

UN CTCN Partnership and Liaison Office Pilot testing of Capacity Building Program: Concepts of Matchmaking and Peer-to-Peer Learning for Project ideation

Summary Report

Innovative Climate Adaptation Technologies in Water Sector

Date & Venue: 26th – 29th September 2022, Convensia, Songdo, Republic of Korea (ROK)

Hosting organizations: CTCN PALO and Gwangju Institute of Science and Technology (GIST)

Background: The integrated and sustainable management of water resources, including rainwater harvesting and water pricing, sustainable development of water infrastructures, including dealing with water leakage and 3R in the water sector, is crucial with regards to addressing the water crisis globally and the issues raised in the sustainable development goals. It is important to acknowledge that water management is not only a standalone goal (SDG Goal 6) but has close connections to other socio-economic, environmental and development issues. In response to this, CTCN PALO with GIST, co-hosted a 4-day capacity-building program for 15 NDEs from the Asia Pacific and Africa regions.

Purpose: To discuss and share how to reshape the water sector to meet the technology and policy needs effectively, strengthen social and environmental resilience through appropriate financial support, and identify practical actions to be taken by each stakeholder within the overall system.

Themes: To achieve its purpose, each day of the program covered topics of water-related technology, policy, and finance, respectively (refer to Annex I for the final concept note).

Approach: This program took co-creation as the main approach to enable active peer-to-peer discussion on water technology for transformative change in countries of need. Four sequential methods applied were namely segmentation, education-focused information distribution, participatory workshops, and voluntary-based technology talk.

Process and activities: A five-step process was undertaken to adapt co-creation and four-sub approaches during the program delivery (see Table 1).

Table 1 Summary of CTCN PALO Capacity Building Program on Co-creating Multi-country TA project

Process	Methods Applied	Program Activities	Outputs
1. Planning	Co-creating UNFCCC mechanisms-like TA projects	Segmentation	Identification of potential groups with similar water-problem and preferred water-technologies
2. Sensitising		Information distribution	Introduction to the concept of water sector transformation and knowledge transfer
3. Facilitating		Participatory workshops	Identification of a potential multi-country TA project details (i.e. technology, policy, and finance strategies) and related preventable barriers
4. Engaging		Technology talk (Voluntary based)	Networking and future partner seeking for the TA project(s) co-created
5. Analysing		Evaluation	Reaffirmation of all insights gathered from NDEs

- 1) *Step 1. Planning:* This step focused on the application of the segmentation approach in order to identify potential multi-country TA subjects within the participating NDEs. Prior to NDEs attending the program, they were asked to complete an online survey consisting of three key questions identifying: a) the most challenging water-related social issue, b) the most preferred type of water-related technologies to combat selected issue, and c) the second most challenging water-related social issue and technology to address it. The underlying assumption of this approach was that segmenting NDEs by their most urgent water-related crisis that needs to be addressed via technical assistance, not by their region/geographical characteristic, will allow the design of a climate resilient inclusive global TA project, thereby contributing to increasing the impact of future CTCN TA projects.

Step 1. Planning Outputs: The pre-survey received a total number of 12 valid responses. The most challenging problem was water pollution (n=5), followed by water scarcity (n=4). The problems of sea level rise (n=2) and disaster preparedness (n=2) were also identified as the most urgent water crisis. Regardless of their region, three to four countries were verified as sharing the same water-related problem and their commonly preferred technologies by screening the overlapping types of technologies selected by the grouped countries (details refer to Table 2).

Table 2 Summary of 'Step 1. Planning - Pre-program survey' results

Grouped Countries	Common Problems faced by grouped countries	Total number of technologies selected by the group countries	Common technologies identified by the countries with same problem
Sri Lanka, Thailand, Bangladesh, Kenya, VietNam	Water pollution	38	- Change in agricultural practices (limiting fertiliser application, sediment control) - Constructed wetlands for water treatment - Flood-proof wells

			- Improved efficiency of centralized water treatment systems - Improved point-of-use water treatment - Improved water treatment capacity Mitigating pollution at source - Protected areas and land use limitations - Source water protection - Water safety plans - Limiting nutrient leakage
Kenya, Sri Lanka, Thailand, Nepal	Water scarcity (Too little water)	52	- Alternative water sources - Basin level modeling and seasonal forecasting - Improved irrigation efficiency - Managed aquifer recharge (MAR) - Public water conservation campaigns - Rainwater harvesting for infiltration - Reducing system water loss and leakages - Seasonal water rationing - Source water protection - Treating wastewater for onsite reuse under the zero discharge policy - Urban green spaces - Water allocation - Water augmentation - Water efficiency and demand management - Water efficiency in industry - Water storage
Thailand, VietNam, Nepal	Flood (Too much water)	30	- Optimization of urban drainage systems - Riverine flood protection - Urban storm water management - Runoff control structures to temporarily store rainwater
VietNam, Bangladesh	Sea level rise	21	- Barriers to fluvial saltwater intrusion - Built infrastructure for shoreline protection - Coastal groundwater level monitoring - Green infrastructure for shoreline protection - Land claim - Limiting abstraction from shallow aquifers - Limiting saltwater intrusion
Cambodia, Nepal	Disaster preparedness	13	- Early warning - Flood forecasting systems - Flood shelters
Fiji, Malaysia, Tanzania, Sri Lanka, Maldives	Others	10	No duplications identified

2) *Step 2. Sensitising.* The second step of co-creating the UNFCCC mechanisms-linking TA project aimed at transferring knowledge and information. Therefore, three keynote speeches introducing the concepts of the water crisis, quality control, and security were delivered in the first session of each day for three days. 15 lecture presentations covering the ROK's water technology transfer success cases, water policy, and available finances were shared by the local water-related climate-cooperation experts (refer to Annex I for details).

