



**International Association
for Hydro-Environment
Engineering and Research**

Hosted by
Spain Water and IWHR, China

2020

STRATEGIC PLAN

2023

The Future of Hydro- Environment Engineering and Research

> Global Challenges

Water is at the centre of major global challenges including climate change, sustainable development, growing population and its needs, food security, income inequality and poverty, limited water resources and their management, and safeguarding biodiversity in many parts of the world. In 2015, recognising the urgency of dealing with these and other global challenges, the United Nations General Assembly adopted Agenda 2030 with 17 specific Sustainable Development Goals (SDGs) to be met over the next 15 years. Each goal, and water management generally, involve improvements in understanding and engineering water-flow processes. IAHR plays a major international and central role in facilitating these improvements.



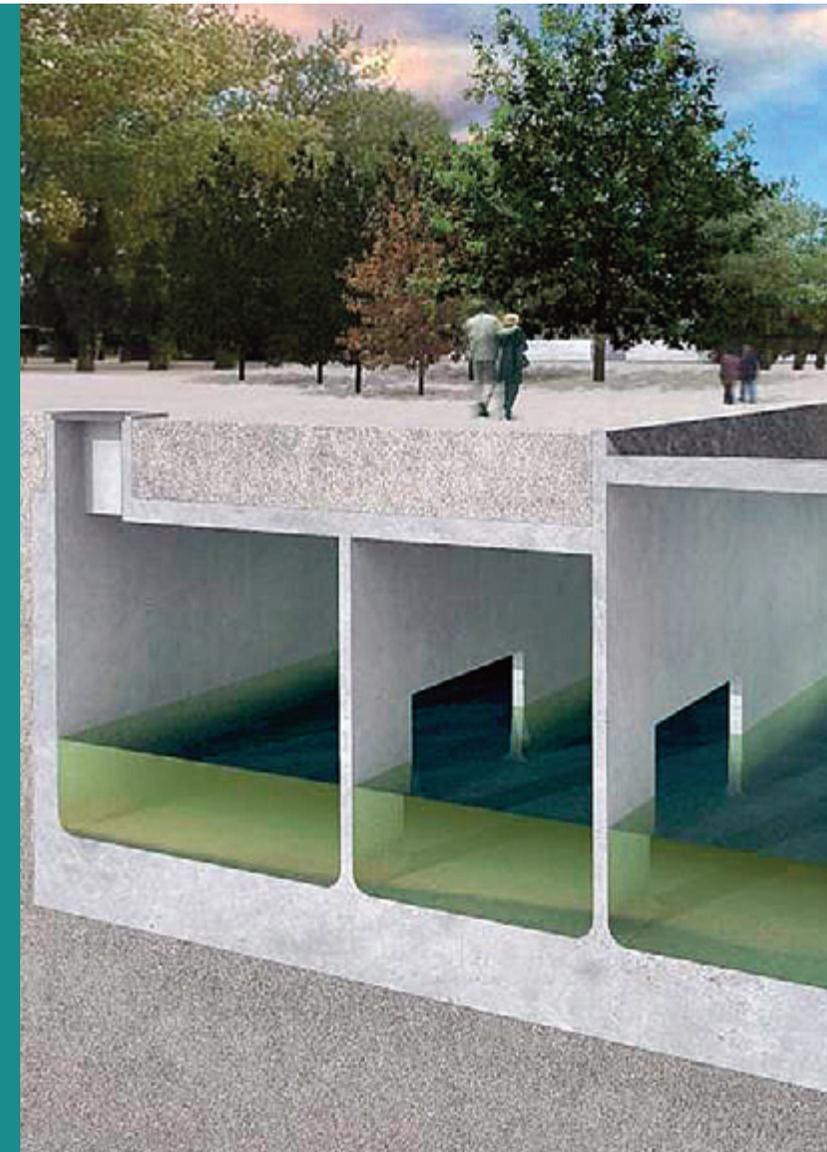
Even under the most optimistic future scenarios, climate change is expected to exacerbate several water-related risks, ranging from the reduced reliability of water availability to increasing frequency of extreme events and sea-level rise. Reducing and adapting to these risks requires the improved understanding of the magnitude of such risks, sound understanding of water-flow processes and the engineering of innovative mitigation measures and adaptive management strategies.

