

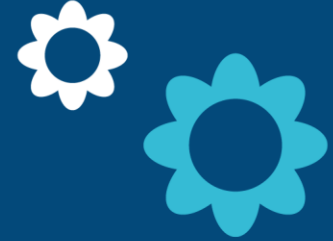


KGID
2026
SEJONG

Korea Water Cluster (KWC) Programs and Financing Approach for Global Water Sector Engagement

Byeongil Son

K-eco KWC



CONTENTS

- 1. Introduction to K-eco, and the Korea Water Cluster(“KWC”)**
- 2. KWC Programs and International Cooperation Cases**
- 3. KWC Collaboration in WB-Financed Projects**
- 4. KWC-based Pilot and Financing Approach for Partner Countries**

1. Introduction to K-eco & the Korea Water Cluster

Overview of K-eco

Institution Name	Korea Environment Corporation
Institution Type	Quasi-Government Institution (Consigned Implementation)
Competent Authority	Ministry of Climate, Energy and Environment
Head of Organization	Lim Sang Jun
Headquarters Location	42, Hwangyeong-ro, Seo-gu, Incheon, Korea
Number of Employees	3,254 persons

Overview of the Korea Water Cluster

Infrastructure Name	Korea Water Cluster
Owning Organization	Ministry of Climate, Energy and Environment
Operating Organization	Korea Environment Corporation
Head of Organization	Lee Je-won
Location	20, Gukgasandan-daero 40-gil, Guji-myeon, Dalseong-gun, Daegu, Korea
Number of Employees	90 persons

1. Introduction to K-eco & the Korea Water Cluster

Business Overview of K-eco



Global Business

- ODA (Official Development Assistance)
- Cooperation with International Organizations
- International Environment Training Programs
- Seoul Initiative
- International Environmental Cooperation Center



Resource Recirculation

- Resource Recirculation Program
- Resource Recirculation Performance Management System
- Operation and Management of Resource Recirculation System
- Waste Management



Environmental Infrastructure

- Installation Support of Aquatic Ecology Restoration and Wastewater Treatment Facilities
- Installation Support of Water Supply and Sewerage Facilities
- Installation and Support of Environmental Energy Recovery Facilities
- EIA (Environmental Impact Assessment)



Climate & Air

- Supporting GHG Reduction Policies
- Reinforcement of Capacities for Climate Change Response
- Management of National Air Quality Monitoring System
- Promotion of Vehicle Environment Businesses
- Odor Management



Water & Soil

- Sewerage Policy Support
- Soil and Groundwater Management
- Water Pollution Management and Control
- Water Quality Monitoring



Environmental Health

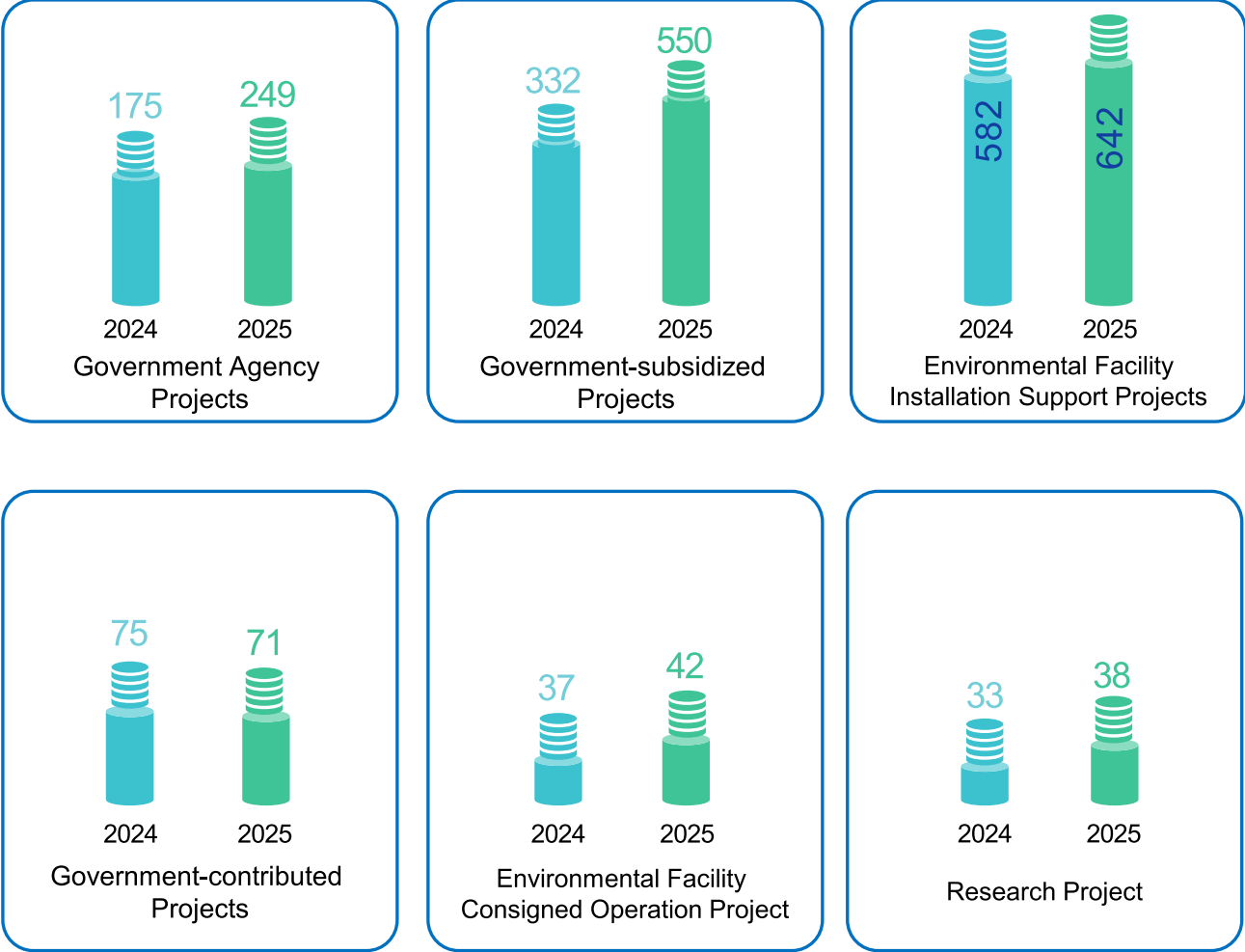
- Promoting Life-based Environmental Services
- Provision of Environmental Public Health Services
- Management of Hazardous Materials
- Prevention and Reduction of Pollutant Discharges



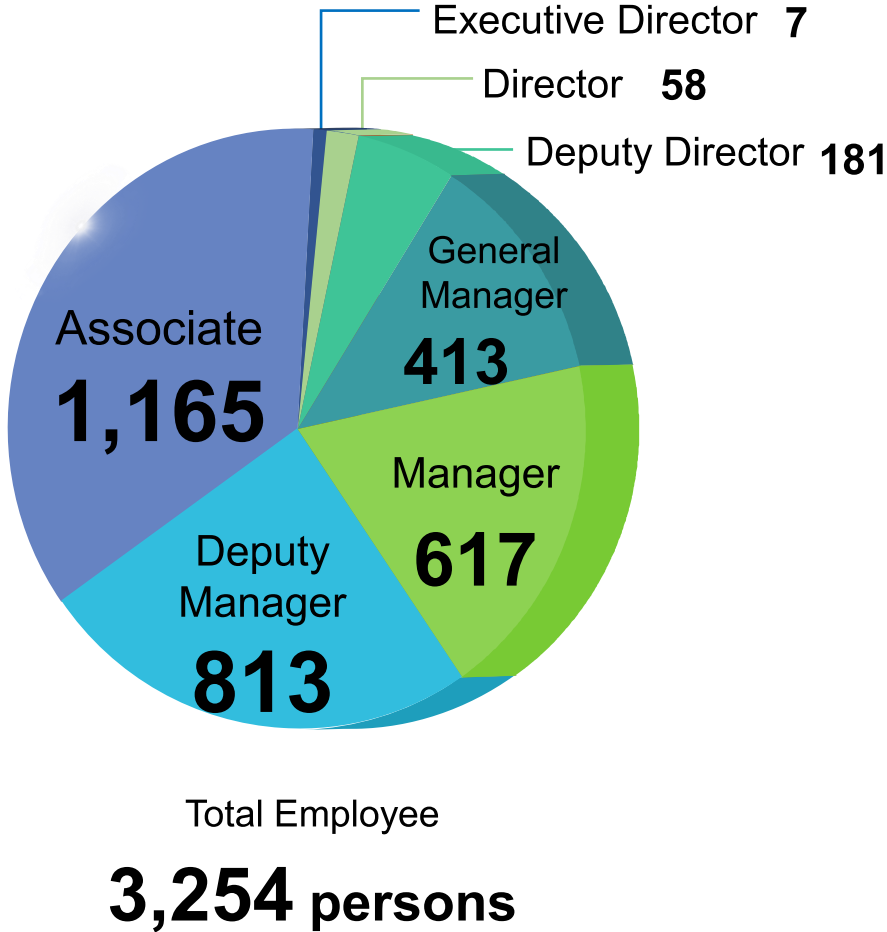
1. Introduction to K-eco & the Korea Water Cluster

Budget Status of K-eco

(Unit: million USD)



Personnel



1. Introduction to K-eco & KWC

Overview of K-eco Overseas Biz

K-eco strives to realize eco-friendly technology for a sustainable future by actively responding to global environmental issues. K-eco is doing its best to promote global relations and continuously improve the value of technology by implementing and consulting on overseas environmental projects.



