



## Various meetings sustain the momentum generated at the world water conference

### Key Insights from HLP 3 of the 18th Congress: Water Resources Management and Best Practices

The plenary session on the theme "Water Resources Management and Best Practices" was held today. The meeting was co-chaired by Wang Zhongjing, Vice President of Ningxia University and Professor of Tsinghua University, and Cecilia Totajada, professor of the University of Glasgow and former president of the International Society of Water Resources. Mr. Li Lifeng, Director of the Division of Land and Water Resources of the Food and Agriculture Organization of the United Nations, Mr. Qiao Zhan, Deputy Representative of the United Nations Development Programme in China, and Mr. Zhang Jianyun, Academician of the Chinese Academy of Engineering, delivered keynote speeches.

#### Innovative Approaches to Water Resources Management

**Li Lifeng**, introduced a forward-thinking approach to integrated water resources management in irrigation. Despite advancements, challenges such as water scarcity, flood control, pollution, drought, and water rights persist. Irrigation, accounting for 72% of global water consumption, places immense pressure on this vital resource. FAO's strategy involves constructing multi-use infrastructure, adopting mobile infrastructure like solar irrigation, establishing water storage facilities, and assessing irrigation needs worldwide with a focus on sustainability, financing diversity, technological innovation, and nature-based solutions. This approach aims to enhance water management and governance through global dialogue, research on water-energy-food coupling, and biodiversity conservation.

**Gabriel Eckstein**, emphasized the need to adapt to changing climatic conditions, stressed the need for flexible laws informed by diverse stakeholders and interdisciplinary perspectives. He stressed the importance of involving various disciplines and stakeholders throughout the law-making process, particularly in the decision-making phase.

## Climate Change and Water Security

Academician **Zhang Jianyun**'s keynote presentation, "Why is the Impact of Climate Change on Water a Must-Talk?" highlighted the undeniable impact of climate change on water security. Recognizing the necessity of integrated water resource management, he stressed that combatting climate change, reducing greenhouse emissions, and mitigating its effects are pivotal for a conservation-oriented society and sustainable water management.

## Water Resources for Sustainable Development

In a compelling video address, **James George** emphasized that water resources serve as a prerequisite for sustainable development, sustaining political, economic, social, and environmental systems. However, the current water resources management framework lacks scientific guidance and international collaboration. Addressing this gap, Zhan called for deep cooperation among international organizations to develop a disciplined approach to water resources management.

## A Call for Systematic and Cooperative Approaches

During the ensuing discussion session, participants concurred on the need for systematic, scientific foundations in water resources management. They emphasized the importance of analyzing historical data and the influence of policies on water management, underscoring the need for well-informed policies and best practices.

Water, being inextricably linked to various fields, was recognized as a fundamental constraint on development and policy formulation. Participants called for comprehensive perspectives that consider economic, ecological, and transportation aspects.

## The Necessity of Deepening Cooperation

Water management was identified as a multifaceted endeavor requiring collaboration not only within the water sector but also across various stakeholders and sectors. This approach, though challenging, fosters participatory involvement and accountability, ultimately offering a pathway to improved water resources management.

During the discussion session, participants agreed that water resources management needs to be supported by a systematic scientific system; Based on historical data, it is necessary to analyze the influence mechanism of management policies on water resources management with scientific thinking, and then guide water resources management policies and get the best practice of water resources management.

Water resources are closely related to the political, economic, social, environmental and other fields and cannot be replaced, and should be regarded as a rigid constraint on the development of all fields and as the basis for policy formulation. Water resources management needs to have a systematic concept, overall economic, ecological, transportation and other fields, comprehensive system, technology, equity and other perspectives, taking into account the breadth and depth.



## World Water Envoys Share their solutions for Water Challenges faced within their community!

The World Water Envoy special session featuring four young professions delved into pressing water-related challenges and innovative solutions from different corners of the globe. The session, moderated by IWRA Executive Director, Callum Clench, and IWRA Project Officer, Mary Trudeau, brought together young water enthusiasts to explore the critical issues affecting water resources within their communities.

