

Newsletter

WEDNESDAY DECEMBER 1ST 2021

EXCO, DAEGU, REPUBLIC OF KOREA



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RECOGNITION, COMMITMENT, AND PARTNERSHIPS UNDERLINED AT THE IWRA WORLD WATER CONGRESS

If a common narrative can align with most activities conducted under the current World Water Congress, this is composed of three concepts: recognition, commitment, and partnership building.

Recognition was clear at the IWRA Awards Ceremony, where key personalities contributing to water were praised. IWRA has five categories of Awards:

THE CRYSTAL DROP AWARD given to **Doğan Altınbilek** this year,

THE VEN TE CHOW MEMORIAL AWARD AND LECTURE, in the name of the first President of IWRA, that has been given to **Dr. Soon-tak Lee**, Distinguished Professor and Professor Emeritus of Hydrology and Water Resources Engineering of Yeungnam University, Korea.

THE WATER DROP AWARD that went to **Laura Movilla Pateiro**, lecturer in Public International Law at the University of Vigo, Spain and



THE WATER INTERNATIONAL BEST PAPER AWARD, awarded by year to author/s based on the originality, innovation, technical quality, and contribution to water resources management of an article appearing in *Water International*.

IWRA FELLOWS to **James E. Nickum**, **Christopher Scott** and **Raya Marina Stephan**.

In addition to these, **IWRA HONORARY MEMBERS** were praised together with Water International Best Paper and Honorable Mention Awards. More on: www.iwra.org/?s=best+paper

The second concept -Commitment- was especially emphasised at the celebration of the 50th anniversary, a symbolic event that underlined the efforts done in the last 5 decades of IWRA to reach the global network of experts that became throughout this period.



Partnerships have been explicitly highlighted in all events and activities of the Congress and have been especially represented by the diversity of participants, from reputed universities and think tanks but also from international organisations of different nature -such as the World Bank, OECD, UNESCO, FAO, the World Water Council, and IFAD- and from policy frameworks in a wide range of countries.

These three common values constitute the essence of IWRA, which are especially visible in the World Water Congress and that are considered the best way to advance water debates at global level.

FOREWORD



BY PATRICK LAVARDE, FORMER IWRA PRESIDENT **From Senegal to South Korea: Why water matters**

The overarching theme of the current [World Water Congress](#) in South Korea is water security. It is a pressing issue. Water is an increasingly scarce resource. More than 2.2 billion people have no access to water and 4.2 billion no secure access to sanitation.

Water is a complex matter. Finding and implementing lasting solutions is notoriously difficult. Take the continent of Africa, home to 1.2 billion people. Water is shared across 13 major river basins with most of these shared by five or more countries.

And in a continent of significant environmental and geological diversity, water pressures abound. While Rwanda may be well endowed with freshwater, the number of water-scarce countries in Africa is set to rise over the next 10 years.

How Africa manages water security will be under discussion next week at the Congress. Senegal is emerging as a leader in water security and will

have government representatives in Daegu next week. It matters to Senegal, a country that borders the Sahel and where water scarcity, compounded by climate change, is disruptive.

Moreover Senegal is hosting the [IX World Water Forum](#) in 2022 and I am very proud to be co-President of the Forum's organising committee.

Without reliable access to water, communities and societies are condemned to subsistence livelihoods, poor sanitation, greater disease, and diminished economic opportunities. Too often governments have failed to grapple with the issue of water and adequately invest in water provision and supply. Of course, raising the capital to invest in water infrastructure is not straightforward, but access to water and sanitation has both a public health benefit while enables greater economic activity and productivity.

With the effects of climate change now apparent, the interdependence of African countries on shared water provision is now more acute than ever. Water resources are particularly affected in a continent which already has a highly variable climate. Both water mitigation and adaptation measures need to be established

that can protect the most vulnerable and ensure that floods and droughts do not damage Africa's future growth potential.

What steps should governments take? That is under discussion next week at the World Water Congress in Daegu. It is an important event bringing water resource practitioners together and serves as a milestone to the World Water Forum hosted by the government in Senegal and held in Dakar in April 2022.