SI
Seoul Initiative



GELP
Global Environmental
Leaders Program



K-GNP
K-eco Global Net-Zero
Partnership



ODA
Official
Development
Assistance



International
Environment Research
Project



ASEAN Korea
Cooperation Fund



International
GHG Mitigation Projects



1. Introduction to K-eco & the Korea Water Cluster

ODA (Official Development Assistance)

Grant (KOICA)

DR Congo (Idiofa)

Improvement of the Water Supply and Sanitation in Idiofa
(US\$ 2 Mil. / 2013 ~ 2019)



Cote d'Ivoire (Abidjan)

Social Connections to Water Supply Network for Citizens
(US\$ 5 Mil. (3rd Phase) / 2023 ~ 2026)



Grant (Ministry of Environment)

Mongolia (Bayanzurkh)

Developing Sanitation Systems and Reducing Desertification in Ulaanbaatar
(US\$ 6 Mil. / 2022 ~ 2025)



Uganda (Busukuma)

Construction of a Faecal Sludge Treatment Plant and Strengthening Management Capacity
(US\$ 0.5 Mil. / 2022 ~ 2025)



Grant (MDB & KOR EDCF)

Vietnam (Ho Chi Min)

Ho Chi Min City Environmental Sanitation Project: Supervising Sewer Construction
(US\$ 45 Mil. / 2017 ~ 2024) (WB)



Mongolia (Ulaanbaatar)

Consulting for the Expansion of the Central Laboratory of the Environmental Monitoring Project
(US\$ 17 Mil. / 2023 ~ 2026) (KOR EDCF)



1. Introduction to K-eco & the Korea Water Cluster

Korea's Water Industry Support System

Establishing the Water Industry Support System based on the Expertise of the MoE and Its Agencies

Ministry of Environment(MoE)



Ministry of
Environment

- Overall Environmental Policy Formulation
- Water, Air, Waste, Soil, etc.

K-eco (Water Cluster Division)



- Overall Environmental Policy Implementation
- (Water Cluster) Comprehensive Support from R&D, Test, Training, Overseas Expansion for Korean Water Companies

K-water (Green Infra Mgnt. Divison)



- Water Supply (Construction & Operation)
- (Industry Support) K-Test Bed, Operation of Overseas Market Development Team

Korea Water Partnership



- Specialized Institution for Overseas Business
- Innovative Water Company Support Program

Environmental Industry Tech. Institute



- R&D Support Institute under the MoE
- Multiple Environmental Industry Support Programs

Water Tech. Certification Institute



- Domestic Certification, Verification System
- Overseas Certification Cooperation

1. Introduction to K-eco & the Korea Water Cluster

General Information of the Korea Water Cluster

Established with \$185 million in government funding, KWC supports the full cycle of water technology development and global expansion.

Location

- Daegu Metropolitan City

Investment Budget

- US\$ 170 mil. (Government Fund)

Owner / Operation

- Ministry of Environment / K-eco

Major Feature

- R & D, Test-Bed
- Business Commercialization
- Overseas Marketing
- International Cooperation

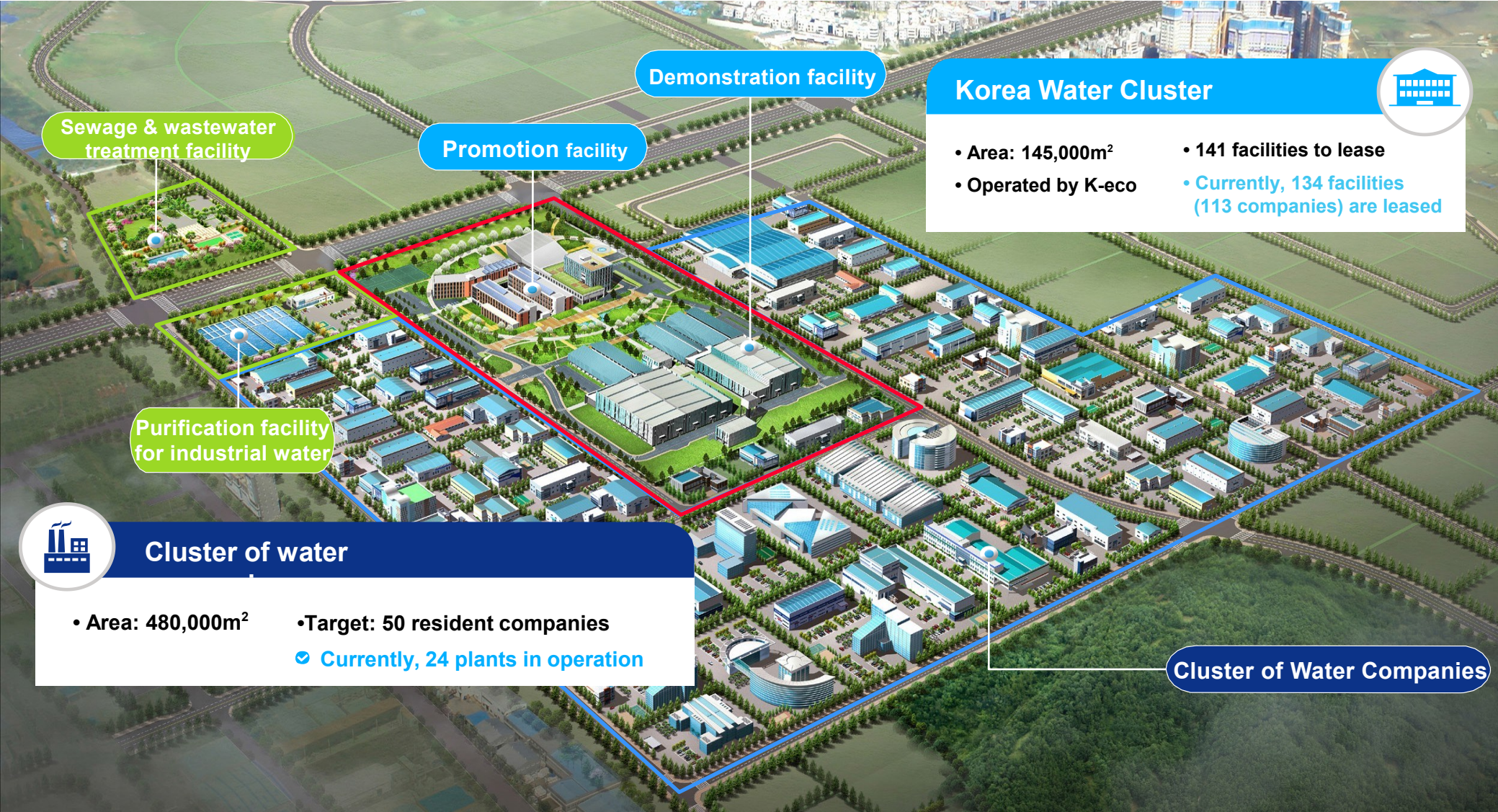
Annual Budget

- Total US\$ 16.0 mil.
- **Corporate Support US\$ 8.9 mil.**
- Facility Operation US\$ 7.1 mil.



1. Introduction to K-eco & the Korea Water Cluster

Bird`s-eye View



1. Introduction to K-eco & the Korea Water Cluster

Water Promotion Facilities

KWC operates key facilities such as the Global Business Center, R&D Center, and Water Campus to support innovation and global business expansion.