The availability and efficient use of water resources is critical for water security including food security, considering that about forty percent of global agricultural production depends on irrigation, and that changing precipitation patterns in many parts of the world threaten rain-fed agriculture.

Preserving biodiversity and ensuring the future health of terrestrial and aquatic ecosystems requires an understanding of how the flow of water affects living organisms and alters their environment, which is necessary for coming up with well-considered water management strategies and creative designs of hydraulic structures in new or existing development areas.

Addressing many other challenges highlighted in the SDGs, such as eliminating poverty, ensuring healthy lives, and having sustainable, resilient and more liveable cities, depends on finding solutions to a range of water-related problems.

The engineering of water and infrastructure in harmony with our environment is an essential and significant part of the solutions to respond to these challenges. IAHR seeks to play a central role in mobilising the world's collective know-how in state-of-the-art engineering, innovation and research to contribute to dealing with the major global water challenges of our times.



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> What is Hydro-Environment Engineering and Research?

Hydro-environment engineering and research refers to the continuing expansion of our knowledge about water flow and management in engineered structures and natural water bodies and the use of such knowledge to serve the needs of people and in harmony with the environment



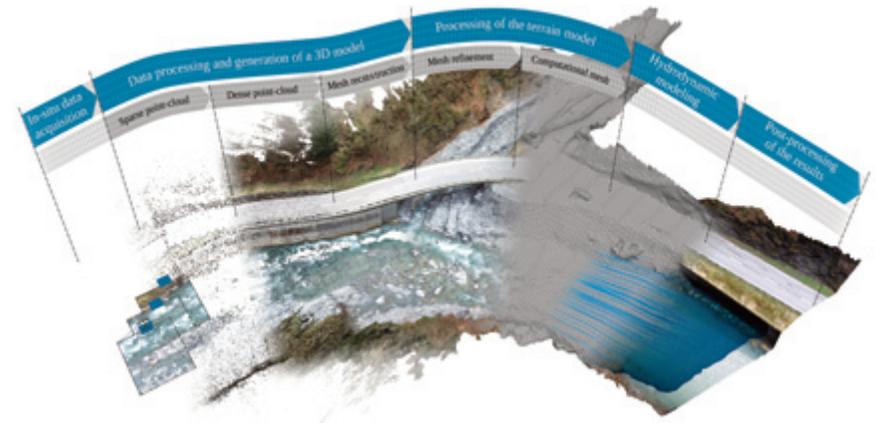
The Promise and Challenge of New Technologies

The rapid emergence and widespread use of new technologies holds the promise of helping address the major global challenges, but at the same time presents us with new questions and problems. Remote sensing and imaging data technologies, from satellites to unmanned autonomous vehicles, have advanced dramatically the ability to assess field conditions. Also, progress in electronic sensor technology has made it possible to collect accurate detailed measurements both in the field and in the laboratory. Advances in data analytics and artificial intelligence continue to improve the derivation of relevant information from the large volume of data collected with the new technologies. These advances are among the focal topics addressed by IAHR.

Progress in communication technologies and collaboration methods make it possible to instantly share information and monitor natural and engineered systems. IAHR brings together experts and ensures dependable communication on different levels and via various media. Also, IAHR supports practitioners and researchers to keep abreast of the latest developments and participate in the global conversation on pressing Hydro-Environmental matters.

Working together to build a better future for water and environment

Hydro-Environment engineering and knowledge of our waterways in harmony with nature plays a major role in the future of social and economic development around the world. The collective responsibility to act together, speak as a global voice, and share and amplify the impact and power of the capabilities and knowledge of our members and networks is as great as ever.



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Our Vision

> Bring together the world's engineers, experts, researchers and organisations to accelerate solutions and knowledge discovery about the water environment





Our Mission

- 1. Provide a world class international networking platform and great member experience** for knowledge makers and consumers, top and emerging scholars and leaders in the field of Hydro-Environmental science, engineering and research to meet, collaborate, exchange, further careers, promote work and augment influence on state-of-the-art projects and the world's grand engineering challenges. IAHR engages today's experts and helps prepare the next generation to respond to the complexities of future challenges.
- 2. Inspire, disseminate and catalyse state of the art knowledge and thinking** on the most important water engineering and related environmental issues of present times through high quality products and peer-reviewed publications.
- 3. Convene events that set agendas, harness and amplify the collective knowledge of the global Hydro-Environment community** through the organisation of congresses, symposia, seminars, workshops, learning experiences and meetings around the world on the latest and most pertinent subject areas and emerging areas of interest.
- 4. Act as a global voice on behalf of the water and environment engineering industry as well as the research and educational community** by leveraging its position as an international expert organisation, working with strategic partners and through global outreach and advocacy on matters of interest and importance to our members.

