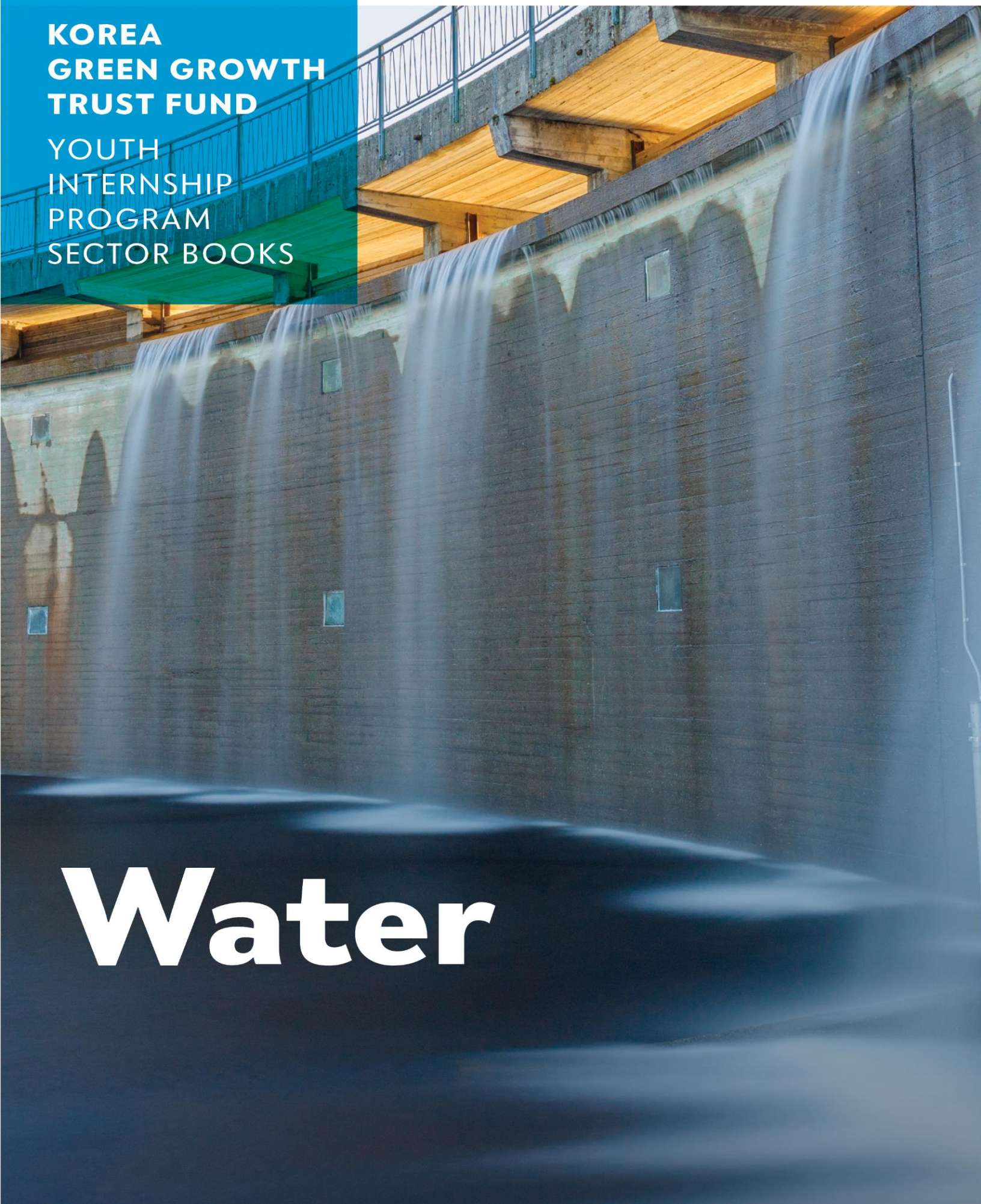
WORLD BANK GROUP

KOREA GREEN GROWTH TRUST FUND

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YOUTH INTERNSHIP PROGRAM SECTOR BOOKS



Water

The original draft of this sectoral portfolio book was authored by the second internship cohort (**Injun Song, Daeun Jeong**) and later revised and updated by the third (**Junsu Park, Onsol Cho**) cohort.