Step 2. Sensitising Outputs: This allowed participating NDEs to be sensitized to the program context of innovative water technologies. Ideally, all keynote speeches

delivered must have allowed the participants, who are typically not involved in the co-creation process, to reflect and prepare themselves for the next step of facilitation.

- 3) *Step 3. Facilitating:* The activities covered in this step were twofold, namely, completion of an individual online survey and a group discussion (refer to Annex II for activity materials). Online surveys delivered prior to the group discussion were designed to empower them to represent their country's needs, remind their position as officials with decision power in the climate cooperation system, and identify potential barriers to future TA project design. For example, the individual online survey on Day 1 requested NDEs to share the details of the most loved type of water-crisis-solving technical assistance project. A funnel question on "How would you do it differently if you get another chance to redo this project?" allowed NDEs to reflect on preventable barriers to future TA project design. Similarly, Day 3 online survey measured each NDE's perceived level of confidence in attracting various climate finances.

The second activity of the group discussion (see Figure 1) aimed at encouraging grouped NDEs to generate potential multi-country TA technology, policy, and finance strategies. Each theme for the second activity was covered in every morning session over three days of the program.



Figure 1 Photos of 'Step 3. Facilitating - Group discussion'

On Day 1, the list of common technologies identified via the pre-program survey was provided to support the discussion of grouped NDEs. On Day 2, an idea board outlining chosen hard technologies and potential types of policies (i.e. social change, awareness raising, market creation, etc) to consider was provided for each group (see Figure 2 for idea boards). The participating NDEs were able to use sticky notes to share the group's

opinions and perspectives to the board. On Day 3, groups discussed potential climate finances that could be utilized to support the transfer of soft (i.e. policy) and hard technologies. A list of climate finances NDEs could consider was provided to support their discussion (refer to Annex II – activity materials).

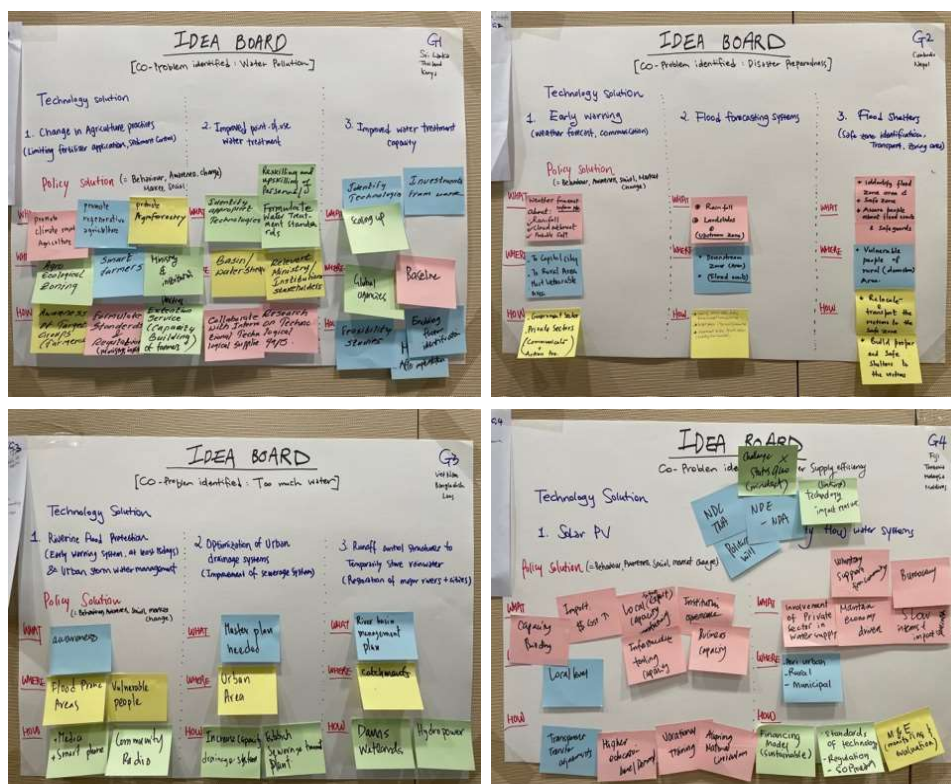


Figure 2 Examples of Idea boards

Step 3. Facilitating Outputs: Thematic analysis of the individual survey responses on challenges experienced in previous climate technology transfer revealed the following as preventable actions that could potentially increase the overall impact of future TA: 1) Stakeholder engagement, 2) Multi-sectoral technology transfer, 3) Data/Evidence-based M&E, 4) Financial support for scaling up, and 5) Pre-planning of sub-projects. The top three financial schemes that NDEs feel most confident in attracting were CTCN TA and Global Environment Facility (GEF), followed by Green Climate Fund (GCF) and World Bank (WB), and Adaptation Fund (AF) and Asia Development Bank (ADB) (See Table 3). On the contrary, participating NDEs found climate finances supported by private sectors (local and global banks) and European Banks least confident in attracting for climate technology projects. GCF was the most attractive financial scheme that NDEs will attempt to attract for future CTCN TA projects for the next 5 years. Especially with the TA project under implementation and completion, NDEs found AF as a linkable finance scheme to scale up the projects.