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Operationalising the vision

To realise our vision, IAHR will develop a four-year road map achieved through the implementation of annual operational plans. We shall mobilise and deploy aligned resources and engage with the most strategic global and national partners.

At the heart of our activities, IAHR will promote and support our members to play the most influential roles in representing the Hydro Environmental sector on the global stage; and to accelerate knowledge discovery and application.

An adroit Council and Executive Council shall bring influence, networks, experience and knowledge to lead and augment our collective capacities and enable member-driven activities.

The global secretariats in Beijing and in Madrid shall be leveraged to optimise strategic advantages and shall be committed to supporting the activities of IAHR through sustainable finances and support services.





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IAHR in 4 years time

Our strategic priorities

By 2023 IAHR will

Provide a world class international networking platform and great member experience

- Facilitate and support a platform for hydro-environment leaders to set agendas and address the great water engineering and environmental challenges of present times.
- Leverage on innovative technologies and social media to engage with members for fruitful and enjoyable interaction.
- Actively engage with Young Professionals and rising stars.
- Facilitate global outreach in Latin America, Asia and Pacific, and Europe, and enhance our presence and visibility in Africa, Middle East and North America.

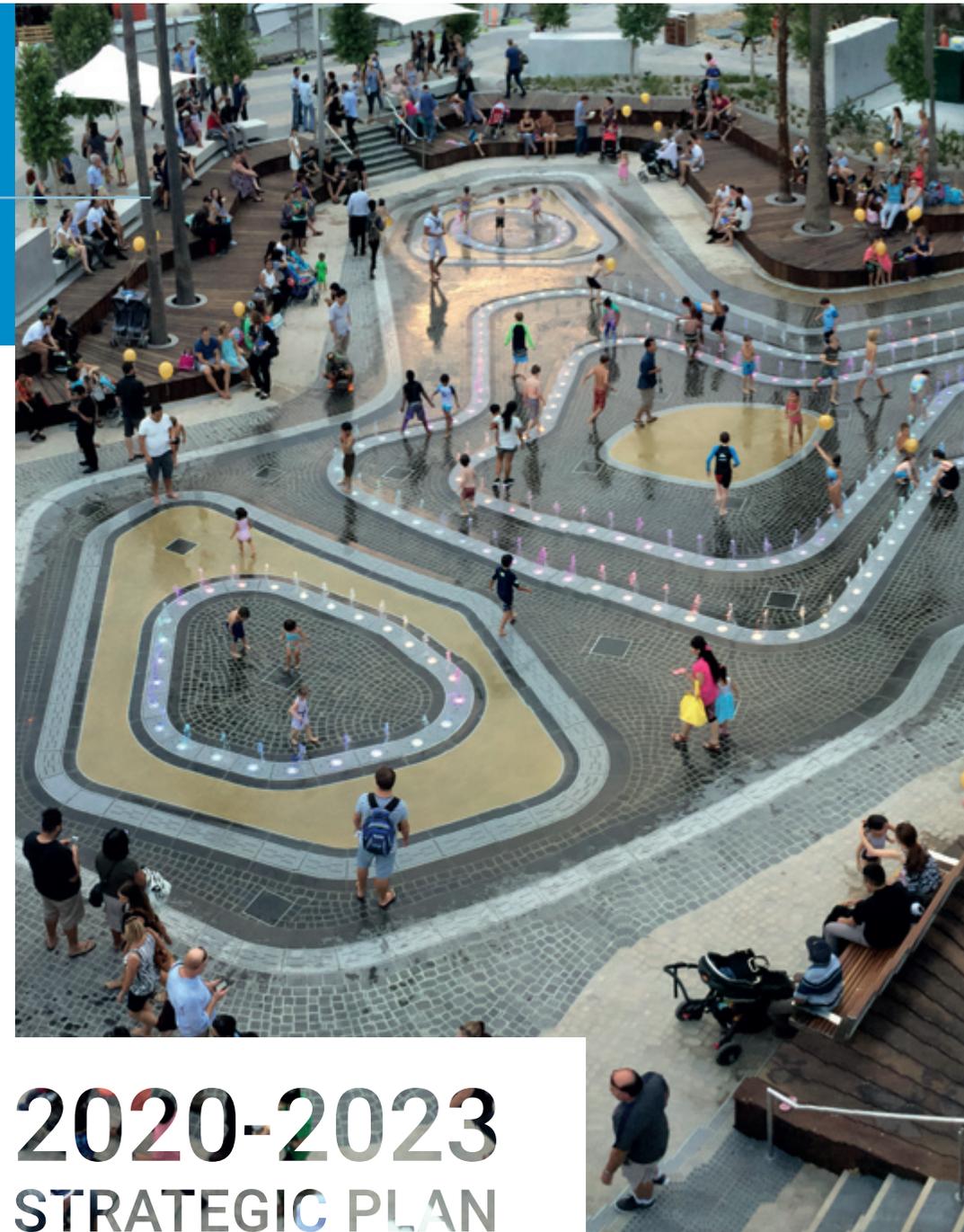
Inspire, disseminate and catalyse state-of-the-art knowledge and thinking