Here are three ideas to kick start the conversation next week in South Korea:

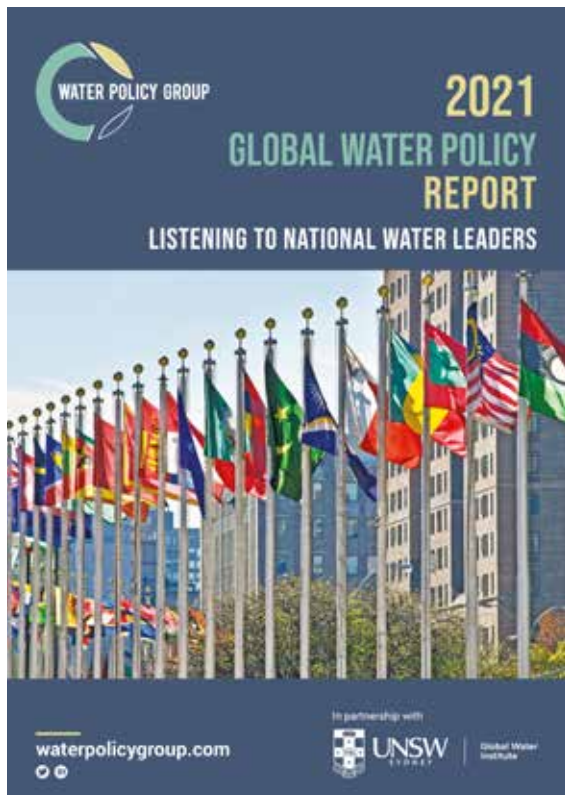
First, policymakers should try to address the paucity of data. Knowledge is key to understanding the scale of the problem. Good policymaking depends on strong scientific data.

Second, armed with data, governments and international bodies need to develop water governance systems that are underpinned at both the policy and regulatory level. This needs to be done at the local, provincial, national and international level.

Third, investment in human capital is critical. Home-grown expertise is hard to beat! Augmented by world-class knowledge share and training, investment in talent is key to enabling and equipping today's (and future) hydrologists and water engineers charged with addressing one of the most complex issues of our time – water management in an unpredictable and dramatically changing climate.

This is a product developed by the
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IDENTIFYING THE DIFFICULTIES TO ACHIEVE THE SUSTAINABLE MANAGEMENT OF WATER



Read the full Report here:
waterpolicygroup.com

A major event of the IWRA World Water Congress which is undergoing in Daegu, Korea has been the presentation of the Global Water Policy Report. The publication aims at identifying key issues around water outcomes globally.

The Report builds upon experiences from 88 countries of all regions, representing 75 percent of the world's population. A preliminary finding for most of the surveyed countries is that their greatest concern is about climate change reducing water supply or worsening floods and droughts. Increasing demand for water, and more water-based disasters - all amplified by climate change - are also seen as very high risks.

National water leaders who participated in the survey consider most of the SDG 6 targets to be 'challenging' or 'impossible' to achieve.

Among the difficulties identified, the 'lack of financing' was most cited with regard to aspects related to achieving the targets on drinking water, water use efficiency, water quality and water scarcity.

'Governance problems' was also referred as the most frequent obstacle to achieving targets on protecting ecosystems, integrated water resource management, local participation and transboundary cooperation.

Asked about the top three challenges to maintaining or achieving good water management, the participants in the survey mention 'fragmented water institutions.'

For more than half of the countries surveyed, groundwater are considered essential to their country's future water supply. Despite this, national water leaders of only a quarter of surveyed countries believe their groundwater is being used sustainably in most locations within their countries.

MR. ABDOULAYE SENE, EXECUTIVE SECRETARY AND CO-CHAIRMAN OF THE PREPARATORY COMMITTEE FOR THE ORGANIZATION OF THE 9TH WORLD WATER FORUM



"We hope that the results of the Daegu Congress would pave the way forward to the 9th World Water Forum in 2022"

The global water community is anxiously waiting for the 9th World Water Forum, that will take place in Dakar, Senegal, next March 2022. Under the theme of "Water Security for Peace and Development," this event will convene policy and economic decision-makers, international institutions, civil society, the academia and private sector recipients.

As **Mr. Abdoulaye Sene**, Executive Secretary and Co-Chairman of the Preparatory Committee for the organization of the 9th World Water Forum has commented to the Newsletter of the WWC, "*we are preparing the thematic content and organising the sessions and agenda for the 9th World Water Forum. Takeaways of Daegu congress will be of big importance for our content in Dakar.*"

With regard to the IWRA WWC which is taking place in Daegu this week, Mr. Sene comments that "*it was a*

challenge for IWRA to organise this Congress, which has become a great success. We definitely hope that the results coming from this Congress could really fit the next World Water Forum. Our Congress theme on water security is an important one, because we all know that water is essential, especially when we discuss about fighting this pandemic and about enhancing resilience of our societies and economies.”