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Korea Green Growth Trust Fund (KGGTF)

Water Sectoral Book

The water sector is fundamental to sustainable development, public health, and economic prosperity. Reliable access to clean water and sanitation drives economic growth, reduces poverty, and supports livelihoods across agriculture, industry, and energy. Water security underpins essential services and ensures communities can thrive. It is also a powerful engine of job creation. From construction and utility operations to irrigation services, watershed restoration, and wastewater management, the water sector creates employment opportunities at every stage of the water cycle. These contributions make water central to achieving inclusive and sustainable development outcomes.

The World Bank Group supports countries in securing water for people, food, and economies through financing, technical assistance, and strategic partnerships. Yet the challenges remain immense. More than 2 billion people still lack safely managed drinking water, and 3.5 billion live without adequate sanitation. The Bank's active portfolio focuses on expanding universal access to water and sanitation, developing climate-resilient irrigation, reducing the impacts of floods and droughts, strengthening governance systems, and improving sustainable resource management. Guided by its Global Water Strategy and initiatives such as the Fast Track Water Security and Climate Adaptation Program, the Bank works with governments, private sector partners, and donors to scale innovative solutions for stronger, more productive and resilient water systems.

Pressures and Challenges

Despite its critical role, the water sector faces mounting pressures. Rapid urbanization, environmental degradation, and years of underinvestment strain already fragile systems. Outdated infrastructure and limited wastewater treatment capacity slow progress and limit opportunities for firms and workers who depend on reliable water services. At the same time, growing demand from cities, farms, and industries increases competition for scarce resources. Climate change adds further stress, as shifting rainfall patterns and more frequent floods and droughts disrupt supplies and damage ecosystems. Inefficient water and wastewater management also contributes to greenhouse gas emissions, underscoring the sector's responsibility to both mitigate and adapt to climate impacts.

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Pathways Forward

Key priorities include scaling wastewater reuse, integrating nature-based solutions, and deploying digital tools to improve utility performance and resource efficiency. Strengthening governance and institutions, mobilizing blended finance, and fostering innovation are essential to accelerate progress.

Investments in smarter and more resilient water management improve access and also deliver powerful economic benefits. They create jobs in construction, operations, maintenance, hydroinformatics, climate-resilient agriculture, and environmental restoration. They stimulate industry and local businesses, raise agricultural productivity, enhance food security, and strengthen resilience to climate shocks. By advancing these priorities, the water sector can continue to drive economic opportunity while safeguarding resources for future generations.

KGGTF's Role

The Korea Green Growth Trust Fund (KGGTF) plays a catalytic role in advancing efficient and climate-smart water management. Through the 27 targeted grants, the Trust Fund supports upstream initiatives that build institutional capacity, pilot innovative solutions, and integrate digital tools for efficient service delivery. By promoting wastewater reuse, strengthening governance, and enabling cross-sector collaboration, KGGTF helps client countries deliver integrated water strategies—laying the foundation for long-term water security, climate resilience, and green growth.

Why Korea?

Korea's remarkable transformation from an aid recipient to a global innovation leader stands as a powerful testament to what's possible with bold vision and smart policy. In just a few decades, Korea lifted itself from poverty to prosperity—harnessing science, technology, and human capital to drive inclusive growth and sustainability. This journey, rooted in strategic policymaking and relentless innovation, offers a compelling blueprint for countries seeking to leapfrog development challenges and build resilient, future-ready economies. Through the Korea Green Growth Trust Fund (KGGTF), Korea now shares its hard-earned lessons with the world—helping identify relevant policies and technologies and connecting them with World Bank teams and partner countries seeking innovative,

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KGGTF Water Strategic Priorities

KGGTF's engagement in the water sector has evolved since its inception. Early-grants (2014–2018) concentrated on expanding access to basic sanitation services, improving urban water infrastructure, and closing service gaps in underserved areas. These foundational efforts responded to urgent needs in rapidly urbanizing regions and low-income communities, laying the groundwork for stronger service delivery systems.

