TIP Platform Session list

Technology, Implementation, Policy Platform

Focus area	Session Title	Organizer	Page no.
Sustainable Water Resources and Water Disaster **수자원확보 및 물재해**	Introduction of advanced digitalized technologies in hydrological survey for sustainable smart water management in response to the climate crisis 기후 위기 대응, 지속 가능성, 스마트 물 관리를 위한 최첨단 수문 조사 기술 소개	Korea Institute of Hydrological Survey 한국수자원조사기술원	3
	Technical Solution for Sustainable Water Management of Asia 지속가능한 아시아 지역 물관리를 위한 기술 솔루션	K-water 한국수자원공사	7
	Granular and Cost-Effective Framework for Sustainable Water Resources and Flood Vulnerability Mapping Using Artificial Intelligence on Satellite Imageries and Geospatial Big Data 인공지능 기반 위성 이미지 및 지리공간 빅데이터를 활용한 지속 가능한 수자원 및 홍수 취약성 매핑을 위한 세분화되고 비용 효율적인 프레임워크 소개	Politeknik Statistika STIS, UN Regional Hub on Big Data and Data Science for Asia and the Pacific 인도네시아 통계 폴리테크닉 대학교, 유엔 아시아 태평양 지역 빅데이터 및 데이터 과학 허브	11
	Youth Researcher Session: Innovative Approaches to Flood Protection Investment in an Uncertain World 신진연구자 발표: 불확실한 기후변화에 대응하는 재해방지를 위한 혁신적 접근방식	Japan Water Forum 일본물포럼	14
	Water Security for Climate Change Adaptation 기후 변화 적응을 위한 물 안보	UNESCO i-WSSM, UNESCO 유네스코물안보국제연구교육센터, 유네스코	16
	Harnessing Remote Sensing for Water Resources and Climate Resilience 원격 탐사를 활용한 수자원관리 및 기후 복원력 강화	Korea Water Resources Association, GIST 한국수자원학회, 광주과학기술원	19

	Digital Water Management Innovations Create New Value for Water 디지털 물관리 혁신으로 물의 새로운 가치 창출	K-water 한국수자원공사	22
Agricultural Water and Groundwater **농업용수 및 지하수**	Catalyzing Ecology-Water-Youth Nexus- Based Initiatives through Sustainable Financing Mechanism 지속가능한 자금 조달 매커니즘을 통한 생태-물-청년 연계 이니셔티브 추진 동향	Indonesian Green Action Forum (IGAF Headquarters), 인도네시아 그린 액션 포럼	26
Water Recycling and Reuse **물 재활용 및 재이용**	Decentralized and Private Model for Efficient Wastewater Reuse for Jordan Case 효율적인 폐수 재사용을 위한 분산화 및 민간 모델 – 요르단 사례	Jordan Wastewater Reuse organization (JWSRO) 요르단폐수재이용기구	29
Water Governance and Partnership **거버넌스와 파트너십**	The Smart Water City: Solution Platforms as an Evaluation Criteria and Implementation Guidance 스마트워터시티 물 문제 해결을 위한 평가 기준 및 기술 실행 지침으로서의 솔루션 플랫폼	K-water 한국수자원공사	32
	Overseas governance and demonstration strategy of national R&D development performance (facilities) 국가 R&D 개발 성과의 해외 거버넌스 및 실증화 전략	SKKU, Smart Water Technology and Consulting, Ltd 성균관대학교. 스마트물관리기술컨설팅(주)	35

Date/Time/Venue	November 13 (WED) / 13:00-14:30/#322A (3F), EXCO
(Co-)Organizer	Korea Institute of Hydrological Survey
Session title	Introduction of advanced digitalized technologies in hydrological survey for sustainable smart water management in response to the climate crisis

Program

Time	Contents	Participants
13:00-14:05(5')	Session Introduction Opening remarks	Dr. Sinjae Lee (Korea Institute of Hydrological Survey, Division Manager) - Chair Dr. Eunjeung Shim (Korea Institute of Hydrological Survey, Principal Researcher) - Session Organizer
13:05-13:25(20')	Integrated Real-time Discharge Management System (IRDiMS)	Mr. Sanguk Cho (Korea Institute of Hydrological Survey, Principal Researcher)
13:25-13:45(20')	Discharge Measurement Method using Drone Footage	Mr. Taeeun Lim (Korea Institute of Hydrological Survey, Senior Researcher)
13:45-14:05(20')	Introduction of the spatially expanded applications of evapotranspiration and soil moisture observations using cutting-edge technology	Mr. Kiyoung Kim, Senior Researcher(KIHS) (Korea Institute of Hydrological Survey, Senior Researcher)
14:05-14:25(20')	Current status of non-contact flow velocity and discharge measurement in Japan	Dr. Makiko Iguchi, (Hydro Technology Institute Co., Ltd, Director)
14:25-14:30(5')	Closing Remarks	Dr. Sinjae Lee (Korea Institute of Hydrological Survey, Division Manager) - Chair

Results

Presentations

- **Speaker 1, Mr. Sanguk Cho**

The expansion of flood warning points and the growing need for real-time discharge data have become critical issues. To keep pace with these changes, the Korea Institute of Hydrological Survey(KIHS) has introduced cutting-edge survey methods, including PAVOs, drones, and unmanned wireless boats, in its hydrological surveys. Additionally, KIHS plans to gradually increase the number of automated monitoring stations to 442 by 2029. The Integrated Real-time Discharge Management System (IRDiMS) was introduced to enhance data collection and analysis. The system has demonstrated a meaningful similarity between the data collected through IRDiMS and actual observed data. The presentation concludes with a discussion of the future implementation plans for IRDiMS.

- **Speaker 2, Mr. Taeeun Lim**

The presentation focused on introducing a new flow measurement technique using drone footage. The background and growing necessity for innovative discharge measurement methods were explained, followed by an introduction to the concept and methodology of Spatio-Temporal Image Velocimetry (STIV). The presentation covered the drone image filming and calibration procedures, STIV analysis steps, and the comparative analysis results, for each water levels. The presentation concluded with a discussion of comprehensive improvements and future directions of the study.

- **Speaker 3, Mr. Kiyoung Kim**

The presentation addressed the necessity of measuring soil moisture and evapotranspiration as key hydrological elements and explained existing measurement methods. However, Mr. Kim said that traditional dielectric methods have limitations in terms of measurement range. To overcome these constraints, a new measurement technique utilizing Cosmic-Ray Neutron Probes (CRNP) was introduced. The Korea Institute of Hydrological Survey(KIHS) is currently operating test-bed sites in Paju and Hongcheon to collect data using this method, and is developing measurement techniques tailored to Korea's specific characteristics. Additionally, the impact of these test-bed sites on establishing the KOSMOS (Korean cosmic-ray Soil Moisture Observing System) network for soil moisture observation was discussed, along with the validity of the data collected at these sites. Future plans for their installation and operation and the need for a method to produce a domestically optimized spatial map was emphasized, along with suggestions for improving satellite accuracy in East Asia. The presentation concluded with a call for further advancements in satellite data accuracy for regional hydrological monitoring.

- **Speaker 4, Dr. Makiko Iguchi**

The presentation focused on the current non-contact flow and velocity measurement status in Japan. It began with a history of flow measurement in Japan, followed by the development of surface analysis using images (videos), particularly the usefulness of the STIV method, 24-hour flow measurement using Hydro-STIV, and concluded with a comprehensive summary. In Japan, STIV has become officially the standard method for discharge measurement. The presentation introduced the history of development in image-based and video-based analysis from 1990 to the present. Among these, the concept of Hydro-STIV, developed by HTI, along with its data accuracy, related software, and portable equipment, was introduced. The results of measuring the Ibo River in Japan using LSPIV and STIV were then compared, highlighting the technical differences between the two methods and specifically explaining the advantages of STIV. The presentation discussed how AI-enhanced STIV enables real-time, 24-hour, and diverse environmental measurements.

