to pay a certain entry price to enjoy a heritage experience.

Economic valuation can consider different kinds of instrumental values. These include direct use values, indirect use values, non-

use values and option values. While direct use values relate to consuming a product, for instance eating seafood, indirect use values relate to the enjoyment of a good without impairing the good, for example, the value of visiting a monument. Option value relates to the value of maintaining something for the future so it can be enjoyed then. Non-use values include bequest, altruistic, and existence values. Bequest values relate to the value of knowing that future generations can benefit from a good, while altruistic values relate to knowing that someone else is able to benefit from it now. Existence values relate to the value of knowing that something exists regardless of its usefulness to anyone. They relate to, but are different from, intrinsic values, in that existence values still express an economic preference for a (heritage) good, while intrinsic values are independent of preference (O’Connor and Kenter, 2019).

In many cases, heritage values are not reflected, or not reflected fully by the market, including for heritage that is not commodified, and/or publicly provided or subsidised (e.g., free access to museums or heritage sites), or where heritage is not the primary or only good provided by an economic activity. For example, Reed et al. (2013) found that harbours are a factor that encourages tourism at seaside locations and inshore fishing allows tourists to gain access to fishing activities through the visual attribute of fishing vessels. Furthermore, analysis of tourists’ preferences suggest that the considerable desire for “locality” attributes for marine vacations (Lacher et al., 2013), and consumers for traditional food produce (Verbeke et al., 2016). In these cases, economic value can be assessed through surveying for peoples’ willingness to pay

in a hypothetical way, such as is illustrated by Box 10.

Who is this for and when is it used?

Valuation can take place as a routine form of statistical monitoring (for example, assessment of the contribution of heritage tourism to a region’s gross value added or to regional employment). It may also be used to inform particular decisions, such as in the context of project appraisal (feeding into e.g., cost-benefit analysis), within the context of broader policy, such as marine spatial planning, or to inform business decision making (e.g., linked to market research). It is generally undertaken by specialised economic researchers and consultants, commissioned by decision makers within these contexts.

Examples of decision/management contexts

Because heritage values are often not fully reflected in market values, non-market economic valuation can be commissioned to ensure heritage values are considered on a part with other values or to make a case for investment. Many heritage goods are maintained with taxpayers’ money or protected by legislation (e.g., historic marine protected areas). By eliciting how much people would be willing to pay to protect the good for the future, reduce risks to its decline, or improve it (e.g., through improving access or facilities), valuation can contribute to conservation. For example, Duràn et al. (2015) focused on different aspects of fishing heritage, such as maritime knowledge, folklore and types of traditional boat, elicited economic preferences for the design of economic incentives aimed at heritage preservation.

What are the outputs?

The outputs of an economic valuation mostly include monetary indicators of some sort, which may be at individual or household level, and/or aggregate/societal scale. These indicators may refer to the current economic value of something, or may be varied according to different future scenarios. They may also include a comparison between the economic costs and benefits of scenarios (cost-benefit analysis), or what may be the most cost-efficient approach to achieve a particular outcome (cost-effectiveness analysis). An important non-monetary indicator is employment.

Relevant tools

There is a great diversity of economic modelling and empirical methods and tools. Macro-economic tools consider economies in aggregate. Examples include input-output analyses and social accounting matrices, which can assess the value of specific economic activities to regional economies. Micro-economic approaches include revealed preferences, based on observation of people's behaviour (focusing on use values), and stated preference approaches, that are used to elicit people's preferences through questionnaire surveys. The latter approach can also reveal non-use values. Both types of methods can consider non-market values. For example, the Travel Cost Method, a revealed preference approach, considers the costs incurred to visit an attraction as a proxy of its recreational or tourism value. Stated preference approaches consider the value of a change in a good in a hypothetical market. They include contingent valuation, where people are asked directly for their willingness to pay, and choice experiments (for example, Box 10), a sophisticated approach where people choose from a series of options, which

allows economists to assess what aspects of the choice scenarios influence participants choices (e.g., age, state, accessibility of a heritage good, etc.) and how much they are willing to pay for improvements in them. More recently, in environmental valuation, methods have been developed that link economic valuation with deliberation, which provides avenues for challenging conventional economic concepts of values based on preferences, moving from a perspective focused on consumer choices to discussion of social desirability (Kenter, 2017). Deliberative monetary valuation has, to our knowledge, not been applied yet in a cultural heritage context.