### World Water Envoys and Their Insightful Presentations

The session showcased four remarkable World Water Envoys, each offering a unique perspective on water management:



**Kate Hawley**

#### Strategic Woodland Creation for Natural Flood Management

Kate Hawley, serving as the World Water Envoy for the United Kingdom, opened the session with her presentation on "Strategic Woodland Creation for Natural Flood Management." As an area operations manager in the UK's Forestry Commission, Kate emphasized her research on forestry practices to mitigate flooding in the UK. She shared alarming flooding statistics and outlined her long-term strategy to minimize flood events' likelihood and impact, including an intriguing approach of reintroducing beavers.



**Oudi Kgomongwe**

#### Sustainable Groundwater Development & Management

Oudi Kgomongwe, the World Water Envoy from South Africa, presented "Sustainable Groundwater Development & Management." Her comprehensive talk covered various facets, from the importance of groundwater to the challenges faced in South Africa. Oudi discussed social, economic, and environmental factors influencing sustainable groundwater development, highlighting the need for recognizing diverse stakeholder interests and adopting scientific approaches.



**Nguyen Son Tra**

#### Water Issues & Climate Change Adaptation in the Mekong Delta

Nguyen Son Tra, the World Water Envoy representing Vietnam, delivered a compelling speech titled "Water Issues & Climate Change Adaptation: Case Study of Community-based Mangrove Forest Plantation in the Mekong delta of Vietnam." He engaged the audience with the mythical "nine dragons" story and stressed that no single solution can tackle all challenges. Instead, he encouraged collaborative, collective solutions for the sustainability of the Mekong delta.



**Moemen Sobh**

#### Addressing Water Scarcity in Port Said, Egypt

Moemen Sobh, Egypt's World Water Envoy, shed light on the pressing issue of water scarcity in Port Said. Egypt faces a staggering water deficit of 7 billion cubic meters annually, with forecasts of running out of water by 2025. Moemen highlighted the urgency of addressing limited freshwater resources, a growing population, and deficient water infrastructure.



## A Call for Systematic and Cooperative Approaches

The IWRA's Special Session served as a pivotal platform for the four Envoys to present their projects, raise critical questions, and engage with experts tackling similar issues. Small group discussions ensued, allowing for in-depth exploration of the presented projects' challenges and potential solutions. Each Envoy will provide reports on the next steps following this session.

Additionally, the Special Session provided an invaluable opportunity for practitioners to connect with like-minded individuals, fostering knowledge exchange and problem-solving for water-related challenges worldwide. By bringing these innovative minds together, the IWRA continues to drive progress in addressing the pressing global water crisis.

The IWRA World Water Envoy programme was created to hear stories from youth representatives of the next generation at the World Water Congresses, to give them a chance to showcase the water issues they and their communities face and the solutions they are exploring. For each congress, youth who are passionate about water resource management will be invited to share their journey and work as they embark on their careers. They are called "World Water Envoys"





## Exploring Water management at the 18th World Water Congress

### Theme 1: The Interplay of Water Resources-Population-Economy-Ecology in a Changing Environment



Eme Daniel Eteke, from Nigeria, delivered a lecture on Transforming values and catalyzing change: reflecting on experiences in taking Water-sanitation-hygiene-gender campaign to public schools in Nigeria



From the perspective of water-energy, Yinshuang Xia from Tongji University, based on the established high-resolution comprehensive geographic database of coal mines, coal-fired power plants and various coal chemical enterprises, mapped the whole picture of water withdrawal from the coal industry in the Yellow River basin (YRB).

### Theme 2: Improve Water Use Efficiency and Promote Water Public Services



Miss. Shiruo Hu, from Tsinghua University, presented her understanding of the paradox of irrigation efficiency from the perspective of water pricing implications on irrigation behavior. She stated that raising water prices, setting cultivated land restriction and offering subsidies on planting area can be an efficient way to achieve the dual goals of water-saving and ensuring food security while also improving farmers' income.

### Theme 3: Build a Resilient Disaster Prevention and Mitigation System



Dr. Liping Dai, from Utrecht University, shared a integrating nature-based solution into policies for flood risk management in the Netherlands. Other countries and regions in the world dealing with comparable issues might find inspiration from this.





Prof. Cao Jianting of the General Institute of Water Resources and Hydropower Planning and Design, MWR, China, illustrated flood prevention and reduction measures.

## Theme 4: Enhance the Quality and Stability of Water Ecosystems



Dr. Carla Pinto Cruz from the University of Iowa gave a presentation entitled "The impact of policy drivers in the quality of freshwater restoration projects in Europe and China", discussing the role of various types of policies in freshwater restoration projects from the perspective of typical projects in Central Europe.