Table 3 Summary of finance schemes preferred by the participating NDEs

	Top 1	Top 2	Top 3
Climate finance you feel most comfortable attracting in general	CTCN TA and GEF (n=10 for each)	GCF and WB (n=8 for each)	AF and ADB (n=6 for each)
Climate finance you feel least comfortable attracting in general	Private sector (Local Banks and Businesses) (n=7)	EIB and EBRD (n=6 for each)	Private sector (Global banks and Businesses) and IDB (n=5 for each)
Climate finance you plan to attract in the next 12 months in general	CTCN TA (n=10)	GCF (n=9)	AF (n=6)
Climate finance you plan to attract in the next 5 years in general	GCF (n=10)	GEF and AF (n=8 for each)	CTCN TA (n=7)
Climate finance you plan to attract in the near future to scale up the CTCN TA project in planning	GCF (n=10)	AF (n=9)	GEF (7)
Climate finance you plan to attract in the near future to scale up the CTCN TA project under implementation	AF (n=9)	GEF (n=8)	GCF (n=7)
Climate finance you plan to attract in the near future to scale up the CTCN TA project completed	AF (n=8)	GCF (n=7)	GEF (n=6)

Group discussions facilitated by CTCN PALO staff resulted in identifying each group's most preferred two to three technologies for solving the shared water-related problems (refer to Table 4, the fourth column from the left for details). Potential policies to implement to transfer hard technologies chosen and types of financial support that need to be attracted to increase the longevity of the TA project were identified (see Table 3, the fifth and last columns from the left for details). Finally, the types of financial scheme that could support the TA ideas that they generated was identified by the grouped NDEs. In summary, a total of 11 potential multi-country project ideas were created by the grouped NDEs.

Of those 11, by prioritising the ideas involving the linkage of CTCN TA to other financial schemes, the following four multi-country TA projects ideas were selected. These ideas could be followed up by the team to enhance the concept further:

- Project idea 1: Agriculture practice transformation TA with Kenya, Sri Lanka, and Thailand
- Project idea 2: Optimization of Urban drainage systems (Improvement of sewerage system) TA with Viet Nam, Bangladesh, and Laos
- Project idea 3: Solar PV TA with Fiji, Tanzania, Malaysia, and the Maldives
- Project idea 4: Gravity flow water systems TA with Fiji, Tanzania, Malaysia, and the Maldives

Table 4 Summary of co-created potential multi-country TA projects

Group	Countries	Shared water-related problem	Commonly preferred 2-3 types of water technologies	Policy ideas to increase overall impact of chosen technology transfer	Types of finance scheme to attract
1	Kenya, Sri Lanka, Thailand	Water pollution	Agriculture practice transformation	- Communication strategy promoting regenerative agriculture (focusing on awareness raising of farmers) - Formulation of standards and regulations for ministry and institutional change - Agro ecological zoning system installation	<u>CTCN TA, GCF</u>
			Improved point-of-use water treatment	- Water treatment standards - Building foundation of institutional infrastructure (education system allowing interdisciplinary research practices with global technology suppliers) - Capacity building of relevant ministry, institutions, and stakeholders	CTCN TA
			Improved water treatment capacity	- Investment framework - Enabling factor identification - M&E framework	Not mentioned
2	Cambodia, Nepal	Disaster preparedness	Early warning	- Weather forecast information system (particularly for rainfall, cloud outburst, probable solutions) covering capital cities, rural areas, and most vulnerable areas - Government and private sector engagement strategy, focusing on communication and action plans	ADB, GCF, AF, CIF, WB
			Flood forecasting system	Communication strategy via training, social media, radio supporting local communities and involving participation of government and private sectors including line ministries (Specific technologies: Rainfall, landslides)	ADB, GCF, AF, CIF, WB
			Flood shelters	- Development of Standard of safeguards for rural area - Development of Safezone relocation and transporation strategies of the victims	ADB, GCF, AF, CIF, WB
3	Viet Nam, Bangladesh, Laos	Flood (Too much water)	Riverine Flood Protection (Urban storm water management)	Communication strategy raising the awareness targeted at altering flood prone areas to protect vulnerable people (i.e. Channels mentioned:	GEF

4	Fiji, Tanzania, Malaysia, Maldives	Water supply efficiency		Community radio, media, and smart phones)	
			Optimization of Urban drainage systems (Improvement of sewerage system)	Master plan to cover urban areas, focusing on increasing capacity drainage system and establish sewerage treatment plant	<u>CTCN TA</u>
			Runoff control structures to temporarily store rainwater (Restoration of major rivers and cities)	River basin management plan for a catchment area through hydropower, dams, and wetlands	GCF
			Solar PV	- Foundation of institutional governance including higher education system - Local-level capacity building or vocational training projects targeted at business, local experts, and infrastructure tooling - Transparent transfer agreements to increase political will of key stakeholders (i.e. NDE, NDA)	<u>CTCN TA</u> , <u>GCF</u> , GEF, AF, WB, ADB
			Gravity flow water systems	- Development of financing model and/or economy driven market creation strategies by engaging private sectors for peri urban, rural, and municipal areas - Appropriate M&E framework to evaluate longitudinal impact of the technology and align national curriculums (i.e. NDC, TNA) - Development of Standard Operating Procedure (SOP) for technology	<u>CTCN TA</u> , WB, ADB, <u>GCF</u> , GEF

4) *Step 4. Engaging.* This step focused on providing a voluntary-based technology talk opportunity to the participating NDEs. Visiting to the Incheon City's '2022 Global Eco biz & Carbon Neutrality Conference + Exhibition' engaged NDEs in exploring future partners for TA project development (see Annex III for a list of climate technology suppliers who attended the exhibition).

Field trips to two cities over two days (i.e. Seoul Jungnang Wastewater and Sewage treatment centre, Water purification plant in Bupeong) allowed NDEs to visualize the expected outcome if they chose to transfer water supply and/or sewerage facilities to their countries. Direct communication with technicians and engineers working in the field provided NDEs with an opportunity to address questions related to maintenance

issues, which could contribute to enhancing the details of project ideas proposed through Step 3.