Another lesson learned from Daegu is the hybrid format of the Congress: “the hybrid format of Daegu has been a great experience so that we can follow what has been done and how to use virtual platforms so that we could integrate both a physical and a virtual component.”



“It is remarkable to see that IWRA has succeeded to maintain constructive work during these 50 years, and we would like to congratulate the Association for this very important celebration and to wish all the success in the coming 50 years to come especially in the framework of the SDGs, and the Agenda 2030,” he said.

HOW THE IWRA AWARDS FUNCTION? INTERVIEW TO MR. RABI MOHTAR, CHAIR OF THE AWARDS COMMITTEE AT IWRA



What are the values under the IWRA Awards?

IWRA is an organization build on a spirit of sharing time, knowledge and values towards water resources and water professionals. Acknowledging the contributions of IWRA and the water community at large is important value to IWRA. The Awards, therefore, acknowledge the impact of these individuals to the association and to the water community at large.

How have the Awards evolved in the last years of IWRA?

IWRA awards have grown in importance and number over the years. They also evolve to acknowledge not only members of IWRA but also non-members who significantly contributes to water resources and to the water community.

Awards are also a mean to spread the good work that IWRA has been doing worldwide.



Can you tell us more about the process to identify awardees and what this means for those of you that you met in recent years?

There is an awards committee that over sees the process. Over the last three years the guidelines and the process have undergone significant revisions reflecting the values of IWRA indicted earlier. Nominations are announced several months ahead of the deadline and can be either self-nominations or proposed by IWRA members. The criteria for each award is very clearly communicated to members of the awards committee who will fill the criteria for each award. Following members vote, the committee convene and deliberate and select the awardees.

THE PERSPECTIVE OF THE AWARDEES – LAURA MOVILLA, UNIVERSITY OF VIGO

“I am very excited to be the first recipient of the IWRA Water Drop Award”

What are your expectations about the IWRA WWC Congress and why it comes in a highly critical momentum?

I am confident that this congress is an incredible opportunity to learn, share and discuss current water issues. The central theme of the congress, “Foundations for Global Water Security and Resilience - Knowledge, Technology and Policy”, is of vital importance in the current context of increasing climate insecurity and global pandemic. The ideas coming out of the congress will undoubtedly provide important feedback for research and policy-making around water security and resilience for the coming years. They will also pave the way for the 9th World Water Forum under the overarching theme of “Water Security for Peace and Development” to be held in Dakar, Senegal in 2022, and for the United Nations Water Conference 2030.

What are your feelings about receiving this Award after so many years devoted to water management issues?

I am very excited to be the first recipient of the IWRA Water Drop Award, which recognises since 2020 a student or early-career professional who has made an innovative contribution to the water sector. I joined IWRA when I started my Ph.D. and its members, activities, and publications have been a constant source of learning. I would have been much more difficult to develop my research career in international water law without the company of this excellent network of excellent researchers and professionals. I am very grateful to the association for this award. It constitutes a fantastic initiative to attract more young professionals to the association and encourage more professional vocations around water issues.



How can you describe the impact of the pandemic on current water debates?

The global pandemic has focused international attention on safe water for handwashing, drinking, and personal hygiene. Hopefully, this will reinforce the progress made in the last years in improving access to safe drinking water and sanitation and recognising the human rights to water and sanitation. Paradoxically, the pandemic is also expected to delay the achievement of the goals of the 2030 agenda, which go far beyond access to water and sanitation services. They also include, as we know, objectives relating to transboundary cooperation, pollution reduction, integrated management of water resources, protection of related ecosystems, etc. We must not lower our guard in our efforts to achieve them.

What will be the water-related issues that will occupy the debates in the coming years?

The very theme of this congress reflects one of the main challenges facing humanity and the planet: how to ensure water security and

«I am very grateful to the association for this award. It constitutes a fantastic initiative to attract more young professionals to the association.»

resilience. This is a very broad, complex and multidimensional issue on which our own survival as a species and that of the planet depends and needs to be seriously addressed by the international community. Water security and resilience are also closely related to the 2030 agenda, which will dominate the sustainability agenda, also in relation to water, in the coming years. And, of course, the global pandemic has brought access to water, sanitation and hygiene to the front page of the sustainable development agenda.