Strengths and limitations

Economic valuation can be a powerful tool in policy. Assessment of values in a monetary metric allows comparison of diverse benefits and costs, helping inform trade-offs and priority setting. To generate synergies in terms of policy delivery and providing public valuations can be integrated within a broader Ecosystem Approach or Landscape Approach. However, monetary valuations are limited by not fully capturing the diverse values and societal significance of cultural

Further reading

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- Reed, M., Courtney, P., Urquhart, J. and Ross, N., 2013. Beyond fish as commodities: Understanding the socio-cultural role of inshore fisheries in England. *Marine Policy*, 37, pp.62-68.
- EFTEC, 2014. Economic valuation of heritage. Final report to English Heritage. <https://historicengland.org.uk/content/heritage-counts/pub/2014/economic-valuation-of-heritage-report-pdf/>
- Bedate, A., Herrero, L.C., Sanz, J.Á., 2004. Economic valuation of the cultural heritage: application to four case studies in Spain. *Journal of Cultural Heritage* 5, 101–111. <https://doi.org/10.1016/j.culher.2003.04.002>

heritage. This is particularly an issue when this limitation is not clearly recognised, and the value of culture is reduced to its economic value. In addition, conventional economic valuation methods have been critiqued on a range of grounds, including that people often have poorly formed preferences and do not always trade them off rationally, or more profoundly that aggregated individual consumer preferences should not be equate with social value. Some of these issues can be mitigated by integrating monetary and non-monetary valuation to assess non-instrumental values (Chapter 6), and through novel deliberative valuation approaches that move away from conventional economic value assumptions.

Resource requirements

Economic valuations are demanding in terms of expertise, requiring significant training in data analysis, statistics (econometrics), and, for stated preference methods, survey design. Desktop based valuations based on existing data often still require 3-6 months. Studies that collect new data may require 6-12 months of time to collect, analyse and report. For stated preference methods, there may be substantial sampling costs.

Box 10: Economic valuation of fisheries heritage in Scotland

Simone Martino and Jasper Kenter

PERICLES employed a choice experiment for the valuation of heritage-related aspects of inshore fishing on the Scottish west coast. The goal was to assess the value of fishing as a living heritage and valorise local produce as a source of income to local communities.

220 locals and visitors in the towns of Oban and Mallaig were interviewed and asked to make choices across six aspects relating to their consumption of seafood: *origin*, local vs imported food; *processing*, related to the freshness of produce; *harvesting*, small-scale inshore fishing boats vs offshore industrial vessels; *certification*, Marine Stewardship Council sustainable fishing label, or not; *food consumption*, large restaurants vs harbour-side outlet or takeaway; and heritage,

enjoying cultural aspects such as observing fishing boats operating at docks; and finally, *cost*, which reflected the price of a meal, allowing us calculate monetary trade-off with the other aspects.

The results showed a strong preference for locality, freshness, and sustainability in harvesting, as well as for tangible marine heritage. Local origin and environmental certification were most important. There were no differences in willingness to pay between locals and visitors, with middle-aged participants willing to pay substantially more than younger participants (due to the sampling, willingness to pay could not be estimated separately for the group above 60 years old). Willingness to pay a premium for different attributes of value is reported in Table 2.

These results show that both locals and visitors value positively cultural aspects of the living inshore fisheries, well beyond the basic value of consuming a fish supper. Furthermore, these results highlight the importance of strengthening the ties between catch and locality. As previously suggested by Cerjak et al. (2014) and shown by Reed et al. (2013), the presence of living fisheries creates a link between the customer and the fishers themselves.

Table 2: Willingness to pay a premium for different aspects of value of a fish meal.

