



## POLICY BRIEF

April 2023

### World Water Day 2023 Scotland:

### ‘Accelerating Change through Partnerships and Cooperation’

Edinburgh International Conference Centre, 22nd March

#### Overview

- The Hydro Nation agenda facilitates science and innovation, developing talent and collaboration to inform policy and maximise the benefits of Scotland’s waters.
- Hydro Nation International aims to coordinate and harness a range of national and international water-related activities that contribute not only to the Hydro Nation agenda, but also to the UN goals, particularly SDG6.
- Progress towards world targets remains off track and could jeopardise the SDG agenda.
- Water affects all of us, so we all have a responsibility to lead, act, and innovate to make a difference and ‘be the change’.
- The scale and pace of the climate emergency and other global issues has led to greater recognition of the need to collaborate and share knowledge to shortcut our way to get SDGs and other targets back on track.



#### Background

In December 1992, the United Nations General Assembly declared March 22 as World Water Day, and it has been celebrated annually since 1993. World Water Day 2023 marked an important moment, not only as the 30th anniversary of this observance, but also as the halfway point for the International Decade for Action, “Water for Sustainable Development” 2018-2028. At this crucial time, where we need to reaffirm our collective responsibility to the 2030 Agenda, this Hydro Nation conference provided a forum for water professionals, researchers, policymakers, regulators, and the wider community, to share knowledge and learn about emerging trends and opportunities for water to act as a catalyst for accelerating change through intersectoral interactions, and the ways in which policy, research and innovation can come together to safeguard water sustainability and resilience worldwide.

#### Key themes

The event programme was framed around the premise of “Water and...” to emphasise the role of water as a catalytic agent of change for achieving a sustainable and resilient future and its linkages to achieving other Sustainable Development Goals (SDG) targets and aims. The event was structured into morning, afternoon, and evening sessions. The morning session consisted of plenary [talks](#) around four key themes: 1) Water and Health, 2) Water and Sustainable Engineering, 3) Water and Digitalisation; and, 4) Water and Global Cooperation. Following the thematic session, the audience had the opportunity to network and view the digital poster exhibition provided by the Hydro Nation Scholars Programme and held in the [Virtual Pavilion](#). The afternoon session focussed on Water and Policy, starting with a round table discussion on partnership working, and later updates on Scotland’s evolving Hydro Nation agenda. The event wrapped up with the evening keynote talk supported by Scotland’s Centre of Expertise for Waters (CREW) on the topic of place-based solutions.

The key messages from World Water Day 2023 Scotland are summarised below.

## Water and Health

The focus of this session was on the interactions between the water and healthcare sectors. In the spirit of partnerships, the first talk was a joint presentation provided by [Andrew Millar](#) (University of Edinburgh) and [Michael Lockhart](#) (Public Health Scotland, PHS) highlighting the ongoing work carried out by a wide range of partners including Scottish Water, SEPA, University of Edinburgh, PHS, BioSS and CREW for monitoring the SARS-CoV-2 virus in wastewater. The programme, established in the first few months of the pandemic, provided key information to Scottish Government and others about the reproduction number and prevalence of the virus. Early evidence showed that wastewater and case data tracked very closely during the outbreak, providing a new promising approach to track the virus nationwide. From PHS' perspective, similar wastewater surveillance has wider applications as a multidisciplinary service dependent on strengthening links with required partners to ensure that it adds value to inform policy.

The second talk by [Sharon Pflieger](#) (NHS Highlands and One Health Breakthrough Partnership, OHBP) focussed on the need for a more sustainable approach to prescribing pharmaceuticals, including to reduce its environmental impact and the spread of antimicrobial resistance. The activities and achievements of the OHBP provide an outstanding example of how a range of partners with overlapping interests have come together to create a consortium of regulators, academics, industry, and public health specialists to make a significant difference. A forward look of the OHBP is to expand its approach to other pollutants and engage more internationally.