From the point of view of international water law, which is my field of research, there is a need to further deepen the legal pillars of water governance, especially in relation to groundwater and its transboundary governance.

CITIES, AT THE CORE OF MANAGING WATER RESOURCES EFFICIENTLY



Mayors of cities, representatives of city governments, together with water professionals of international water organizations have convened at the World Water Cities Forum, celebrated under the IWRA WWC in Daegu.

With the aim of identifying water-related problems in cities and of enhancing collaboration around innovative solutions the Forum has intended to establish an exchanged platform of knowledge, skills, and policies.

Professor Jim Nickum, Editor-In-Chief, and IWRA Water International Editorial Team acted as Head of the judging panel and **Dr. Monica Garcia Quesada** participated as members of the jury of a water challenge. Two cities -Mikkeli in Finland and Shaoxing in China- showcased two different challenges. In the Finnish case, the challenge was about Educating and recruiting young professionals in the water sector; in the Chinese case, it was about seeking comprehensive



and innovative strategies for the management and restoration of plain river ecology.

For each case, there were 4 or 5 proposals on how to deal with these challenges, were presented by representatives of different countries. The selected solution was proposed by **Professor Jin Young Jung**, from the Youngnam University

-Korea- for the first challenge, consisting on a proposal to facilitate training of University students in water companies. For the second challenge, the awarded proposal focused on the incorporation of nature-based solution for river basin management, which was presented by **Nabeed Iqbal Gondal**, Director of the Pakistan Council of Research on Water Resources.

INTERVIEW

MÓNICA GARCÍA QUESADA, IWRA PROJECT MANAGER ON SMART CITIES

“A smart city goes beyond the implementation of ICTs. It is the one applying urban sustainability”



What type of water challenges are cities currently facing?

Cities around the world are facing large challenges regarding climate change, population growth, rapid urbanisation, compounded by urban inequality, and governance deficiencies. In the water sector, these phenomena are creating well-documented difficulties both in the management of urban water resources and in the provision of urban water and sanitation services. Indeed urbanization and climate change have impacted the natural water cycle, and cities are today at the centre of environmental disasters such as floods and tropical storms, which are great threats and are directly affecting the life and wellbeing of thousands of people and the environment. The expansion of urban areas is creating difficulties in the provision of adequate drinking water and sanitation in many areas of the world, as well as problems managing the expansion and renewal of water networks in the enlarged urban areas.

Under the Smart Cities narrative, what is the relevance of technology and innovation to drive sustainability?

Innovation and technology are powerful tools to bring progress to society. Many of the comforts that people enjoy today are possible thanks to products and techniques inconceivable only a

few generations ago. In the water sector, the uptake of smart technologies has been slower, but they have shown their potential to assist with numerous challenges, across geographic locations in both developing and developed regions. smart technologies have shown their potential to assist with numerous challenges, across geographic locations in both developing and developed regions: water scarcity, water quality deficits, aging infrastructures, deficient urban planning, etc. ICTs have assisted cities to reach policy objectives and international goals for urban development and societal well-being. But a smart city is not simply a city that implements ICTs, but one that reports a substantial and measurable improvement in urban sustainability and in the quality of life of local actors precisely because of the implementation of these technologies. In this sense, a smart city is not defined exclusively by the use of smart technologies, but also by wider aspects of economic efficiency, social equity, and environmental sustainability.

What type of initiative would you underline to be in decision-making in the years to come for smart cities?

Given the large role of water in the development of smart and sustainable cities, a Standard and a certification scheme that pays specific attention to the management of this resource at the local scale is very much needed. We do have evidence of the impact of technologies in certain areas of urban water services provision and urban water resources management, but we lack a comprehensive assessment method capable of examining smart water systems at the local level. Such instruments should tell us about the different functions of water in urban settings, about how and to what degree the proposed smart solutions address those functions, and

« We do have evidence of the impact of technologies in certain areas of urban water services provision and urban water resources management, but we lack a comprehensive assessment method capable of examining smart water systems at the local level. »

whether existing solutions are sufficient and adequate. In addition, defining water performance indicators and measuring and collecting water data needs to be accompanied by an assessment of the allocation of policy roles and responsibilities and the presence (or lack thereof) of sufficient coordination across levels of government and policy sectors. The adoption of smart water solutions depends not only on technological prowess and capabilities in a city, but also on other aspects related to the institutional frameworks and policy decisions. In this sense, a standard and certification scheme for Smart water cities responsive to these aspects can define the central common aspects of smart water sustainability at the local level while examining and comparing solutions in cities with different agendas, contexts, and needs.

