

ing. More than 800 commitments were issued as part of the Water Action Agenda. Some 219 commitments include a reference to heritage, and 166 acknowledge the role of the past. Yet, how exactly the past and heritage can help to address water-related challenges requires clarification.

One step to a better connection between water, heritage and the past is understanding which disciplines engage with water and how, and what this means for valuing water, culture and heritage in a shared way. Therefore, capacity building in multiple disciplines – from architecture to dentistry, plumbing to carpentry – can help facilitate more sustainable and inclusive water use. For example, connecting professional water practices to the public and linking the study of maritime heritage to the exploration of water management and its past may help increase water awareness and facilitate the emergence of shared approaches to valuing water and heritage. Studying the past can help us understand the relationship between humans and water and the multiple forms of tangible structures and intangible practices that may derive from living with water. A first lesson to learn from historic practices may be to respect water on a daily basis, pragmatically, emotionally, and perhaps also spiritually.

The Valuing Water Initiative, established in line with the United Nations Valuing Water Principles, has opened debate on a value-based design that goes beyond economic values. As Michela Miletto and Richard Connor write in their preface to the report *Valuing Water*:

The values of water to human well-being extend well beyond its role in supporting direct physical life-sustaining functions or economies and include mental health, spiritual well-being, emotional balance, and happiness. The often intangible nature of these sociocultural values attributed to water regularly defies any attempt at quantification, but they can nevertheless be regarded amongst the highest values. (UNESCO World Water Assessment Program 2021, 8)

A recent survey conducted by the Valuing Water Initiative emphasized similarly: “Valuing water needs to bring together explicitly the public and private values of water. Bringing these together using a common denominator, typology, or methodology is difficult because they are intrinsically different in value and scale” (Valuing Water Initiative 2020, 7).

The Valuing Water Initiative in its first *Global Survey of Water Values* proposes a system of multiple values – a values landscape – including what the survey calls fundamental, governance and assigned water values (Valuing Water Initiative 2022). The findings of the survey suggest that there are economic, environmental and cultural values at play. Identifying values is an important step, but how exactly can we implement the values in practice?

We must understand our water system and the values that shape them in space (in the landscape, cities and buildings) and through time (past, present and future) as flows (water is always changing and never fixed) and through the lens of networks in an ecosystemic way. A so-called “value case”

going beyond a financial bottom line can help. To achieve that, we need broad awareness of the role of values, including values that have shaped practices of the past, values that have catalyzed transformations, and values associated with material, economic and cultural flows. Our values also determine how we interact with nature – and how we design and create.

For this reason, it is important to point to the concept of culture, which includes ideas, languages, institutions, laws and rituals in particular social contexts. To get an idea of how diverse water values can be, you only need to think about the different ways you engage with water. We propose that turning to the past, history and heritage can help, at least in three ways:

*1. History can serve as a **mirror** for water-system thinking.*

Analyzing past water systems and the values that guided them can help us understand the importance of water as a complex system, from source to sea. We can get a better sense of how integrated water systems connect spaces, institutions and culture, and how this history can help us imagine sustainable water futures. Values are often anchored in habits, traditions and cultures – even recently created ones. By exploring the heritage of communities, it is possible to unveil these values. For example, the study of traditional water systems shows us how water management, architecture, institutions, laws and rituals have been integrated and have allowed communities to thrive in extreme conditions, including arid or flood-prone environments.

*2. The past has to be recognized as the **foundation** for future development.*

The structures we have erected, the institutions we have formed, the laws, tools and cultures we have developed over centuries are not only a study object; they are the foundation for how we can design the future. Once established, a system of dikes, polders, pumps and institutions shape all future interventions. History provides us with empirical evidence of developments and interventions that failed. It also teaches us ways of living with water that might be reestablished.

*3. Specific spaces and practices can be identified and protected as **heritage**.*

Heritage properties and practices can inspire sustainable development, but if we want to save them for future generations at a time of climate change, they need to be protected, including from destruction by changing water systems. This means developing clear frameworks, terminologies and policies. For example, water management plans for UNESCO World Heritage Sites could help protect these sites. Traditional ways of living with water can also inspire future water management.