Step 4. Engaging Outputs: Identified potential partners who could either join CTC Network member or be directly connected to NDEs who indicate interest via follow-up emails.

- 5) **Step 5. Analysing:** This step involved analyses of each workshop activity and the program evaluation to address room for improvement in the future capacity-building program design and implementation. Triangulation of all data collected will be performed to identify detailed action plans for future practice.

Step 5. Analysing Outputs: Analyses of all workshop activities are completed as stated above. A total of 11 responses were collected for the program evaluation survey. The results indicated that participants found the session on technology solutions introducing local case studies most interesting. Qualitative responses revealed that receiving information on the replicability and feasibility (especially related to the maintenance costs) of the presented technology solution made the session most interesting. In contrast, the finance and problem identification session were considered the least interesting. Qualitative responses indicated that a lack of knowledge of financial schemes and limited examples of scaled-up TA cases made the session the least interesting.

Table 5 Summary of 'Step 5. Analysing' results

Countries responded	Most interesting session	Least interesting session	Final comments to CTCN PALO
Malaysia	Day 1 - Session 2-1: Technology solutions to the Water Security	Day 3 - Session 1: Finance and Problem identification	The program leaves us no time to experience the Korean Culture outside working hour. The lecture/ sharing session was rather in a hurry.
Maldives	Day 1 - Session 2-2: Technology solutions to the Water Quality	Day 3 - Session 1: Finance and Problem identification	Request if possible, to provide an opportunity for 2 participants from Maldives in the coming years to enhance the capacity building and technology transfer process.
Thailand	Day 1 - Session 2-2: Technology solutions to the Water Quality	Day 2 - Session 2-1: Listen and Learn: Policies for water crisis improvement by NDEs	Should provide the presentation documents before starting workshop.

Bangladesh	Day 1 - Session 2-2: Technology solutions to the Water Quality	Day 2 - Session 2-1: Listen and Learn: Policies for water crisis improvement by NDEs	Financial and technological solutions for water Ecosystem development in Bangladesh.
Sri Lanka	Day 1 - Session 2-2: Technology solutions to the Water Quality	Day 4 - Session 1: Technology Talk with Korean Technology Solutions	Including more site visits (Ex: K- Water) and sharing more technological know-how would benefit the participants.
Viet Nam	Day 2 - Session 2-1: Listen and Learn: Policies for water crisis improvement by NDEs	Day 3 - Field trip to Seoul, Jungnang Wastewater and Sewage treatment center	Thank you to the organizers for giving me the opportunity to attend this useful conference. I have one suggestion that: It is expected that the Organizers will create conditions for each face-to-face meeting to send a full-time staff of the national NDE who understands the order and procedures of the CTCN to be ready to assist in submitting appropriate technical proposals to the Ministry, the governing bodies and the secretariat of international CTCN. However, in addition, it is necessary to have a direct voice of another delegate who is a through knowledge expert in a specialized understand field that the NDE cannot fully, so that attending face-to-face meetings will bring more results.
Nepal	Day 3 - Field trip to Seoul, Jungnang Wastewater and Sewage treatment center	Day 3 - Session 1: Finance and Problem identification	As our country have the problems of too much water & no water; we need the techniques of holding the runoff water for more and more period so that it could recharge the ground water. likewise, it will be very fruitful to us if the organizers include the techniques of recharge the ground water and the water sources like springs and aquifers in their capacity building course or training courses.
Tanzania	Day 3 - Session 1: Finance and Problem identification	Day 3 - Session 1: Finance and Problem identification	This was a good training opportunity. I advise to be continuous to other CTCN NDEs in Africa. It can also be done for other sectors such as agriculture, manufacturing, clean mining etc.
Mongolia	Day 3 - Session 2: Introduction to the GCF Readiness	Day 4 - Session 1: Technology Talk with Korean Technology Solutions	Very grateful for this program that really helps capacity building for NDEs.
Kenya	Day 4 - Session 1: Technology Talk with Korean Technology Solutions	Day 3 - Session 1: Finance and Problem identification	The Technology exhibition was very informative.
Zambia	Day 4 - Session 1: Technology Talk with Korean Technology Solutions	Day 3 - Field trip to Seoul, Jungnang Wastewater and Sewage treatment center	To arrange for more enhanced country to country collaborations in other areas as well other than just water sector. South Korea is very advanced in terms of Science, technology and innovation. Zambia needs to tap into the knowledge and experience of South Korea in order to address the Technology Needs Assessment, Nationally Determined Contributions, Technology Adaptions Plans. We look forward to actualizing pilot projects on water technologies and focusing on Zambia being assisted in developing Water Resources Master Plan by South Korea through CTCN interventions as an outcome from this capacity building workshop.

The final comments shared with CTCN PALO by the participated NDEs indicate future capacity-building programs need to offer step-by-step tailored knowledge contents to overcome the challenges that NDEs reported facing in increasing the effectiveness of previous TAs. In addition to this, the NDE's different levels of readiness in understanding knowledge shared and discussing financial schemes to design scalable TA projects were observed. For example, few NDEs mentioned a need for direct face-to-face meeting with CTCN secretaries and NDAs to scale up the project meanwhile few suggested future programs to focus on informing the details of available financial schemes.