Water Convergence R&D Center

- Scale 4F(2 buildings)
- Floor area 1,956m²
- Test & analysis labs, labs for lease

Global Business Center

- Scale 6F
- Floor area 14,718m²
- K-eco, Exhibition Hall, facilities for lease
- Guesthouse, Rental facilities

Water Campus

- Scale 4F
- Floor area 5,620m²
- KIWATEC, Venture incubator, Classrooms



1. Introduction to K-eco & the Korea Water Cluster

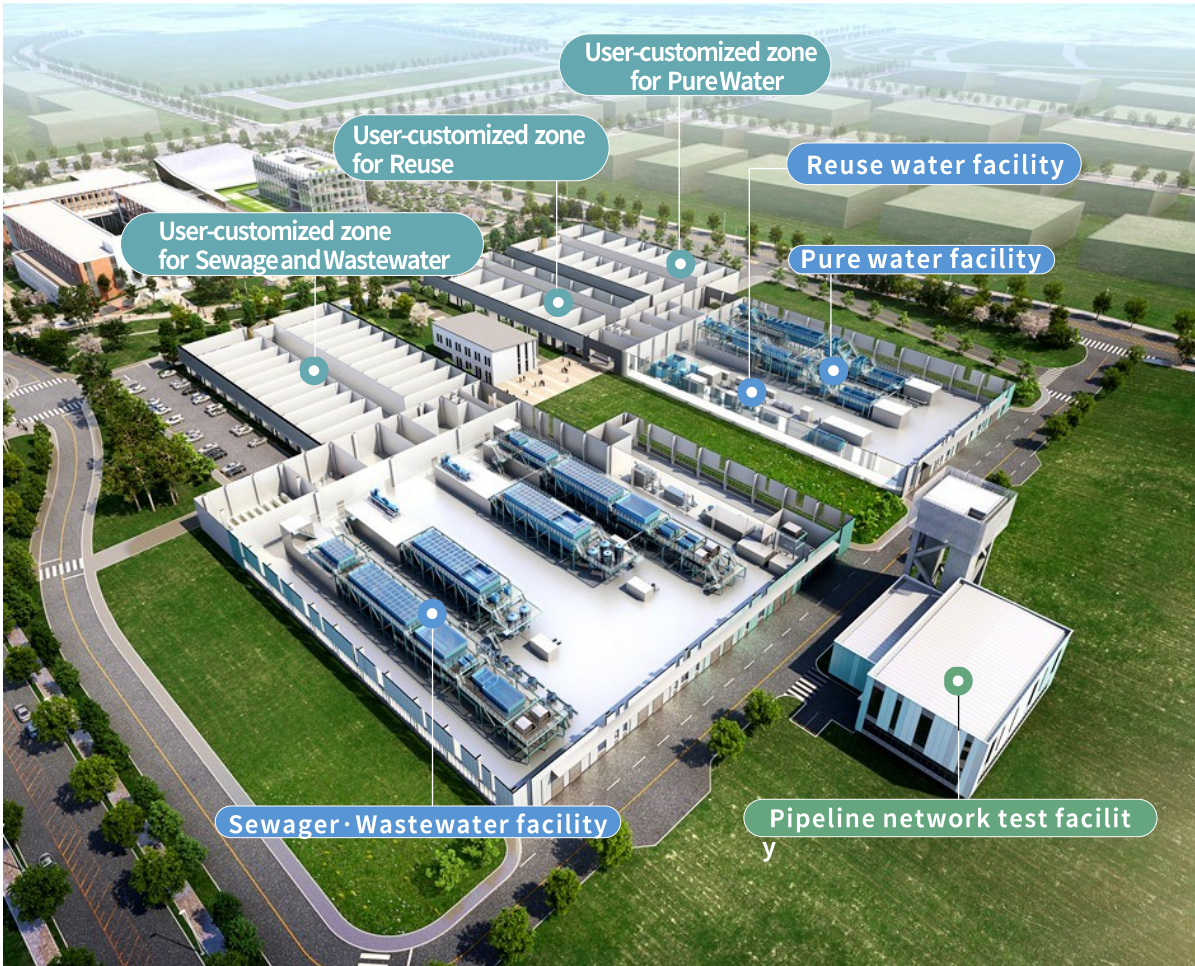
Demonstration Facilities

State-of-the-art pilot plants and pipeline networks enable cost-effective validation of sensors, actuators, pumps, and other water industry products.

Demonstration facility	
• Pure Water	2,000m ³ /day
• Sewage	1,000m ³ /day
• Wastewater	1,000m ³ /day
• Reuse water	1,000m ³ /day

User-customized Zone	
• 15 facilities for Pure Water	200m ³ /day
• 15 facilities for Sewage	100m ³ /day
• 10 facilities for Wastewater	100m ³ /day
• 10 facilities for Reuse water	100m ³ /day

Pipeline network test facility	
• Building	1F
• Floor area	963m ²
• Elevated water tanks, common areas, pipeline network	



2. KWC Programs and International Cooperation Cases

KWC Programs

Start-up Support

- Commercialization
- Investment Attraction
- Consulting Services

➤ Grant US\$ 100K

Commercialization Support

- Digital Tech.
- Energy Saving Tech.
- Design Tech.
- Operation Tech.
- Promising Tech.

➤ Grant US\$ 6.4 Mil.

Overseas Demonstration (1)

- Tech. Localization
- Installation Support
- Biz Development

➤ Grant US\$ 300K

Overseas Demonstration (2)

- Tech. Localization
- Installation Support
- Biz Development

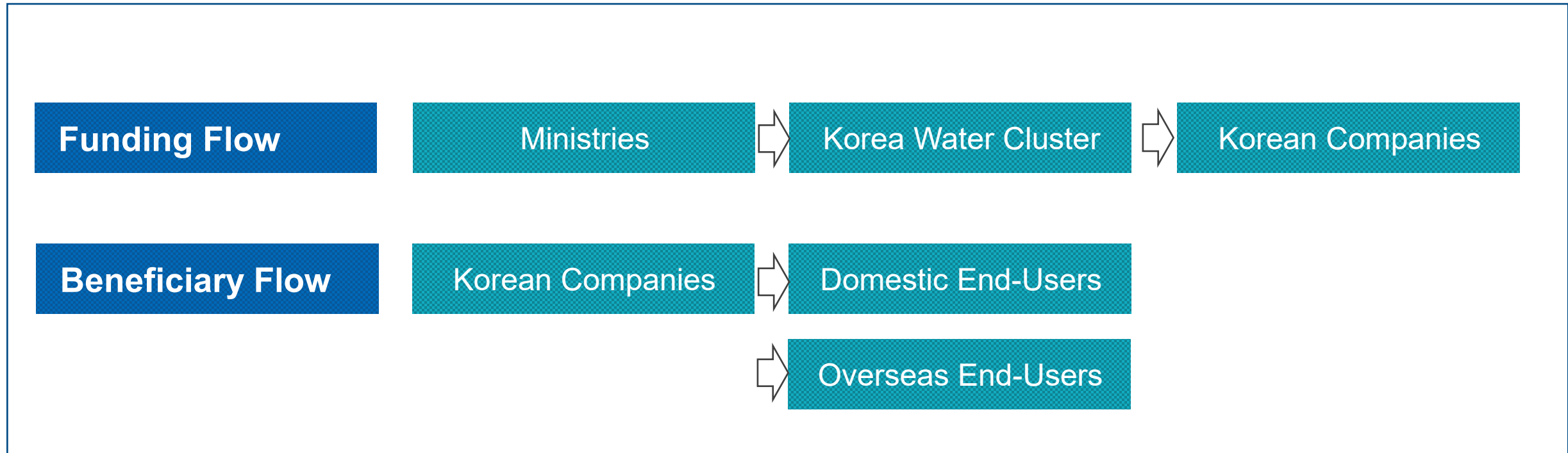
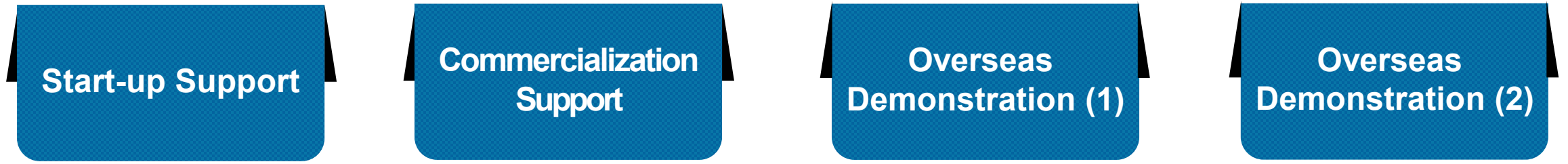
➤ Grant US\$ 190K