Attributes of value	Willingness to pay (British pounds)	
	Age group <18-39	Age group 40-59
Local origin	14.55***	22.50**
Fresh processing	6.28**	9.72*
Inshore vessel	5.87***	9.09*
Environmental certification	10.52***	16.27*
Small outlet	5.32***	8.23*
Harbour heritage	5.39**	8.34*

*** p<0.01; ** p<0.05; *p<0.1; standard error in bracket

Chapter 13: Zoo-archaeological and genetic tools

Dimitra Mylona and Chrysoula Gubili

Present day fishing heritage often has deep roots in the past. Zooarchaeological and genetic tools can be used to investigate these roots. The two approaches are complementary, but also quite different. The first (formally known as ichthyo-archaeology) leads to the analysis of archaeological fish bones and marine invertebrates that are retrieved in archaeological excavations and has developed in the field of archaeology. Genetic analysis, in the context of work done by PERICLES, refers to the analysis of the DNA and proteins that are preserved in ancient fish bones. This tool has been developed by biologists and is often used in marine ecology.

The fish bones and seashells collected using zooarchaeology usually represent food leftovers or remains of processing activities that took place in the past. They offer insights on past fisheries (fish and molluscan species available, fishing technology, fishing intensity, and their changes over time) and on the cultural treatment of the above in the context of diet, economy, cult etc. The application of the genetic tool has a double purpose. One is to enhance the efficacy of zooarchaeological analysis

by providing more accurate identifications, and the second is to explore fish population dynamics in the past. This is a crucial element in assessing the nature of past fisheries and the effect of environmental and cultural factors on it.

Who is this for?

Both these tools are not new and they have been used in archaeological, historical and fisheries research, but they have not been used before in the context of cultural heritage (especially fishing cultural heritage).

When is it used?

These tools can be used where past fisheries may offer insights for the present day management of fisheries and fishing heritage. The outputs of zooarchaeology and genetic tools usually take the form of publications and subsequently, the data presented in those can be used in a variety of ways. In PERICLES' Northeast Aegean case region, for example, zooarchaeology was used to produce narratives on past fisheries that raise awareness on the cultural relevance of fishing at different points in time within the region. Additionally, genetic data was used to enhance the capabilities of zooarchaeology (e.g., to enable identification of the various species of gray mullets whose bones cannot be discriminated on morphological grounds), as well as to facilitate and improve



Figure 30: A typical sample of archaeological fish bones, as they are retrieved from excavations. These can be identified to species and shed light to issues of past fish populations and aquatic environment, fishing technology and culinary practises.

current management of culturally important fish species.

What are the outputs?

The outputs of these tools are of two types: a) the raw data which are stored in relevant databases. In the case of archaeological fish bones and marine molluscs these databases belong to either excavation projects or government (often not open access) and in the case of genetic data they are published in Github and biological database repositories (both open access); b) Data that are presented in published reports. These are more understandable to non-specialists, and may or may not be open access.

Strengths and limitations

These tools offer fish/fishing/ fisheries related data that cannot be obtained otherwise and also offer considerable time depth and space specificity to aspects of fishing cultural heritage. Additionally, they link the environmental and cultural element of fishing cultural heritage effectively. Their efficacy however, depends on the number of applications within a region, with best results attained in areas where zoo-archaeological and genetic research is already well established. The higher accumulation of data permits better results when they are used in the field of fishing heritage management.



Figure 31: DNA analysis of archaeological fish bones requires specialised facilities and methodologies.

Resource requirements

The application of the zoo-archaeology tool is fairly straightforward and is linked to the availability of archaeological fish remains and fish related artefacts (fishing tools, structures etc) in a region. In areas where such research has already been performed independently (in the field of local archaeology), as most coastal European regions are, relevant data are probably already available and free to use if they are published. If not, collaboration with local archaeological authorities or institutions needs to be set up and employment of a specialist zoo-archaeologist is required. Issues of technical facilitation (e.g., software, reference collections) and cost are dependent on local conditions and the extent of work that needs

to be done (often already existing resources are used and the main cost relates to bench fees and travel/accommodation expenses for the specialist). Genetic analysis is performed as complementary, using materials that have already been collected and analyzed in zooarchaeology. It requires the employment of a geneticist with experience on fish genetics and the use of specialized laboratories, which may be located abroad. The cost of the application of this tool can be high, depending on the local circumstances and the scale of application (number of analyzed samples).

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- Wheeler, A. and Jones, G.A., 1989. *Fishes*. Cambridge: Cambridge University Press.