Key Takeaway

Speakers shared their perspectives on the evolving challenges and innovative solutions in hydrological surveys. They discussed the critical need for real-time discharge data, the introduction of cutting-edge survey technologies such as drones and unmanned boats, and automated systems like the IRDiMS of KIHS. These advancements were essential in improving flood forecasting and water resource management.

- One of the presenters also shared insights on the importance of accurate soil moisture and evapotranspiration measurements. Mr. Kim highlighted the limitations of traditional methods like FDR and TDR and explained that KIHS introduced the Cosmic-Ray Neutron Probe (CRNP) as a promising alternative. Furthermore, international collaborations, such as with ESA and NASA, were emphasized to enhance satellite monitoring in East Asia.
- This session contributed to water experts' understanding of integrated new technologies in hydrological surveys and monitoring. The discussions on innovative measurement techniques, such as drone-based discharge analysis and CRNP, provided valuable insights into how these technologies can enhance flood management, soil moisture monitoring, and satellite data accuracy.

Photos

Description : The Chair of the TP-1, Dr. Sinjae Lee

Description : The Chair of the TP-1, Dr. Sinjae Lee and the session organizer, Dr. Eunjeung Shim

Description : The first presenter, Mr. Sanguk Cho

Description : The second presenter, Mr. Taeeun Lim

Description : The third presenter, Mr. Kiyoung Kim

Description : The fourth presenter, Dr. Iguchi Makiko

Description : A session participant asking questions related to the presentation on non-contact flow and velocity measurement method(1)

Description : A session participant asking questions related to the presentation on non-contact flow and velocity measurement method(2)

Description: The overview scene of TIP Platform(organized by KIHS) full of participants

Description : Participants who are highly focused on the third presentation

Date/Time/Venue	November 14 (THU) / 10:30-12:00 / #306A (3F), EXCO
(Co-)Organizer	Korea Water Resources Corporation
Session title	Technical Solution for Sustainable Water Management of Asia

Program

Time	Contents	Participants
10:30 - 10:35(5')	Set the Scene	Dr. Sangyoung Park (Head Specialist of Global Cooperation Department, K-water)
10:35 - 10:45(10')	[Presentation 1] Hydraulic and Hydrological Analysis of Large River Basins Using Global Data and AI Technology	Prof. Giha Lee, (Professor, Kyungpook National University)
10:45 - 10:55(10')	[Presentation 2] SERVIR's innovation and cooperation with ROK for water-related disaster risk reduction in southeast Asia	Dr. Peeranan Towashiraporn, (Director, Asia Disaster Preparedness Center (ADPC))
10:55 - 11:05(10')	[Presentation 3] Digital Twin Water Management Platform: Innovative approach for optimal water management	Mr. Jingon Kim, (Senior Manager of Water Resources Operation Department, K-water)
11:05 - 11:15(10')	[Presentation 4] Nature-based Solutions in Integrated Water Resources Management	Dr. Layheang Song, (Assistant Professor, Institute of Technology of Cambodia (ITC))
11:15 - 11:25(10')	[Presentation 5] Water Supply System Digital Twin Pilot Project in Korea	Mr. Sangmin Lee, (Senior Manager of Water Supply System Operation & Maintenance Department, K-water)
11:25 - 11:55(30')	Panel Discussion	Dr. Sangyoung Park (Head Specialist of Global Cooperation Department, K-water) Prof. Giha Lee (Professor, Kyungpook National University) Dr. Peeranan Towashiraporn (Director, Asia Disaster Preparedness Center (ADPC)) Dr. Layheang Song (Assistant Professor, Institute of Technology of Cambodia (ITC)) Ms. Sueyoung Kim (Head of Water Resources Management Policy Team, K-water)
11:55 - 12:00(5')	Group Photo & Wrap-up	

Results

Presentations

- Prof. Giha Lee: Presented machine learning techniques for high-resolution hydrometeorological data generation, rainfall-runoff simulation, and real-time flood forecasting to reduce flood risks in Asia.
- Dr. Peeranan Towashiraporn (ADPC): Introduced the SERVIR-SEA program, which uses high-resolution satellite data to provide critical flood and drought information, enhancing climate resilience in Southeast Asia.
- Mr. Jingon Kim: Demonstrated K-water's digital twin integrated water resource management system, highlighting its application in countries with limited data infrastructure, such as Saudi Arabia.
- Dr. Layheang Song: Explained the concept and benefits of Nature-based Solutions (NbS) as an alternative to traditional gray infrastructure in water resource management.

- Mr. Sangmin Lee: Showcased the application of digital twin technology in water treatment facilities, focusing on virtual monitoring, analysis, and simulation for improved operations and maintenance.

Discussion

- Ms. Sueyoung Kim: Emphasized the need to understand local socio-cultural contexts for technology adoption and the importance of policy support, such as tax incentives tailored to local water use practices.
- Dr. Peeranan Towashiraporn (ADPC): Stressed the challenges of integrating technology and policy in countries with significant gaps between field operations and data, highlighting the importance of user capacity building and providing simplified, tailored information.
- Dr. Layheang Song: Noted difficulties in spreading NbS due to a lack of human resources, reliance on gray infrastructure, and passive attitudes among decision-makers, calling for government-led policy foundations.
- Prof. Giha Lee: Highlighted the importance of hybrid approaches that integrate AI, satellite data, and big data to complement each other in underdeveloped Asian countries lacking sufficient water resource data.
- Mr. Jingon Kim: Pointed out that data acquisition, particularly real-time data, is critical for applying digital twin technology and called for active efforts by governments to facilitate data acquisition.

Key Takeaway

- **Innovative Water Management Technologies**: Presentations showcased advancements in machine learning, digital twin systems, high-resolution satellite data, and Nature-based Solutions (NbS), providing actionable insights for water resource management in Asia.
- **Adaptation to Local Contexts**: Effective adoption of technologies requires understanding socio-cultural contexts, local water use practices, and establishing supportive policies like tax incentives and capacity-building programs.
- **Hybrid and Scalable Approaches**: For regions with limited data, combining AI, satellite data, and big data in hybrid models offers practical solutions. Phased implementation of digital twins demonstrates feasibility even in resource-scarce environments.
- **Policy and Institutional Support**: Government involvement is crucial in facilitating real-time data acquisition, supporting NbS adoption, and bridging the gap between technology and policy integration in developing countries.
- **Enhancing Climate Resilience**: Tailored application of South Korea's water management innovations to diverse Asian countries is key to improving climate adaptation and sustainable water practices across the region.