KWC Grant-Funded

Ministry of SMEs
Grant-Funded

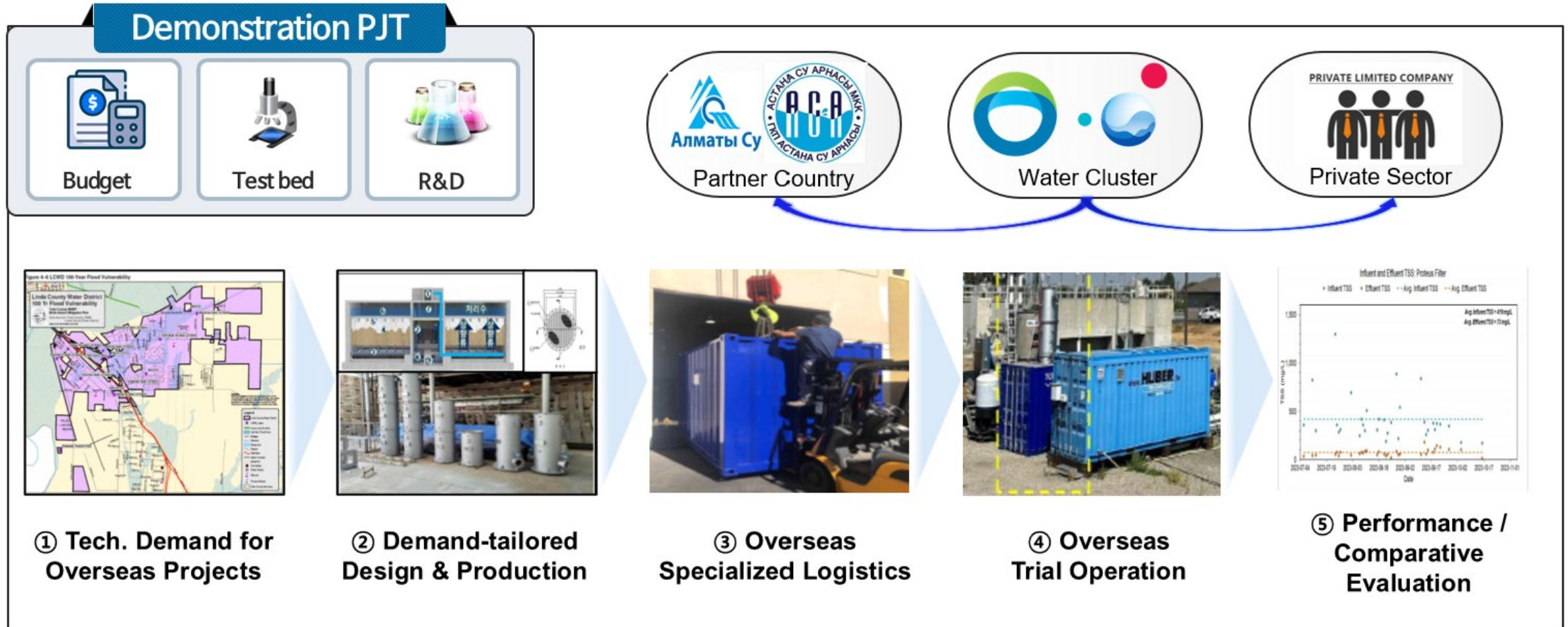
2. KWC Programs and International Cooperation Cases

KWC Funding and Beneficiary Flow



2. KWC Programs and International Cooperation Cases

KWC Demonstration Project Support



2. KWC Programs and International Cooperation Cases

International Cooperation Cases

① Water Quality Telemonitoring System(TMS) in Colombia

KWC Support

Commercialization Support

Selected Company

EMC

Support

ODA Project Planning on WQ TMS in Colombia

Funding

US\$ 20,000 in 2024

Achievement

Budget Agency

Korea Intl` Cooperation Agency (KOICA)

Support

Pre-ODA & Capacity Building in Colombia

Funding

US\$ 340,000 from 2024 to 2025

Beneficiary Flow

Korean Companies (EMC)



Colombian Institutions in the Water Sector

2. KWC Programs and International Cooperation Cases

International Cooperation Cases

① Water Quality Telemonitoring System(TMS) in Colombia

Site Survey



Proposed Project Site 1 (Water Intake Source)



Proposed Project Site 2 (Industrial Complex)



Proposed Project Site 3 (Water Treatment Plant)



Proposed Project Site 4 (Reservoir)



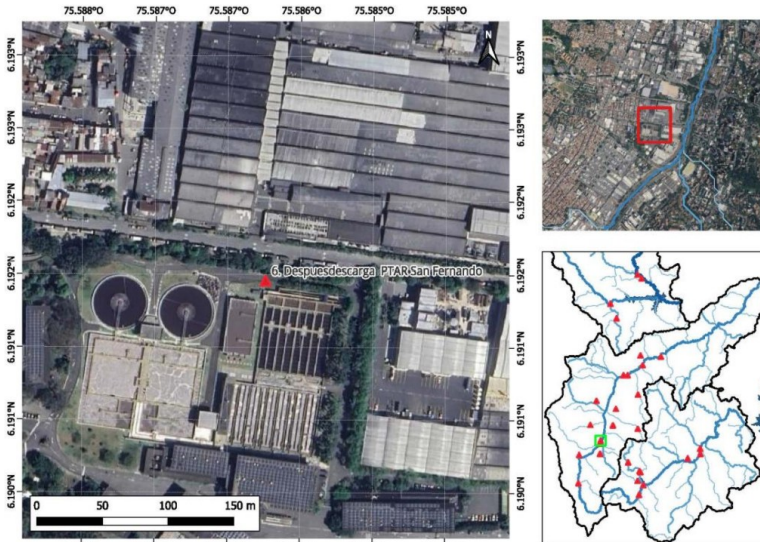
2. KWC Programs and International Cooperation Cases

International Cooperation Cases

① Water Quality Telemonitoring System(TMS) in Colombia

Fixed WQ TMS

WWTP	San Fernando WWTP Outfall (86,400 ton/day)
Installation Plan	7 sites including WWTP/WTP discharge points, major polluted river areas
Monitoring Parameters	TOC, TN, TP, pH, SS (organic matter, nutrients, suspended solids, etc.)



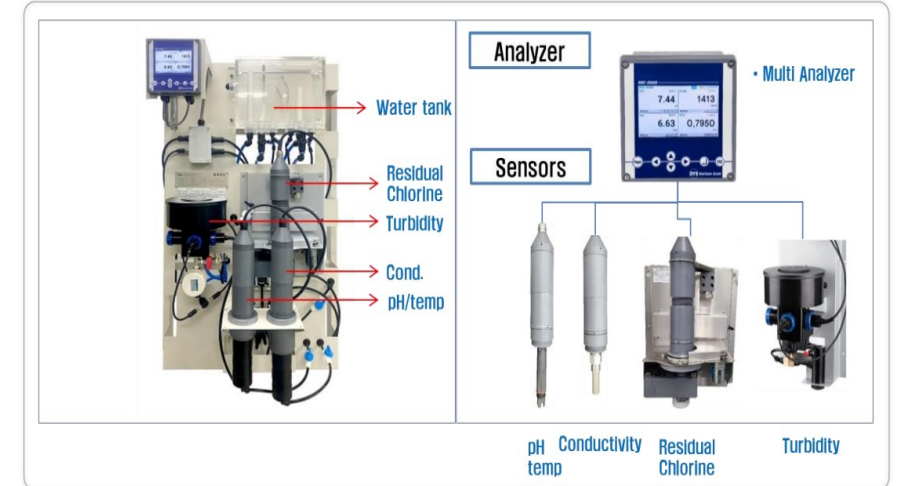
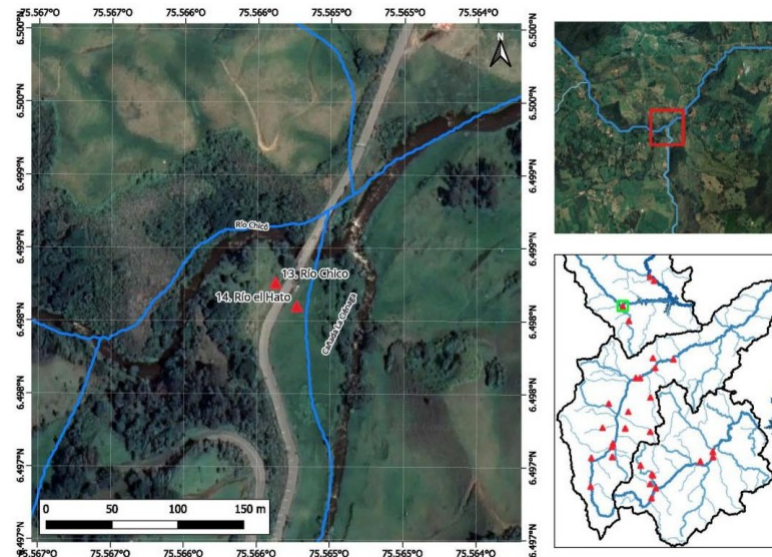
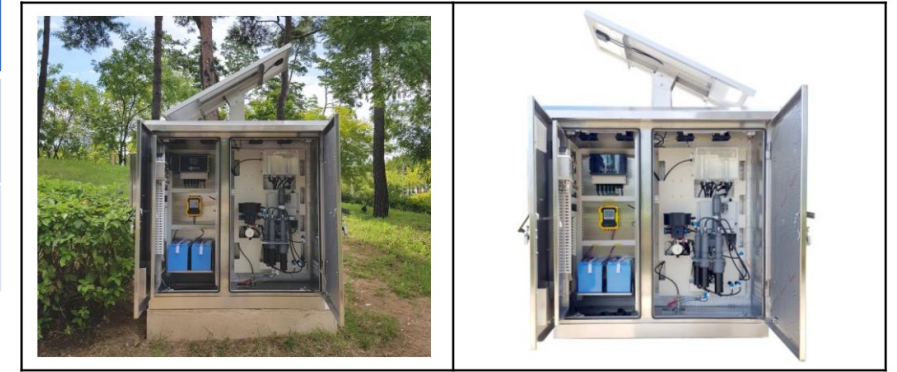
2. KWC Programs and International Cooperation Cases

International Cooperation Cases

① Water Quality Telemonitoring System(TMS) in Colombia

Small-Scale WQ TMS

Area	At the confluence of the Chico and Hato Rivers (Water Resource)
Installation Plan	21 Sites Including Intake Inflows, Reservoirs, And Lakes
Monitoring Parameters	Residual Chlorine, Ph, Turbidity, Electrical Conductivity, Etc.