Song Siyuan, representing HydroChina Huadong Engineering Corporation, tackled the topic of "Investigation on the optimal frequency of water quality testing in large-scale leftover-water constructed wetlands." Siyuan's insights revolved around optimizing water quality testing frequencies, particularly in expansive constructed wetlands.

## Theme 5: Advance the Construction of Sustainable Water Infrastructures



Abdullah Said ALkaabi from Ministry of Agriculture, Fisheries and Water Resources delivered a report named 'Groundwater Modeling of Alluvial Aquifers at Wadi Bani Kharus Catchment in Oman' and shared the results about long-period simulation on the groundwater acquirer.

## Theme 6: Innovations in Water Governance and Management



Renée Martin-Nagle, from the International Water Resources Organisation, sparked discussions on "Unconventional water resources: who owns the rain?" Her presentation explored unconventional sources of water and the complex question of ownership.



Mr. Su Qiuna, representing the Department of Politics and Law of the Ministry of Water Resources, shared his expertise on the "Legal Guarantee for the Protection and Governance of the Yangtze and Yellow Rivers in the New Era." His insights focused on legal mechanisms and protections to safeguard these vital river systems in the modern era.



Yu Lili from the General Institute of Water Resources and Hydropower Planning and Design of the Ministry of Water Resources shared her thoughts on groundwater mining control from a sustainable perspective.



National Research Institute for Rural Electrification, Ministry of Water Resources of the P. R. China, Hangzhou Regional Center (Asia-Pacific) for Small HydroPower and Nanjing Hydraulics Research Institute co-hosted a seminar regarding Belt and Road countries on water resources and environment. The conference discussed issues such as the current situation and future development of water conservancy in Sabah, Malaysia, urban and rural water resources management and water environment governance in Namibia, water supply and sewage disposal in Tanzania, scientific and technological innovation of water resources management in Ethiopia, and water conservancy and hydropower development planning in Punjab, Pakistan, as well as water ecology protection and response to climate change in Uzbekistan.



The International Network of Basin Organizations (INBO) organized a special session of shared and innovative water information systems for improving national and basin level water resources management.



Special session on nature-based solutions for water-related disaster prevention and mitigation was organized by China Institute of Water Resources and Hydropower Research (IWHR), studying flash flood early warning systems and drought monitoring technique and its application in China.

The Asian Development Bank hosted a side event on Innovative Rural Public Health Management, which explored the design and application of an online practice guide for rural wastewater management in China, the management of rural wastewater management organizations in China and a compendium of policies and regulations, and the current status and outlook for public participation in rural domestic wastewater management.







## A Night of Friendship and Celebration at the Gala Dinner

On the third evening of the congress, participants were treated to a networking Gala Dinner. Wu Wenqing, Chief Planner of the Ministry of Water Resources of China, delivered a welcoming address.

Wu Wenqing: "Ladies and gentlemen, esteemed guests, it is a pleasure to welcome you to this official dinner tonight, representing the Ministry of Water Resources. I extend my heartfelt thanks to all of you for your unwavering support and commitment to China's water conservancy industry."

"In the realm of global water management, the International Institute of Water Resources stands as a beacon, leading the way in promoting water resource management and fostering harmony between people and water. It plays a pivotal role in advancing global water governance and sustainable development."

"I offer my warm congratulations on the successful first three days of the conference! As we look ahead, there are numerous thematic sessions, closing ceremonies, technical inspections, and more to come. I eagerly anticipate the ongoing exchange of knowledge and the birth of new ideas."



## Celebrating Excellence and Contributions

The evening also featured a special recognition ceremony. James Nickum, Chief Editor of Water International, and Raya Stephan, Deputy Editor, presented awards to the authors of the 2021 and 2022 Water International Best Paper Awards. These accolades honored outstanding contributions to the field of water resources.

Additionally, Lili Yu and Bassel Daher, Directors of the IWRA Awards Committee, had the privilege of presenting the latest IWRA Honorary and Senior memberships, recognizing the achievements and dedication of individuals in the water resources community.



