

TIP Platform Session list

Technology, Implementation, Policy Platform

Focus area	Session Title	Organizer	Page no.
Sustainable Water Resources and Water Disaster 수자원 확보 및 물 재해	Creating a sustainable future with seawater desalination 해수담수화를 통한 지속가능한 미래	K-Water	2
Agricultural Water and Groundwater 농업용수 및 지하수	Joint Session: Intergenerational and Interdisciplinary Discussions on Smart Water Management & Call for Actions for the 10th World Water Forum's Youth Programme 공동 세션: 스마트 물 관리에 관한 세대 간 및 학문 간 토론 & 제 10차 세계 수자원 포럼 청년 프로그램을 위한 행동 요청	Indonesian Green Action Forum, UN Decade on Ecosystem Restoration, Asia Water Council Young Professionals, Asia Water Council, World Water Council, UNESCO I-WSSM	5
Water Recycling and Reuse 물 재활용 및 재이용	Innovative Reuse Options from South Amman Wastewater Treatment Plant 남 아만 하수처리 공장에서의 혁신적인 재사용	Jordan Wastewater Reuse Organization (JWSRO)	10
Water Governance and Partnership 거버넌스와 파트너십	Towards a Water Secure World: Enhancing sustainable water governance through UNESCO Intergovernmental Hydrological Programme (IHP) IX-phase 유네스코 정부간수문학 프로그램(IHP) 9단계 이행을 통한 지속가능한 물관리 거버넌스 강화	Ministry of Environment of ROK, UNESCO IHP National Committee of the ROK	13
	Partnerships and Cooperation for Water 물을 위한 파트너십과 협력	UNESCO I-WSSM, UNESCO	17
	Joint Session: Establishment of overseas governance and commercialization strategy based on national R&D project and performance 공동 세션: 국가 R&D 프로젝트 및 성과를 기반으로 한 해외 거버넌스 및 상업화 전략 수립	SKKU, KEITI	20

Date/Time/Venue	December 7 (Thu) / 10:00-12:00/#306B (3F), EXCO
(Co-)Organizer	K-water
Session title	Creating a Sustainable Future with Seawater Desalination

Program

Time	Contents	Participants
10:00-10:10 (10')	Opening remarks	Dr. Hyeonsik Kim (Chief Research Officer, K-water)
10:10-10:30 (20')	Achievements and Direction of Domestic Seawater Desalination	Prof. Sangho Lee (Professor, Kookmin University)
10:30-10:50 (20')	Overview of Emerging Technologies in Seawater Desalination	Prof. Chanhee Boo (Professor, KAIST)
10:50-11:05 (15')	Current Status of K-water's Seawater Desalination	Dr. Jihye Kim (Principal Researcher, K-water)
11:05-11:20 (15')	Removing Carbon and Recovering Water using Seawater Desalination	Dr. Leo Hyoungkun Park (Vice President, Capture6)
11:20-12:00 (40')	Panel Discussion	Chair: Prof. Sangho Lee Panelists: Prof. Chanhee Boo, Dr. Kyunghyuk Lee(K-water), Dr. Leo Hyoungkun Park

Results

Presentations

- Speaker A(Prof. Sangho Lee)**
 Starting from the water security, carbon neutrality and water industry, Prof. Lee reviewed the main domestic R&D projects related to desalination such as SEAHERO, GMVP, FOHC, SEAHERO2, KORAE, MD+, DREAMS. Especially, objectives, core technologies, organizations, major outcomes, benefits of ongoing research project "DREAMS" were introduced in detail. Finally, future R&D direction of desalination to meet the domestic and international demands was suggested; digital based desalination based on machine learning and digital twin technologies and seawater reverse osmosis(SWRO) brine management including extracting minerals and valuable resources.
- Speaker B(Prof. Chanhee Boo)**
 High recovery reverse osmosis(RO) will effectively improve the performance of current RO process. In line with it, Prof. Boo introduced the worldwide emerging technologies in seawater desalination such as highly selective nanofiltration(NF), ultra-high recovery reverse osmosis(RO) and resource recovery. Highly ion selective NF membrane can be utilized as a pretreatment of RO to increase the ion rejection. Also, characteristics of osmotically assisted reverse osmosis(OARO), counter flow reverse osmosis(CFRO), ultra-high-pressure(UHP) RO, and Low-salt-rejection(LSR) RO were discussed and compared.
- Speaker C(Dr. Jihye Kim)**
 Dr. Kim introduced about K-water's the first seawater desalination project so called 100,000m³/d of Daesan SWRO project,

from the current water supply and water shortage in Daesan industrial complex to the target water quality and process configuration of Daesan SWRO plant. In order to efficiently operate the Daesan SWRO plant, construction and operation of 1,000 m³/d pilot plant in UAE and development of operation optimization program were performed by participating the national R&D project. In addition, research on analyzing the effect of blending multiple water sources for seawater desalination and generating the sodium hypochlorite from SWRO brine are currently being conducted.