Chapter 14: Digitisation

Maili Roio

Digitisation is the process of converting information into a digital (i.e., computer) format. Digitising cultural heritage is now widely used by archives, museums, libraries, universities, scientific collections and heritage authorities in order to make the heritage in its various forms visible and accessible to different audiences via the Internet.

In a broader sense, digitisation is a support process for digitally capturing cultural heritage. Digital heritage can be divided into two parts – one is the so-called ‘digitally born’ material (i.e., material that originated as digital content) and the other is the heritage that has been digitised. The digitised data can be shared more easily and

makes the cultural resources accessible to everyone.

Who is this for?

Digitising heritage is a powerful, and sometimes the only tool for preserving heritage. This does not apply solely to the heritage that has already been preserved in archives and repositories but

Figure 32: Digitised heritage: historic photo of sailing ship Gullkrona.

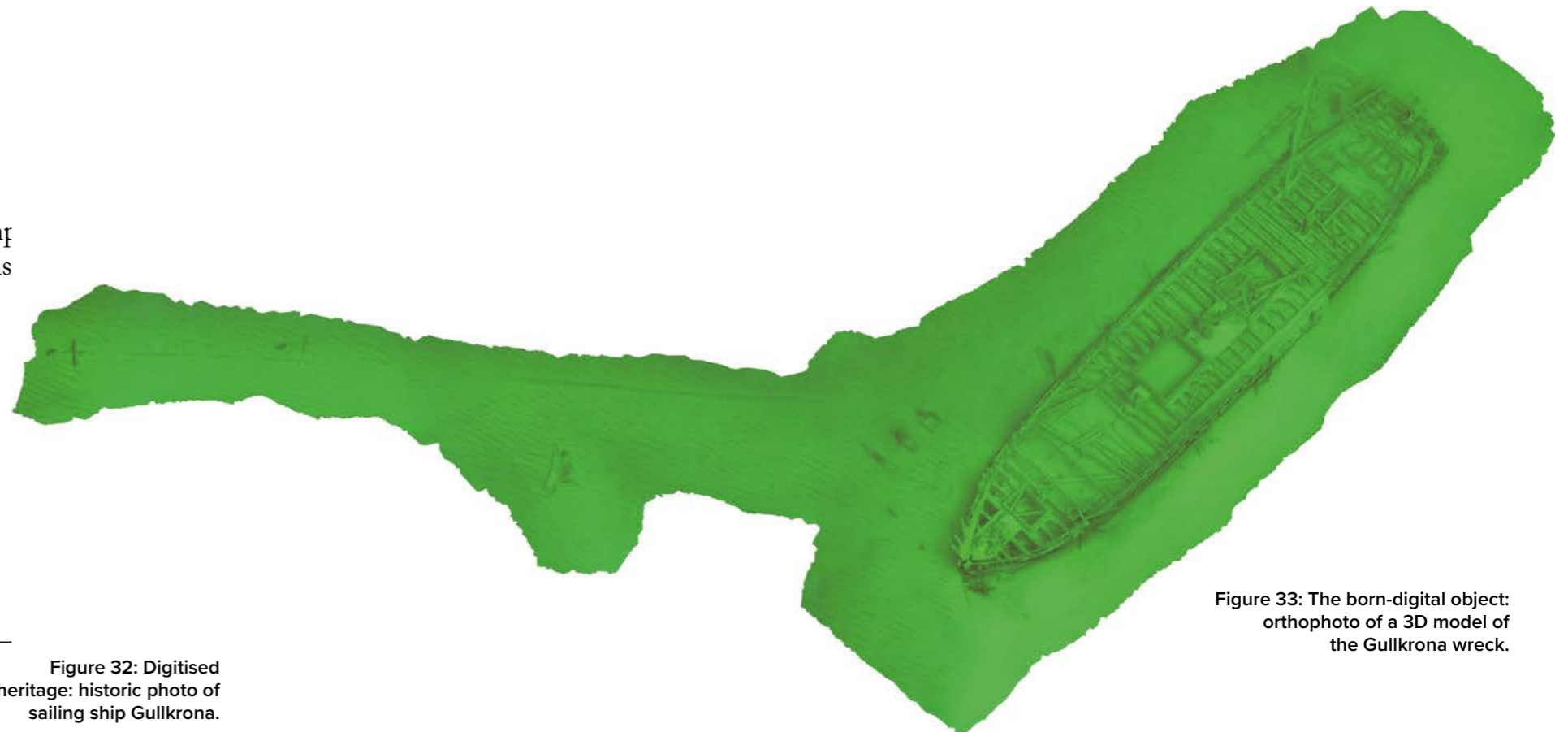


Figure 33: The born-digital object: orthophoto of a 3D model of the Gullkrona wreck.