Photos

[Presentation 1] Hydraulic and Hydrological Analysis of Large River Basins Using Global Data and AI Technology
- Prof. Giha Lee

[Presentation 2] SERVIR's innovation and cooperation with ROK for water-related disaster risk reduction in southeast Asia
- Dr. Peeranan Towashiraporn

[Presentation 3] Digital Twin Water Management Platform: Innovative approach for optimal water management
- Mr. Jingon Kim

[Presentation 4] Nature-based Solutions in Integrated Water Resources Management
– Dr. Layheang Song

[Presentation 5] Water Supply System Digital Twin Pilot Project in Korea - Mr. Sangmin Lee

Panel Discussion

	
Panel Discussion	Panel Discussion

Date/Time/Venue	November 13 (WED) / 15:00-16:30/#322A (3F), EXCO
(Co-)Organizer	Politeknik Statistika STIS & UN Regional Hub on Big Data and Data Science for Asia and the Pacific
Session title	Granular and Cost-Effective Framework for Sustainable Water Resources and Flood Vulnerability Mapping Using Artificial Intelligence on Satellite Imageries and Geospatial Big Data

Program

Time	Contents	Participants
15:00 - 15:05(5')	Opening remarks (online)	Prof. Setia Pramana (Chief Secretariat, UN Regional Hub on Big Data and Data Science for Asia and the Pacific)
15:05 - 15:45(40')	1. Trends in Climate Change and Disaster Events 2. Towards Risk-Informed Governance 3. Introduction to Fundamental Disaster Vulnerability: Basic Concept and Indicators 4. AI and Big Data Technologies for Disaster Vulnerability 5. Implementation of Frontier Technologies for Flood Vulnerability Mapping Using Geospatial Big Data 6. Geo Visualization Dashboard Demonstration 7. Sustainability of Initiative: Stakeholder mapping and impact assessment Strategic Recommendations	Dr. Arie Wahyu Wijayanto (Head of the Center for Research and Community Services, Politeknik Statistika STIS)
15:45 - 16:18(33')	Hands-on Session	Ms. Maria Shawna Cinnamon Claire (Data Science Specialist, Politeknik Statistika STIS)
16:18 - 16:28(10')	Q&A Discussion	
16:28 - 16:30(2')	Closing Remarks	Dr. Arie Wahyu Wijayanto (Head of the Center for Research and Community Services, Politeknik Statistika STIS)

Results

Presentations

- **Prof. Setia Pramana (Chief Secretariat, UN Regional Hub on Big Data and Data Science for Asia and the Pacific)**

  Prof. Setia introduced the UN Regional Hub on Big Data and Data Science for Asia and the Pacific along with its objectives, activities and commitments. It aims to facilitate the use of Big Data for official statistics and Sustainable Development Goal indicators, promoting knowledge-sharing on methodological development and algorithms, and offering training programs on utilizing Big Data for official statistics in the Asia-Pacific region. He informed that since the establishment of this Regional Hub, it has been building commitment and active contribution through various activities such as capacity building, research and development, and partnership.

As the host of this UN Regional Hub, Indonesia, represented by BPS-Statistics Indonesia, will continue to give the best efforts to become a catalyst for the development of big data and data science.

- **Dr. Arie Wahyu Wijayanto: (Head of the Center for Research and Community Services, Politeknik Statistika STIS)**

  Dr. Arie began his presentation by explaining the concept of sustainable water resources. He presented the driving forces of sustainable water resources includes population growth, urbanization, economic growth, globalization of trade, climate variability, and climate change. It is undeniable that climate change is related to disaster events, including floods. He explained the concept of floods, flood vulnerability, and their context in the Sustainable Development Goals (SDGs). He also introduced alternative technologies and data sources for SDGs and flood vulnerability mapping. He highlighted that the use and innovation of technology can support the management and making of crucial decisions within a cost-effective framework for the sustainability of water resources and water disaster control.

- **Ms. Maria Shawna Cinnamon Claire: (Data Science Specialist, Politeknik Statistika STIS)**

  Ms. Maria explained the technical process carried out for enhancing the development of flood vulnerability mapping by utilizing geospatial big data. She presented a technological solution and tool along with comprehensive steps for collecting satellite imagery data, performing geospatial data extraction and pre-processing, and building an Interactive Geo-Visualization Dashboard for flood vulnerability mapping. The interactive dashboard offers a valuable contribution not only in enhancing understanding but also supports informed, data-driven decisions for reducing vulnerability, improving flood preparedness, and enhancing resilience planning. She highlighted that the proposed approach facilitates flood vulnerability mapping not only at the administrative level but also at the granular level. Ms. Maria also showed the granular flood vulnerability interactive dashboard with a resolution of 1 km that she had built on her project.

Discussion

- Participant asked about the weighting of flood vulnerability indicators, the update period of the model formed, and the method for validating the results of flood vulnerability mapping. Dr. Arie explained that various methods can be used for weighting. In general, Indonesia uses field survey data. The National Disaster Management Agency handles this. Flood vulnerability mapping updates can be done up to monthly, but the model that has been built produces data with a four-month update period. The Indonesia's official flood vulnerability data is updated every five years He also explained that validation can be done by taking samples from the grid and validating them with the Google Earth engine. He informed that the big data geospatial approach used can provide results with a fairly high level of accuracy and has the advantage of cost-effectiveness compared to the traditional method.

- Mr. Julian David Uran Zea asked about the process for integrating existing indicators to produce flood vulnerability values. Ms. Maria explained that the process of calculating flood vulnerability values involves assigning weights to indicators obtained from a variety of sources, including academic literature and expert discussion. The calculation process can utilize a variety of methodological approaches, including statistical methods and machine learning. She explained that one of the key considerations is ensuring that each indicator accurately reflects the relevant flood vulnerability components.

Key Takeaway

- The use of satellite imagery and geospatial big data technology can produce a cost-effective framework for flood vulnerability mapping and can even present up to a granular level
- The speakers agreed on the importance of commitment to developing innovation to contribute to disaster risk reduction efforts, especially water disasters.

- This session contributes to raising awareness about the impacts of climate change and enhancing understanding of the concepts and technology related to disaster vulnerability.
- Participants gain practical experience and knowledge on how to collect satellite imagery data and create interactive geo-visualization dashboards for flood vulnerability mapping.
- Provide strategic recommendations on disaster vulnerability to stakeholders and related parties

Photos

Opening Remarks from Prof. Setia Pramana

Presentation from Dr. Arie Wahyu Wijayanto

Presentation from Ms. Maria Shawna Cinnamon Claire (Hands-on Session)

Group Photo

Date/Time/Venue	November 14 (THU) / 10:00-11:30/#321A (3F), EXCO
(Co-)Organizer	Japan Water Forum
Session title	Young Researcher session: Innovative Approaches to Flood Protection Investment in an Uncertain World

Program

Time	Contents	Participants
10:00-10:05(5')	Opening remarks	Mikio Ishiwatari, Visiting Professor, University of Tokyo
10:05-10:20(15')	A Framework to Evaluate Spillover Effects for Flood Control Investment	Kinza Khan, Graduate student, University of Tokyo
10:20—10:35 (15')	Reducing Poverty and Inequality by Investment in Flood Protection: Scenario Analysis in Thailand	Leon Vin, Graduate student, University of Tokyo
10:35-10:50(15')	Multiple Benefits of Upstream Green Infrastructure: Case in Indonesia	Qistina Dewi, Graduate student, University of Tokyo
10:50-11:05(15')	Application and evaluation of Nature-based Solutions for flood mitigation in Korea	Miguel Enrico Robles, Graduate student, Kongju National University
11:05-11:20(15')	Relationship between Flood Damage and Flood Vulnerability Focusing on Property Damage and Human Casualties	Han-na Park, Graduate student, Seoul National University
11:20-11:30(10')	Panel Discussion	

Results

Presentations

- **Kinza Khan, University of Tokyo, Japan: A Framework to Evaluate Spillover Effects for Flood Control Investment**

  By incorporating secondary benefits, method provide more holistic view of true economic impact of flood control measures, and it will lead to more informed decision making and better allocations of resources. Furthermore, the consideration of public health and land value, provides more accurate cost benefit analysis which is often overlooked in traditional analysis.