## Water and Sustainable Urban Infrastructure

Climate change is the biggest threat to society, and the IPCC<sup>1</sup> reported that adverse impacts from human-caused change will intensify. There is a recognised need for a

fundamental change in how cities manage urban water and flood risk and sustainable urban infrastructure, and particularly Blue-Green Infrastructure (BGI) has become central to climate change mitigation and adaptation as cost-effective and generally supported by the public. The increasing incorporation of BGI within Scotland highlights a need to consider its inclusivity as part of how we bring about a just transition, delivering healthy places for healthy people. [Rebecca Wade](#) (Abertay University) explored the intersectionality and need for collaboration across the whole of urban infrastructure to deliver these measures effectively and get the maximum co-benefits from them, presenting case studies from Dundee on partnership working between Scottish Water and Dundee City Council.



## Water and Digitalisation

Digitalisation is reshaping the landscape and dynamics of every sector, including water. This session explored the benefits of digitalisation in the water sector and offered concrete examples of successful implementations. [Marian Scott](#) (University of Glasgow) reflected on the phrases 'data rich, information poor' or DRIP, data lakes, data deluges, and digital environments within the context of the water sector. Data and digital tools can be considered infrastructure because they support and underpin much of what needs to be achieved, but the true value comes from translating data into information, knowledge and understanding. As a statistician, Marian considers the healthy scepticism that comes with how to deal with high volumes of data is very important. A brief discussion of some small catchment and global projects such as the Globolakes<sup>2</sup> and MOT4Rivers<sup>3</sup> showcased the evolution of mechanisms for data generation and use, and highlighted that partnerships are key.

While there are good examples of digital water in Scotland, we can look deeper into the work done in the wider UK landscape by other organisations such as GSMA represented by [Zach White](#) and the International Water Association (IWA). GSMA sits at the intersection between

1 <https://www.ipcc.ch/report/sixth-assessment-report-cycle/>

2 <https://www.globolakes.stir.ac.uk/>

3 <https://www.stir.ac.uk/research/hub/contract/1818183>



the mobile utilities and the development sector as mobile devices are the main interaction for many people. Its digital utilities programme supports resilience across low- and middle-income countries (LMICs) through digital solutions and innovative partnerships. The programme collaborates with IWA's Digital Water Programme to facilitate access to knowledge about digitalisation and support best practices, including through last year's inaugural Digital Water Summit 2022<sup>4</sup>. Zach explored how we think of digital water and the various ways to frame it, as often, the ways it is talked about can be alienating to utilities and policymakers, which presents a barrier for digital adoption. A case study in Kenya<sup>5</sup> provided a good example of framing digital adoptions to give utilities a language to understand how digital tools can augment water provider capacity. Zach profiled some of the innovative companies working in the sector and reviewed what we know about levels of digitalisation within water utilities. The short answer is not a lot. However, there are some exciting prospects in this field, including an amazing pipeline of innovation, innovative and blended finance, digital foundations within populations and institutions, and the urgency with which the issue is being treated.

## Water and Global Cooperation

The morning session wrapped up on an international note, with a keynote talk by [Asit Biswas](#) (University of Glasgow). Linking with the previous sub-session, Asit highlighted that 90% of all the data in the world right now has been generated in the last two years, and knowledge is doubling at a rate faster than at any time in human history. There are a lot of changes happening and many in ways that we cannot understand. Problems are getting more complex, yet we are sticking to the same solutions. There is a need to reflect why we have failed to reach SDG targets in the past 45 years. The latest projections indicate that at most 13 developing countries will meet SDG 6 because water quality is simply not a factor. Cities and countries can learn much from each other on how specific water problems can be solved. Up to now, knowledge flow has

been mostly from developed to developing countries, but developed countries can also learn much from developing countries. Further, the R&D landscape has changed and has moved from the public to the private sector, but knowledge is not being shared. Knowledge flow in the 21st century needs to be a 2-way street for research to be translated into policy and impact. The final message of the presentation was that the world is not experiencing a water crisis because of physical lack of water, but rather due to inadequate management.