applies also to the heritage that is still in situ and is being studied and recorded. The digitisation and online accessibility of cultural resources can promote innovation in areas such as tourism, education, architecture, design, publishing, advertising, gaming or spatial planning.

When is it used?

Digitising is used for capturing documentary, printed and photographed heritage, also art and film heritage – all the time keeping in mind the collections’ value in use as components of digital services. Therefore, digitised cultural heritage includes old paintings, graphics, drawings, sketches, photos, negatives, slides, glass negatives, documents, music sheets, scripts, books, maps, furniture, wooden objects, metal objects, textiles, polychrome objects, ceramics, glass... and all other materials.

Cultural heritage landscapes are also digitised: old houses,

sacral structures, hillforts, graves, sunken shipwrecks, various layers and archaeological items in their original location that have been found during excavations, etc. Digitising that part of the cultural heritage is essential as it is the most vulnerable part due to human activity.

Within the marine environment, thanks to the development of 3D technology it is possible to record underwater wreck sites completely in a relatively short time during fieldwork and it has become the main working tool for maritime archaeologists. 3D recording of wrecks has become irreplaceable in performing heritage protection duties and achieving conservation objectives by enabling carrying out detailed inventories and assessing condition. 3D recording can be used as a starting point for long-term monitoring and for understanding the natural processes at the site. 3D models make it possible for scientists, who do not perform underwater archaeological

research themselves, to still study the sunken sites. Visualising underwater heritage by making the invisible visible to a wider audience of people interested in history can be considered equally important.

Examples of decision/management contexts

When it comes to digitising heritage, continuous decisions need to be made about what objects are more important or more endangered and should be considered a priority, what objects can wait, and whether an object needs to be digitised at all. Digitisation of cultural heritage is thus not just a technical task, it also requires complex decisions about what should be digitised and in what manner. Thus for example, it may not necessarily be appropriate to scan at the highest possible resolution or use a certain piece of equipment simply because it is available, and there is a choice whether to digitise in 2D or 3D.

What are the outputs?

An output can be a simple document (a screenshot, a 3D model, a video, etc.) or a set of documents (a collection of models, charts, etc.). As a result of digitisation, an analog object becomes a digital object in raster image file format (scanning, photographing) or vector graphic file format (using an analog-to-digital converter). It is also possible to create 3D models.

With regard to digitised heritage that has been uploaded to the web, a challenge is for this not just to collect “digital dust” but would reach the audience who might be interested in it, would find use in some electronic study material or in new products.

Relevant tools

It is possible to digitise cultural heritage by using contact methods and non-contact methods. In the case of contact methods, the original touches the glass of the scanner and therefore it is not possible to

use this method with delicate materials. In the case of non-contact methods, the lens of the camera does not touch the material that is being digitised.

The digitised cultural heritage is accessible in various databases. The most remarkable tool has been Europeana – a multilingual platform for Europe’s digital cultural heritage collections, which currently provides visitors with more than 50 million books, paintings, films, recordings, photographs and archive material from over 2,200 partner institutions, including prestigious museums, libraries and archives. Europeana, together with related projects, has established an interoperable infrastructure and a thriving cross-border network for digital heritage.

Strengths and limitations

The digitisation of cultural heritage and its preservation is a costly task. At present, only a fraction (ca 20%) of Europe’s cultural heritage is digitised,

and only a small proportion of all digitised items is made accessible online. The most important challenge is still preservation and publication of digitised materials. The amount of digital data is huge, but its long-term preservation needs increased attention.