- **Leon Vin, University of Tokyo, Japan: Reducing Poverty and Inequality by Investment in Flood Protection: Scenario Analysis in Thailand**

  Flood control investment is one potent tool to help global poverty and inequality reduction in flood-prone developing countries. The investment gives better poverty alleviation (23.8%). Considering spillover impact of investment, further reduce disparity (68.5%) and elevate flooded poor's growth (80%)

- **Qistina Dewi, University of Tokyo, Japan: Multiple Benefits of Upstream Green Infrastructure: Case in Indonesia**

  Green alternative benefit to cost ratio can exceed the conventional by 2 (two) times to be more favorable scenario in the case study.

- **Miguel Enrico Robles, Kongju National University: Application and evaluation of Nature-based Solutions for flood mitigation in Korea**

  Vulnerability index is proposed for Nature-based solutions.

- **Han-na Park, Graduate student, Seoul National University: Relationship between Flood Damage and Flood Vulnerability Focusing on Property Damage and Human Casualties**

  Flooding damage indicators needs to consider not only property loss but also human loss. Improving physical vulnerability such as old housing, sewage capacity, road paving can reduce property loss of flooding. Strengthening local capacities could reduce human losses.

Discussion

- Recent advances in flood control and disaster risk reduction research have demonstrated the critical importance of comprehensive evaluation frameworks that consider multiple benefits and impacts. Traditional analysis often underestimates total economic benefits of flood protection works. The presentations collectively emphasized the need for holistic approaches that consider social, economic, and environmental factors in flood protection planning. Proposed methodology enables more informed resource allocation decisions.
- Thes findings support the critical role of flood protection in achieving multiple sustainable development goals while providing evidence for increased investment in comprehensive flood protection strategies.
- There are various definitions of green infrastructure and nature-based solutions. For example, in Japan green infrastructure and nature-based solution have similar meanings.

Key Takeaway

- Flood protection significantly contributes to quality-oriented growth—addressing poverty, reducing inequality, and preserving ecosystems. Green infrastructure or nature-based solutions can provide multiple benefits.
- Novel methodologies have been proposed to evaluate the diverse benefits of water-related disaster risk reduction, such as poverty reduction, improving inequality, and decreasing human casualties. Future studies should examine these benefits and develop methodologies of economic analysis.

Photos

Discussion

Group Photo

Date/Time/Venue	November 13 (WED) / 13:00-14:15/#321A (3F), EXCO
(Co-)Organizer	UNESCO, i-WSSM, IWRA
Session title	Water Security for Climate Change Adaptation

Program

Time	Contents	Participants
13:00 - 13:05(5')	Opening Remarks	Mr. Bongwoo Shin (Director, i-WSSM)
13:05 - 13:20(15')	Water and Climate Change Adaptation in IHP-IX Strategy: Science for a water secure world in a changing environment	Dr. Sarantuyaa Zandaryaa (Programme Specialist, UNESCO-IHP)
13:20 - 13:30(10')	GWSI Issue No. 5 - Water Management for Climate Change Adaptation: Making science-based decisions	Dr. Dongkyun Kim (Programme Manager, i-WSSM)
13:30 - 13:40(10')	Climate Change Aspects Related to Water Security	Mr. Ignacio Deregibus (Acting Executive Director, IWRA)
13:40 - 14:00(20')	Fostering Resilience in Arid Areas: A case of facilitated Multi-Stakeholder Engagement for Improving Access to Water	Ms. June Samo (Program Director, Millennium Water Alliance)
14:00 - 14:10(10')	Q&A	
14:10 - 14:15(5')	Wrap-up & Closing	

Results

Presentations

- **Opening Remarks / Mr. Bongwoo Shin (i-WSSM)**
  - Welcomed the audiences and addressed the purpose of the GWSI publication and the TIP Session

- **UNESCO's Water and Climate Change Adaptation Strategy (pre-recorded) / Dr. Sarantuyaa Zandarayaa (UNESCO IHP)**
  - Discussed climate change is a water crisis and water is a climate connector
  - Highlighted water management is essential for climate change mitigation, adaptation, and resilience
  - UNESCO IHP's 9th strategic plan addresses water challenges and climate changes

- **GWSI Issue No. 5 / Dr. Dongkyun Kim (i-WSSM)**
  - The Global Water Security Issues (GWSI) is a co-publication of UNESCO and i-WSSM
  - The 5th Issue of GWSI is entitled with "Water management for climate change adaptation: Making science-based decision"
  - The publication provides various case studies on climate impacts, climate-resilient water management and water governance

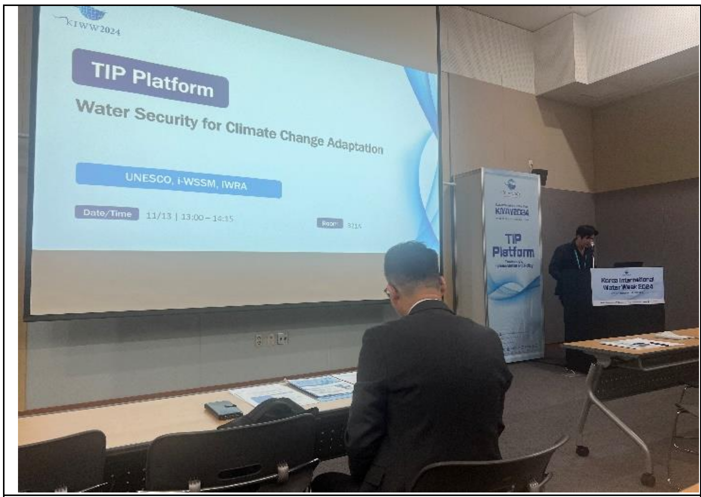
- **Climate Change Aspects Related to Water Security / Mr. Ignacio Deregibus (IWRA)**
  - IWRA has been involved in GWSI Project since Issue 2
  - The publication highlights stakeholder engagement for climate change adaptation
  - In addition, cooperation across borders is crucial for transboundary collaboration and shared watershed

- **Fostering Resilience in Arid Areas: A case of facilitated Multi-Stakeholder Engagement for Improving Access to Water / Ms. June Samo (Milennium Water Alliance)**
  - Kenya RAPID program's objective is to improve access to safe and sustainably managed water and rangelands in five Arid and Semi-Arid Land (ASAL) counties in Kenya
  - Case studies including public-private partnership (PPP) showed importance role of public engagement for climate change adaptation in Kenya

Key Takeaway

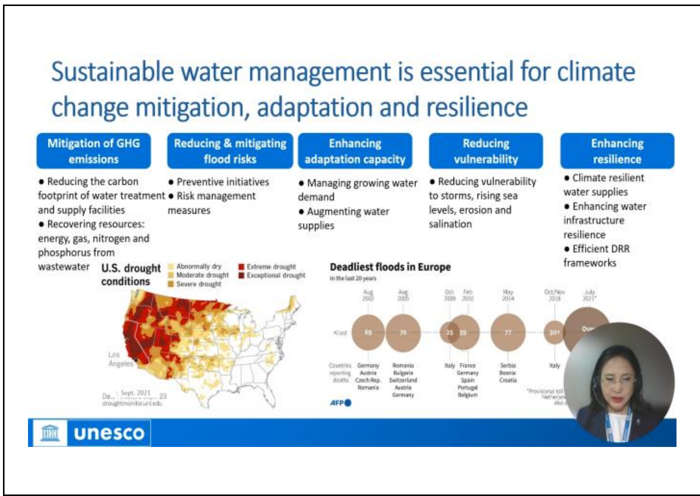
- Speakers shared their perspectives on climate change adaptation and case studies of public engagement
- This session contributed to promote the 5th Issue of Global Water Security Issue, "Water management for climate change adaptation: Making science-based decision"