The contributions in Volume 2 Number 2 (2023) of *Blue Papers* complement the discussions held in New York during the UN 2023 Water Conference. They stress the benefits of revisiting the good practices of the past with methods and case studies that are neither energy nor capital-intensive, but that are value-based and offer ways of living well despite various water challenges.

Part I, "Challenges, Concepts and New Approaches," explores several value-based perspectives that are linked to indigenous communities, religious practices and living heritage and examines the political dimensions of water heritage. E. Lynn Porta and Aaron T. Wolf focus on the integration of water values in international treaties and organizations, an important perspective for the UN Water Action Agenda. Vera Lessa Catalão and Sergio Augusto Ribeiro explore the role of nature-based solutions and ancient water practices in South American Indigenous communities, by revitalizing ancestral concepts such as *buen vivir* (well-being) conceptualized as a common good. Pascal Bourdeaux touches on the importance of religious history and its potential capacity to develop moral practices for a "global history of religious ecology." Jet Bakels and Chantal Bisschop discuss intangible cultural heritage practices that can support the recreation of a more climate-resilient landscape. Jean-Paul Corten follows up on this discussion with a proposal for systematically connecting water and heritage management through their history, conservation and planning. The complex relationship between the past and the present is further explored by Lena Hommes, with an analysis of the imaginaries of the past and the influence of contemporary values in the example of a Peruvian ancestral water system and the instrumentalization of values for political purposes. Finally, Elena Perez-Alvaro explores the role of intangible and community practices of underwater cultural heritage in achieving the SDGs.

Part II, "Methodologies and Case Studies," begins with three contributions that provide innovative approaches and insights for understanding – and planning according to – the different ways humans relate to water in densely inhabited areas, across multiple geographies and climatic conditions. Rianne Makkink and Barbara Kaczmarczyk describe how the WaterSchool M4H+ project in Rotterdam proposes a new way of thinking about the management of water resources by promoting sustainable, consumption-conscious practices. Theo Kremer, Marco Scheffers and Julia Geven present their approach to harnessing and implementing historical data in sustainable development projects, such as the redevelopment of the Nieuwmarkt area in Amsterdam. Queenie Lin revisits how the Dutch East Asia Company incorporated their own water management knowledge with local knowledge and colonial precedents for living with water in the tropics, identifying challenges for contemporary heritage management. Ana María Arbelaez-Trujillo and Juliana Forigua-Sandoval explore the tensions between natural and cultural heritage preservation using the case of the Serpis River in Spain. The three articles that follow address the potential of traditional ways of living with water to adapt and respond to climate change. Moustaph Ndiaye explores the water heritage of Senegal's St. Louis Island and its climate vulnerability, reflecting on the potential of the area's sustainable development. Laura Cipriani and Alessandro Destro focus on ways in which past coastal landscape and heritage practices can help in addressing climate change challenges through the case of Venetian "fish valleys" in Italy. Szu-Ling Lin and Cheh-Shyh Ting present the Erfeng Irrigation Canal System in Taiwan, which not only facilitates long-term collaboration between Taiwan and Japan but also provides potential solutions to contemporary climate challenges. Joseph Pieteron's article on the Nzulezo stilt village in Ghana explores the challenges of cultural heritage preservation in the context of tourism-oriented site management. Tourism is also one of the topics addressed by Inge Bobbink, Wenting Gao and Isabella Banfi, who present a layered visual analysis as a prima-

ry methodology with which to assess the current situation of the historic water supply system of Sassi di Matera in Italy. Finally, Filipe Condé Alves closes with the Brazilian case of Caxambu City, where the local government, together with citizens, pursued the recognition of heritage status as a way to safeguard traditional ways of living with water and to maintain community water access. In summary, these articles suggest the necessity for humans to rethink the values of living with water. They prioritize sensitivity to cultural and local values over anthropo- and techno-centric approaches. The case studies, methodologies, concepts and new approaches put forward in this issue of *Blue Papers* demonstrate that *living with water* is not synonymous with living around, against, or even despite water. Instead, they establish a unique body of knowledge through which we can reevaluate our relations with water in diverse geographical and functional contexts.

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