## A Night of Cultural Harmony

The Gala was not only a celebration of achievements but also a showcase of cultural diversity. Chinese musicians treated attendees to a mesmerizing folk instrumental ensemble, featuring performances like the hauntingly beautiful Erhu solo “Good Night” and the evocative guzheng solo “Fishing Boat Singing Evening.” Indonesian artists graced the stage with vibrant dance and song performances, embracing their rich local traditions.

As the night unfolded, guests engaged in warm conversations and expressed their heartfelt wishes for the continued success of the Water Resources Conference.

In the evening, a Gala Dinner was held in the banquet hall, and Wu Wenqing, Chief planner of the Ministry of Water Resources of S China, attended and delivered a speech.



## Exploring the Role of Law in Freshwater Resource Management - An Interview with Gabriel Eckstein



In a candid interview, Gabriel Eckstein, a distinguished expert in water law, delved into the vital role of law in shaping policies, behavior, and society's values. He emphasized the multifaceted nature of law as a powerful tool for addressing the complex challenges of freshwater resources. Here are the key insights from the interview:

### **Law as a Tool for Shaping Policies and Behaviour**

Eckstein began by emphasizing that law serves as a tool to shape policies and guide the conduct of individuals and institutions. Its purpose is to align actions with the evolving needs of society while upholding its core ideas and values.

### **Balancing Diverse Needs**

In the context of freshwater resources management, Eckstein highlighted the diverse needs that must be addressed. These encompass providing adequate water supplies of the right quality for various sectors, including people, agriculture, energy, and industry. Equally important is safeguarding water for environmental preservation, as well as for recreational, aesthetic, and cultural purposes.

### **Guidelines for Actions and Procedures**

Eckstein emphasized that the law goes beyond addressing needs; it provides essential guidelines for how actions should be carried out and the procedures to be followed. Incorporating principles into the legal framework is crucial. These principles include efficiency, sustainability, fiscal responsibility, equity, prioritization, transparency, and public participation in decision-making processes.

### **Ensuring Infrastructure Aligns with Society's Needs and Values**

In the realm of infrastructure development, the law plays a pivotal role in ensuring that the constructed systems and structures genuinely meet society's needs and objectives. Additionally, it ensures that these projects align with society's values and priorities. The law serves as a safeguard, helping shape infrastructure development in a manner that reflects the aspirations of the community.

Gabriel Eckstein's insights underscore the significance of law as a dynamic instrument in the management of freshwater resources. It not only addresses needs but also fosters sustainability, equity, transparency, and public involvement – all vital elements for securing a water-secure future. The interview serves as a reminder of the profound impact of law in creating a balanced and harmonious relationship between society and its freshwater resources.

## Interview Series – Loïc Fauchon on Ensuring Global Water Security and Efficiency



We had the privilege of interviewing Loïc Fauchon, the President of the World Water Council. In this enlightening video interview, Fauchon addressed the paramount question: "How can we enhance the security of water resources worldwide and manage them more efficiently?"

### Topic 1: Enhancing the Security of Water Resources

Fauchon emphasized the urgent need to bolster the security of water resources across the globe. He pointed to the dual challenges of climate change and population growth, which demand increased availability of fresh water. Freshwater is a vital resource essential for human development, energy production, and food cultivation. However, it also plays a crucial role in preserving nature, sustaining biodiversity, and maintaining ecosystem equilibrium. The 21st century presents us with the challenge of balancing water for humanity and water for nature. Additionally, he highlighted nature-based solutions as a key part of the answer to this pressing issue.

### Topic 2: Feeding the Planet

Feeding the growing global population, which is projected to reach 3 to 4 billion by the end of this century, is the second major challenge addressed by Fauchon. Africa is expected to experience a population increase of threefold. To meet this challenge, we must explore new resources, including groundwater, desalination, and the reuse of wastewater. These resources are essential for agriculture, ensuring water reaches farmland, and providing natural solutions for sustainable food production. Additionally, education and training are crucial to equip communities to combat drought, hunger, and disease effectively.

Fauchon emphasized the importance of innovation in water resource management, which can lead to more efficient water use and conservation. He advocates for responsible consumption, emphasizing the need to consume less and consume better. Moreover, he called for comprehensive solutions in financing and governance. Above all, he stressed the importance of convincing political decision-makers and economic stakeholders that water is a top priority for the planet's survival, especially in the face of climate change and demographic shifts. Fauchon firmly asserted that "water is politics," emphasizing its central role in shaping the future of our world.