Resource requirements

Digitisation is very resource-intensive (time, cost, expertise and technical resources), at both the creation and the maintenance stage. Cataloging, indexing, preparation of material for digitising, post-processing of the material, quality assurance, and maintenance of digital resources are all necessary and resource-intensive activities. Digitising of cultural heritage requires special equipment, hardware and/or software for scanning, photographing and post-processing. Technical capabilities are evolving very rapidly and allow for increasingly efficient digitisation.

Further reading

- Dudek, I., Blaise, J. 2017. What Comes before a Digital Output? Eliciting and Documenting Cultural Heritage Research Processes. *International Journal of Culture and History*. <https://doi.org/10.18178/ijch.2017.3.1.083>
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- <https://digital-strategy.ec.europa.eu/en/policies/cultural-heritage>
- <https://www.europeana.eu/et>

Box 11: Sketchfab

Maii Roio

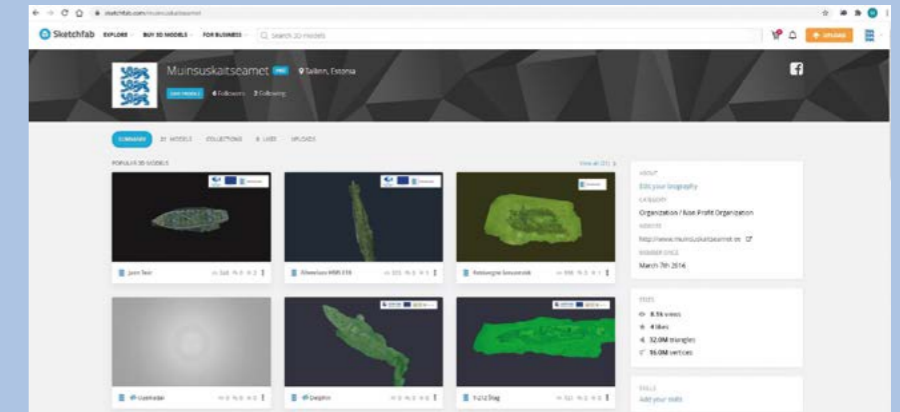
Sketchfab is a platform to upload, publish, share, embed, buy, sell, and find 3D, VR (virtual reality) and AR (augmented reality) content online: websites, eCommerce platforms, blogs, articles, advertising campaigns, and across social channels. This technology is integrated with every major 3D creation tool and publishing platform. It provides a viewer based on the WebGL (Web Graphics Library) and WebXR (Web Cross Reality) technologies that allows users to display 3D models on the web, to be viewed on any mobile browser, desktop browser or Virtual Reality headset.

Who is this for?

Sketchfab is used by both individuals and companies and institutions and has 5+ million registered users. Sketchfab’s community consists of artists, designers, architects, hobbyists, engineers, brands, museums, heritage authorities, universities, game studios, schools and others.

When is it used?

Sketchfab offers a useful service for sharing and viewing models both publicly and privately and provides online and mobile community portals, where visitors can browse, rate, download or buy user generated 3D models. Sketchfab users can choose to make their 3D model files available for download under Creative Commons licenses or to sell them in the Sketchfab store. Textured 3D models can provide virtual access to areas that cannot normally be reached, can be used for generating sections and profiles, and can be used as the basis for 3D-printed physical models.



What are the outputs?

The main product of Sketchfab is a 3D, Virtual reality (VR) and Augmented reality (AR) model viewer. It enables users to move freely around or inside the 3D scene using mouse, touch manipulation, VR or AR. In addition to static 3D models, the viewer is able to play and control 3D animations. Viewers can enable the VR mode to see the model in Virtual Reality headsets or the AR mode to insert the model within the real world via a mobile device. The 3D viewer is used on the Sketchfab website and mobile apps, but can also be embedded on external websites, notably on Facebook, Twitter and Wordpress.

Strengths and limitations

Sketchfab is easy to use and compatible with various 3D programs, websites and platforms. 3D models can be uploaded to Sketchfab from its website or directly from various 3D software, using plugins. All you need to use Sketchfab is an internet connection. It enables presentation of cultural heritage preserved in museums as well as in the landscape. It also constantly evolves and adapts to new challenges in

Figure 34: 3D, Virtual reality (VR) and Augmented reality (AR) of vessels from the Sketchfab webpage.