- **Speaker D(Dr. Leo Hyoungkun Park)**

Dr. Park pointed out the negative effect of brine discharge from seawater desalination and introduced about the new method to remove carbon and recover water, so called Capture6's DAC (Direct air capture) process combining the brine pretreatment, electrochemical conversion and air capture. Utilization of well-know and verified technologies and decarbonization of multiple industrial processes are major benefits of this concept. Capture6's DAC process using wastewater effluent will be tested with pilot scale at Palmdale water district. In addition, Capture6 is looking for the opportunity to validate their technology using seawater desalination brine.

Discussion

- **Discussion point**

- South Korea has been a leader in seawater desalination R&D through the experience of many projects including SEAHERO, GMVP, FOHC, SEAHERO2, KORAE, MD+, DREAMS. Considering the global trend and domestic demands, development of digital desalination and brine management technologies is further required.
- In order to improve the efficiency of RO process considerably, development of highly selective membrane and utilization of high recovery processes are needed. However, low marketability of this area makes the membrane manufacturers hesitate. Not only technological development but also support by regulation and policy is important.
- The important role of K-water in seawater desalination field is project developer. As a project developer of Daesan seawater desalination project, K-water had some difficulty to persuade local community about the environment impact of brine. To overcome this issue, it is highly required to develop the method to minimize or reuse of brine with environment-friendly approach.
- Simultaneously removing carbon and recovering water from SWRO brine is a combination of already-validated processes but need of total engineering approach. The required cost to capture CO₂ would be high because of applying the many different technologies, so efforts to reduce the cost is necessary. However, at the same time, understanding of 'Climate Technology' and developing the strategy to utilize the carbon credit should be considered to get the economic feasibility.

- **Key Takeaway**

- Speakers shared their perspectives on seawater desalination by reviewing the domestic R&D projects, overviewing the global technical trends, and introducing the state-of-art technologies.
 - Discussants shared their perspectives on future direction of seawater desalination such as highly-selective membrane development, concentrated brine management, connecting with carbon capture.
 - This session contributed understandings of current status and further development direction of seawater desalination to stakeholders.
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Photos



Prof. Sangho Lee's Presentation



Prof. Chanhee Boo's Presentation



Dr. Jihye Kim's Presentation



Dr. Leo Hyoungkun Park's Presentation



Panel Discussion



Group Photo

Date/Time/Venue	December 6 (Wed) / 13:00-15:30/321A/B Room, EXCO
(Co-)Organizer	Indonesian Green Action Forum (IGAF) UN Decade on Ecosystem Restoration Asia Water Council Young Professionals (AWCYP) Asia Water Council (AWC) World Water Council (WWC) UNESCO i-WSSM
Session title	Joint Session: Intergenerational and Interdisciplinary Discussions on Smart Water Management AND Call for Actions for the 10th World Water Forum's Youth Programme

Program

Time	Contents	Participants
13:00-13:30 (30')	Welcoming Remarks	<ul style="list-style-type: none"> Prof. Dr. Ahmet Mete Saatci, Board of Governor of World Water Council (Welcoming Remarks Presenter) Prof. Shahbaz Khan, Director of UNESCO Asia-Pacific (Welcoming Remarks Presenter) Prof. Dr. Younghwan Kim, Executive Director of Asia Water Council (Welcoming Remarks Presenter) Mr. Josan Malik Ibrahim, IGAF Head of Delegates (Welcoming Remarks Presenter)
13:30-13:35 (5')	Introduction of the Session	Ms. Dinda Ashellia Romadian, IGAF Representative (Moderator)
13:35-13:45 (10')	Water and Ecosystem Restoration Flagship	Dr. Achmad Solikhin, Advisory Board of UN Decade on Ecosystem Restoration and World Water Council (Presenter)
13:45-13:55 (10')	IGAF Commitments to the World Water	<ul style="list-style-type: none"> Mr. Mawan Dwi Saputra, IGAF Representative (Presenter) Ms. Shierley Astryella Riendy, IGAF Representative (Presenter)
13:55-14:05 (10')	Asia Water Council Commitments to Water and Youth	Prof. Dr. Jewon Lee, Project Manager of Asia Water Council (Presenter)
14:05-15:15 (10')	Water and Gender in the Asia-Pacific Region	Dr. Rina Ryoo, Programme Manager of UNESCO i-WSSM (Presenter)
15:15-15:25 (10')	Youth and the 10th World Water Forum Processes	<ul style="list-style-type: none"> Ahmad Farub, M.Sc; Youngs University (Presenter) Dr. Neil Andhika, World Water Forum Youth Program Focal Point (Presenter)
15:25-15:35 (10')	Water and the Environment Interlinkage	Ms. Hyewon Lee, IFSA Representative (Presenter)
15:35- 14:50 (10')	Open Floor Discussions: Questions and Answer	Moderated by Dinda Ashellia Romadiani, IGAF Representative (Moderator)
14:50-15:55 (5')	Wrap-up, Closing Remarks, and Photo Session	Tegar Kurniawan, IGAF Representative (Wrap-up and Closing Remarks Presenter)

Results

Presentations

Notable speakers made four welcoming remarks from different agencies:

- **Prof. Ahmet Mete Saatci** from the World Water Council welcomed youth delegates participating in the Joint Session on the importance of youth voices in the water sector. He informed us that water can be used as a weapon in war. For instance, in Gaza, Palestine, many vulnerable people died due to the control of water.
- **Prof. Shahbaz Khan** from UNESCO informed the importance of youth as part of the UNESCO strategy. He also discussed one of the best examples of water management in Bali, namely, Tri Hita Karana and the Subak system, which balances nature and humans. He underscored some water challenges, such as climate change and water disasters, and the importance of finding solutions to address wicked water problems. He also informed the importance of multidisciplinary collaboration for sustainable water management.
- **Prof. Younghwan Kim** emphasized the importance of AWC and AWCYP as the leading platforms for young people in Asia and the Pacific in the water sector. He also informed us that this Session would provide opportunities for youth to learn more about AWC and its commitment to youth.
- **Mr. Josan Malik Ibrahim** presented the importance of this Joint Session for smart water management and youth engagement for the 10th World Water Forum. He expected that this Session would be beneficial for young people.

Presentations:

- **Dr. Achmad Solikhin** from the UN Decade on Ecosystem Restoration: He presented about the UN Decade on Ecosystem Restoration's Partnership Networking Briefing. He informed that the UN Decade has 253 partners globally, consisting of 18 collaborating agencies, 14 global partners, 57 supporting partners, and 167 actors. He also informed us about five task forces, such as Best Practices, Finance, Monitoring, Science, and Youth, and mentioned about 31 challenges under 12 themes. He provided examples of the Marine Challenge and Freshwater Challenges and informed us that the UN Decade is the first, best, or most promising example of large-scale and long-term ecosystem restoration in any country or region, embodying the 10 Restoration Principles of the UN Decade.
 - **Mr. Mawan Dwi Saputrra and Ms. Shierley Astryella Riendy** from the Indonesian Green Action Forum: They presented the Best Practices: Youth Involvement at the International Foras. He introduced the Indonesian Green Action Forum, its engagement, and its project. They also mentioned some partners supporting their platform, especially KIWW, K Water Forum, Asia Water Council, UN Decade on Ecosystem Restoration, and World Water Council. They also introduced three best practices on youth and water: Edu Green Village, Triple R, and Climate Day 2023. They also shared their international participation in organizing youth events at KIWW, World Water Forum, AIWW, and SIWI.
 - **Dr. Jewon Lee from the Asia Water Council:** He presented about the Asia Water Council's Commitments to Water and Youth. He informed that AWC was established to set Asia's water issues at the top of global agendas and promote sustainable development by solving water problems under its mission. Since 2013, AWC has conducted 4 General Assembly & 19 Board of Council meetings successfully held until 2023. He also mentioned that the Asia International Water Week is conducted every 3 years, and the third AIWW will be conducted on Sep 24-28, 2024, in Beijing, China. He explained about AWC water projects, global agendas, and key events. As a commitment to young people, AWC has established the AWCYP with a mission of Asia's sustainable development with Smart water and a mission of raising Asia's water issues at the top of global agendas, promoting Asia's sustainable growth by solving water problems. He mentioned that AWCYP members comprise twelve organizations, including the Indonesian Green Action Forum. Finally, he stressed the future commitments of the 10th World Water Forum and the third Asia International Water Week.
 - **Ms. Rina Ryoo from UNESCO iWSSM:** She presented Water and Gender in the Asia-Pacific Region. She informed about the Global Agenda on Water and Gender and the UNESCO iWSSM's Projects and activities on Gender equality
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done from 2020 to 2022, such as Boom-Up content, research projects, forum, and EC/YP network. She shortly introduced about the UNESCO iWSSM's WAGLE Young Professionals, with its missions: 1) Continuous Spread of the Gender Equality Agenda in the Water Sector in the Asia-Pacific Region, 2) Discovering Action items for achieving this agenda, 3) To be the main network of gender equality agenda in the water sector in the Asia-Pacific region in water domain. She also stressed about the WAGLE YP's logo, operational idea, and structure.

- **Mr. Ahmad Farub from Youngsan University:** He presented about the Youth Delegates and Youth Programs under the 10th World Water Forum. He informed us that there are three youth processes: Political, Thematic, and Regional, mainstreaming youth voices. He also provided updated information on the satellite events undertaken for the 10th World Water Forum in the Americas, Europe, Asia and the Pacific, Africa and the Middle East region. He also updated the importance of the Bali Youth Plan of the 10th World Water Forum, consisting of 27 global youth organisations.
- **Dr. Neil Andhika** from the Youth Programme Focal Point of the 10th World Water Forum: There was no presentation from Dr. Neil Andhika but there is a video, promoting the World Water Forum. The video highlighted three processes of the 10th World Water Forum, including political, regional, and thematic process.
- **Ms. Hyewon Lee** from the International Forestry Students' Association: She presented about the forest problems caused by the water crisis. She informed about the role of forests in the water cycle and noted the decrease of functional forests due to climate change. She also informed the recent wildfire outbreak in Korea and international cooperation to address climate change. She emphasized the importance of forest, water, and climate change.

