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Water-Linked Heritage as a Vector of Ecosystemic Change in Cities and Regions

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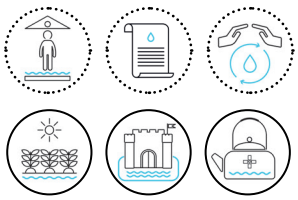
Water and water-linked heritage play a very important role for many cities and regions. They are at the center of many places' identities and key activities. Consider historic waterfronts and infrastructures such as bridges, port facilities, sluices, dams, water towers, mills and specific water-related landscapes, both in the city and in the countryside. Consider also intangible aspects of water-linked heritage, from traditional water management practices to values and local stories. These all have the potential to galvanize the interests of diverse stakeholders and provide a foundation for an ecosystemic approach to sustainable urban and regional development. This is not only because of positive values associated with water, but also because water-linked heritage valorization can effectively connect environmental, economic and social dimensions of sustainability. By working with water-linked heritage as a vector of the ecosystemic transformation of cities and regions, one can span multiple boundaries. First, doing so can attract a diverse set of stakeholders representing different disciplines and policy sectors, engaging them in place-making and the co-creation of transition strategies and tactical activities. Second, water allows for defining functional geographies and strategically linking diverse places connected by water bodies, cutting across administrative boundaries. By drawing upon five international case studies involved in the Interreg WaVE project, the authors have elaborated a typology to classify and compare different approaches to heritage valorization.

KEY THEMES



< Fig.1 One of the historical redoutes redeveloped in Breda, the Netherlands, through "development in dialog" process with diverse stakeholders to promote valorization of historical defensive structures with that of the Dutch landscape (Source: Brigitt Albers, Bureau Vormgeving / Municipality Breda).

^ Fig. 2 Tibi dam on the Monnegre River in the province of Alicante, Spain. The site is revalorized as part of the "Blue Routes" tourist attraction and Monnegre Green Corridor strategy connecting diverse water-linked heritage sites (Source: Brigitt Albers, Bureau Vormgeving).

Introduction

This article builds on the Interreg WaVE project implemented between 2019 and 2023.[1] WaVE stands for "Water-linked Heritage Valorization by Developing an Ecosystemic Approach." This project entailed knowledge transfer and close collaboration between five diverse European locations – Breda in the Netherlands, Aarhus in Denmark, Ravenna in Italy, Alicante province in Spain and Ister-Granum Euroregion across the Slovak-Hungarian border – supported by Delft University of Technology (knowledge provider) and two companies, CertiMac (communication) and Grants Europe (project management). The project aimed at promoting an integrated adaptive reuse of water-linked cultural heritage sites for driving wider ecosystemic changes toward more sustainable regional and urban futures. One of the hallmarks of the project was the emphasis on including a broad range of regional stakeholders in a process of co-creating action plans to valorize this heritage. The stakeholders involved included representatives of diverse regional public organizations related to planning, tourism, water management and heritage valorization, including museums, academic institutions, local businesses and civil society groups.

The action plans co-created across the five locations were based on regional status quo analyses engaging local stakeholder groups in identifying key water-linked heritage sites and values, features of the policy context, as well as challenges and opportunities for heritage valorization strategies. Local stakeholder groups were involved throughout the status quo analysis processes in different ways, ranging from simple provision of information to active forms of engagement involving partnership and

1. More information about the project can be found under the link, https://projects2014-2020.interregeurope.eu/wave/.

co-creation when identifying cost-benefit issues or regional strengths, weaknesses, opportunities and threats for water-linked heritage valorization (Dąbrowski et al. 2019a; Interreg WaVE 2022). On that basis, the actions proposed in each of the plans aim first at the realization of the jointly defined place-specific vision for the future of water-linked heritage, and second, the cross-fertilization of ideas and transfer of elements of good practices identified in each of the five locations (Interreg WaVE 2020).[2] Most of these good practices emphasized storytelling and place-making, engaging stakeholders and citizens, and using the water-linked heritage as a strategic connector across places and diverse policy agendas, from urban development to water management, climate adaptation, restoration of nature, culture, tourism, economic development and agriculture. The action plans are implemented as part of wider efforts to promote reforms in spatial and developmental policies on both municipal and regional levels, positioning water-linked heritage valorization as a driver of ecosystemic changes. In many cases, especially those in Southern and Eastern Europe, these actions are to be co-financed through the European Union's Cohesion Policy programs.