Photos



Moderator (Mr. Seo Hyung Choi)

Opening Remarks (Mr. Bongwoo Shin)



Presentation (Dr. Sarantuyaa Zandaryaa)

Presentation (Dr. Dongkyun Kim)

Presentation (Mr. Ignacio Deregibus)

Presentation (Ms. June Samo)

Panel Discussion

Panel Discussion

Date/Time/Venue	November 14 (THU) / 10:00-12:00/#314 (3F), EXCO
(Co-)Organizer	Korea Water Resources Association, GIST
Session title	Harnessing Remote Sensing for Water Resources and Climate Resilience

Program

Time	Contents	Participants
10:00 - 10:03(3’)	Brief Introduction to the Session	Dr. Sangho Lee (President, KWRA) & Dr. Venkataraman Lakshmi (President Hydrology Section, American Geophysical Union)
10:03 - 10:25(23’)	Observations and Modeling of Hydrological Extremes in Support of Sustainability (Invited)	Dr. Venkataraman Lakshmi (President Hydrology Section, American Geophysical Union)
10:25 – 10:40(15’)	Water Body Detection using Multi-Satellite Imagery from the Perspective of Drought	Dr. Minha Choi (Professor, SKKU)
10:40 - 10:55(15’)	Soil Moisture Data Assimilation Strategies for a Coupled Land-atmosphere Forecast System	Dr. Yonghwan Kwon (Head Researcher, Korea Institute of Atmospheric Prediction Systems)
10:55 - 11:10(15’)	AI-based Soil Moisture Retrieval in South Korea using Meteorological data, Satellite Images, and Digital Elevation Model	Dr. Yangwon Lee (Professor, Bukyung University)
11:10 - 11:25(15’)	Addressing aps in Flash Drought Monitoring and Management: A Case Study in the Mississippi River Basin	Dr. Sophia Baker (Visiting scholar at GIST, University of Virginia)
11:25 - 11:55(30’)	Emerging Voices in Remote Sensing; A showcase of innovative research by students. Each selected student will present a 3-minute talk on cutting-edge topics related to remote sensing and hydrology, offering fresh perspectives and new ideas for future research in the field.	10 Student Presenters
11:55 - 12:00(5’)	Wrap-up & Closing	Dr. Dongkyun Kim (Professor, Hongik University)

Results

Presentations

- **Speaker Dr. Lakshmi**
  Remote Sensing in Hydrology; A detailed presentation on the use of satellite-based remote sensing for monitoring and predicting water cycles and its critical role in sustainable hydrological management.
- **Speaker Dr. Choi**
  Remote Sensing in Drought Analysis; Insights into the application of advanced satellite tools for real-time drought analysis and monitoring, providing essential data for mitigating drought impacts.

- **Speaker Dr. Kwon**
  Data Assimilation in Remote Sensing and Land Surface Models; An overview of data assimilation techniques and how they integrate satellite data with land surface models to enhance hydrological predictions and decision-making.
- **Speaker Dr. Lee**
  Water Resources and Satellite Systems; Discussion on how satellite systems are transforming water resource monitoring and ensuring more efficient water allocation in response to climate change.
- **Speaker Ms. Bakar**
  Exploration of advanced technologies and their potential to optimize drought and flash drought management, offering innovative solutions for real-time monitoring, prediction, and decision-making in water resource systems during extreme dry conditions.
- **10 Speakers presentation**
  Emerging Voices in Remote Sensing; A showcase of innovative research by students. Each selected student will present a 5-minute talk on cutting-edge topics related to remote sensing and hydrology, offering fresh perspectives and new ideas for future research in the field.

Discussion

- **Dr. Lakshmi:** The lecture highlighted the pivotal role of satellite-based remote sensing in monitoring and predicting water cycles, emphasizing its importance for sustainable hydrological management.
- **Dr. Choi:** The lecture focused on leveraging satellite-based remote sensing to monitor and predict water cycles, underscoring its significance in sustainable hydrological management.
- **Dr. Kwon:** The lecture provided an overview of data assimilation techniques, emphasizing the integration of satellite data with land surface models to improve hydrological predictions and support decision-making.
- **Dr Lee:** The lecture discussed how satellite systems are revolutionizing water resource monitoring and enabling more efficient water allocation to address the challenges of climate change.
- **Ms. Bakar:** The lecture explored advanced technologies for optimizing drought and flash drought management, focusing on real-time monitoring, prediction, and decision-making in water resource systems during extreme dry conditions
- **10 speakers:** The session showcased innovative student research through 3-minute talks on cutting-edge remote sensing and hydrology topics, offering fresh perspectives and inspiring future research directions.

Key Takeaway

- Speakers shared valuable insights on the use of satellite-based remote sensing, data assimilation techniques, and advanced technologies to enhance sustainable hydrological management and address water resource challenges under climate change. The discussion emphasized innovative approaches for drought and flash drought management, integrating real-time monitoring, prediction, and decision-making to optimize water resource systems.
- An engaging highlight of the session was the 3-minute presentations delivered by 10 students, showcasing fresh perspectives and groundbreaking research in remote sensing and hydrology. The presentations captivated the audience, with four outstanding students receiving awards from the Korean Water Resources Association (KWRA) in recognition of their excellence. This session offered both inspiration and practical knowledge, contributing significantly to advancing stakeholder understanding and encouraging innovation in the field.

Photos

Dr. Lakshmi & Dr. Sangho Lee

Opening Remarks (Dr. Lakshmi)

Q&A (Dr. Minha Choi)

Presentation (Dr. Yonghwan Kwon)

Award of Appreciation

Group Photo

Date/Time/Venue	November 13 (WED) / 13:30-15:30/#306B (3F), EXCO
(Co-)Organizer	K-Water
Session title	Digital Water Management Innovations Create New Value for Water

Program

Time	Contents	Participants
13:30 - 13:35(5')	K-water Digital Water Management Business Portal Launching Introduction	Ms. Yoon Young Cho (Specialist, K-water)
13:35 - 13:40(5')	Address of welcome	Dr. Hyoung Ju Ryu (Senior Executive Vice President, K-water)
13:40 - 13:45(5')	Congratulations	Mr. David LaFrance (CEO, American Water Works Association)
13:45 - 13:50(5')	"Digital Water Management Business Portal" promotional video	Ms. Yoon Young Cho (Specialist, K-water)
13:50 - 13:57(7')	"Three Super-Gap Technologies" promotional video	Ms. Yoon Young Cho (Specialist, K-water)
13:57 - 14:06(9')	Digital Twin Water Management Platform (Digital GARAM+)	Mr. Jin gon Kim (Senior Manager, K-water)
14:06 - 14:15(9')	AI Water Treatment Plant	Mr. Ji hoon Kim (Senior Manager, K-water)
14:15 - 14:24(9')	Smart Water Network Management	Mr. Gi won Park (Manager, K-water)
14:24 - 14:31(7')	"Global Emerging Technologies" promotional video	Ms. Yoon Young Cho (Specialist, K-water)
14:31 - 14:41(10')	Introduction of "Global Emerging Technologies"	Mr. Dong hwan Lee (Senior Manager, K-water)
14:41 – 14:51(10')	Break Time	
14:51 - 15:21(30')	Panel Discussion (Topic) Solving global water problems through digital water management	Moderator : Prof. Yong tae Shin (Professor, Soongsil University) Mr. David LaFrance (CEO, American Water Works Association) Dr. Ignacio Deregibus (Acting Executive Director, International Water Resources Association) Dr. Roger Royo (Public Policy Specialist, Asian Development Bank) Dr. Jason Noh (CEO, SDPlex Ltd)
15:21 - 15:30(9')	Commemorative photo and closing ceremony	Ms. Yoon Young Cho (Specialist, K-water)

Results

Presentations

- **Mr. Jin gon Kim** : Digital twin is a cyber-physical system that synchronizes the real world with a virtual digital world for monitoring and simulation. By connecting a wide range of data to the virtual world and incorporating simulation models, decision-makers can find the best solutions. The goal of this project is to establish an innovative water management platform aimed at improving the efficiency of water management decision-making and preventing water disasters.