Discussion

There was only open floor discussions in this Joint Session addressing the presentations delivered by speakers or panelists. However, there were four questions from the floor given to the speakers. They include:

- **Mr. Josan Malik Ibrahim** asked about the engagement of women and youth in their institutions, both in the Asia Water Council and UNESCO iWSSM. Dr. Jewon Lee and Dr. Rina Ryoo responded both youth and women have been provided a specific platform in their institutions. For instance, the Asia Water Council established the Asia Water Council Young Professionals, whereas UNESCO iWSSM established the UNESCO WAGLE YP.
 - **Mr. Tegar Kurniawan** questioned the mechanism for putting young people on the Asia Water Council Board of Governors (BoG). Dr. Jewon Lee responded that they could apply their interest as part of youth-led organizations during the BoG's open application. He also can engage youth during the BoG meetings to voice their voices.
 - **Mr. Mawan Dwi Saputra** asked about the importance of young people being tabled in the high-level politics in the water sector. Dr. Jewon Lee and Dr. Rina Ryoo responded that they could engage them with the policy-decision makers, but it is still tricky.
 - **Mr. Achmad Solikhin** requested that young people be financed to attend the 10th World Water Forum 2024. Dr. Jewon Lee and Dr. Rina Ryoo responded that they would finance young people to attend the 10th World Water Forum as part of their commitment to empowering youth. They also emphasized the importance of engaging them in the Forum process.
 - In conclusion, in the questions and answers part, the speakers noted that young people played essential roles in the water sector and that youth voices have been mainstreamed into their institutions through youth platforms, research, capacity-building, and others. They also noted that youth participation in the 10th World Water Forum is pivotal and needs to be brought to the table for further commitments, actions, and policy-making. They also considered the importance of processes in actualizing actions rather than only acquiring outputs or outcomes. All speakers agreed to bring and engage youth in their platform and the upcoming World Water Forum.
- **Key Takeaway**
 - Youth has been mainstreamed in their agenda in the form of internal and external activities, and their voices should be accommodated for further actions,
 - All the partners of the Joint Session agreed to bring youth to the 10th World Water Forum and have the potential to support them to attend the Forum financially,
 - The speakers agreed on the importance of engaging youth in sustainable water resources management,
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- Interlinking youth, water, and gender is the pivotal nexus for actualizing water agenda in the local, national, and global arena,
 - Gender equality for young women and men should be taken into consideration in the water sector in the form of education, jobs, politics, participation, etc.
 - The Asia Water Council has worked sustainably to support smart water management projects since 2016, with support from national and international donors.
 - UNESCO iWSSM has provided a platform for sharing gender issues in Asia and the Pacific Region.
 - The speakers expected all the participants could join the 10th World Water Forum in Bali, Indonesia.
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We also provide you with two videos dedicated to our Joint Session:

1. Pre-KIWW 2023: https://www.youtube.com/watch?v=Vq_BPbYdMXs (credit: Mr. Josan Malik Ibrahim)

2. Joint Session: <https://www.youtube.com/shorts/9nqgBu2uOHY> (credit: Ms. Shierley Astryella Riendy)

Photos



Photo session of the participants



Discussions session



Description



Welcoming remarks from Prof. Dr. Shahbaz Khan, UNESCO



Welcoming remarks from Dr. Ahmad Saatchi, World Water Council



Committees of the Joint Sessions



Questions and answers session



Discussion Session

Date/Time/Venue December 7 (Thursday) / 13:00-15:00/#322 (3F), EXCO

(Co-)Organizer Jordan Wastewater Reuse Organization (JWSRO)

Session title Innovative Reuse Options for South Amman Wastewater Reuse Options

Program

Time	Contents	Role	Participants
13.0- 13.15	Welcoming Remarks	Presenter	Dr. Luay Froukh, JWSRO
13.15-13.45	South Amman WWTP Overview	Presenter	Dr. Luay Froukh, JWSRO
13.45-14.15	Treatment and Effluent Characteristics	Presenter	Eng. Maram Hawwa, PMU, Water Authority
14.15-14.30	Current Reuse and Challenges	Discussion	Eng. Maram Hawwa, PMU, Water Authority
14.30-14.45	Proposed Innovative Reuse Options	Presenter	Dr. Luay Froukh, JWSRO
14.45-15.00	Feasibility and Options Selection	Presenter	Eng. Maram Hawwa, PMU, Water Authority
15.00-15.15	Open Discussion	Discussion	Dr. Luay Froukh, JWSRO

Results

Presentations

- **Speaker A:** Illustrate Speaker A's presentation

Dr Luay Froukh from Jordan wastewater reuse organization (JWSRO) presented the first presentation which covered the following topics;

- Jordan location map and geopolitical situation
- Available surface and ground water resources
- Water demand for various users
- Importance of treated wastewater/ considered as new source of water supply

Dr Luay Froukh from Jordan wastewater reuse organization (JWSRO) presented the first presentation which covered the following topics;

- Plant history and construction cost
- Plant characteristics
- Plant treatment technology
- Plant treated water quality

- **Speaker B:** Illustrate Speaker B's presentation

Eng. Maram Hawwa from Water Authority presented the following topics;

Challenges facing the plant and reuse options;

- Plant location challenges
- Storage of surplus flow in the winter

- Proposed reuse options

Dr Luay Froukh from Jordan wastewater reuse organization (JWSRO) covered in the next presentation the following topics;