As demands have grown, priorities have shifted. More recent grants (2019–2024) emphasize integrated water resources management, digital innovation, and rural-urban equity-reflecting the recognition that water systems must be efficient and capable of supporting sustainable growth. This includes strengthening governance, applying advanced technologies, and piloting models that unlock economic opportunities while improving service delivery.

This evolution aligns with global development trends, including the Sustainable Development Goals (SDG 6), the World Bank's Green, Resilient, and Inclusive Development (GRID) approach, and the growing demand for circular economy solutions. KGGTF's role has expanded to meet these demands by serving as a platform for innovation, upstream diagnostics, and cross-sector knowledge exchange.

Current Priorities

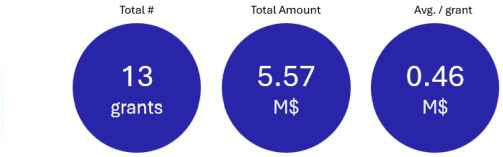
KGGTF's current water-sector strategy is centered on building resilient, inclusive, and digitally enabled water systems.

- **Wastewater Management and Reuse**: Focuses on increasing wastewater treatment and promoting reuse to reduce pollution, enhance water availability, and contribute to circular economy outcomes.
- **Citywide Inclusive Sanitation (CWIS)**: Supports equitable urban sanitation by combining onsite and offsite solutions, strengthening service delivery in informal settlements and peri-urban areas.
- **Climate Resilience and Flood Risk Management**: Enhances the capacity of water systems to respond to climate-induced hazards through infrastructure upgrades, nature-based solutions, and early warning mechanisms.
- **Capacity Building and Water Governance**: Invests in institutional development, policy reform, and human capital to improve planning, accountability, and service quality.
- **Digital Water Strategies and Smart Utilities**: Promotes the use of data platforms, remote sensing, and smart metering to increase operational efficiency and transparency across the water service value chain.

Together, these themes represent an integrated and forward-looking approach that leverages Korean expertise and global best practices. KGGTF's water-sector grants are designed to foster innovation, improve equity, and build long-term climate resilience, while enabling countries to make measurable progress toward universal water security.

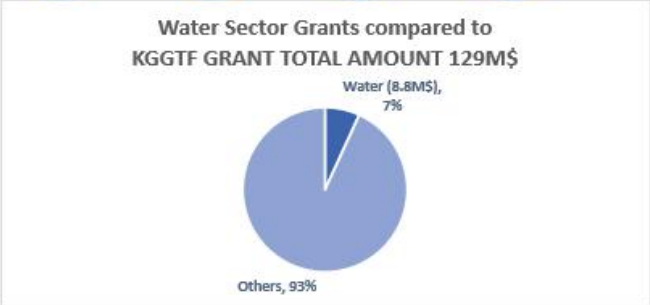
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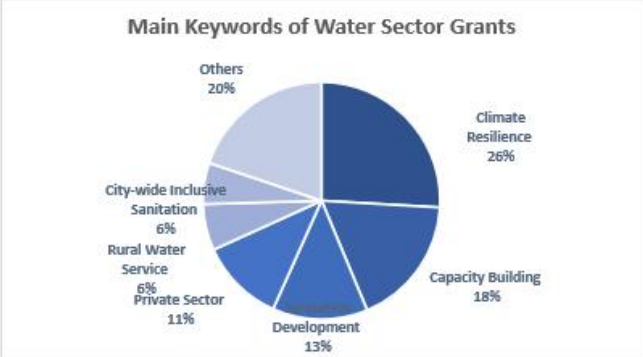
KGGTF Water Portfolio Snapshot

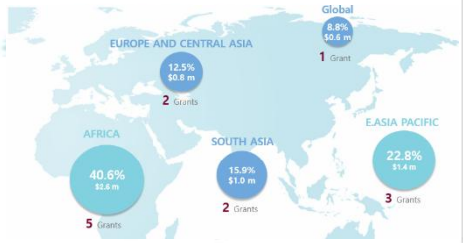


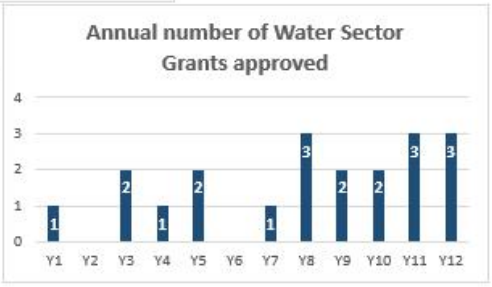
List of Client Countries / Regions

Angola
Bangladesh
Colombia
Congo, Democratic Republic of
Ethiopia
Indonesia
Kenya
Mongolia
Morocco
Nepal
Tanzania
Uganda
Uzbekistan









