



Following Water at the Mantua and Sabbioneta World Heritage Site

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Reflecting on water and heritage as a system linking nature and culture raises challenges and opportunities for both water and heritage management. This case study explores what integrating water and heritage management means for Mantua and Sabbioneta, two cities in Northern Italy listed by UNESCO as a World Heritage Site because of artistic, architectural and urban values associated with the Renaissance. It considers how World Heritage management recalls water-based visions, interactions between heritage institutions and water institutions and the role of water in innovative heritage projects promoting local communities' involvement and challenging partnerships. It argues that embedding water and heritage relationships for sustainable development could be recognized as an opportunity for the Mantua and Sabbionetta World Heritage Site to integrate Sustainable Development Goals (SDGs) 11 and 8 with goals 4, 12, 15 and 17.



< Fig.1 Part of the “Pescherie di Giulio Romano” from the “Rio” during a market day for local products (Source: Maria Estefania Gioia).

The Mantua and Sabbioneta World Heritage Site

Mantua and Sabbioneta are two cities in Northern Italy, located in the Pianura Padana (Padana plain), a territory shaped by the water of the rivers Po, Oglio and Mincio. The two cities, both located in Mantua Province in the Lombardy region, are separated by approximately 30 km. Mantua (capital city of the province of the same name) currently has almost 49,000 inhabitants and Sabbioneta has 4,200 inhabitants (ISTAT 2020).

During the Renaissance period, the Gonzaga family shaped their territorial domains into land for agriculture, hunting and horse breeding, while constructing the dukedom's defensive capabilities. Moreover, their patronage of artists and architects, such as Andrea Mantegna and Giulio Romano, transformed Mantua's territory from Roman remains and medieval settlements into a dukedom of outstanding art, architecture, urban interventions and hydraulic works. During the Renaissance, Mantua was an artificial island in the middle of a plain where the Mincio River was made into four artificial lakes surrounded by embankments, swamps and systems of fortresses, ports and reclamation lands. Close by, in the second half of the sixteenth century, following urbanistic principles of the Renaissance, Vespasiano Gonzaga built Sabbioneta as a new city and fortress surrounded by embankments, forests and swamps.

The artistic, architectural and urban achievements during the Renaissance period in both Mantua and Sabbioneta were inscribed on the World Heritage List in 2008 as one Cultural Serial World Heritage property. Although both cities have distinctive characters, the World Heritage List inscription focuses on their shared World Heritage values. Both sites are managed to-

gether at the local level through a World Heritage management office that aims to assure permanent coordination between the two municipalities and the Italian Ministry of Culture. Such a framework requires the reconciliation of different interests and the development of shared visions to reinforce the World Heritage character of both cities. Currently, the Mantua and Sabbioneta World Heritage management plan follows the 2011 UNESCO Recommendation on the Historic Urban Landscape (UNESCO 2011) to facilitate the integration of comprehensive strategies framing World Heritage values in a broader socio-economic and environmental sustainable development perspective, in which local actors may play an active role in a site's protection and enhancement.

Based on these considerations, this case study explores how the focus on water systems, water-based visions and water-based projects that shape the Mantua and Sabbioneta World Heritage Site improve its heritage management while working to integrate heritage and water; in doing so, it addresses water and heritage interactions in three parts. The first highlights the role of water for the Mantua and Sabbioneta World Heritage property by exploring interactions between heritage institutions and water institutions. The second demonstrates the role water can play in innovative projects, recalling local communities' involvement and challenging partnerships. The third recalls the role of water as an opportunity for the Mantua and Sabbioneta World Heritage Site to include Sustainable Development Goals (SDGs). To conclude, this case study draws attention to future challenges and opportunities pertaining to the water-heritage relationship at Mantua and Sabbioneta.

Water and World Heritage Interactions

Water affects heritage in different ways. It can be important at the creation of a heritage site and it is also part of future challenges. When considering water and heritage relationships, water erases the limits between what is inside and outside a World Heritage property. This situation facilitates the understanding of challenging World Heritage management approaches such as the Historic Urban Landscape approach. Therefore, it is important to examine how Mantua and Sabbioneta World Heritage management reference water systems, how institutional water frameworks interact with the World Heritage site, and to explore the role of water in local communities. Water can be approached as a common value to reconcile different interests and contribute to understanding World Heritage from a sustainable development perspective while promoting projects that increase local capacity and support challenging governance integration.