- Feasibility of reuse options
- SOWT analysis for plant reuse
- Advantages and disadvantages of reuse options
- Feasible reuse option and cost estimate

Discussion

- **Discussant A:** summarize Discussant A's talking point

The focus of the discussion from raised points from the participants was on the followings;

- Limited water resources and transboundary conflicts
- Impact of Syrian refugees on water and wastewater infrastructure
- Impact of agriculture the economy

- **Discussant B:** summarize Discussant b's talking point

Dr Luay Froukh from Jordan wastewater reuse organization (JWSRO) mentioned in the discussion the followings;

- Sustainability of reuse options in solving the plant challenges
- Possibility of funding for proposed feasible reuse option
- The plant future
- The involvement of women in farming

- **Key Takeaway**

- Speakers shared their perspectives on precise understanding of importance of treated wastewater for irrigation in Jordan and reduction of pressure on the groundwater
- The replication of South Amman plant case due to contribution of feasible reuse options to livelihood of local community.
- This session contributed to participants understanding of Jordan water situation, geopolitical conflict, use of solar energy and the how proposed reuse options in the session contributed to reduction in the environmental impact and increase in the local community stability and providing them with source for their livelihood.

Photos





Presenter/Speaker



Presentation

Date/Time/Venue	December 7 (Thu) / 10:00-12:00/#314 (3F), EXCO
(Co-)Organizer	Ministry of Environment, ROK, UNESCO IHP National Committee of the Republic of Korea (IHP-ROK)
Session title	Towards a Water Secure World: Enhancing sustainable water governance through UNESCO Intergovernmental Hydrological Programme(IHP) IX-phase

Program

Time	Contents	Participants
10:00 - 10:05 (5')	Opening Remarks	Prof. Kwan-sue Jung Co-Chairperson, UNESCO IHP-ROK
10:05 - 10:10 (5')	Introduction of the Session	UNESCO IHP-ROK Secretariat
10:10 - 10:25 (15')	UNESCO IHP: Scientific Support to Water Governance	Prof. Shahbaz Khan, Director of the UNESCO Office in Beijing
	UNESCO IHP-IX Implementation in Korea (focus on water governance and partnership)	
	Establishing cooperation system and analyzing international trends for sustainable cities focusing on ecohydrology	Prof. Yong-won Seo, Dept. of Civil Engineering, Yeungnam University
10:25 - 10:55 (30')	Development of Online Education Platform for Enhancing Capacity of AI + Water Resources Engineering	Prof. Seung-yub Lee, Dept. of Civil and Environmental Engineering, Hannam University
	Operation of IHP Experimental Basin and Enhancement of International Utilization of Hydrological Data	Prof. In-hwan Park, Dept. of Civil Engineering, Seoul National University of Science and Technology
10:55 - 11:00 (5')	Seating arrangement for the panel discussion	
	Enhancing sustainable water governance through UNESCO IHP IX-phase	
11:00 - 11:45 (45')	- Q & A for 3 presentations - Panel Discussion	(Moderator) Prof. Joo-heon Lee, Vice Chairperson of the UNESCO IHP-ROK, (Panelists) - Prof. Shahbaz Khan (Director, UNESCO Beijing) - Dr. Sang-kee Seo (Director General, Korea Rural Community Corporation, Rural Research Institute) - Prof. Gun-hui Chung (Dept. of Civil Engineering, Hoseo University) - Ms. Eun-young Kim (Chief, UNESCO Agenda & Policy Center, Korean National Commission for UNESCO)
11:45 - 11:50 (5')	IHP-IX Phase Activity Plan - 31st IHP RSC-AP Meeting (2024) - 26 th IHP Intergovernmental Council (2024)	UNESCO IHP-ROK Secretariat
11:50 - 12:00 (10')	Closing & Commemorative Photo	Prof. Kwan-sue Jung Co-Chairperson, UNESCO IHP-ROK

Results

Presentations

- **Prof. Yong-won Seo (IHP-IX Output 1.2, Cross-cutting Theme 2)** introduced the concept of ecohydrology and its linkage with the UNESCO IHP IX-Phase and shared the ecohydrological approach in urban basin with four sites (Łódź City, Poland; Putrajaya Lake and Wetland, Malaysia; Taehwa river and Gapcheon, Republic of Korea). Focusing on the international cooperation in ecohydrology, Prof. Seo presented the UNESCO Ecohydrology demonstration site network and cooperation opportunities to enhancing governance through utilizing IHP-related networks.
- **Prof. Seung-yub Lee (IHP-IX Output 1.9)** delivered his research outcomes to enhance capacity of AI+Water Resources Engineers in line with the IHP IX-Phase's key activities; facilitation of the development, promotion, tools and methodologies on AI for water resources assessment. By sharing survey results and activities taken on developing an AI educational tool for water resources stakeholders, Prof. Lee emphasized the importance of the capacity to collect, secure, and communicate big data and nurturing π-shaped talented experts who are having interdisciplinary knowledge based on water resources engineering.
- **Prof. In-hwan Park (IHP-IX Output 3.2)** talked about utilizing hydrological data to bridge the data-knowledge gap throughout the IHP IX-Phase. By using collected data from the IHP experimental basin (Gyeongan stream) in Korea, Prof. Park has standardized data sets and cooperated with the IHP-WINS(Water Information Network System) developers to register the ROK's water DB that can be useful for other IHP member states who seek methodologies and tools to manage hydrological data.