## Roundtable Discussion: Accelerating Change through Partnership Working

This unique session was led by Hydro Nation alumnus, [Kerr Adams](#) to discuss the experiences and challenges of partnership working to achieve sustainable water management. Kerr set the stage for the discussion by providing an introductory presentation and a short video example from SEPA and Scottish Water's One Planet Choices decision-making method to highlight the need for partnership working and the ways it can be achieved in Scotland. Panellists included Jim Pritchard (SEPA), Stephen Mendey (Scottish Water), Barry Greig (Scottish Government) and Cecilia Tortajada (University of Glasgow) who provided policy, management and academic perspectives on the benefits and challenges of partnership working and its contributions in the context of Scotland's Hydro Nation agenda and in response to global change impacts on water. A key message from the discussion was that the water environment in Scotland is under pressure from multiple sources, and partnership working plays an important role across the water sector for overcoming these challenges and for achieving Scottish Government's Hydro Nation ambitions, as these approaches help to deliver better decisions and outcomes, and ultimately improve quality of life. For these partnerships to work domestically and abroad, all affected and interested parties must be included to mediate trade-offs and establish clear yet adaptable plans.

<sup>4</sup> <https://digitalwatersummit.org/>

<sup>5</sup> <https://iwa-network.org/digital-adoption-by-water-utilities-reflections-from-the-experience-in-the-kenyan-water-sector/>

## Scotland The Hydro Nation

[The Hydro Nation Chair Research and Innovation Programme](#) based at Stirling University was launched at World Water Day 2022. In 2023, [George Ponton](#), Head of Research and Innovation at Scottish Water provided an overview and update on the outcomes of the programme to date, and presented a forward look including increasing the flow of knowledge and capability through it. From a Scottish Water perspective, the Hydro Nation Chair programme has multiple benefits that ultimately will enable them to deliver services and values for customers and go beyond net zero emissions, also allowing Scotland to be recognised as a Hydro Nation.

## The Language of Water

*What is the language of water? How do you read it effectively in the landscape? How do we speak it to keep life flowing? What are the consequences when we forget the language of water?* Bringing real community led examples of regeneration and rejuvenation of local landscapes by local communities, [Minni Jain](#) (The Flow Partnership) provided an engaging and inspiring talk with community stories from Africa and India and how they are repairing their arid or flooded regions and speaking the language of water in caring for and reviving the water resilience of their landscapes.

## Conclusion

Scotland's World Water Day 2023 served as a forum for science and policy interchange and raised awareness of the urgency, benefits, and opportunities for partnerships and cooperation for making better and joint decisions to achieve SDG, Net Zero and Hydro Nation ambitions. The speakers provided shining examples of how people and organisations are doing this successfully in Scotland and the UK, with some perspectives from the international landscape. The event opened with welcoming remarks by [Rachel Helliwell](#), Director of HNIC and CREW, and [MSP Mairi McAllan](#), Minister for Environment and Land Reform, both highlighting the need to collaborate and share knowledge to shortcut our way to achieve and be the change we desire. In his closing remarks, [Jon Rathjen](#) (Deputy Director, Water Policy & Directorate of Energy and Climate Change Operations, Scottish Government) reflected that further than acceptance of the importance to collaborate, we need to think more about how to collaborate effectively. Lastly, it was noted that Scottish Government is launching a wide-ranging policy review in the water space, reimagining how we look at water, wastewater, and drainage as separate but parallel services with different challenges, and how to deliver each of these more sustainably and more circularly. In line with the theme of the conference, this will be a collaborative effort with input from key stakeholders moving forward in the next few months.

## Launch of New Initiatives

### [Recommendations for Leveraging Blue Space for Health](#)

A set of recommendations co-created by Glasgow Caledonian University in collaboration with Hydro Nation and major stakeholders in water, health, and third sectors. These are the first set of such recommendations in the world.

### [Register of Expertise \(RoE\)](#)

A CREW-funded project to connect opportunity with capability in the water science and policy arena was launched at the event and the water community encouraged to sign up. The register provides a platform to raise awareness of work, explore and connect with others to build partnerships, and share knowledge and learn about upcoming opportunities and activities.

### [Hydro Nation Energy Innovation Programme \(HNEIP\)](#)

A Scottish Government-funded project that aims to bring businesses and academic experts together to develop new products and processes that exploit the links between energy and water to drive down emissions and contribute to Scotland's blue green economy.