Water and World Heritage management

The Mantua and Sabbioneta World Heritage Management Plan 2020 depicts each city's relationship with water systems through time, recalling the vision of Mantua as a *città d'acqua* (city of water) and the vision of Sabbioneta as an *isola fortificata nella pianura di bonifica* (fortified island in the reclamation plain). These water-based visions for the current Mantua and Sabbioneta World Heritage management plan have influenced the interaction between water management and heritage management. For instance, the systems of lakes, channels, and reclamation lands, among other water systems that now connect the Mantua and Sabbioneta World Heritage sites with their territories, involve various water and heritage stakeholders. These stakeholders recall the role of water

protection for historical and environmental purposes, as well as the use of water inside and outside the areas protected as World Heritage. For example, the Mantuan lakes link the Mincio River and the water systems connecting the Mantuan territory (fig. 2). The Parco del Mincio (Mincio Park) is part of the Mantuan World Heritage buffer zone, and as a regional institution establishes a *contratto di fiume* (river agreement) about the role of biodiversity and environmental protection throughout the Mincio River and the municipalities between Garda Lake and the Po River. Moreover, in Sabbioneta, traces of the historical water defense systems are present in the reclamation lands shaping the Sabbioneta World Heritage buffer zone (fig. 3). These lands belong to private owners currently using them for agriculture; and their use depends on water irrigation systems managed by *consorzio di bonifica* (water management boards).

Mantua and Sabbioneta as a case study demonstrates that involving water institutions in World Heritage management is as crucial as involving World Heritage in water protection and water management. Although there is no official interaction between the World Heritage Sites and water management frameworks, understanding water and heritage together has the potential to break the administrative boundaries between a World Heritage Site and water and heritage management. Exploring water and heritage relationships allows the Mantua and Sabbioneta World Heritage Site to show how these interactions occur at the local level, for instance as projects, partnerships or just in the everyday life of the communities living in the heritage-protected area.

Water, local communities and heritage projects

This section of the case study uses as examples projects promoting innovative heritage ap-



^ Fig. 2 Recent photo of Mantua from one of the lakes (Source: Teseo, CC BY Creative Commons Attribution-Share Alike 3.0 Unported).



proaches, connecting different institutions and local communities as active stakeholders for Mantua and Sabbioneta World Heritage management. In Mantua, public-private partnerships connect water with innovative approaches to protect heritage. The World Heritage Management Plan 2020 follows the vision “Mantua, City of Water” and links incremental planning processes promoted by the Mantuan municipality and public-private initiatives with the rehabilitation of public spaces such as the Mantuan lake shores and the restoration of buildings linked to water systems inside the city. For example, the local initiative “Pescheria di Giulio Romano” is a heritage-based project to restore and reuse an abandoned building that connects the city with the “Rio” (an artificial channel crossing Mantua). The building allows access to the water and to the “Beccherie” (loggia underneath the city level), a public space used as a fish market until the nineteenth century (fig. 1).

The project led to the establishment of Fondazione Pescheria di Giulio Romano, a foundation in charge of the building restoration works and the management of the project in the next 30 years. The foundation holds crowdfunding campaigns involving civil society as new partners of the project and it also sponsors events and educational programs with local schools. This public-private partnership was recognized as innovative heritage management by the EU-Urbact INT-HERIT network. Currently, the project and restoration works are still in development.

In Sabbioneta, concerns about the local communities and heritage relationship led to an innovative initiative called “Cerchio d’Acqua” (Circle of Water), a project carried out in 2016–2018. The project developed a participatory process aiming to strengthen local community involvement, resilience and value creation in Sabbioneta. This project reinforced the World Heritage



^ Fig. 3 Current photo of Sabbioneta fortification wall and agricultural lands (Source: Teseo, CC BY Creative Commons Attribution-Share Alike 4.0 International).

Management Plan 2020 vision of “Isola fortificata nella pianura di bonifica” (fortified island in the reclamation plain) aimed at enhancing the role of the fortification walls, the reclamation lands, and the embankments as water-land management systems surrounding Sabbioneta. One of the main challenges of the project was to gather actors usually not involved in heritage management (like local agricultural institutions, institutions managing water irrigation systems, and private landowners) and promote dialogue among all the different local actors involved in Sabbioneta territory. The project conducted several progressive meetings and it developed digital cultural mapping made by and for local communities during exploratory walks in the reclamation lands and at participatory tables with local actors. Moreover, the projects followed an educational program working for and

with local schools. Among the results, the project elaborated a database for the water-land management systems surrounding Sabbioneta, which did not exist until the development of the project. Unfortunately, after the project ended, there was not a monitoring system to measure the impact of the project in Sabbioneta. These projects demonstrate the ability of water-based visions to be a medium to mediate between different institutional frameworks and stakeholders. They show how interaction between water and heritage can drive dialogue and actions that increase local communities’ awareness of the possible significance of World Heritage and the sustainable development of their cities.

Water, World Heritage and the Sustainable Development Goals

The World Heritage framework aims to integrate the Sustainable Development perspective into the procedures of the World Heritage Convention as evidenced by the Policy for the Integration of a Sustainable Development Perspective into the Processes of the World Heritage Convention (UNESCO 2015). Even though each national context has been slowly incorporating Sustainable Development Goals (SDGs), World Heritage Sites still struggle to integrate SDGs into World Heritage management systems and plans.