- Enhance IAHR as an attractive global platform for engaging with members and leaders to create trend and industry standard setting scientific and engineering publications on the world's most pressing hydro-environmental and infrastructure issues.
- Catalyse leading thinking on emerging and game changing topics through knowledge products.

- Inspire young members to get engaged in addressing the global water challenges.
- Increase the circulation, outreach and recognition of IAHR's scientific and engineering publications.
- Inform and lead the way in modern and future publishing trends that opens new opportunities for knowledge sharing.

Convene events that set agendas, harness and amplify the collective knowledge of the global Hydro-Environment community

- Strengthen and modernise the IAHR World Congress, regional congresses and technical symposia as the pre-eminent global events that sets global agendas, enhances knowledge with strategic partners, serves the knowledge community; and provides a great experience to members.
- Optimise globally the IAHR brand through an expanded and coherent series of IAHR owned events as well as co-sponsored events.
- Raise the profile of IAHR by organising prestigious workshops with outcomes and participating in high profile external events that highlight our priority areas.
- Enhance the impact, participation and coherence between IAHR events by creating an ongoing process that links IAHR World Congresses with



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the activities of the Technical Committees, Regional Congresses and Speciality Conferences.

- Partner with leading institutions to provide continuing learning and professional opportunities.
- Develop partnerships with civic, private and international organisations on water problems which are especially appealing to young members.
- Develop a more popular digital and online presence for IAHR regarding learning and knowledge dissemination.

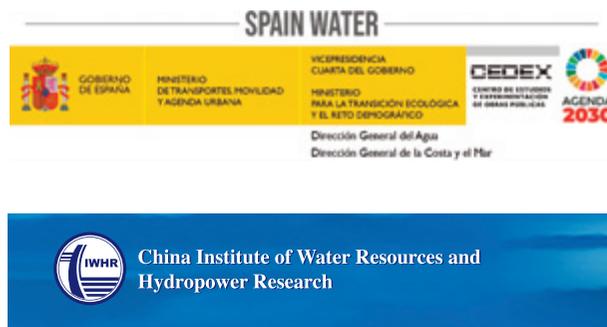
Act as a global voice on behalf of the Hydro-Environment engineering industry and research community

- Advocate, influence, promote and defend the interests of the world's water and environmental specialists.
- Connect with the most influential organisations at the international, regional and national levels.
- Facilitate a richer exchange between the works and activities of IAHR's members with policy makers, funding agencies, managers, private sector and other external stakeholders, by providing a platform for public/private research institutions to exchange ideas and knowledge and promote joint use of their own special research facilities

What is IAHR?

The International Association for Hydro-Environment Engineering and Research (IAHR), founded in 1935, is a global independent members-based organisation of engineers and water specialists working in fields related to the hydro-environmental sciences and their practical application. Activities range from river and maritime hydraulics to water resources development and eco-hydraulics, through to ice engineering, hydro-informatics, flood risk management and continuing education and training.

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International Partners



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