N.B. The project “Smart water Cities”, run collaboratively by IWRA, K-water, and the Asia Water Council seeks precisely to develop such assessment. We are currently working with researchers, water professionals, and experts to develop a Global Standard and certification scheme that will help us to measure and benchmark the role and impact of urban water technologies in different cities around the world. The first report of the project is being finalised and will be out by the end of 2021!

IWRA AND UNESCO PARTNERSHIP EXTENDS FOR TWO ADDITIONAL YEARS



After three years of collaboration, IWRA President Gabriel Eckstein met with Bongwoo Shin, Director at the UNESCO i-WSSM -International Centre for Water Security and Sustainable Management- to formally extend the partnership agreement between both organisations to collaborate on the Global Water Security Issues (GWSI) Paper Series for a further two years. GWSI is a collection of case studies published annually focussing on different aspects of Water Security.

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IWRA has been a leading partner with i-WSSM on this project since the start of the second edition, which focussed on “Water Reuse within a Circular Economy Context”, and continued with the recently published third issue which focused on “The role of sound groundwater resources management and

governance to achieve water security”. The Fourth issue on “Water Security and Cities – Integrated Urban Water Management” will be released in 2022.

The signing ceremony was followed by a session held with UNESCO i-WSSM to present and discuss some of the new case studies in the recently published third issue, including:

- Drivers for Collective Groundwater Management: The Case of Copiapó, Chile (Elisa Blanco, Pontificia Universidad Católica de Chile, Chile)
- Conservation, Protection, and Management of Urban Groundwater through City Master Plans: A Case of Indian Cities (Lovlesh Sharma, National Institute of Urban Affairs, India)
- Transboundary Groundwater, Peace and Security: Opportunities and challenges in Central America (Maureen Walschot, Université Catholique de Louvain and the University of Haifa, Belgium)
- Groundwater Quality, Pollution Control, and Climate Change (Malcolm J. Gander, Department of Defense, United States)

In the spirit of the newly signed agreement, both organisations launched the call for abstracts for the fifth issue of GWSI, which will address “Making Decisions for Climate Adaptation”.

FLOOD MITIGATION MEASURES, RISK ASSESSMENTS AND THE ROLE OF ECOLOGICAL KNOWLEDGE ADDRESSED AT THE SECOND DAY OF THE WWC

- The flood vulnerability in urban areas can be reduced by introducing methods for urban catchments such as detention, retention ponds, pumping stations, levees and drainage systems to mitigate flood impacts. A goal is to redesign the catchment network by changing its internal drainage network without disrupting the network for the entire catchment.
- The influence of agricultural factors has higher impact than industrial or commercial factors in drought risk among the vulnerable population
- The risk reduction measures must rely on vulnerability assessment.
- The concerned private and public stake holders must not look at the monetary value of each species and instead should start implementing policies in order to save the species at grave danger of being affected by climate change.

SESSION SUMMARY

The General session under the moderation of **Lesha Wuitmer** started with a focus on vulnerability management in urban areas. The session started with presentation on vulnerability management and the mitigation measures to be implemented in managing the drainage networks for flood control in Seoul, South Korea. The comprehensive study was done in different catchments suggesting various counter measures for each. Some of the measures mentioned were detention, retention ponds, pumping stations, levees and drainage systems to mitigate these



impacts. Different statistical analyses along with a general representation of the past and present trends of the topological characteristics in order to understand the catchment characteristics were also demonstrated. The study concluded that the network configuration for the entire catchment remained the same however, the internal network configuration kept changing.

The session continued with presentation on drought risk assessment with another case study in the context of South Korea. The presentation focused more on the comprehensive understanding of drought implications for regional and socio-economic conditions of the affected population. The evaluation of drought risk was done by using modeling, literature and other secondary sources using the drought hazard index as the main indicator. The study concluded that influence of agricultural factors have higher impact than industrial or commercial factors in mapping the hazard of drought risk among the vulnerable population.