3D. Current limitations include limits on uploading large files. More generally, Sketchfab is proprietary, commercial software and not open source.

Resource requirements

Sketchfab is free to join for individuals, with a library of free and paid 3D content available for download. Cultural heritage institutions can receive a price discount. Premium users can customize and share their models privately. No special technology is required to use Sketchfab. Sketchfab provides a virtual reality mode of its viewer on compatible VR headsets.

Further reading

- <https://sketchfab.com/feed>
- <https://en.wikipedia.org/wiki/Sketchfab>

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Glossary

CACTUS: a tool created within the framework of the European IMCORE project that can be consulted online to improve consideration of climate change in public policies and facilitate implementation of concrete adaptation actions (Box 4).

Citizen Science: entails the participation of non-scientists in collecting (often large-scale) data (Box 2).

Community of Meaning: a diversity of stakeholders who share a concern regarding the development of sustainable practices of cultural heritage (Chapter 2).

Community of Participation: the governance setting of cultural heritage and the (possible) involvement of actors in the conceptualization of cultural heritage through processes of inclusion and exclusion (Chapter 2).

Compass Framework: a diagnostic tool developed by the PERICLES project that heritage agencies, practitioners, researchers, and coastal-focused governments can use for conserving and utilising cultural heritage, shifting away from strict preservationist approaches to an understanding of heritage as dynamic and potentially transformative (Chapter 3).

Contextual values: see values.

Digital Storytelling: a tool that enables, through an ICT-based platform, creating and sharing stories, which may include multimedia and map based references and can underpin tours (Box 9).

Digitisation: the process of converting information into a digital (i.e. computer-readable) format. Digitised data can be shared more easily and makes the cultural resources accessible to everyone (Chapter 14).

Economic valuation: assessment of the economic importance of heritage or other goods. It is conducted through diverse methods, including macro-economic assessments to consider the contribution of goods to regional or national economies, and micro-economic valuations based on the analysis of willingness to pay for goods, including those that fall outside the market (Chapter 12).

Ecosystem Approach: a strategy originating in the Convention for Biological Diversity for the integrated management of land, water and living resources to promote conservation and sustainable use. It is often associated with the ecosystem services framework. Although not designed for cultural heritage, it has informed other approaches such as Integrated Coastal Zone Management and Marine Spatial Planning relevant for the integrated management of marine heritage (Chapter 5).

Emic perspective: a cultural perspective from the 'inside' of a culture, rather than observed from the outside as a "detached observer" (Chapter 8).

Ethnography: a qualitative social science research approach conducted to discover emic cultural perspectives of communities of meaning, including through interviews and participant observation (Chapter 8).

Genetic tools for fisheries: analysis of the DNA and proteins that are preserved in ancient fish bones with the goal to enhance the efficacy of zoo-archaeological analysis by providing more accurate identifications and to explore fish population dynamics in the past (Chapter 13).

Integrated Coastal Zone Management (ICZM): a policy cycle based on the "...dynamic, multi-disciplinary and iterative process to promote sustainable management of coastal zones" that "...covers the full cycle of information collection, planning (in its broadest sense), decision-making, management and monitoring of implementation" (The Commission to the Council and the European Parliament, 2000).

Integration of cultural heritage in marine policies: the coordination between policy makers, stakeholders and citizens to tackle different problems simultaneously supported by the implementation of crosscutting tools such as environmental and strategic impact assessment, integrated coastal zone management and marine spatial planning.

Instrumental values: see values.

Intrinsic values: see values.

Landscape Approach: an effort to move away from purely ecological landscape conservation to include social, economic and cultural concerns building on local community and stakeholder engagement. Landscape Approaches can directly incorporate cultural heritage, including through the Protected Landscape Approach and the Cultural Landscape Approach (Chapter 4).

Life Framework: a framework that encapsulates the four main ways in which nature matters to people; how we live from nature, live in nature, live with nature and live as nature. The conceptual approach can also be applied to heritage values (Chapter 6).