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How KGGTF Supports Bank Teams

KGGTF Water grants have made significant contributions across policy development, technical assistance, capacity building, and pilot implementation. These efforts have supported the global Water transition by addressing critical challenges such as grid modernization, water efficiency, and renewable integration.

KGGTF's portfolio demonstrates impact across policy, technical, and institutional dimensions, with a strong emphasis on upstream analysis, stakeholder engagement, and policy formulation. By linking global expertise with country-specific needs, the Trust Fund enables Bank teams to design projects that are more responsive, scalable, and sustainable.

1. **Institutional Capacity Building**
   Grants have played a pivotal role in helping governments design national programs and strengthen institutional frameworks in areas such as sanitation, utility performance, and river basin governance. In Angola, KGGTF supported the development of a National Sanitation Strategy (K181), while in Bangladesh, it contributed to integrated river management planning in the Jamuna River corridor (K119). Capacity-building programs, such as the K-Water Academy, have further enhanced technical expertise by training water utility operators from East Asia and Sub-Saharan Africa, building a pipeline of skilled professionals to manage and expand water services.

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Case Study: Building Drought Resilience in Southern Angola through Geospatial Information and Nature-Based Infrastructure (AR 2023)

Since 2013, southern Angola has faced the worst drought in more than three decades, affecting over 75% of the population. The crisis triggered widespread malnutrition, migration, deforestation, and agricultural losses exceeding US$561 million, contributing to an overall economic downturn of nearly US$749 million. With 80% of boreholes non-functional and fewer than 20% of rural communities accessing safe water, systemic solutions were urgently needed.

With KGGTF support, Angola piloted an integrated approach that combined geospatial analysis, nature-based infrastructure, and community-level planning. The grant produced Angola's first comprehensive analytical report on drought resilience and water security, directly shaping the design of the US$450 million RECLIMA Project. The program targeted five priorities: rural water point management, agropastoral dynamics, water resource mapping, regional targeting of NBS, and municipal-level water security planning.

Key Activities

- **Geospatial and Hydrogeological Analysis:** Basin-level studies in Cunene, Cuvelai, and Cubango mapped groundwater availability and drought vulnerabilities.
- **Municipal Water Plans (MWPs):** Developed participatory planning tools integrating water supply, storage, and resilience strategies at the local level.
- **Nature-Based Solutions (NBS):** Identified and prioritized watershed storage, aquifer recharge, and green infrastructure for community-based drought mitigation.
- **Capacity Building & Knowledge Exchange:** Trained 15 Angolan and Egyptian officials in Korea's advanced water management systems and held workshops on groundwater management, remote sensing, and resilience planning.
- **Policy Influence:** Integrated recommendations into Angola's national water policies, embedding green infrastructure and participatory approaches for long-term adoption.

The program's outputs fed directly into the Climate Resilience and Water Security Project (RECLIMA), approved in 2022, which will invest US$450 million (including

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US$150 million in co-financing) to improve water security for 1.2 million people across nine provinces. Crucially, KGGTF's analytical work helped shift Angola's approach from short-term emergency response to long-term resilience, anchoring green infrastructure and data-driven planning in national strategies.

Korean partnerships were pivotal. K-Water, KEITI, and Korea Rural Community Corporation (KRC) collaborated with Angola's National Water Directorate and basin administrations, sharing expertise on sustainable water infrastructure and digital monitoring. Their inputs directly informed Angola's municipal water plans and drought preparedness framework.

Looking ahead

Angola will scale municipal water planning nationwide, expand NBS adoption, and institutionalize geospatial monitoring systems to better manage climate extremes. The RECLIMA project will finance both infrastructure and institutional capacity, reinforcing Angola's resilience to recurrent droughts.