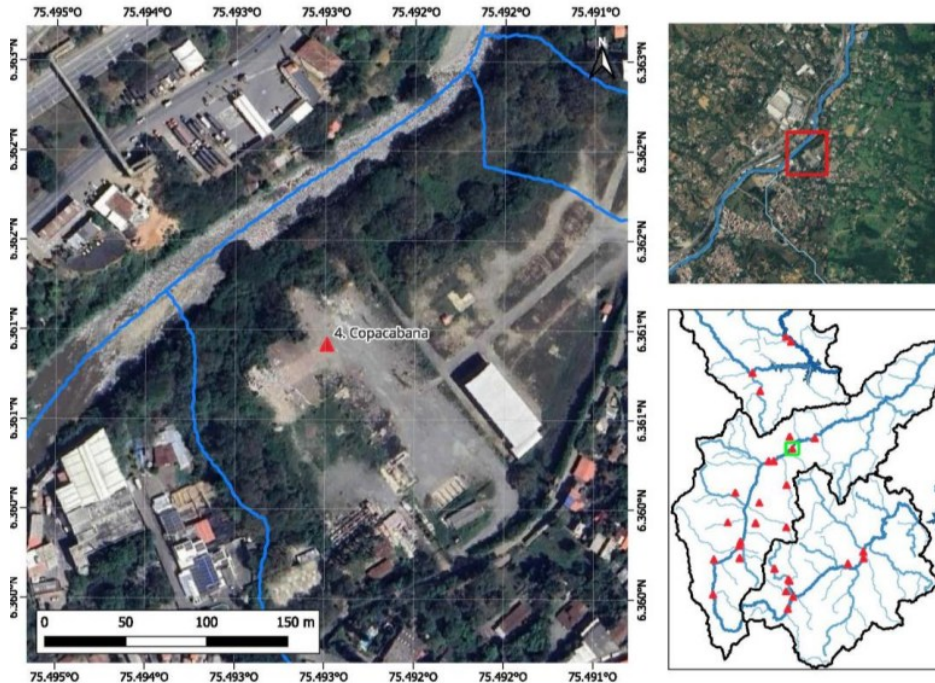
2. KWC Programs and International Cooperation Cases

International Cooperation Cases

① Water Quality Telemonitoring System(TMS) in Colombia

Mobile WQ TMS

Installation Plan	Non-fixed Installation / Multiple Small-scale Discharge Points (Battery-powered)
Monitoring Parameters	pH, SS, Conductivity, etc.



2. KWC Programs and International Cooperation Cases

International Cooperation Cases

② Demonstration Project Linked to the Kazakhstan and Vietnam Plant Modernization Project

KWC Support

Overseas Demonstration (2)

Selected Company

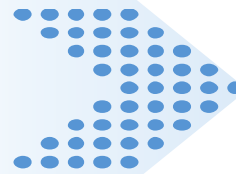
7 Companies

Support

KWC-Led Identification of Overseas Pilot Opportunities

Funding

Approx. US\$ 190,000 in 2025



Achievement

Budget Agency

Affiliated organization under the Ministry of SMEs(KOFCA)

Support

KWC-Led Tech. Demonstration
US\$ 200,000 in 2025

Export

US\$ 300,000 in 2025

Beneficiary Flow

7 Korean Companies



Kazakhstan & Vietnam
Water Institutions

2. KWC Programs and International Cooperation Cases

International Cooperation Cases

② Demonstration Project Linked to the Kazakhstan and Vietnam Plant Modernization Project

Project Planning

Business Delegation from 2021 to 2024



Client Invitations



Acquisition of Project Information

Project “Climate-Resilient Water Resources Development” (Phase 1)

Project Coordinator	COMPONENT A	Construction and reconstruction of 11 reservoirs for water storage and flood control, including: <ul style="list-style-type: none"> combined earthen and concrete dams with reinforcement concrete water intake and outlet structures with spillways regulated emergency and overflow channels hydrostatic stations, water gauging stations, and other related facilities
Ministry of Water Resources and Irrigation of the Republic of Kazakhstan		Restoration and modernization of 3,400 km of irrigation networks to reduce water losses, including: <ul style="list-style-type: none"> reconstruction of irrigation canals (primarily open lined canals) installation of water outlets, sluice gates, mudflow and flood spillways
Amount of Phase 1 of the project		Increase in the flow of the Yesil River by 100 km
Source of financing	COMPONENT B	Installation and automation of SCADA systems at 11 reservoir headworks and 21 main irrigation canals
Islamic Development Bank		Creation of an Automated Water Resources Management Center and development of a centralized water resources monitoring and management platform integrating all SCADA systems
Project Implementer and Borrower	COMPONENT C	Provision of modern technology and equipment to regional branches of Kazvodkhoz and the National Hydrogeological Service “Kazhydrogeology” for sustainable infrastructure operation and improved hydrogeological research
Kazvodkhoz		Promotion of efficient water use technologies
Project Implementation Agency		Improvement of groundwater and soil fertility analysis, river basin analysis
SK Water Solution	Development of flood and drought management programs	
Implementation period	Mapping irrigation needs and potential for the development of baseline data and master plans	
2025 – 2028 rr.	Implementation of remote sensing technologies for data management	
Coverage	Creation of an early warning system	
6 territorial regions		

2. KWC Programs and International Cooperation Cases


International Cooperation Cases

② Demonstration Project Linked to the Kazakhstan and Vietnam Plant Modernization Project

Budget Securing


Team Water Korea

Group of Water Company



**Korea Environment Corporation
(Korea Water Cluster)**

- * Deployment of wastewater experts
- * Utilization of the resident water companies



**Korea Water Partnership
(Overseas Business Team)**

- * Deployment of overseas cooperation experts
- * Utilization of the member company pool



Group of Water Company

- The participation scale of companies is determined according to the budget.

Measurement Instruments	Pump
Blowers	Valve
Filter	Actuator
Treatment Technologies	Convergence Technology



Securing Funding



Korea Water Cluster

KWC-Led Tech. Demonstration
US\$ 190,000 in 2025

2. KWC Programs and International Cooperation Cases

International Cooperation Cases

② Demonstration Project Linked to the Kazakhstan and Vietnam Plant Modernization Project

Tech. Demonstration

Non-Intrusive Flow Meter (KAZ)



Dissolved Organic Matter (DOM) Treatment System (KAZ)



2. KWC Programs and International Cooperation Cases

International Cooperation Cases

② Demonstration Project Linked to the Kazakhstan and Vietnam Plant Modernization Project

Tech. Demonstration

Deodorization System (KAZ)



Water Quality Sensor (VN)



3. KWC Collaboration in WB-Financed Projects

WB Dominican Republic Water Sector Modernization Program (PAD5086, Mar. 2023)