A different approach was taken to understand the stark difference between two species (rice shrimp and rice fish) to demonstrate the direct effect of unbalanced support from industries and government towards their availability thereby directly depleting the population of the species. As per the study, in the Mekong province of Vietnam, the rice shrimp was given more

emphasis due to its higher demand, easier maintenance and stakeholder support. However, protection of the rice fish, on the other hand, was not substantially backed by any governmental or industrial support. The lack of knowledge among the indigenous community regarding the suitable environment and the nutrition requirements for the rice fish had now made rice fish a major concern of depletion in the near future in the Mekong province.

Therefore, although three different topics were discussed, it was evident that climate change vulnerability assessment was a major topic of concern to be addressed in the near future.

Speakers

Lesha Witmer

Women for water Partnership- steering committee member.

Moderator

Key-note Speaker

Jun Shik Hwang

Yeungnam University

Oral presenter

Jieun Kim

Hanyang University

Oral presenter

Linh Nguyen

PhD student, Nagasaki University

Oral presenter

Two oral presenters on the schedule were not present

Presentations

Jun Shik Hwang

Implementation of drainage network layout as a flood mitigation measure: A case study in Seoul, South Korea.

Jieun Kim

Regional Drought Risk Assessment Using a Gaussian Mixture Model.

Linh Nguyen

The Role of Traditional Ecological Knowledge in the Transformation towards Adaptive Governance: Case Study of the Vietnamese Mekong Delta.

NARA LEE, PARTNERSHIP AND LIAISON OFFICE IN THE REPUBLIC OF KOREA ASSISTANT FAO REPRESENTATIVE IN KOREA



“Promoting ways for agriculture to produce more nutritious food with less water though digital innovation and more effective governance is critical”

The nexus between water and agriculture is clear, but would you underline the key issues that are leading the debates at present?

The amount of available freshwater resources per person has declined by more than 20 percent in the past two decades. Water scarcity is one of the leading challenges that will continue to increase with a growing world population, greater demand for water and the climate change, which is already altering hydrological regimes everywhere.

Crops and livestock account for 70 percent of all water withdrawals and up to 95 percent in some developing countries. According to the ‘Progress on level of water stress’ published



2021, agriculture continues to be the most demanding sector regarding freshwater consumption in most of basins.

Thus, promoting ways for agriculture to produce more nutritious food with less water through digital innovation and more effective governance, together with investments in water technologies and infrastructure is critical. Also, securing access to quality water, especially for poor family farmers who feed much of the world is also essential. This requires sustainable water management in agriculture and increased investment in water infrastructure, such as water harvesting or irrigation, improving the advisory services for water management and more.

In addition, there is an increasing need to identify 'fit for purpose' uses of wastewater resulting from other human activities. This is part of several unconventional sources of water which can also contribute to a circular economy including health, agriculture, and energy production while contributing to a cleaner environment.

How the pandemic has affected the progress experienced in the last years?

The COVID-19 pandemic highlights the close link to water, sanitation and health. The traditional approaches have failed to address the linkages between waterborne diseases and waste management, particularly

livestock waste and pollution, and the added value of health and well-being of humans and animals, including financial savings through closer cooperation of human and animal health. Thus, it became clearer that to improve the health of rural communities, a multi-sectoral approach to integrated water resources management is needed.

According to the State of Food Security and Nutrition 2021, between 720 and 811 million people were affected by hunger in 2020 with the increase largely propelled by the COVID-19 crisis. The COVID-19 pandemic exposed the vulnerability of agri-food systems to shocks and stresses and led to increased global food insecurity and malnutrition.

With increased demand for food and the climate change with unexpected extreme weather, it is critical to undertake more integrated approaches for water management and further actions to make agri-food systems more resilient, efficient, and sustainable using less water.

What is the importance of this type of events and what are your expectations out of this World Water Congress?

As indicated in the 'Progress on level of water stress' published 2021 by FAO and UN-Water, in order to reduce water stress, efficient water distribution systems and sustainable agriculture, reuse of wastewater is critical together with water-saving

technologies, green and hybrid technologies, and awareness raising to reduce the use of water in households and sustainable consumption.