Panel Discussion

- **Prof. Shahbaz Khan** suggested the ROK to take a leading role in green development which includes IWRM(integrated water resources management), data management, and scientific technology. Also, as a key player among the five neighboring countries (ROK, Japan, China, Mongolia, DPRK), Prof. Khan encouraged the ROK to facilitate collaboration with those countries not only in the water sector and the scientific and cultural sectors related to water.
 - **Dr. Sang-kee Seo** introduced the research areas where KRC Rural Research Institute focuses on irrigation and drainage, groundwater, and food security related to climate change impacts. As a leading agricultural research institution, Dr. Seo recommended to design international cooperation activities between the IHP-ROK and RRI to address hydro-agricultural issues and develop appropriate solutions.
 - **Ms. Eun-young Kim** shared the KNC for UNESCO's efforts to raise awareness and develop capacities of the general public, especially of students in Korea regarding water and sanitation issues and water security by running the ESD(Education for Sustainable Development) project. Through establishing an active communication channel between the KNC and IHP-ROK, prioritizing Africa and gender issues in IHP IX-phase implementation, and organizing events to present IHP works and opportunities to students, the IHP IX-Phase can be delivered effectively, according to Ms. Kim's recommendation.
 - **Prof. Gun-hui Chung** shared her ideas to potentially interlink the IHP IX-Phase activities with the Korean ODA projects and bridge the advanced economies and developing countries by disseminating knowledge and technologies that are crucial to maintaining good water resources management and strengthening water governance. By taking a chance of hosting the 31st IHP Regional Steering Committee Meeting for Asia and the Pacific in 2024, Prof. Chung suggested inviting more diverse water stakeholders to deal with water issues and build solid partnerships with them.
 - **Key Takeaway**
 - In this session, UNESCO IHP-IX stakeholders shared their own research findings, best practices, and policy recommendations to cope with exacerbating water issues in line with the framework of IHP-IX phase and discussed how these lessons-learned would be disseminated and applied effectively to ensure each country's sustainable water resources management. By utilizing the UNESCO IHP platform and sharing actionable solutions, participants sought to
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create synergy and strengthen partnerships to support sustainable water governance whereby decisions are made based on technology, implementation, and policy by building mechanisms enabling all stakeholders to participate.

- The organizer, UNESCO IHP National Committee of the Republic of Korea, presented the ROK governments' efforts to ensure water security through implementing the IHP IX-Phase 'Science for a Water Secure World in a changing environment' by conducting research projects and facilitating various international water cooperation activities between domestic stakeholders and the UNESCO Water Family.
- In the keynote speech, the speaker highlighted the importance of water to achieve the 2030 Sustainable Development Goals(SDGs) and shared the best practices and results of the previous IHP phase.
- 3 presenters delivered their research findings for the period 2022-2023 on ecohydrology, AI capacity building and Utilization of hydrological data respectively.
- During the panel discussion focused on strengthening water governance and partnership through IHP IX-Phase, each panelist shared their perspectives and opinions to expand the scope of IHP works and potential partnerships that would lead to more inclusive engagement of diverse groups of people, regions, and actors to accelerate the IHP IX-Phase implementation.
- Throughout the Q&A, all the speakers and audience exchanged their ideas and comments that would contribute to raising awareness of IHP and participation both domestically and abroad.

Photos



Prof. Kwan-sue Jung (Co-Chairperson, UNESCO IHP-ROK) delivered the opening remarks. He emphasized the importance of intergovernmental collaboration to enhance sustainable water governance, and contribution of UNESCO IHP-ROK to accelerate the program as leading priority outcomes and regional steering committee for Asia and the Pacific.

Prof. Shahbaz Khan (Director, UNESCO Office in Beijing) introduced the history and achievement of the UNESCO IHP, and the role of UNESCO regional office to support the program by covering technology, education, science and culture.



Prof. Yong-won Seo (Yeungnam University) presented ‘Establishing cooperation system and analyzing international trends for sustainable cities focusing on ecohydrology’ which addresses cross-cutting theme ‘Ecohydrology and Water Quality’ and Output 1.2 ‘Ecohydrology research and innovation’ of the IHP IX-Phase.

Prof. Seung-yub Lee (Hannam University) gave a presentation on ‘Enhancing Capacity of AI+Water Resources Engineering’ which aims to develop an online education platform to provide AI education for water engineers. He is leading the output 1.9 under the ‘Priority area 1. Scientific Research and Innovation’ of the IHP IX-Phase.



Prof. In-hwan Park (Seoul National University of Science and Technology) shared his research outcomes on ‘Operation of IHP Experimental Basin and Enhancement of International Utilization of Hydrological Data’ to implement outcome 3.2 under the ‘Priority area 3. Bridging the data-knowledge gap’.

During the **Panel discussion**, four panelists shared their insights on IHP implementation in the ROK and recommended potential activities and collaborations to support and enhance water governance by utilizing the IHP platform. Also, the audience requested more information on the UNESCO IHP to be shared with the public and suggested awareness-raising opportunities.