- **Mr. Ji hoon Kim** : K-water has been promoting the AI water treatment plant project. K-water's AI water treatment plant is a futuristic water treatment plant operated by big data and AI technology, rather than human analysis and judgement. It is integrated with autonomous operation, energy management, predictive maintenance and intelligent CCTV.

- **Mr. Gi won Park** : SWNM stands for Smart Water Network Management. By applying IoT and AI technologies to the entire tap water supply process to reduce water leakage and more proactively respond to pipeline accidents such as water quality abnormalities.

- **Mr. Dong hwan Lee** : Global water problems such as floods, droughts, and water safety due to the climate crisis are intensifying. K-water accelerates concrete actions to address the climate crisis and support sustainable development through seven climate solutions. (Float Photovoltaic Power, Ultra Pure Water, Hydro-Thermal Energy, Green Hydrogen, Groundwater Dam, Seawater Desalination, Tidal Power)

Discussion

- We discussed the considerations for applying the three super-gap technologies to overseas business.

- **Mr. David LaFrance** : For all three of the super-gap technologies, seeing how other water professionals are using them is the best way to accelerate adoption. The experience of seeing how the technology can be used and the willingness to share best practices, is also the best way to build long-lasting professional partnerships overseas. The overall strategy should be based on matching the benefits of AI technology with business partners that are curious about how AI will successfully improve their water treatment processes.

- **Dr. Ignacio Deregibus** : As we consider applying these advanced technologies internationally, several factors are critical for their effective integration and long-term success: Local Context and Customization, Regulatory and Policy Alignment, Community Engagement and Capacity Building, Financial Sustainability and Cost-Benefit Analysis, Data Privacy and Cybersecurity. And Developing a customized business strategy for implementing K-water's three super-gap technologies on a global scale requires a multi-faceted, tailored approach that recognizes and respects the unique needs and challenges of each region.
- **Dr. Roger Royo** : When applying these advanced technologies to overseas projects, three main factors come into play: Adaptation to Local Conditions, Capacity Building and Knowledge Transfer, Economic Viability and Sustainability. These considerations help us bridge technological innovation with local needs, ensuring impactful, sustainable projects. And K-water can develop a customized business strategy by focusing on main areas (Comprehensive Assessment and Customization, Capacity Building and Stakeholder Engagement)

- **Dr. Jason Noh** : The driving force of change, that is, human effort, is more important than the value of technology. Services are needed to package element technologies so that customers can choose the right one. Need to review and suggest how much funding is needed overseas to promote digital transformation through customer ROI analysis

Key Takeaway

- "Digital Water Management Business Portal" promotional video introduced a web-based business portal for commercializing and globalizing digital water management technology.
- Introduction of 3 major super gap technologies and global emerging technologies, promotional video, brochure, cost of building technology-specific solutions based on demand, simulation and chatbot functions, etc.
- Speakers introduced three major super-gap technologies and global emerging technologies that combine K-water's operational know-how with digital technology.
- Three super gap technologies : Technology that manages the entire water management process, from water resources due to floods and droughts in river basins to tap water production and supply efficiency, by incorporating digital functions.
- Global emerging technologies : Technology to further advance water management technology and combine it with eco-friendly energy.
- Discussants shared the considerations for applying the three super-gap technologies to overseas business.
- This session contributed to informing stakeholders about K-water's digital water management technology and considering directions for expanding it overseas.

Photos

	
Address of welcome	Congratulations
	
"Digital Water Management Business Portal" promotional video	Introduction of "AI Water Treatment Plant"

Introduction of “Global Emerging Technologies”

Panel Discussion

Date/Time/Venue	November 14 (THU) / 13:00 – 14:30/#321A (3F), EXCO
(Co-)Organizer	Indonesian Green Action Forum (IGAF) & UN Decade on Ecosystem Restoration
Session title	Catalyzing Ecology-Water-Youth Nexus – Based Initiatives through Sustainable Financing Mechanism

Program

Time	Contents	Participants
13:00-13:05(5’)	Congratulatory Remarks	Muhammad Damas Tri Atmaja (IGAF)
13:05-13:10(5’)	Opening Remarks	Cempaka Arum Rahmandini (IGAF)
13:10-13:15(5’)	Introduction from Moderator	Ahmad Farub (AWCYP)
13:15-13:25(10’)	Presentation 1: Water-Environment Projects and Their Financing Mechanisms	Kezzia Lamture Hutapea (IGAF)
13:25-13:35(10’)	Presentation 2: Water Initiatives’ Financing Mechanism	Dr. Loay Frookh (JWSRO)
13:35-13:45(10’)	Presentation 3: The UNCCD G20 Mangrove Restoration Project Proposal	Bilqisty Vidaang Allaya (IGAF)
13:45-13:55(10’)	Presentation 4: A Path of Water Policy in Korea	Ikjae Kim, Ph.D (Korea Environment Institue)
13:55-14:25(30’)	Questions and Answer	Ahmad Farub (AWCYP)
14:25-14:30(5’)	Wrap up & Closing	Luluk Jelita Putri (IGAF) and Inayah Minallah (IGAF)

Results

Presentations

- ***Kezzia Lamture Hutapea: Water-Environment Projects and Their Financing Mechanisms***

✓ **Importance of Clean Water**: Water is an essential resource for life, yet access to clean water in Indonesia remains a challenge despite abundant water resources.
✓ Recent data (BPS 2022) shows a slight increase in clean water production, highlighting the need for better management and innovative solutions.
✓ IGAF is a youth-led organization founded in 2012, focused on empowering local communities to address ecological issues.

✓ **Major IGAF Water Projects**
Edu Green Village (Cinangneng Village, since 2014):
Focus: Environmental education, WASH (Water, Sanitation, and Hygiene), and water filtration.

SDG 6: Clean Water and Sanitation.

Triple R (Ciaruteun Ilir Village, since 2015):

Focus: Circular economy and wastewater management.

SDG 12: Responsible Consumption and Production.

Akurasi (Cinangneng Village, since 2023):

Focus: Integrated aquaponics to reduce pollution in fishpond water.

SDG 6: Clean Water and Sanitation.

Eco Enzyme (Cihideung Ilir, since 2024):

Focus: Production of ecoenzyme from fruit peel waste.

SDG 12: Responsible Consumption and Production.

- ***Bilqisty Vidaang Allaya: The UNCCD G20 Mangrove Restoration Project Proposal***

- ✓ The UNCCD's G20 Global Land Initiative serves as the primary funding source for IGAF's Climate Smart Forestry project. This grant program aims to support land restoration, sustainable forestry, and nature-based solutions in climate-vulnerable areas
- ✓ Grant Overview Land Restoration Sustainable Agriculture and Ecosystem Conservation Climate Resilience and Community-Based Solutions Global
- ✓ Collaboration Alignment with IGAF Goals Shared Focus on Decarbonization, Circular Economy, Support Educational and Community Engagement Youth, and Local Empowerment

- **Dr. Loay Frookh : Water Initiatives' Financing Mechanism**

- ✓ Case studies on successful implementation of wastewater and solid waste projects.
- ✓ Recommendations on securing long-term funding for youth-led water initiatives.