In this regard, organizing important events such as World Water Congress, which serves as a critical milestone for researchers and decision makers to engage with each other to share experiences and new developments, is essential to make a positive impact. As emphasized at the UNFCCC COP26 just few weeks ago, we need to do much more, and do it much more quickly. I hope that we can join forces to make real changes towards achieving SDGs through the new knowledge and innovative ideas gained from the congress.

What would be the themes leading the work of FAO with regard to the nexus between water and agriculture in the near future?

FAO is moving forward on the action pillars of the SDG 6 (Clean Water and Sanitation) Global Acceleration Framework in catalysing water investments, data and information, capacity development, innovation and governance for more efficient, inclusive, resilient and sustainable agri-food systems using less water. FAO will contribute to accelerating SDG 6 implementation by leveraging all our expertise and experience through the Water-Food-Energy Nexus, Integrated Water Resources Management, Digital and Geospatial Informatics, the Use of Nonconventional Water, and Water Quality and Food Safety programmes.

HIGH-LEVEL PANEL

The future of water challenges in the coming 50 years



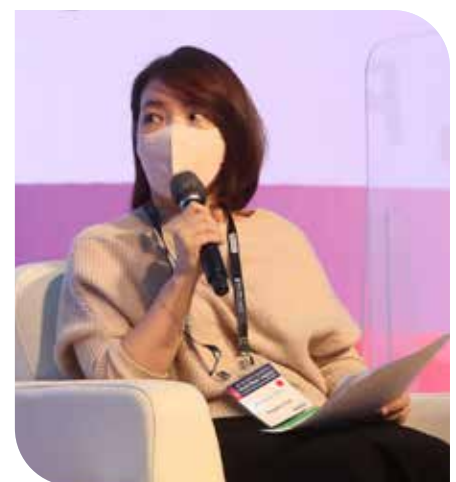
The second day of the World Water Congress which is being held in Daegu, Korea, started with a High-Level Panel that counted with Gabriel Eckstein, President of IWRA, Lesha Witmer, Advocacy Manager at the Women for Water Partnership, Yoonjin Kim, Planning Director at the Korea Water Forum, Bassel Daher, Assistant Research Scientist at the Texas A&M Energy Institute and Adjunct Assistant Professor at Texas A&M and Georgina Mukwirimba, IWRA's World Water Envoy from Zimbabwe.

The introduction to the session was facilitated by James Nickum, Editor-in-Chief of IWRA that explored the water challenges that the world will face in the coming 50 years and how these will be addressed by IWRA. Under that prism, the relevance of working in partnership was

especially underlined together with the contribution of IWRA to advance issues such as water insecurity and to build relevant knowledge through research work and policy briefs as well as capacity building.

For Gabriel Eckstein, IWRA President, "the SDGs are surrounded by unpredictability and they are not milestones that can be achievable in a timeline manner, especially when we face new challenges such as water quality and availability."

The need to open opportunities for vocational training on water-related topics was especially underlined by Lesha Witmer, from Women for Water International, who stated that despite the advances around technology, there is still lack of qualified people to capitalize that. "Qualified people are out there but are



«The interface between science technology and policy is the key function IWRA provides.»
 Yoonjin Kim, Korea Water Forum



«the SDGs are surrounded by unpredictability and they are not milestones that can be achievable in a timeline manner, especially when we face new challenges such as water quality and availability.»
Gabriel Eckstein, IWRA President,

not being hired. There is a huge lack of qualified people in the water sector,” she said. The water and energy nexus was underlined by **Ms. Witmer** as one of the debates that needs to be addressed.

Following similar arguments, **Yoonjin Kim**, from the Korea Water Forum, mentioned the unique role of IWRA that differs from the rest of organisations dealing with water management. “The interface between science technology and policy is the key function IWRA provides,” he said. He mentioned the need to incorporate carbon neutrality at the core of any water-related action.

Bassel Daher, from the Texas A&M Energy Institute, mentioned the raising challenges witnessed through the COVID-19 pandemic which obliges us to establish an interconnection between water,

resilience, and other sectors. Due to this, “there is not a single discipline or sector that can address these challenges alone; there is a need for heightened collaboration as well as for channeled investment to enable the development that cuts across these disciplines in order to allow a higher level of harmonization and coordinated planning,” he explained.