Current Approaches to Preserving and Managing Water Heritage

Through a comparison of the results (see table 1) from the regional status quo analyses conducted across the WaVE's five locations and through questionnaires and online workshops with the experts from those locations, we elaborated a typology to classify and compare different approaches to heritage valorization. This comparative research revealed substantial differences in approaches to water heritage valorization across different European contexts, but also highlighted some commonalities.

The typology is based on five dimensions, for which we defined three-step scales. The first one is the *degree of protection of heritage* and refers to the extent of flexibility in the approach to heritage valorization (for more details on the policy contexts in our five sites, see Interreg WaVE 2022). This degree can range from (1) restrictive / rigid (heritage has to be preserved as it is, there is little room for change) – this approach may restrict the use of heritage as a vector of wider socio-economic or environmental change; through (2) intermediate (mixed approach), in which there is a degree of rigidity, but also adaptation of heritage is possible; to (3) flexible (openness to use of heritage as a policy resource, for adaptive reuse of heritage sites or buildings) and more freedom is given to stakeholders in working with heritage in a more market-oriented approach. We found that in most of our case study areas the degree of protection of heritage was intermediate, with only Alicante standing out as having a rigid approach with little room for creative use of heritage as a resource for policy change.

The second dimension is the degree of integration and coordination of heritage policies with other politics, for instance, environmental or economic policies. This can range from: (1) segregation from other policies (the heritage policy has few links to spatial planning and/or other policy agendas); (2) coordination with other policies (elements of heritage valorization policy are coordinated with spatial planning and/or other sectoral policies to generate syn-

2. For more details on the regional status quo analysis, please see the WaVE Library online. https://projects2014-2020.interregeurope.eu/wave/library/

City / region	*Protection*	*Integration*	*Understanding*	*Participation*	*Decentralization*
Aarhus	Intermediate	Coordinated	Built and intangible heritage	Active	Deconcentrated
Breda	Intermediate	Integrated	Built and intangible heritage as well as natural heritage	Active	Decentralized
Ister-Granum	Intermediate	Coordinated	Mainly built heritage	Passive	Deconcentrated
Alicante	Rigid	Coordinated	Built and intangible heritage as well as natural heritage	Passive	Decentralized
Ravenna	Intermediate	Coordinated	Built and intangible heritage as well as natural heritage	Active	Deconcentrated

^ Table 1 Overview of the typology across the five WaVE project location (Source: Ana Maria Fernandez Maldonado, Marcin Dąbrowski, Kasia Piskorek and Wout van den Toorn Vrijthoff).

ergies and avoid tensions between them); to (3) integration with other policies (heritage is used as a vector of economic, social, environmental change, as an integral part of spatial planning and other development-oriented policies). Breda stood out as the only one of the five cases where the water-linked heritage policy was deemed "integrated" with spatial planning and other sectoral policies, namely water management and economic development policy. In other cases, heritage policy was only "coordinated" with other policies.

The third dimension – *broadness of the understanding of heritage* – examines the degree to which intangible and natural heritage are considered in heritage policies. Thus, heritage policies can be: (1) focused mainly on built heritage (buildings and infrastructures); (2) focused both on built and intangible heritage (including elements of identity, customs, storytelling, etc.); or (3) focused not only on built and intangible heritage, but also on natural heritage (considered alongside the valorization of tangible and intangible cultural heritage). In Ravenna, Breda and Alicante, the understanding of heritage in valorization policies was the broadest and included intangible and natural elements. In contrast, in Aarhus and Ister-Granum, the policy remains focused on built and intangible cultural heritage, ignoring natural heritage.