Triangulation of all data collected through this program indicates the Four out of Six Ws for future capacity-building program design as following:

- a) Participants (Who): Key stakeholders those who must be involved in the future programs with NDEs are CTCN secretaries, NDAs, finance experts (specifically from GCF, AF, GEF), implementing parties (specifically Network members, AE, national policy design experts, national private sector businesses)
- b) Activity types (How):
 - a. Education
 - i. Technologies including introduction to national level TNA and TAP
 - ii. Technologies on field
 - iii. Technology policy dialogue
 - iv. Climate finance
 - b. Discussion/Direct conversation
 - i. With local technicians from developed country (mentoring)
 - ii. With CTCN managers, NDAs, finance experts including GCF, GEF, AF
 - iii. With Network members, AE, DP (matchmaking)
- c) Contents and measures of activities (Why and What):
 - a. Stakeholder engagement
 - b. Multi-sectoral technology transfer
 - c. Data/Evidence-based M&E
 - d. Financial support for scaling up
 - e. Pre-planning of sub-projects

For this program's national and local communication coverage, refer to Annex IV.

Conclusions

Actionable items for the multi-country TA projects delivery:

- Project idea 1: Agriculture practice transformation TA with Kenya, Sri Lanka, and Thailand
- Project idea 2: Optimization of Urban drainage systems (Improvement of sewerage system) TA with Viet Nam, Bangladesh, and Laos
- Project idea 3: Solar PV TA with Fiji, Tanzania, Malaysia, and the Maldives
- Project idea 4: Gravity flow water systems TA with Fiji, Tanzania, Malaysia, and the Maldives

Actionable items for the next capacity building program design and implementation:

- Conduct a global baseline survey identifying current NDEs' level of capacity, knowledge, and motivation etc
- Design "targeted" capacity-building programs based on the survey results, keeping the segmentation and participatory workshop components in all programs
 - Potential program concept 1: Education and Awareness-raising (Participating subjects: NDE, sector-relevant government bodies)
 - Potential program concept 2: Networking and Co-creating TA projects (Participating subjects: NDE, NDA, Accredited Entity)
 - Potential program concept 3: Partnering with (Participating subjects: NDE, Network members, Finance experts)
- Based on the survey results indicating NDEs' needs and wants, develop a classification of future partners and define expected roles for each partner category

Annex I – Final program concept note

CTCN Partnership and Liaison Office Launch, Songdo

Capacity Building Program: Innovative Climate Adaptation Technologies in Water Sector

26th – 29th September 2022, Songdo, In-person

Globally, developing countries are facing significant water threats such as water security and quality. Industrialization, economic growth, urbanization, population growth and agricultural production are causing problems in water security, availability and accessibility. Confining region to the Asia-Pacific, nearly 2 billion people have poor and limited access to water and this number is projected to reach 5 billion by 2050. In addition, about 90% of the total wastewater generated in the area is mixed into the freshwater system without proper treatment resulting in reducing the quality of existing water resources. The water pollution has increased heavily and seriously. The extreme weather events and disasters caused by climate change are worsening water security and quality situations (UN Centre for Regional Development, 2018).

The integrated and sustainable management of water resources including rainwater harvesting and water pricing, sustainable development of water infrastructures including dealing with water leakage and 3R in the water sector (i.e. water use reduction, and reuse and recycling of wastewater) are crucial with regards to addressing the water crisis globally and the issues raised in the sustainable development goals. It is important to acknowledge that water management is not only a standalone goal (SDG Goal 6) but has close connections to other socio-economic, environmental and development issues.

It is time to discuss and share how to reshape the water sector to meet the technology and policy needs effectively, strengthen the social and environmental resilience through appropriate financial support, and identify practical actions to be taken by each stakeholder within the overall system.

In response to this, the UN Climate Technology Centre & Network (CTCN) and the Gwangju Institute of Science and Technology (GIST) is offering a 4-day program on reshaping the water sector to enhance national capabilities of resolving the sector-specific climate crisis. Through 3 days of in-person workshops and a 1-day field trip, this program seeks to 1) Acknowledge the current status of the water crisis; 2) Share the latest technology, policy, and finance solutions to address challenges in the sector; and 3) Understand the actual operation of one of the latest technology to invited 20 NDEs worldwide. Distinguished technology experts, climate finance organizations, and policy designers in the water sector will present the latest information for NDEs to consider adapting in future CTCN Technical Assistant projects.

Day 1 (Monday, 26th September)

Opening Ceremony and Introduction to the program MC: Dr Suil Kang, GIST	
11:00 – 11:07 (7 min)	Welcome Remarks <i>Prof. Dr. Kyoung-Woong KIM</i> Director of International Environmental Research Institute Professor, School of Earth Sciences and Environmental Engineering Gwangju Institute of Science and Technology
11:07 – 11:14 (7 min)	Open Remarks <i>Mr. Rajiv Garg</i> Head of CTCN PALO, ad Interim
11:14 – 11:21 (7 min)	Congratulatory Remarks <i>Ms. Yoonji Hwang</i>

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	Director General Climate & Environment Response Team (KOREA NDE)
11:21 – 11: 26 (5 min)	Congratulatory Remarks <i>Mr. Ki-Wook LEE</i> Head of Environment and Climate Policy Division, Incheon City
11:26 – 11:30 (4 min)	Group photoshoot and the Introduction to the program - COVID-19 HYGIENE PROTOCOL - Toilet location - Food and drinks location - Expected general program activities - Available meeting rooms for Bilateral/Multi-stakeholder discussion

Session 1: Global Water Crisis and Problem identification

Moderator: Dr. Jeawon Kim, CTCN

11:30 – 11:45 (15 min)	Key Note Speech Global Water Crisis and solutions (+ impact of COVID19 on the water sector) <i>Speaker 1: Dr. Seok-Won Hong</i> Principal Research Scientist Water Cycle Research Center KIST
11:45 – 12:15 (30 min)	Problem identification (CTCN) 1) Individual activity (10mins): NDEs identify pre-existing national water crises and technological solutions which attempted to address these crises 2) Group activity (20mins): a. NDEs share crises and previous solutions to one-or-another b. Identify common barriers to previous solutions achieving their goal 3) Share the results to the idea board