The High-Level panel was closed by **Georgina Mukwirimba**, IWRA’s World Water Envoy from Zimbabwe, who said that “Africa cannot afford to undergo a transformation that cities in Europe or Australia can afford to do. Under this assumption, population growth constitutes a big challenge and solutions are outside of the water sector and outside of our reach, so governments, the food sector, and other policy makers play a central role.”



«Qualified people are out there but are not being hired. There is a huge lack of qualified people in the water sector.»
Lesha Witmer, Women for Water International

As for the role that the youth can play, she mentioned that “youth should be involved in the planning stages and implementation around water.”



James Nickum, Editor-in-Chief of IWRA

Georgina Mukwirimba, IWRA’s World Water Envoy from Zimbabwe:
 «Africa cannot afford to undergo a transformation that cities in Europe or Australia can afford to do. Under this assumption, population growth constitutes a big challenge and solutions are outside of the water sector and outside of our reach, so governments, the food sector, and other policy makers play a central role.»

Bassel Daher, from the Texas A&M Energy:
 «There is not a single discipline or sector that can address these challenges alone; there is a need for heightened collaboration as well as for channeled investment to enable the development that cuts across these disciplines in order to allow a higher level of harmonization and coordinated planning»

GOVERNANCE OF SHARED WATERCOURSES IN AFRICA: EAST AFRICA BASINS



As water governance is one of the current global debates, the IWRA World Water Congress in Daegu has dedicated part of its content to this theme.

KEY MESSAGES

- Africa has a high percentage of people that does not have sanitation system and clean water.
- Transnational law benefits in a transboundary could improve the decision-making on hydropower projects, an accurate understanding and analysis of a situation can lead to a more informed and better governance.
- The modeling and approach of WEF uses WEF Nexus evaluation model+ strategic optimization model (DAF), eco-system services descriptions and more.
- Data exchange may potentially support cooperation but may be more effective for practical applications-e.g. flood control, drought forecasting and the lack of data exchanged, may limit practical usefulness of data.
- Despite important progress in both projects, fundamental knowledge gaps remain on aquifer dynamics.
- Existence of a strong RBO that gives focus to groundwater can be critical to elevate and sustain cooperation on a particular aquifer.

SESSION SUMMARY

Integrated approach to the governance of shared water courses in Africa.

The session of “Integrated approach to the governance of shared water courses in Africa” was mostly themed under the water-energy and food nexus with a focus on transboundary water resource management. The session started virtually with a focus on the local demands of people in response to the transboundary approach of river basin management. It session proceeded with an emphasis of focus on exchange of knowledge among the past projects and studies in the different river basins along with an acknowledgement to the space-time impact of the water-food and energy nexus.

One most captivating question put forth was “should we respond to local needs before applying global perspective?” which sparked interest in the session. The benefit of noticing and in fact solving the local problems at the local level without any global intervention is that it allows them to understand and solve the problem faster scale. It was also discussed that a global perspective does not necessarily mean that it is the key to solve problems. Therefore, in order to foster inclusivity and cooperation, discussion among the local level was focused as more important.

Another main lesson was about the knowledge gaps on the surface water and aquifer dynamics. The knowledge gaps in return pave path for management plan and implementing the challenges of on thereby ultimately the. Therefore, the transboundary water management does not only have a stakeholder approach but also touches the policy perspective making it imperative to connect the bridge between the governance and the implementation.

Speakers

Paolo Burlando

ETH Zurich, Switzerland

Co-Moderator

Z. Yihdego & J. Gibson

University of Aberdeen, United Kingdom

Key-note Speaker

Eric Odada

University of Nairobi/ ACCESS, Kenya

Oral presenter

Laure- Elise Mayard

Northumbria University, UK

Oral presenter

Jonathan Lautze

IWMI

Oral presenter

Presentations

Paolo Burlando

A distributed approach to model the Water-Energy-Food -Environment Nexus.

Conceptualisation, application and evidence in Africa basins

Z. Yihdego & J. Gibson

Eric Odada

Laure- Elise Mayard

Connecting the dots between law and transboundary water management:

can international law accommodate the dynamics between investment,

environmental protection, and human rights in hydropower projects?

Data Exchange in Transboundary Basins:

Should we respond to local needs before applying global prescripts?

Jonathan Lautze

Conjunctive Management of Transboundary Waters: Initial Experiences in the SADC region

THE WORLD WATER CONGRESS IN IMAGES