Mapyourheritage.eu: it is an interactive, online cultural heritage mapping platform developed under PERICLES. This portal enables data collection and analysis of the distribution of tangible and intangible cultural heritage across the eight PERICLES European case regions (Aegean Sea, Brittany, Denmark, Estonia, Ireland-Scotland, Malta, Portugal and the Wadden Sea) (Box 8).

McDonaldisation of heritage: the repackaging and commodification of culture in a homogenised way for mass tourist consumption.

Marine Spatial Planning (MSP): it is an approach aimed at regulating the spatial and temporal use of marine activities. Being a compulsory requirement in Europe Directive 2014/89/EU, Marine Spatial Planning (MSP) is accelerating the inclusivity of cultural policies and actors' engagement within marine (and in some cases) coastal plans.

PERICLES: PrEseRvIng and sustainably governing Cultural heritage and Landscape in European coastal and maritime regionS is a EU Horizon 2020 research project that focused on sustainable governance of coastal and maritime cultural heritage and landscapes, running between 2018-2021 (Box 1).

PERICLES Risk Assessment Framework: used to assist assessment of risks, evaluation of the state of cultural heritage and the processes towards a sustainable use and management of heritage in a participatory way (Chapter 7).

Resilience: a dynamic capacity to adapt while remaining within critical thresholds, and responding to stresses by evolving new pathways. Resilient strategies can be categorised as survival, a traditional approach based on the static maintenance of the status quo, and transformative, to be interpreted as a deliberate and participative effort to steer systems towards new formations (Chapters 2, 3 and 7).

Relational values: see values.

Risk: events or phenomena that could result in, often irreversible, damage to cultural heritage often with broader economic, political, cultural and social effects (Chapters 2, 3 and 7).

Sketchfab: is a platform to upload, publish, share, embed, buy, sell, and find 3D, VR (virtual reality) and AR (augmented reality) content online, including digitised cultural heritage (Box 11).

Spatial approaches: used to identify and explain connections across and between locations, bringing together different datasets in a spatial context to provide unique insights, and reveal associations between different spatial dimensions (layers). Spatial data is used to inform key decision areas that affect coastal and maritime cultural heritage, such as heritage management policies, urban and rural planning decisions, and natural heritage conservation (Chapter 11).

Transcendental values: see values.

Values: include opinions on the importance of worth of something specific to context (contextual values), but also broader life goals and principles that transcend specific contexts, but help guide context-specific evaluations to facilitate deliberative decision making for cultural heritage management. A key conceptual distinction is that between: *Transcendental values*, those that signify broad guiding principles, such as prosperity, health or protecting nature; and *Contextual values* that pertain to a specific object of value, e.g., the importance of a particular forest for its historical significance. Contextual values include intrinsic, instrumental or relational values. Intrinsic value is based on the inherent worth of an object, instrumental value refers to an object's value for the sake of something else. Relational values describe the importance of meaningful relationships. Intrinsic, instrumental and relational values are not mutually exclusive (Chapter 6).

Value lenses: these are essentially "lenses of worthiness" that identify what is important and how. Different knowledge traditions harbour different value lenses (Chapter 6).

Visual Problem Appraisal (VPA): a film-based learning strategy with ethnographic, deliberative and artistic aspects, which enhances the inclusion of underrepresented stakeholders and increases the quality of problem analysis and policy design (Box 6).

Zoo-archaeology: within a marine context, analysis of archaeological fish bones and marine invertebrates to get insights on past fisheries (fish and molluscan species available, fishing technology, fishing intensity, and their changes over time) and on the cultural treatment of the above in the context of diet, economy, culture (Chapter 13).



Figure 35: Boats in Malta.



This handbook provides an overview of diverse approaches, methods and tools for integrated, sustainable and participatory governance of marine and coastal cultural heritage. It is written for decision makers, local communities and researchers, providing both conceptual and practical information on diverse topics, including: approaches such as the landscape and ecosystem approaches; frameworks for transformative heritage, participatory risk assessment, and heritage values; overviews of methodological families such as ethnography, participatory and spatial methods and economic valuation, and introductions to diverse methods and tools, from fish bone DNA analysis to digital storytelling. Altogether, it provides a diverse armory for conservation and sustainable use of heritage, based on interdisciplinary knowledge, a dynamic perspective of heritage, and inclusive and effective stakeholder and public participation.



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