Program Overview and Financial Structure

Program Name

➤ **Dominican Republic Water Sector Modernization Program**

Total Budget

➤ **US \$1.25 Billion (World Bank's Multiphase Programmatic Approach)**

Phase I

➤ **2023–2027 (US\$250 Million)**

Objective

➤ **Improve efficiency, service coverage, and NRW reduction**

Program Type

➤ **Program for Results**

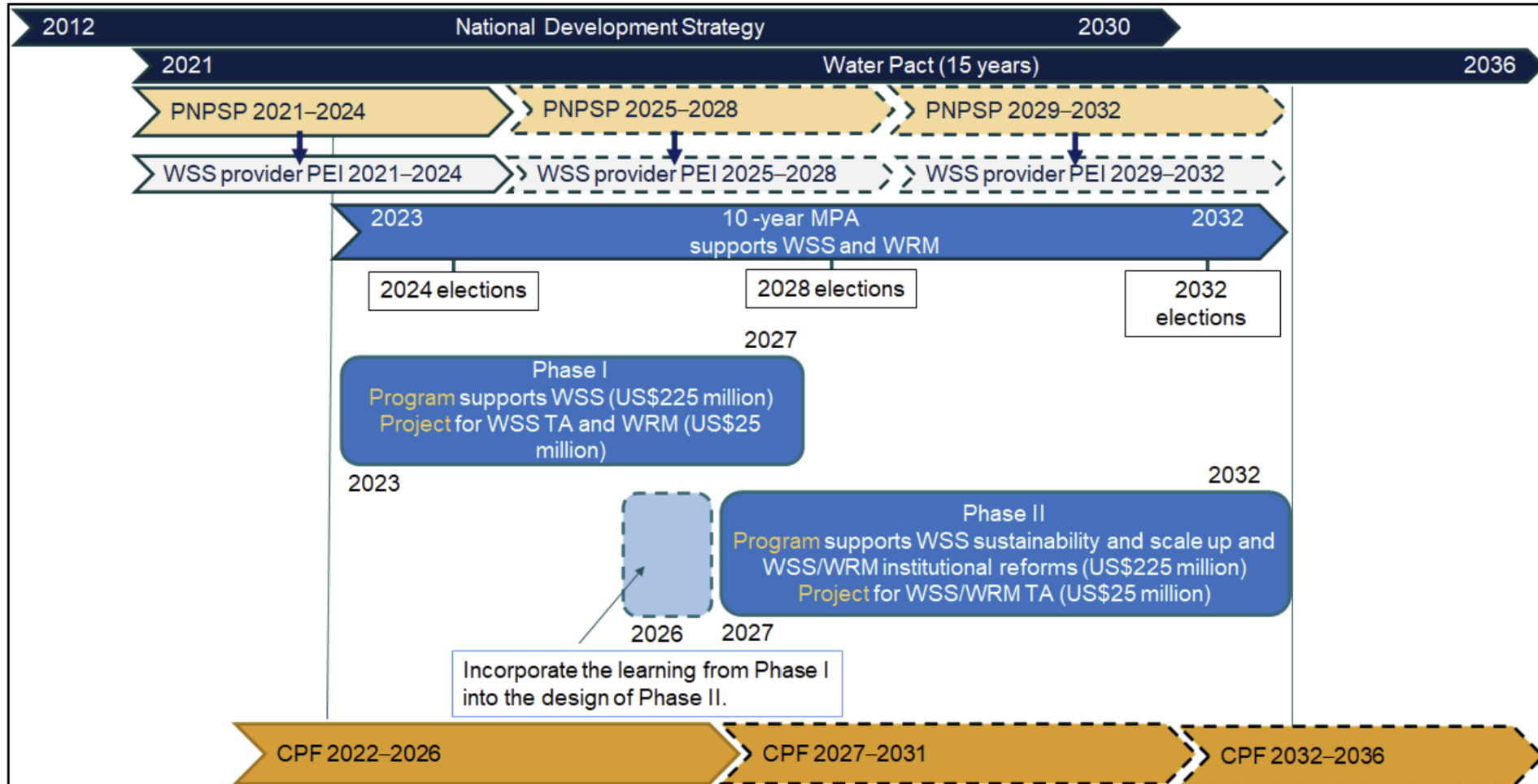
Executing Agencies

➤ **INAPA, CORAAVEGA, CORAASAN**

3. KWC Collaboration in WB-Financed Projects

WB Dominican Republic Water Sector Modernization Program (PAD5086, Mar. 2023)

MPA Alignment with Government Strategy, Water Pact, and PNPSPs



3. KWC Collaboration in WB-Financed Projects

WB Dominican Republic Water Sector Modernization Program (PAD5086, Mar. 2023)

Project Location on WB DR Water Program



Indicative Timeline For DLI Disbursement / DLR Target Values (US\$ Millions)

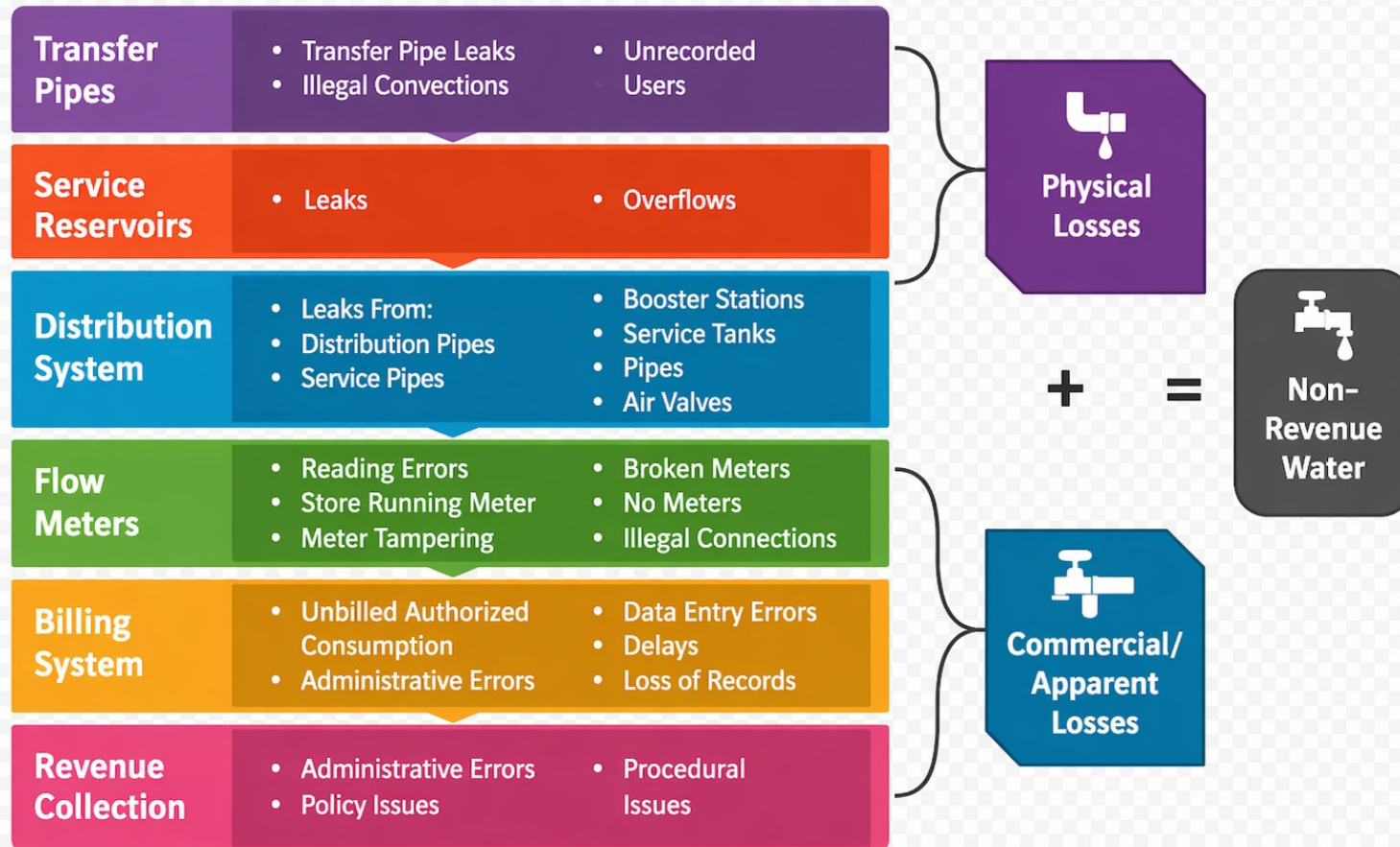
Disbursement Linked Indicator	Total	% PforR	2023	2024	2025	2026	2027
DLI 1 - Households Serviced with Water Supply	25	11%	0	3	8	7	6
DLI 2 - Households Serviced with Sanitation	25	11%	4	5	4	6	6
DLI 3 - Strengthened Accountability and Improved Planning Capacity	11	5%	2	2	2	2	2
DLI 4 - Improved Capital Budget Planning and Implementation	10	4%	-	2	2	2	2
DLI 5 - Increased Collection Rates	14	6%	-	-	3	5	6
DLI 6 - Improved Operational Planning, Non-Revenue Water	35	15%	3	8	8	8	8
DLI 7 - Reduced Non-Revenue Water	15	7%	-	-	4	5	6
DLI 8 - Improved Energy Efficiency	15	7%	-	-	4	5	6
DLI 9 - Strengthened Corporate Governance	51	22%	3	12	12	12	12
DLI 10 - Strengthened Performance Monitoring	25	11%	-	6	6	6	7
Sub Total	225	100%	12	38	55	59	62
Investment Project Financing (IPF) for Institutional Reforms, Capacity Building, etc.	25	-	2	2	6	7	9
Grand Total	250	-	13	40	60	66	71

3. KWC Collaboration in WB-Financed Projects

Explanation of Non-Revenue Water

NON-REVENUE WATER

Areas of Non-Revenue Water



3. KWC Collaboration in WB-Financed Projects

How KWC Works with Partners



3. KWC Collaboration in WB-Financed Projects

Analysis of Current NRW Management in the Dominican Republic

Challenges → WB Loan Program → International Cooperation

01 Policy on NRW in the DR

- ✓ No dedicated NRW policy
- ✓ Lack of regulations



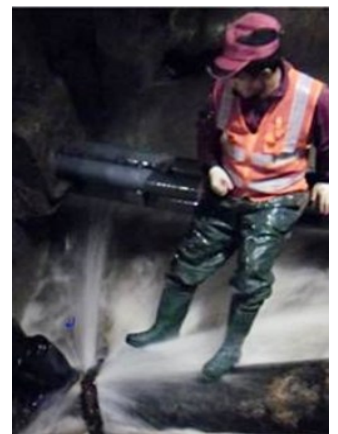
02 Water Revenue Collection

- ✓ No water meters
- ✓ supply & billing unverified
- ✓ Tariffs by household or factory type