Date/Time/Venue December 6 (Wed) / 13:00-14:45/#314 (3F), EXCO

(Co-)Organizer i-WSSM, ROK, UNESCO

Session title Partnerships and cooperation for water

Program

Time	Contents	Participants
13:00-13:05 (5')	Opening Remark	Mr. Bongwoo Shin (Director, Korea Water Forum)
13:05-13:10 (5')	Welcoming Remark	Mr. Engin Koncagül (Senior Programme Officer, UNESCO WWAP)
13:10-13:15 (5')	WWDR Message	Mr. Gilbert Hougbo (Chair, UN-Water)
13:15-13:30 (15')	(Presentation 1) UN WWDR 2023: Partnerships and cooperation for water	Mr. Engin Koncagül (Senior Programme Officer, UNESCO WWAP)
13:30-13:45 (15')	(Presentation 2) Partnerships and cooperation for food and agriculture	Ms. Nara Lee (Assistant FAO Representative, FAO Partnership and Liaison Office in Seoul)
13:45-14:00 (15')	(Presentation 3) Regional perspectives – Asia and the Pacific	Mr. Anshuman Varma (Economic Affairs Officer, UN ESCAP)
14:00-14:15 (15')	(Presentation 4) Sustainable water security in developing countries through partnerships and cooperation	Ms. Neha Midha (National Programme Officer, UNESCO New Delhi Office)
14:15-14:40 (25')	Panel Discussion	<i>Moderator</i> Engin Koncagül (Senior Programme Officer, UNESCO WWAP) <i>Panel</i> Mr. Yohan Lee (Research Professor, Busan University of Foreign Studies) Mr. Sang-young Park (Executive Director, K-water)
14:40-14:45 (5')	Wrap up and closing	

Results

Presentations

- **Engin Koncagül (Senior Programme Officer, UNESCO WWAP): UN WWDR 2023: Partnerships and cooperation for water**
The 2023 United Nations World Water Development Report (WWDR) highlights the importance of partnerships and cooperation in water sector. Unfortunately, water-related Sustainable Development Goals (SDGs) is off-track. Especially, the situation is bad in transboundary regions. To reduce the data and information gap and to accelerate the development

and uptake of innovative technologies, cooperation and partnerships are required.

- **Nara Lee (Assistant FAO Representative, FAO Partnership and Liaison Office in Seoul): Partnerships and cooperation for food and agriculture**

Ms. Nara Lee's presentation focused on partnerships and cooperation for food and agriculture. For food and agriculture, partnerships and cooperation can be distinguished by 5: rural-urban partnerships, partnerships at water basin level, research and innovation, knowledge sharing and capacity building, and data collection. Partnerships play a crucial role in improving the livelihoods of smallholders farmers and vulnerable communities.

- **Anshuman Varma (Economic Affairs Officer, UN ESCAP): Regional perspectives – Asia and the Pacific**

Mr. Varma explained different types of partnerships and cooperation. First, intra-sectoral partnerships include multi-stakeholder partnerships, Public-Private Partnerships, and cooperation for sharing transboundary water resources and it allows to involve local communities, national ministries, and NGOs. Second, cross-sectoral partnerships allow to have high levels of Integrated Water Resources Management (IWRM) implementation with a focus on both water and land management and effective watershed governance. Lastly, extra-sectoral partnerships provide integrated solutions like water-energy-food nexus approach.

- **Neha Midha (National Programme Officer, UNESCO New Delhi Office): Sustainable water security in developing countries through partnerships and cooperation**

Ms. Neha Midha's presentation explored the cooperation of Republic of Korea, K-water, and i-WSSM by providing an example project, Sustainable Water Security for Human Settlements in Developing Countries under Climate Change in Bhutan. The project aims to improve capacity to monitor water quality to reduce risk to water security in cities and improve their adaptability to the climate change. 4 water quality monitoring stations installed in Bhutan and it encouraged various stakeholder's participation.

Discussion

- **Nara Lee:** Partnerships can improve crop reality (improving productivity and efficiency in agriculture)- technology-based cooperation, data information, water-energy-food-ecosystem nexus
 - **Anshuman Varma:** Ensuring water security needs to be preceded to achieve sustainability, especially in many developing countries in Asia and Africa
 - **Neha Midha:** Although stakeholders can make either positive or negative impacts, encouraging various stakeholder is important for partnerships and cooperation
 - **Yohan Lee:** financially supporting countries in need through knowledge, and information sharing is important to achieve the goal
 - **Sang-young Park:** From experiences in Mekong region, data and information gap exist. For partnerships and cooperation, gaining complementary and correct data is the crucial
 - **Key Takeaway**
 - Speakers shared their perspectives on partnerships and cooperation for water
 - Discussants shared their experiences and lessons learned in Mekong region and ASEAN region
 - This session contributed to spread the 2023 United Nations World Water Development Report
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Photos