The Mantua and Sabbioneta World Heritage management plan does not use SDGs for defining and monitoring World Heritage efforts. However, at the UNESCO World Heritage Canopy,¹ Mantua and Sabbioneta World Heritage site managers have identified SDG 11 (sustainable cities and communities) and SDG 8 (decent work and economic growth) as targets for the shared management framework. Even though SDGs 11 and 8 are crucial for the Mantua and Sabbioneta World Heritage Site, using water as a holistic vision for World Heritage management can also help address other SDGs and broadens the role of water in World Heritage conservation from a sustainable development perspective. The in-

teractions between the Mantua and Sabbioneta World Heritage Management Plan 2020 and the projects Pescheria di Giulio Romano and Cerchio d'Acqua can be examples. For instance, World Heritage management could consider SDG 17 (partnership for the goals) to measure the evolution of private-public partnerships and local communities' involvement at the Pescheria di Giulio Romano project. Furthermore, the building's historical connection with water, the participation of local communities and the activities developed with local schools may help to bring in SDGs 4 (quality education) and 12 (responsible production and consumption) to reinforce the role of research, knowledge and education about water contamination and water consumption in cities. The Cerchio d'Acqua project links to SDG 4 by measuring the project's impact on local schools and younger generations and to SDG 17 by measuring the participation of actors dealing with water that do not usually interact with heritage-based projects. Moreover, targeting SDGs 12 and 15 (life on land) could help to connect the role of agriculture and water irrigation systems to the environment and their impact on World Heritage management.

1. This case study reflection started with my PhD research "World Heritage and Locally Based Planning Interaction" (tentative PhD title) at Politecnico di Milano, an application to the case studies call at the UNESCO World Heritage Cities Forum 2021, and the presentation "Shared Vision, Shared Strategies: The Case of Mantua and Sabbioneta World Heritage Site through the Examples of 'Pescherie di Giulio Romano' and 'Cerchio d'Acqua'" at the forum at the UNESCO World Heritage Cities event "Celebrating the 10th Anniversary of the 2011 UNESCO Historic Urban Landscape Recommendation" held online on 21 June 2021. This presentation is available online at <https://whc.unesco.org/en/canopy/mantuaandsabbioneta/> and it was jointly made by myself and the site managers of Mantua and Sabbioneta. The information available at the UNESCO World Heritage Canopy website titled "Creating a Shared Framework in the Serial World Heritage Property of Mantua and Sabbioneta (Italy)" builds on text and photos chosen by Mantua and Sabbioneta site managers and the World Heritage Center.

The projects Pescherie di Giulio Romano and Cerchio d'Acqua are not of my authorship. Information about these projects is open-access. I have gathered more information through interviews with project authors and key stakeholders as part of my PhD research in urban planning, design and policy.

Final Remarks About Water and Heritage at Mantua and Sabbioneta

The analysis of the World Heritage Site of Mantua and Sabbioneta highlights how crucial it is to gain institutional capacity for World Heritage and water interactions. In this regard, it is key for World Heritage management practices to pursue constant planning that aligns different levels, frameworks, policies and governance plans. For instance, at an international and national level, World Heritage management must align with SDG monitoring systems, and in the local context, align World Heritage management with existing policies and studies focused on water. For instance, in the case of Mantua and Sabbioneta, it is important to learn from studies of climate change and of water contamination due to the industrial use of the Mantuan lakes and the agricultural activities in Sabbioneta. The results of such alignments may lead to a framework for integrated interpretation and management of World Heritage cities and the pursuit of sustainable development.

Furthermore, in Mantua and Sabbioneta it is crucial to include World Heritage in spatial and urban plans and actions, such as improving better public transportation between both World Heritage cities and within each city's nearby areas. In this sense, connecting water and heritage could promote new forms of mobility by recalling the role of rivers, ports and lakes for transportation or by reusing traces of historical embankments as cycling routes. Such measures could be linked to slow tourism efforts and projects reframing tourism at World Heritage Sites. These aims promote alternative forms of the development of Italian World Heritage cities with cultural tourism often functioning as a mono-cultural economic development model. Similarly, Covid-19 has posed both a challenge and a source of new opportunities for more locally

based tourism, with potential benefits for both locals and visitors.

Finally, tracing water and heritage interactions invites us to explore the role of World Heritage cities as heritage for local communities. For instance, recalling local communities' involvement in the projects Pescheria di Giulio Romano and Cerchio d'Acqua shows how water requires trade-offs and compromises for stakeholders with divergent interests. Nevertheless, further reflection must consider what and how heritage narratives and memories involving water emerge when local communities examine water and heritage relationships. How will local people recount local stories about water traditions inside the World Heritage Site? Will they be reminded of how much water was and is part of everyday life in the local community? Understanding past, present and future water and heritage relationships is crucial for the Mantua and Sabbioneta World Heritage Site. Water was important in the past, continues to be in the present and it will remain so in the future of these two cities, their inhabitants and their territories.

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