Lunch break (75 minutes)

Session 2-1: Technology solutions to the Water Security

Moderator: Dr Suil Kang, GIST

13:30 – 13:55 (25 min)	3R (reduction in water use, reuse and recycle) for water security <i>Speaker 2: Dr. Visvanathan Chettiyappan (AIT)</i>
13:55 – 14:20 (25 min)	Integrated water resource management including water leakage <i>Speaker 3: Dr. Eun Namkung</i> Vice-President of Korea Water Forum Research Professor Institute of Construction and Environmental Engineering Seoul National University
14:20 - 14:35 (15 min)	The project addressed water security 1 (CTCN TA Project in Namibia) Water Recycling Technologies in Namibia <i>Speaker 4: Yooshin Engineering - Korean Network member</i>
14:35 – 14:50 (15 min)	The project addressed water security 2 Smart water metering and ICT application including mobile payment <i>Speaker 5: Dr. Herb S. Rhee</i> Managing Director, Innovative Technology and Energy Center (iTEC) Arusha, Tanzania (Virtual)
14:50 – 15:10 (20 min)	Joint Q&A session

Break-time (10 minutes)

Session 2-2: Technology solutions to the Water Quality

Moderator: Dr Hyung-Ju Kim

15:20 - 15:45 (25 min)	Water Treatment Systems in Korea <i>Speaker 5: Dr. Kyung-Hyuk Lee</i> <i>Water & Wastewater Research Center</i> <i>K-water Institute</i>
15:45 - 16:10 (25 min)	Global climate crisis and efforts to respond in the water sector Technology and Policy Alternatives in Water Management for the Water Crisis Response (in Asia and the Pacific) <i>Speaker 6: Dr. Hwanil Park</i> <i>Chief Director of Division of Global Innovation Strategy Research</i> <i>Science and Technology Policy Institute(STEPI)</i>
16:10 - 16:25 (15 min)	Project addressed water quality 1 Saline water purification for households and low-cost durable housing technology for coastal areas of Bangladesh <i>Speaker 7: Ms. Rywon Yang</i> <i>Senior Researcher</i> <i>Climate Technology Cooperation Division</i> <i>Green Technology Center Korea(GTCK)</i>
16:25 - 16:40 (15 min)	Project addressed water quality 2 Application of the gravity-driven membrane(GDM) technology for supplying sustainable drinking water to rural communities <i>Speaker 8: Dr. Kyoung-Woong Kim</i> <i>Director of International Environmental Research Institute</i> <i>Professor, School of Earth Sciences and Environmental Engineering</i> <i>Gwangju Institute of Science and Technology</i>
16:40 - 16:55 (15 min)	Project addressed water quality 3 <i>Speaker 9: Prof. Karoli Njau</i> <i>Environment, NM-AIST (Nelson Mandela African Institute of Science and Technology), Tanzania (Virtual)</i>
16:55 - 17:15 (20 min)	Joint Q&A session

Day 2 (Tuesday, 27th September)

Session 1: Water Policy and Problem identification

Moderator: Dr Jeawon Kim, CTCN

10:15 - 10:30 (15 min)	Key Note Speech Water Security and Quality Policy Options <i>Speaker 1: Dr. Jongho AHN</i> <i>Director General of Water and Land Research Group</i> <i>Korea Environment Institute(KEI)</i>
10:30 - 11:00 (30 min)	Policy Need Identification (CTCN) 1) Individual activity (10mins): NDEs identify pre-existing national water crisis-related policies and subjective impact assessment of the policies executed 2) Group activity (20mins)

	a. NDEs share previous policy solutions to one-or-another b. Identify common barriers to previous policies achieving their goal 3) Share the results to the idea board
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Session 2-1: Listen and Learn: Policies for water crisis improvement by NDEs

Moderator: Dr Suil Kang, GIST

11:00 – 11:25 (25 min)	Policy transformation in technical assistant Speaker 2: <i>Mr. Heejung SHIN</i> <i>Senior Manager</i> <i>Global Cooperation Department, K-water</i>
11:25 – 11:40 (15 min)	Policies to the respective countries in water sector 1 Speaker 4: <i>Participating NDEs – Fiji</i>
11:40 – 11:55 (15 min)	Policies to the respective countries in water sector 2 Speaker 5: <i>Participating NDEs – Namibia</i>

Lunch Break (75 mins)

Session 2-2: Policies to shift culture and economy: Improving Water Security and Quality

Moderator: Dr Suil Kang, GIST

13:10 – 13:35 (25 min)	Top-down approach in designing policies: Water security improvement (Water pricing) Speaker 6: <i>Dr. Jinsuhk Suh</i> <i>Principal Researcher</i> <i>Water Policy Research Center</i> <i>K-water Institute</i>
13:35 – 14:00 (25 min)	Bottom-up approach in designing policies: Water quality improvement (Social acceptance and cultural shift) Speaker 7: <i>Mr. Minsu Kim, Co-creation Co.</i>
14:00 – 14:15 (15 min)	Introduction to a project addressed policy transformation for water security technology Mapping potential areas for implementing rainwater harvesting and conservation systems Speaker 8: <i>Implementer (Envelops)</i>
14:15 – 14:30 (15 min)	Project addressing policy transformation for water quality (CTCN TA Project in water quantity supply mapping) Speaker 9: <i>NDE – Zambia</i>
14:30 – 15:00 (30 min)	Joint Q&A session

Session 3: Gala dinner

18:00 – Onwards	Introduction to Korean food
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Day 3 (Wednesday, 28th September)