- **Ikjae Kim, Ph.D :** A Path of Water Policy in Korea

- ✓ This presentation highlights the evolution of water policy in Korea, covering water resource management, flood mitigation, water quality improvement, and climate change adaptation. Dr. Ikjae Kim will discuss government strategies, data-driven approaches, and multi-sectoral collaborations to achieve sustainable water management.

Discussion

- **Discussant A:**
  Q: What are the primary challenges in securing sustainable financing for water initiatives in developing countries?

  A: Governments in developing countries often face budget constraints and prioritize other pressing sectors. Water projects can be perceived as high-risk due to political instability, inadequate governance, or lack of technical capacity. Weak regulatory frameworks and bureaucratic inefficiencies can deter potential funders. Addressing these challenges requires innovative financial models, such as blended finance, public-private partnerships (PPPs), and international development grants.

- **Discussant B:**
  Q: What will be a new water project from IGAF in next year?
  A: IGAF will more foccus in our late programme. We want to improve the "Akurasi" project as our main focus. Also IGAF want to continue our proposal about the UNCCD G20 Mangrove Projrect. There might be a lot ogf new our programme, but we will first forcuss in what programme we already had.

- **Discussant C:**

Q: How can innovative financing mechanisms, such as blended finance, improve the viability of water initiatives?
A: Blended finance combines public and private funding to leverage resources and mitigate risks. Public funds or guarantees can reduce financial risks, making water projects more appealing to private investors. Public funds can be used to absorb initial losses, ensuring private investors have more confidence. Blended finance attracts larger capital pools by bridging gaps in funding. It ensures that projects address social and environmental goals while maintaining financial viability. Successful implementation of blended finance requires transparency, strong governance, and stakeholder collaboration.

Photos

Presentation by Kezzia Lamture Hutapea


Presentation by Dr. Loay Frookh

Presentation by Bilqisty Vidaang Allaya

Discussion

Presentation by Ikjae Kim, Ph.D


Q&A

Date/Time/Venue	November 14 (WED) / 15:30-16:45/#321 A, EXCO
Organizer	Jordan Wastewater Reuse Organization (JWSRO)
Session title	Decentralized and Private Model for Wastewater Reuse: Jordan Case

Program

Time	Contents	Participants
15:30- 15.35(5’)	Welcoming Remarks	Dr. Luoy Froukh, JWSRO
15:35-15:50(15’)	Decentralized and PPP International Cases	Dr. Nidal Salim, GIWEH
15:50-16:00(10’)	Wastewater Overview	Dr. Luoy Froukh, JWSRO
16:00-16:10(10’)	Decentralized and Private Model	
16:10-16:20(10’)	Model Feasibility and Cost Effectiveness	
16:20-16:30(10’)	Brainstorming Session on Waste Rural Wastewater	Ms Balqisty Vallaya, Green Foundation
16:30-16:45(15’)	Open Discussion	ALL

Results

Presentations

- **Dr. Nidal Salim**

Dr. Nidal Salim from GIWEH presented the first presentation which covered an overview for the PPP models around the world. He mentioned the tendency in most countries is increase the role of the private sector in the public sector services. This covers both water and sanitation sectors.

- The private decentralized model is recently emerging as a new model to expand wastewater collection and treatment coverage in urban and rural areas and increase the treatment and reuse efficiency.
- The Public-private partnerships allow large-scale government projects in water and sanitation projects with private funding. The main advantages
- Through the private enterprises, contracts for the construction and operation of urban wastewater treatment facilities, meaning it will reduce the burden on the water authority which relies on foreign aid for wastewater infrastructure.

- **Dr. Luoy Froukh**

Dr Luoy Froukh from Jordan wastewater reuse organization (JWSRO) presented the second presentation which covered an overview for the water and wastewater situation in Jordan. On the water side, Jordan suffers from water scarcity and due to limited resources the ministry of water resources adopted in its water strategy that treated wastewater is considered as another source of water. On the wastewater side there are 31 centralized wastewater treatment plants service around 65% of the population. The amount of treated wastewater in year 2023 is around 240 mcm. This amount forms around 14% of the total available water resources and 25% of the water supplied for agriculture needs. Then he listed the main challenges facing wastewater sector in Jordan as below;

- The main challenge in increasing the centralized treatment systems is the high capital and operational cost
- Considering the three basic components of a wastewater management system—collection, treatment and disposal, the collection—costs account for ~60% of the total budget for a centralized system.

- The decentralized systems are becoming particularly attractive because of the possibility of reducing long-term treatment costs. Mainly in the collection system due serving specific and dens populated areas.
- Difficult topography in the populated areas contributes to high cost
- Illegal connections specifically from industrial waste
- Flow of stormwater to wastewater collection system

Dr. Luoy Froukh from Jordan wastewater reuse organization (JWSRO) covered in the next presentation on the decentralized model and model feasibility. For the remained 35% of not covered population in wastewater collection systems the decentralized systems can be the solution.

- The private decentralized model is recently emerging as a new model to expand wastewater collection and treatment coverage in urban and rural areas and increase the treatment and reuse efficiency.
- Through the private enterprises, contracts for the construction and operation of urban wastewater treatment facilities, meaning it will reduce the burden on the water authority which relies on foreign aid for wastewater infrastructure.

A case study on private model from Jordan is Al Samra plant

- Al Samra wastewater treatment plant is the biggest plant where it treats 70% of country collected wastewater .
- It services both Amman and Zarqa cities, the most populated cities in Jordan (3 million) .
- The plant is acknowledged for being one of the first projects in Jordan to be built under a build, operate, and transfer (BOT) basis.
- It treats an average annual amount of 133 mcm (10% of country water resources for irrigation)
- All treated wastewater is utilized for irrigation in the Jordan Valley

- **Ms. Balqisty Vallayah**

Ms Balqisty Vallayah from the Indonesian Green Foundation presented a case study on the rural wastewater systems serving the rural areas. The systems are mainly decentralized systems serving small communities.

Discussion

- **Discussant A:**

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

- Challenges facing wastewater specifically for industries
- The role of the water authority and utilities in Jordan

- **Discussant B:**

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

- How the decentralized systems are cost effective and feasible
- The private involvement will solve the issue of funding availably
- How Al Samara plant can be replicated as a model for private sector involvement

Key Takeaway

- Speakers shared their importance of decentralized systems for treated wastewater can increase the water availability for irrigation in Jordan and reduction of pressure on the groundwater
- The replication of Al Samra case study will reduce burden on the movement in capital investment in wastewater infrastructure.