03 Leak Detection & Monitoring

- ✓ No leak detection experience
- ✓ High demand for training



3. KWC Collaboration in WB-Financed Projects

Needs for NRW Management

Leak Detection Products



Water leak monitoring
IoT water leak detection sensor



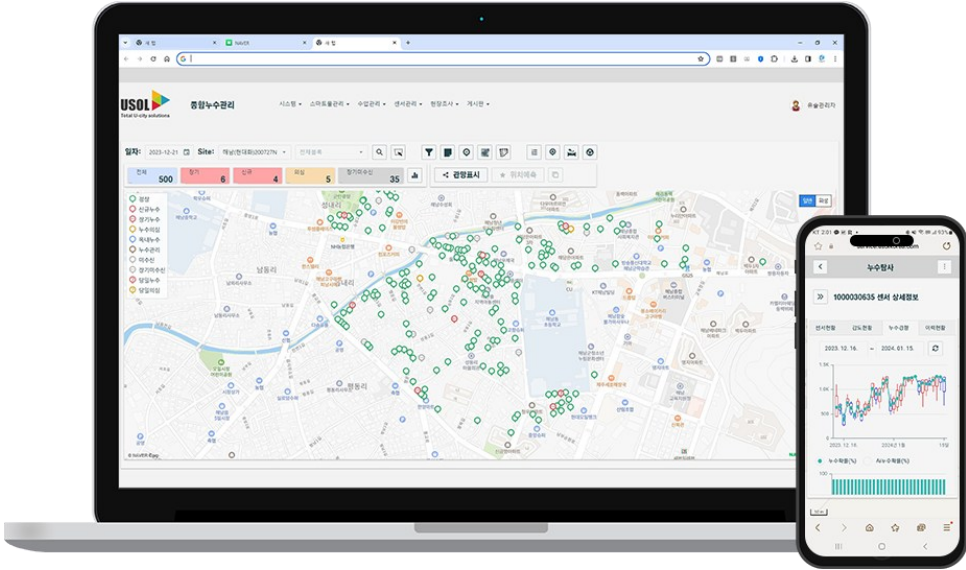
Remote meter reading
Smart meter reading terminal



Flow monitoring
Smart hub



Water pressure monitoring
Smart water pressure gauge

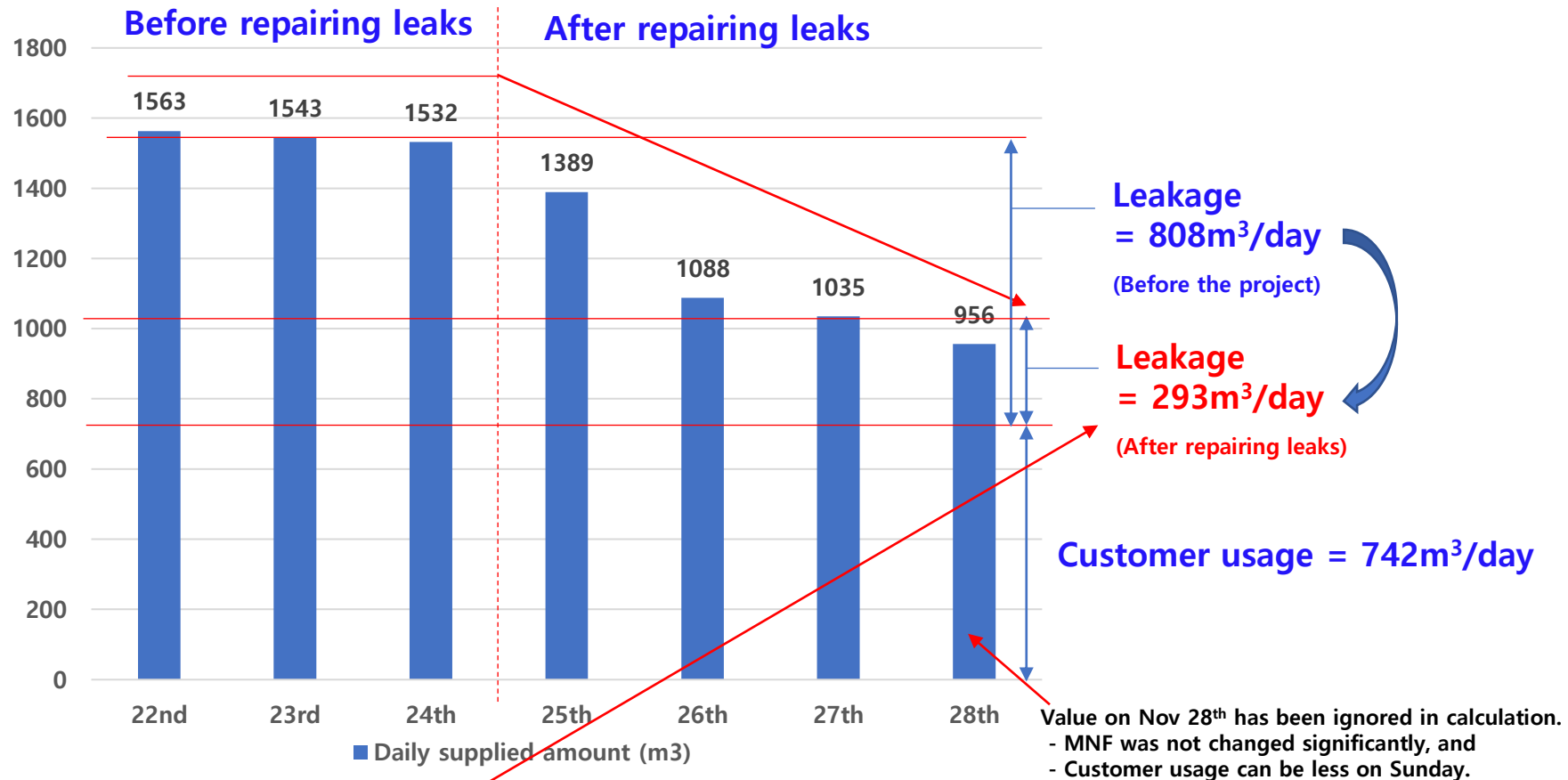


The image shows a laptop and a smartphone displaying the USOL water management dashboard. The laptop screen shows a map of a city with various colored markers indicating different water management points. The smartphone screen shows a detailed view of a specific water meter, including a line graph of water usage over time and a bar chart of water usage by month.

3. KWC Collaboration in WB-Financed Projects

Examples of NRW Reduction Impact

- Change in Daily Supplied Amount in a Project Area(390 Customers) in Thailand, Oct. 2019



*** 64% (=2/3) of water leak loss has been reduced in a week.**

3. KWC Collaboration in WB-Financed Projects

Dispatch of the Consortium Delegation and Strengthening On-site Networks

Key Activities in 2025

June 16 (Mon)

➤ Initiation Report for INAPA

June 17 (Tue)

➤ Meeting with CORAAVEGA

June 18 (Wed)

➤ Pre F/S Site Research

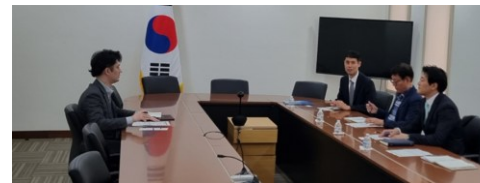
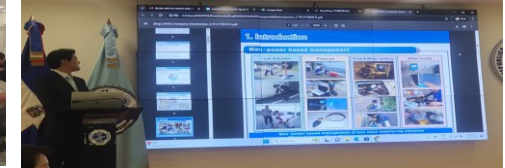
June 19 (Thu)

➤ Meeting with KOR Embassy, KOICA

June 20 (Fri)

➤ Meeting with Local Companies

Initiation Report & Local Research



3. KWC Collaboration in WB-Financed Projects

Dispatch of the Consortium Delegation and Strengthening On-site Networks

Key Activities in 2026

Overseas Demonstration (1)

January

- Pilot Project Coordination Meeting

February

- DR Submitted Official Request to KWC

March

- WC budget allocation & call for participation (US\$ 60,000)

May ~ Nov.

- Implementation (NRW DMA Setup, Leak Detection and repair, etc.)