Session 1: Finance and Problem identification

Moderator: Dr Jeawon Kim, CTCN

10:15 – 10:30 (15 min)	Key Note Speech Global Water Finance and Impact
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	<i>Speaker 1: Mr. Wonsuk Han, KDB</i>
10:30 – 11:00 (30 min)	Financial Need Identification (CTCN) 1) Individual activity (10mins): NDEs identify barriers/challenges to grants, loans, equity, etc. 2) Group activity (20mins) a. NDEs share most/least preferred financial supports to one-or-another b. Identify common barriers to the most/least preferred type of financial support 3) Share the results to the idea board

Session 2: Introduction to the GCF Readiness

Moderator: Dr. Suil Kang, GIST

11:00 – 11:20 (20 min)	Introduction to the GCF Readiness and Water projects covered in GCF Readiness <i>Speaker 2: Mr. Orville Grey</i> <i>Regional Manager for Caribbean</i>
11:20 – 11:30 (10 min)	Q&A session
11:30 – 12:00 (30 min)	Discussion on national vision towards scaling up TA <i>Round speak from NDEs</i>
12:00 – 12:10 (10 min)	Completion of Reflection sheets by NDEs

Field trips to Seoul site

Moderator: Dr Suil Kang, GIST

13:30 – 14:50	Relocation to Seoul (by bus), lunch provided
15:00 – 16:00	Site visit: Seoul Jungnang Wastewater and Sewage treatment center _Seoul Sewerage Science Museum
16:00 – 17:00	Relocation to Songdo Office (by bus)

Day 4 (Thursday, 29th September)

Session 1: Technology Talk with Korean Technology Solutions

Moderator: Dr Jeawon Kim, CTCN

11:00 – 11:20 (20 min)	Key Note Speech at ECIEX (Conventia) <i>Speaker 1: Dr. Jeawon Kim on behalf of Mr. Rajiv Garg</i>
11:30 – 12:30 (60 min)	Technology Talk with Korean Water Technology Solutions Organised by ECIEX

Field trips to Incheon site

Moderator: Dr Suil Kang, GIST

13:30 – 14:30	Relocation to Incheon Site (by bus), lunch provided
14:30 – 16:30	Site visit: Office of Waterworks Incheon Metropolitan Government: 1) Water purification plant in Bupeong 2) Pure water Research Institute
16:30 – 17:50	Relocation to Songdo Office (by bus)

Climate Technology Centre and Network, Partnership and Liaison Office

23rd Floor, G-Tower, 175, Art center-daero, Yeonsu-gu, Incheon

<http://www.ctc-n.org>, Email: ctcn@un.org

Annex II – Examples of Step 3. Facilitating: Activity materials



Water pollution

- Change in agricultural practices (limiting fertiliser application, sediment control)
- Constructed wetlands for water treatment
- Flood-proof wells
- Improved efficiency of centralized water treatment systems
- Improved point-of-use water treatment
- Improved water treatment capacity Mitigating pollution at source
- Protected areas and land use limitations
- Source water protection
- Water safety plans
- Limiting nutrient leakage

Your group's decision:



Types of Climate Finance you could consider

1. UNFCCC funds - CTCN TA
2. UNFCCC funds - Green Climate Fund
3. UNFCCC funds - Global Environment Facility
4. Multilateral climate funds - Adaptation Fund
5. Multilateral climate funds - Climate Investment Funds
6. Multilateral development banks - World Bank
7. Multilateral development banks - Inter-American Development Bank (IDB)
8. Multilateral development banks - Asian Development Bank
9. Multilateral development banks - African Development Bank
10. Multilateral development banks - European Investment Bank
11. Multilateral development banks - European Bank for Reconstruction and Development
12. Private sector - Global banks and businesses
13. Private sector - Local banks and businesses
14. Others



Annex III – List of climate technology suppliers attended ECIEEX 2022

Name of Company	Exhibition Product
Shellpia. Co., Ltd.	Deicer made from oyster shells
Air Quality Associates Inc.	Port vessel air pollution emission receiver (PAQman)
Inobus Co., Ltd.	PET bottle collector
AHN Materials Inc.	Hydrogen storage material package, lithium metal battery anode material
UZUS	Tumbler washer (tumbling)
In Seogu Innovation Cluster	Introduction of project team, etc.
ENVEX	44 th International Exhibition on Environmental Technology & Green Energy
UNIDO ITPO Korea	Consulting on entering developing countries
SUDOKWON Landfill Site Management Corp.	Eco-friendly sanitary landfill, leachate treatment, waste resource energy conversion, park conversion
Incheon Technopark	Center promotion and recruitment consultation
SENTRY	Indoor/outdoor air quality measurement device
Byoli Tech. Co.	Water quality inspection system
Korea Environmental Measurements Institute CO., LTD.	Promotion of testing and inspection institution
DAEMYUNG ESCO CO., LTD.	Low temperature, high-efficiency condensable heat exchange for the recovery of waste heat
WISMAX CO., LTD.	Industrial IoT gas monitoring system
LANDROAD Inc.	Smart non-point pollution reduction system
SUNGHA ENERGY CO., LTD.	Refrigerant-free thermoelectric cooling fan
New-Alternative	Environment monitoring and analysis system
DAEYANG E&I CO., Ltd.	Odor prevention equipment (RTO), All-in-one VOCs treatment equipment (ARECA-V)
JLsolar design	Solar LED landscape lighting
CERACOMB CO., LTD.	Environmental device (CHF, hydrogen eliminator)
Turbowin Co., Ltd.	Industrial blower (turbo blower)
KENTEK Inc.	Fine dust and gas measuring device
DAEYEON Convergence & Intelligence	Solar power, water quality monitoring system
WOORAM CO., LTD.	Food waste processor
Environment Management Technology	Food waste reducer
JUNGDO TECH CO., LTD.	Food waste processor
Event Booth	Event Booth
Incheon Tourism Organization	Incheon Tourism Organization promotion booth (Incheon travel app)
ENVIRONMENTAL CORPORATION OF INCHEON	Promotion booth of environmental basic facilities
Daeshin MC CO., LTD.	Hygiene equipments that "Cyclone Suction Mat", "Shoe Sole Cleaner", and "Caster Cleaner"
LTS Corp.	Sound-absorbing panel with upcycled waste PET
DONGMOON ENT CO., Ltd.	Water quality measuring device
EPS	Continuous pyrolysis technology for waste resource circulation
FLINT LAB INC.	Biofuel heater
Korea Environment Corporation	Promotion of carbon neutral practice point system, carbon point system, etc.
ESG Campaign	ESG Campaign