- This session contributed to participants understanding of Jordan water and wastewater situation, geopolitical conflict, use of decentralized and private models for increase of wastewater collection coverage and available amounts for irrigation and protection of environment

Photos

	
Presentation by Ms. Balqisty Vallaya	Presentation by Dr. Nidal Salim
	
Participants	Group Photo

Date/Time/Venue	November 13 (WED) / 16:00-17:30/#321A (3F), EXCO
Organizer	K-water ,IWRA
Session title	The Smart Water City: Solution Platforms as an Evaluation Criteria and Implementation Guidance

Program

Time	Contents	Participants
16:00-16:05 (5')	Introduction	Dr. Suhyung Jang (K-water)
16:05-16:10 (5')	Opening remark	Dr. ByungKi Kim (K-water)
16:10-16:15 (5')	Overview of Smart Water City Certification Projects	Mr. Ignacio Deregibus (IWRA)
16:15-16:30 (15')	SWC Certification Platform: Governance Pillar	Mr. Callum Clench (The Cape Partnership Ltd)
16:30-16:45 (15')	SWC Certification Platform: Technical Pillar	Dr. Junghwan Lee (K-water)
16:45-17:00 (15')	Exploring Priority Water Management Fields in Target Countries	Mr. Yongmin Ahn (K-water)
17:00-17:15 (15')	SWC Technical Implementation Platform	Dr. KwangSuop Lim (K-water)
17:15-17:30 (15')	Discussion	Dr. Suhyung Jang(K-water)

Results

Presentations

- IWRA delivered a comprehensive presentation on global trends and current status of Smart Water Cities. He particularly emphasized the importance of differentiated approaches based on city scale and characteristics in establishing the Smart Water City concept. Through sharing various global Smart Water City project cases, he highlighted the necessity of customized solutions tailored to each city's specific circumstances.
- The K-water Research Institute team focused their presentation on technical sector KPI evaluation results and pilot test cases. They shared detailed methodologies for measuring performance in key technical areas such as smart metering, leakage management, and water quality monitoring, along with actual implementation cases. Through analyzing success factors and areas for improvement identified in pilot tests, they presented future directions for advancing the global certification system.

Discussion

- The presentations and subsequent discussions successfully demonstrated the comprehensive nature of the Smart Water City certification system and implementation platform. The strong interest shown by international participants validates the global applicability of the approach and suggests significant potential for worldwide expansion.

- The technical depth of the presentations, combined with practical implementation strategies, provided a solid foundation for future international collaboration. As the initiative moves forward, the focus will be on developing practical, adaptable solutions that can be effectively implemented across different urban contexts while maintaining consistent evaluation standards.

Key Takeaway

Discussion on key elements for sharing the Smart Water City (SWC) global certification research project, developed through international joint research by Korea Water Resources Corporation (K-water), the Asia Water Council (AWC), and the International Water Resources Association (IWRA), and for applying the Smart Water City technology implementation platform in the Asian region.

- (IWRA): Sharing the definition, concept, and current issues of the Smart Water City project, evaluating key performance indicators in the governance sector, and discussing strategies for expanding the global certification system.
- (K-water): Evaluating key performance indicators in the technology sector of Smart Water City, conducting a pilot test for the global certification system, and sharing Smart Water City solution tools based on the technology implementation platform.

Expansion of the Smart Water City Global Certification System and Water-Specialized Business Model Initiative

- Expressed strong interest in the Smart Water City global certification system and business technology platform, including inquiries about future research directions for the Smart Water City business technology platform targeting Asian countries.
- Emphasized the need to expand the Smart Water City certification-technology-business linkage initiative through continuous enhancement and promotion of the global certification system and business technology platform.

Photos

Opening Remarks

Participants

Presentation by Mr. Ignacio Deregibus

Introduction

Presentation by Mr. Callum Clench

Presentation by Dr. Junghwan Lee


Q&A

Group Photo

Date/Time/Venue	November 15 (FRI) / 10:00-11:30/#322A (3F), EXCO
Organizer	Sungkyunkwan University (Smart Water Technology and Consulting, Co. Ltd.)
Session title	Establishment of overseas governance and commercialization strategy based on national R&D project and performance

Program

Time	Contents	Participants
10:00-10:05(5’)	Opening remark	Mr. KyungTaek Yum(Sungkyunkwan University, Professor)
10:05 - 10:25(20’)	(ODA Project) Smart Water Management (SWM) Project in Than ha City, Hai Duong Province, Vietnam	Mr. KyungTaek Yum(Sungkyunkwan University, Professor)
10:25 - 10:45(20’)	Status of Waterworks and Future Plan in Vietnam	Mr. Nguyen Chi Nghia (NvWATER, Vietnam, Director General)
10:45 - 11:05(20’)	Test Application of Scale-free Seawater Circulation Innovation Technology for Hanul 2 Power Plant	Mr. MinChul Kim (Jtech water, Senior Researcher) Mr. SeongJun Hwang (KHNP, Senior Manager)
11:05 - 11:30(25’)	Group Discussion	Chairman Mr. KyungTaek Yum(Sungkyunkwan University, Professor) Panelist Mr. Tong Ngoc Thanh (NAWAPI, Vietnam, General Director) Mrs. YoonI Choi (Jtech water, CEO) Ms. MinAh Song (KHNP, Senior Manager)
11:30 - 11:35(05’)	Commemorative photographing	All Participant

Results

Presentations

- **Speaker A: Smart Water Management (SWM) Project in Than ha City, Hai Duong Province, Vietnam (Prof. KyungTaek Yum, Sungkyunkwan University, Korea)**

  Prof. Yum presented a new ODA project in Vietnam on Korea’s smart water grid development technology. He also explained the 1st phase and 2nd demonstration projects in Vietnam. Finally, he suggested that in order to apply SWG technology locally in Vietnam, commercialization should be promoted in addition to new ODA projects for development technology.

- **Speaker B: Status of waterwork and future plan in Vietnam (Mr. Nguyen Chi Nghia, National center for Water resources Planning and Investigation, Vietnam)**

  Mr. Nguyen introduced status of national water management and current water Issues in Vietnam. He explained about future plan, policies, strategies and priorities set by the Vietnam government. New project (ODA) development and implementation procedure is to be followed was also discussed and finally, he concluded with desired field of cooperation with SWG Korea.

- **Speaker C : Patented "Scale Free" Seawater Elector-Chlorination – Assures Reliable Supply of Sodium hypochlorite (Mr. Minchul Kim, Jtech water Co., Ltd, Mr. Seongjun Hwang, KHNP)**

  Mr. Kim & Hwang introduce advanced technology of seawater electro-chlorination. He Our research and development found out Re-circulating the generated chlorine and hydrogen gas neutralizes the mineral ions. With this process, the self-cleaning effect discharges the minerals out of the chamber. As a company specialized in total solutions for electro-chlorination plants, we aim to give full satisfaction to all our customers.

Discussion

- **Discussant Tong:** summarize Discussant Tong's talking point
  Consideration of country-specific conditions for demonstration and materialization. In addition, Mr. Tong highlighted the issues on SWG implementation in Vietnam with possible solutions in developing and managing water resources, and agreed on significance of common responsibilities of all stakeholders in contribution to SWG field and its implementation.

- **Discussant Choi:** summarize Discussant Choi's talking point
  Inquired about the Vietnamese government's water resources policy and the applicability of seawater electro-chlorination in Vietnam.

- **Discussant Kim:** summarize Discussant Kim's talking point
  I wonder what the Vietnamese government's intention is for new Green ODA projects after the successful SWG's demonstration Project.

Key Takeaway

- Participants agreed on developing Smart water networks for collective action based on international cooperation and provided practical advice for the future projects and collaborative works. In addition, the participants and speakers highlighted the issues on SWG implementation with possible solutions in developing and managing water resources, and agreed on significance of common responsibilities of all stakeholders in contribution to SWG field and itsSpeakers shared their perspectives on precise understanding of Green ODA and effective implementation
- Discussants shared Vietnam 2030, 2050 long-term plan needs to be established according to government policy changes, NRW reduction, IWRM activation and Confirmation of the possibility of Korean technology entering the Vietnam market, test bed installation and business model research are required.
- This session contributed to providing stakeholders with an understanding of the overall process of Korea's green ODA projects and the possibility of introducing SWG and seawater electro-chlorination technologies to Vietnam.

Photos

Prof. Yum (Korea) presenting his presentation

Mr. Nguyen (Vietnam) presenting his presentation

Mr. Kim (Korea) presenting his presentation

Participants' discussion of the session

Opening

Participants of the session