The fourth dimension is the *degree of participation* of stakeholders in decision-making on heritage valorization. This can range from (1) passive (stakeholders are informed or consulted); to (2) active (stakeholders engaged in a two-way dialogue on heritage policy, having some degree of responsibility for the implementation); and (3) (elements of) co-creation (co-creating knowledge, co-designing solutions, or co-evaluating the outcomes, etc.). In Aarhus, Ravenna and Breda, based on the assessment by the stakeholders and experts in a workshop setting, participation was deemed as "active," whereas in Ister-Granum and in Alicante, participation remained "passive," without active engagement in the decision-making.

Finally, the *degree of decentralization* allows us to gauge the extent to which heritage policy is defined locally or centrally. This ranges from (1) centralized (with decisions taken, funding provided, rules set by the central government); through (2) deconcentrated (with representatives of the central authority at sub-national

^ Fig. 3 Port of Darsena in Ravenna, Italy, including diverse industrial heritage sites and connecting the city to the coast through water (Source: Ravenna Turismo, Municipality of Ravenna).

levels playing a key role); and (3) decentralized approach (with a degree of autonomy of the local or regional level authorities in defining and managing their heritage policies). In Breda (city) and Alicante (province), we noted the greatest degree of decentralization. In Aarhus and Ravenna, the municipalities are less autonomous, having to work with the representatives of the central government playing a major role in the policy. In the case of Ister-Granum, we noted deconcentration as well, however, here we deal with a cross-border entity functioning as part of an European Grouping of Territorial Cooperation banner, making it a community of local governments rather than part of the territorial administration of a single state.

Current and Future Challenges for Water-Linked Heritage

An important task of the WaVE project was to rethink the very meaning of (water-linked) heritage and consider how it can be a strategic vector for sustainable change. This requires a degree of flexibility and openness to adaptation of heritage sites. Breda and Aarhus have experience using water-linked cultural heritage as a catalyst for city regeneration, while heritage values are recognized in planning and policies. The situation is different for Ister-Granum and Alicante, where heritage approaches have been rather conventional and divorced from regional policies. The projects in these two cities are helping to create a regional vision in which water-based heritage valorization promotes economic development while helping mitigate climate change risks. Italy has a broad and quite complex legal framework for heritage, but water-linked heritage is not specified in the framework, apart from the mention of environmental water-system heritage.

Furthermore, this new meaning of water heritage should include both intangible aspects – traditional techniques and professional skills, stories, and customs – and natural heritage aspects. By valorizing ancient dams, riverbanks, and water management practices, the WaVE projects strived to create synergies by preserving or regenerating natural habitats and restoring biodiversity, bringing host ecosystem services to the citizens.

Another challenge, frequently highlighted by the WaVE partners, was the need to engage a variety of stakeholders, especially citizens, in decision-making (for an overview of the engagement methodology used, see Dąbrowski et al. 2019b). Such engagement is a crucial element in the implementation of heritage projects, because it is linked to the availability of funds for the projects and the commitment of the stakeholders to their realization.

Then, there is climate change. Its impacts affect all the WaVE locations, especially since they are surrounded by rivers and seas, which bring significant risks. This challenge is probably most acute in Alicante province: part of the municipality of Almoradí, for instance, within the alluvial plain of the Segura River, is categorized as a severe risk zone. Alicante's action plan developed as part of the WaVE project includes the valorization of intangible water-linked heritage (traditional irrigation and land management techniques) as an element in mitigating the growing flood risk. Ister-Granum acknowledges the danger of floods from rising levels of the Danube. Facing similar risks, Breda is developing a water retention area in the Zoete delta (sweet delta) former industrial zone for water management purposes, as well as using brownfields adjacent to the Mark River as water retention spaces. Aarhus is looking for synergies with environmental policies to mitigate the

^ Fig. 4 Green embankments of the restored the Aarhus River in the city of Aarhus, Denmark (Source: Phillip Fangel, Aarhus City Archive).

impact of climate change in the area of the old industrial harbor.