Annex IV – Screenshots of national and regional media (n=6)

- https://www.news1.com/view/?id=NISX20220926_0002027085

NEWSIS

[광주=뉴스시스] 배상현기자=지스트 국제환경연구소(ERI, 소장 김경웅)는 26일부터 29일까지 인천 송도컨벤시아에서 태국·말레이시아·아-케나 등 15개국 18명의 물 분야 전문가들을 대상으로 역량강화 프로그램을 운영한다. (사진=지스트 제공) praxis@newsis.com

[광주=뉴스시스] 배상현 기자 = 지스트(광주과학기술원)가 아시아 태평양 지역과 아프리카 국가의 기후기술협력 전문가들을 한국에 초청해 전문성과 업무 역량을 강화하기 위한 교육 프로그램을 운영한다고 26일 밝혔다.

지스트 국제환경연구소(ERI, 소장 김경웅)는 이날부터 29일까지 인천 송도컨벤시아에서 태국·말레이시아·케냐 등 15개국 18명의 물 분야 전문가들을 대상으로 역량강화 프로그램을 운영한다.

이번 역량강화 프로그램에는 물 공급과 수질 개선, 물 분야 기후 위기 대응 등 분야 전반을 기술·정책·재정 관

Microsoft 365
어디서나 비즈니스에 액세스
사용자당 1TB의 OneDrive 클라우드 저장소로 어디서나 정보 즉시 연결하고, 파일에 액세스하세요
지금 구입하기 →

- <https://www.news1.kr/articles/4814167>

news1 뉴스 포토 | 카드뉴스 | 그래픽뉴스

정치 | 북한 | 사회 | 경제 | IT/과학 | 금융/증권 | 산업 | **지방** | 국제 | 생활/문화 | 연

광주·기원, 해외 '물 전문가' 초청 역량강화 프로그램 운영

26일부터 29일까지-인천 송도컨벤시아
(광주=뉴스시스) 조영석 기자 | 2022-09-26 17:54 송고

광주과학기술원(GIST, 총장 김기선)이 아시아 태평양 지역과 아프리카 국가의 기후기술협력 전문가들을 초청, 업무 역량 강화를 위한 교육 프로그램을 운영한다.

GIST 국제환경연구소(ERI, 소장 김경웅)는 26일부터 29일까지 인천 송도컨벤시아에서 태국·말레이시아·케냐 등 15개국 18명의 물 분야 전문가들을 대상으로 역량강화 프로그램을 운영한다고 밝혔다.

- <http://www.veritas-a.com/news/articleView.html?idxno=430192>



- <http://www.newsworker.co.kr/news/articleView.html?idxno=174667>



- <https://www.mk.co.kr/news/society/view/2022/09/849285/>

매일경제 뉴스 | 경제 기업 사회 국제 부동산 증권 정치 IT과학 문화

지스트, 세계 15개국 물 전문가들과 만나 기후 위기 해법 공유

전향일 기자 입력 : 2022.09.26 16:09:53



스웨덴 스톡홀름에서 열린 '물분야 혁신기후기술 역량강화 프로그램' 제1차 참여자들이 단체 사진을 촬영하고 있다. [사진 제공=광주과학기술원(지스트)]

광주과학기술원(지스트)이 세계 15개국 물 분야 전문가들과 함께 기후 위기에 대응하기 위한 해법 공유에 나섰다.

지스트 국제환경연구소는 26일 "이날부터 29일까지 인천 송도컨벤시아에서 태국·말레이시아·케냐·베트남·몰디브·네팔 등 15개국 18명의 물 분야 전문가들과 함께 물 공급·수질 개선·물 분야 기후 위기 대응 등 물 분야 전반에 대한 '혁신기후기술 역량 강화 프로그램'을 운영한다"고 밝혔다.

국제환경연구소는 2001년 유엔대학교 연구소 설립을 위해 설립된 뒤 개발도상국 환경문제 해결을 위한 국제 연구개발 협력, 환경 전문가 양성 및 역량 강화 활동을 이어오고 있다.

- <http://www.namdonews.com/news/articleView.html?idxno=696658>

남도일보

뉴스종합

종합 정치/행정 경제 사회 교육 문화 스포츠 사람들 빛가람

뉴스 > 교육

아시아아프리카 물 전문가 인천에 모인 까닭은?

A 김용석 기자 입력: 2022.09.26 19:21



지스트 국제환경연구소-CTCN 협력연구사무소 주관
송도서 역량 강화 교육-국가별 물 문제 해법 공유



지스트 국제환경연구소와 송도 컨벤시아, 29일까지 인천 송도컨벤시아에서 태국·말레이시아·케냐·베트남·몰디브·네팔 등 15개국 물 분야 전문가들과 함께 '혁신기후기술 역량 강화 프로그램'을 운영한다. 사진은 15개국 참여자들이 오송/지스트 제1차