



UN  
2023 WATER  
CONFERENCE

NEW YORK  
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## UN 2023 Water Conference Side Event

*Sustainable water engineering bringing together the global  
community Summary Statement*

Tuesday 21 March 2023

8 AM New York | 12 Noon UTC | 1 PM Madrid | 8 PM Beijing  
Virtually Live: [https://www.iahr.org/en/lives/details?live\\_id=142](https://www.iahr.org/en/lives/details?live_id=142)

Organized by:

International Association for Hydro-Environment Engineering and  
Research (IAHR)

China Institute of Water Resources and Hydropower Research  
(IWHR)

Spain Water

International Commission on Large Dams (ICOLD)

Organisation for Economic Cooperation and Development (OECD)

International Water Resources Association (IWRA)

DHI Group

Engineering is one of the key elements of sustainable development. It underpins and impacts almost every aspect of our policy, financial, physical, social and environmental solutions. As the Sustainable Development Goals (SDG) are implemented, water infrastructure, technologies and innovations at all levels will be critical. It is estimated that over the period 2015-2030, most countries will need to allocate 1-2% of their GDP to water infrastructure.

In addressing today's challenges, water engineering has evolved since the 1977 UN Conference on Water to become green. It addresses problems in a holistic way and is a multidisciplinary endeavor, understanding and responding to environmental and societal needs, with deference for human rights, leverages critical grey infrastructure, sustains economic growth, includes nature-based solutions and makes the most of ecosystem services.

Green engineering is a significant component of the five SDG6 accelerators that are required to bring nations back on track by i) bringing innovation to reality, ii) generating and using

information and data for positive water outcomes; iii) increasing capacity development; iv) mobilizing and utilizing financing for the most effective multi-purpose outcomes; and v) providing options and adhering to good governance.

In the framework of the 2023 UN Conference on Water, IAHR organized a virtual side-event on how Sustainable Engineering brings the global community together; in partnership with the OECD, IWHR, DHI Group, Spain Water, ICOLD and the IWRA. The event brought together the perspectives of different stakeholders on the theme of sustainable engineering.

**A systems approach is necessary to leverage the interconnectivity of engineering.**

It is important to understand and leverage the connections between the physical assets and the actors involved at different levels of water systems. Using a systems approach for this purpose can maximize the benefits that can be derived from such connections and networks. An example is development based on innovation, coordination, green solutions, openness and shared benefits, and follows the principles of prioritizing saving water, balancing its allocation, managing it using a systems approach and for this purpose harnessing both public and private forces. Both the physical and the social processes that affect the water cycle must be considered.

Sustainable water engineering is based on respect for nature, natural resources and the environment, integrating natural and man-made assets and properly operating and regulating water-related systems, but also human activities, such as land use, urbanization and rural development.

**It is essential to understand the economic value of green solutions and reshape financing mechanisms accordingly.**

Today, there is a gap between what is spent and the investments needed to achieve SDG6 and other water-related SDGs. It is particularly so when it comes to green solutions. Financing mechanisms remain overwhelmingly oriented towards grey infrastructure projects. To overcome this bias we must find ways to quantify and monetize the benefits of nature-based solutions and other green infrastructure projects.

It is important to move beyond valuing only traditional infrastructure projects and be able to demonstrate the value of ecosystem services. Besides developing the methods and tools to do so, we also need the appropriate enabling environment (policies, institutional structures and regulatory settings).

**Effective interchange between science, innovation, policy and governance is essential**

Reaching sustainability, a form of intergenerational ethics, requires continuous interaction between Science, Practice, Policy and Governance. An effective science-policy interface is a critical element for succeeding in achieving the SDGs. Policies and their implementation must be informed by and take advantage of new scientific research and technological innovations.

Digital technologies can help assessing and accelerating progress towards the water-related SDGs. It is important that the use of all such emerging technologies is preceded by adequate capacity development.