Opening Address



Welcoming Address



Presentation



Presentation



Panel Discussion



Group Photo

Date/Time/Venue December 7 (Thu.) / 15:30-17:40/#322B (3F), EXCO
(Co-)Organizer Sungkyunkwan University (SKKU)
 Korea Environmental Industry & Technology Institute (KEITI)
Session title Joint Session: Establishment of overseas governance and commercialization strategy based on national R&D project and performance

Program

Time	Contents	Participants
15:30-15:35 (5')	Opening remark	Kyungtaek Yum (Professor, SKKU)
15:35-15:55 (20')	- Sharing project to solve global water issues - Policy & finance of designing project	Seungmin Ryu (Public business team leader, KEITI)
15:55-16:10 (15')	Proven project introduction and commercialization suggestions in Vietnam	Kyungtaek Yum (Professor, SKKU)
16:10-16:25 (15')	Orientation for smart water resources management in Vietnam, V-SWG commercialization strategy	Nguyen Chi Nghia (Director General, NVWATER, NAWAPI, Vietnam)
16:25-16:40 (15')	Current status of Vietnam water industry & export consulting	Bui Thi Phuong Thao (General Director, Anphuoc International Corporation, Vietnam)
16:40-17:00 (20')	Introduction of ongoing Mongolia project	Sharav Nandinzaya (Project Manager of OECD-AWC Project, Mongolia)
17:00-17:05 (5')	Break time	-
17:05-17:25 (20')	Group discussion	All participants
17:25-17:35 (10')	Cooperative Agreement NAWAPI, An Phuoc International Corporation, SWT&C	Nguyen Chi Nghia (Director General, NVWATER, NAWAPI, Vietnam) Bui Thi Phuong Thao (General Director, Anphuoc International Corporation, Vietnam) Kukheon Han (CEO, SWT&C)
17:35-17:40 (5')	Commemorative Photographing	All participants

Results

Presentations

- **Speaker: Ms. Seungmin Ryu** (Public business team leader, KEITI)
- International cooperation programs in Korea (Green Financing Opportunities with KEITI)

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- Project case studies (Bilateral Cooperation and Multilateral Cooperation)
 - **Speaker: Mr. Kyungtaek Yum** (Professor, SKKU)
 - Demonstration of SWG Project
 - Commercialization of SWG technology and product in Vietnam suggestions
 - **Speaker: Mr. Nguyen Chi Nghia** (Director General, NVWATER, NAWAPI, Vietnam)
 - Orientations and regulations of the legal system on water resources, water supply and drainage and smart water devices
 - Current status of the market for water supply and drainage technology and technical equipment in Vietnam
 - Approach and propose content for developing the V-SWG model using Korean technology
 - **Speaker: Mrs. Bui Thi Phuong Thao** (General Director, Anphuoc International Corporation, Vietnam)
 - Current status of Vietnam water industry (water sources, water supply infrastructure, human resources, investment)
 - Environmental management regulations
 - Opportunities of Korean's smart water management technology in Vietnam market (Steps to access the market)
 - **Speaker: Ms. Sharav Nandinzaya** (Project Manager of OECD-AWC Project, Mongolia)
 - National Dialogue on Water in Mongolia (Shared knowledge, Enhanced capacities, Dissemination of good practices, Policy recommendations, suggestions)

Discussion

- **Key Takeaway**
 - Session presenters discussed their perspectives and accurate understanding for effective commercialization of SWG technology and Korean smart water management products
 - The discussants discussed new projects in Vietnam and Mongolia, analysis of the external environment for commercialization, and various matters for achieving practical results
 - Comparative analysis and customized strategy methods for applying SWG to Vietnam and Mongolia were discussed
 - The discussants discussed ways to promote projects based on support from Korean organizations, including KEITI
 - The discussants discussed ways to strengthen partnerships through signing a cooperation agreement and proceed with commercialization through continuous exchange.
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Photos



Ms. Seungmin Ryu Presentation



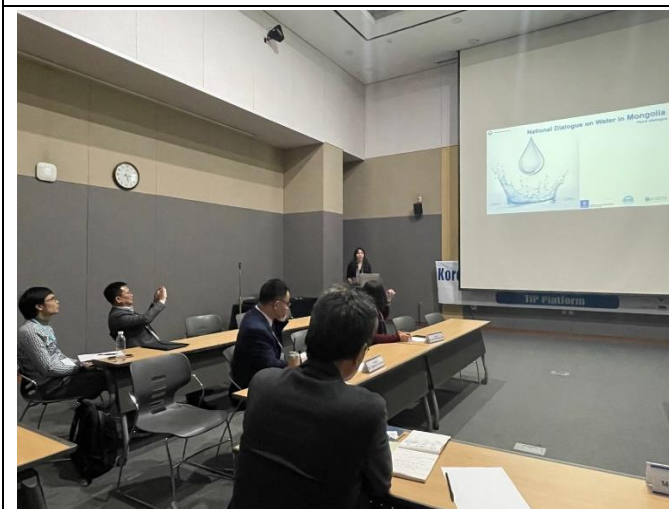
Mr. Kyungtaek Yum Presentation



Mr. Nguyen Chi Nghia Presentation



Mrs. Bui Thi Phuong Thao Presentation



Ms. Sharav Nandinzaya Presentation



Cooperative Agreement (NAWAPI, APIC GROUP and SWT&C)