Pilot Project Coordination Meeting

Responsabilidades definidas para una cooperación efectiva
(효율적 협력을 위한 역할 분담 체계)

La República Dominicana asume responsabilidades operativas y administrativas para la ejecución local y la facilitación institucional, mientras que la parte coreana aporta apoyo financiero, gestión del proyecto y ejecución técnica especializada.
(도미니카 측은 현지 실행 및 제도적 지원을 담당하고, 한국 측은 재정 지원과 사업 관리 및 전문 기술 수행을 담당하는 구조)

República Dominicana

(1) Área Operativa

- Ejecución de trabajos de excavación y reparación en los puntos donde se identifiquen fugas
- Instalación conjunta con la empresa coreana de equipos de detección y monitoreo de fugas (medidores de caudal, medidores, registradores de datos, etc.)
- Adquisición de tarjetas SIM para equipos de comunicación y cobertura de las tarifas mensuales de comunicación

Referencia:

- Costo estimado de tarjeta SIM: aprox. USD 5 por unidad
- Costo mensual de comunicación móvil: aprox. USD 80
- Los montos son indicativos y pueden variar según las condiciones locales

(2) Área Administrativa

- Exención del IVA (VAT) y de los derechos arancelarios para la importación de equipos piloto (en coordinación con la autoridad aduanera y las entidades gubernamentales pertinentes)
- Asignación de personal técnico local para actividades de detección de fugas con fines de fortalecimiento de capacidades

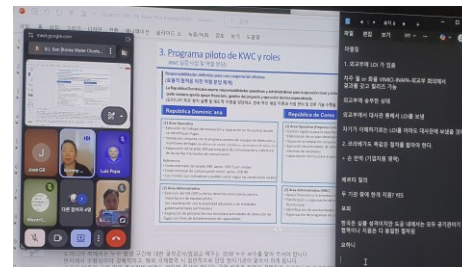
República de Corea

(1) Área Operativa (Empresa Coreana Seleccionada)

- Gestión logística para la exportación de equipos de detección de fugas
- Elaboración de un plan detallado de detección y monitoreo de fugas
- Apoyo en la instalación conjunta de equipos de detección y monitoreo
- Ejecución de actividades de detección de fugas y preparación de informes de resultados
- Capacitación técnica para el personal local

(2) Área Administrativa (KWC)

- Apoyo financiero a la empresa coreana seleccionada
- Planificación y organización de eventos relacionados Corea–República Dominicana
- Identificación de oportunidades de cooperación y negocios posteriores
- Organización de programas de capacitación en Corea por invitación



4. KWC-based Pilot and Financing Approach for Partner Countries

Overseas Demonstration Program

Donor Korea Water Cluster("KWC") at Korea Environment Corporation

Budget USD ≈ 70,000 for Each Project

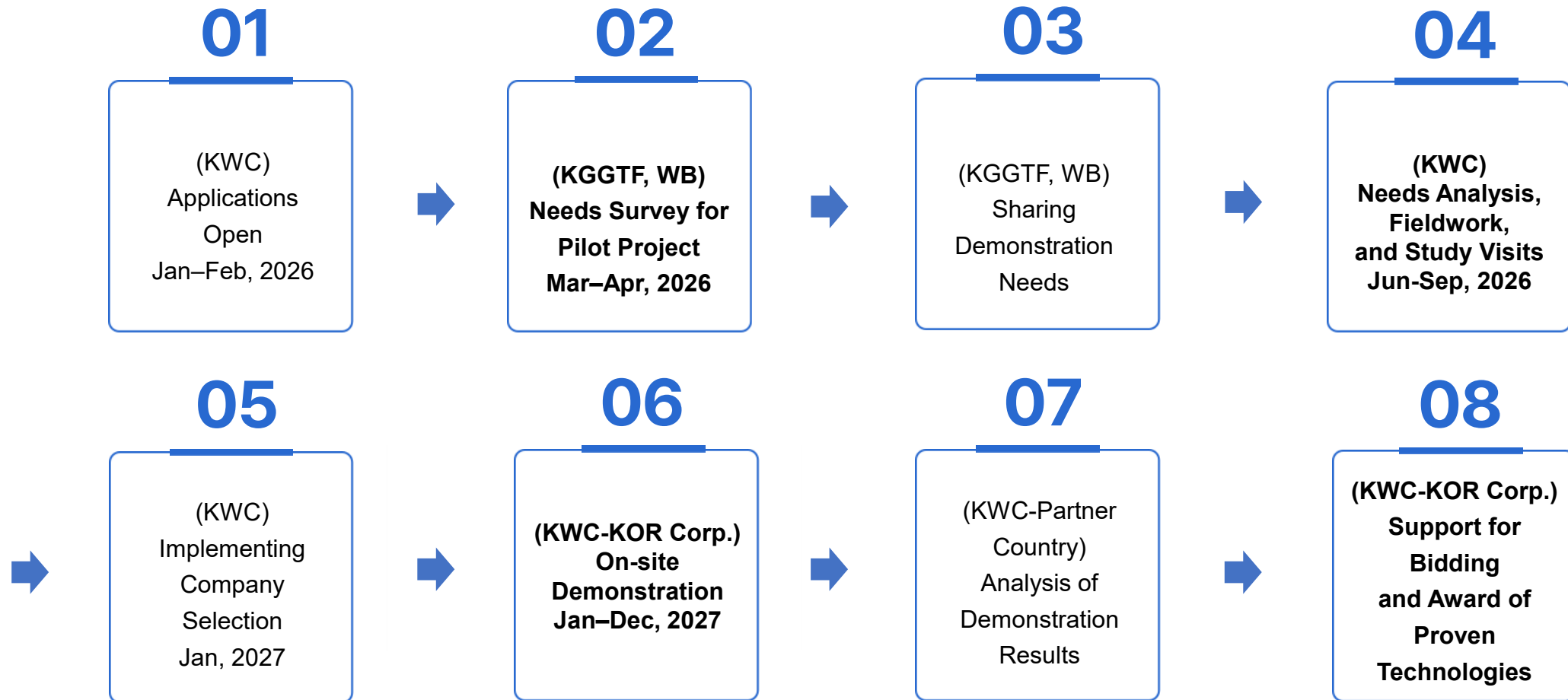
Sector Grant-based Demonstration in Water and Wastewater Infrastructure
(Pipes, Pumps, Valves, Monitoring and Measurement Instruments etc.)

What Is Provided Programs for Borrower countries linked to World Bank financing

- Technology demonstration and training
- Policy consulting
- Invitation Training Program

4. KWC-based Pilot and Financing Approach for Partner Countries

Procedures



4. KWC-based Pilot and Financing Approach for Partner Countries

Expected Benefits

WB

- Facilitation of Project Achievement in Developing Countries /
- Timely Execution of World Bank–funded Budgets

Borrower
country

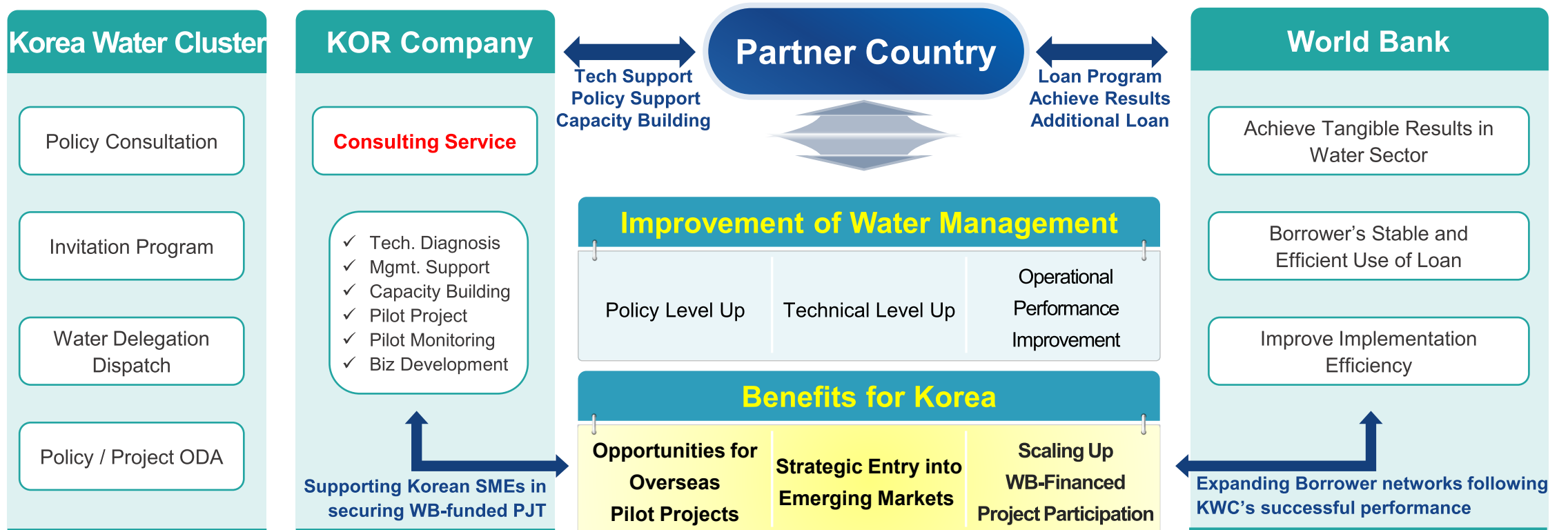
- Stable Technology Adoption through Grant-based Demonstration /
- Policy Experiences through Application of Demonstrated Technologies/
- Technical and Operational Training for Local Operators

KWC

- Accumulation of Overseas Demonstration Experience /
- Opportunities for Market Expansion for Koran Water Companies.

4. KWC-based Pilot and Financing Approach for Partner Countries

Value Proposition and Expected Benefits





A Global Environmental Institution
Leading the Carbon-Neutral Era

Place of issue	Korea Environment Corporation
Issuer	B.I. Son
Date of publication	2025.07. 29.
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