Other global challenges are looming in the horizon, which may shift priorities away from heritage, but the effects remain uncertain. These include the post-Covid-19 public health situation, increasing inflation and the economic crisis as well as the acute energy crisis caused by the recent geopolitical events and conflict in Ukraine.

Conclusion and Future Approaches

The WaVE project delivered important lessons regarding the importance of water-linked heritage that may be useful for policy and research (Dąbrowski et al. 2022). Even if water-linked heritage is vulnerable to climate change impacts, it may help develop new solutions for climate adaptation, building on traditional techniques and knowledge. Water-linked heritage is also an asset in building awareness of climate change impacts among stakeholders and citizens and of the need to embrace water, rather than to keep it at bay.

Moreover, the WaVE project acknowledged the need for more inclusive and active engagement of diverse stakeholders and social groups. Using input from citizens with different values, cultural backgrounds and experiences can help realize the potential of heritage as a vehicle for inclusion and social integration. Involving diverse stakeholders to co-create strategies for heritage valorization makes it possible to identify new possibilities and to think "outside the box." Co-creation processes require build-

ing and maintaining long-lasting relations with stakeholders, supporting long-term collaboration, ownership and social acceptance of heritage valorization strategies.

The WaVE project's results also suggest that instead of a human-centered approach to water-linked heritage valorization, we need an ecosystemic one, in which past knowledge and heritage values inform the design of new landscapes and pathways to sustainability. Water is then an important element connecting the visions for a far-reaching ecosystemic urban and regional transformation with the necessary transitions in the basic elements of urban systems and structures (energy, mobility, blue-green spaces).

Heritage, like water, is always in flux. Instead of preserving it in its current state, we should strive to use water to develop dynamic and multi-functional waterfront areas, to create new values and new uses of heritage through a process of development in dialogue and to guide our cities and regions toward more sustainable futures.

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References

Dąbrowski, Marcin, Ana Maria Fernandez Maldonado, Vincent Nadin, Kasia I. Piskorek, and Wout van der Toorn Vrijthoff. 2019a. *Regional Status Quo Methodology*. Interreg Europe. Delft: Delft University of Technology. https://projects2014-2020.interregeurope.eu/fileadmin/user_upload/tx_tevprojects/library/file_1573467331.pdf.

Dąbrowski, Marcin, Kasia I. Piskorek, Ana Maria Fernandez Maldonado, Wout van der Toorn Vrijthoff, and Vincent Nadin. 2019b. *Methodology for the Engagement of Local Stakeholder Groups (LSG)*. Interreg Europe. Delft: Delft University of Technology. https://projects2014-2020.interregeurope.eu/fileadmin/user_upload/tx_tevprojects/library/file_1572188161.pdf.

Dąbrowski, Marcin, Ana Maria Fernandez Maldonado, Wout van der Toorn Vrijthoff, and Kasia I. Piskorek. 2022. *Key Lessons from the WaVE Project and a Manifesto for the Future of Water-Linked Heritage*. Interreg Europe. Delft: Delft University of Technology. https://www.interregeurope.eu/fileadmin/user_upload/tx_tevprojects/library/file_1643216103.pdf.

Interreg WaVE. 2020. *Good Practices Catalogue for International Knowledge Exchange. 13 Good Practices in Valorization of Water-Linked Heritage from 5 European Locations*. Interreg Europe. Delft: Delft University of Technology. https://projects2014-2020.interregeurope.eu/fileadmin/user_upload/tx_tevprojects/library/file_1605796860.pdf.

Interreg WaVE. 2022. "Project's Online Library." https://projects2014-2020.interregeurope.eu/wave/library.

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