Quotes

"The KGGTF support to Angola has been very welcome, it has given us ways to better understand drought risks and the options to improve water access for climate resilience in the South of Angola." — Elsa Ramos, National Water Director of Angola

"With this work and the RECLIMA project, we hope Angola will strengthen its capacity to better manage scarce water resources to cover competing demands, increase water security, and contribute to the inclusive and resilient development of the south." — Elsa Ramos, National Water Director of Angola

2. **Innovation and Pilot Initiatives**
   Grants have introduced innovative approaches, including treated wastewater reuse for energy generation in Egypt (K165), application of green-gray solutions in flood-prone river basins in Kenya (K119), and the use of advanced hydrological modeling tools like 3D hydro-morphological assessments in Uzbekistan (K116). These pilots provide practical blueprints for integrating resilient water infrastructure into national policies and investment planning.

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Case Study: Repurposing Wastewater – A Sustainable Heating and Water Solution for Ulaanbaatar (AR 2024)

Ulaanbaatar, home to over half of Mongolia's 3.45 million residents, faces a mounting water security crisis driven by heavy groundwater dependence and growing climate pressures. With support from the Korea Green Growth Trust Fund (KGGTF), Mongolia was able to start looking into its first industrial water recycling initiative, showcasing how wastewater can be repurposed as a valuable resource for heating and industrial use. This innovation not only eases pressure on scarce drinking water supplies but also mitigates environmental risks and property damage from seasonal ice-overflow—laying the groundwork for a circular water economy.

The program's core objective was to reduce groundwater reliance by channeling treated industrial wastewater into Ulaanbaatar's district heating system. A pilot system was studied, based on linking MCS Coca-Cola LLC and the Amgalan Thermal Plant (ATP), repurposing 511 m^3/day of wastewater toward ATP's winter demand of 1,300 m^3/day, while cutting seasonal ice-related property damage by an estimated US$55,000 annually.

Key Activities

- **System Design & Technical Assessment:** Conducted technical study on industrial wastewater reuse and proposed a treatment pipeline connecting Coca-Cola's outflow to a treatment plant supplying to ATP.
- **Policy & Regulatory Reform:** Incorporated recycling recommendations into *Vision 2050* and the Government Action Plan (2024–2028), creating incentives for private sector investment.
- **Public–Private Partnership:** Witnessed a Memorandum of Understanding between ATP and MCS Coca-Cola, setting a firm commitment for industry-led circular water solutions.
- **Capacity Building & Knowledge Exchange:** Trained 10 senior officials through workshops and study tours to Korea, learning from membrane bioreactor (MBR) technologies, AI-driven water quality monitoring, and PPP financing models.

Expected Results and Impact

The initiative is expected to deliver the blueprint for Mongolia's first industrial water recycling concept, which when built, will reduced groundwater extraction, and avoided recurrent property damages from ice-overflow in the area. It will also introduce regulatory guidelines for water reuse and establish a replicable model for other industries and cities. Importantly, it is now embedded in Ulaanbaatar's *City*

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General Development Plan 2040, anchoring water recycling into long-term urban development.

Korean partnerships were instrumental. The Ministry of Environment, leading wastewater treatment operators, and technology providers contributed global best practices in water reuse and smart water management. Their expertise helped shape Mongolia's policy framework and technical guidelines, ensuring scalable, context-appropriate solutions. K Eco provided study tour support. KEITI provided support for the initial technical study report.

Next Steps

Building on this success, Mongolia plans to expand wastewater reuse, enhance financial incentives, and integrate recycling into national infrastructure strategies. A permanent government–private sector platform will coordinate investments and policies, ensuring sustainable water management in the face of climate change.

Quotes

"By transforming wastewater into a valuable resource, Mongolia is charting a new course for urban water management. This first-of-its-kind recycling system when built, demonstrates the power of public–private collaboration and international knowledge exchange in tackling climate and resource pressures."
— James Tay, World Bank Task Team Leader





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3. **Leveraging Lending Operations**

   KGGTF grants strengthen World Bank lending by providing upstream diagnostics and technical insights and stakeholder engagement.

   - In Kenya, KGGTF supported the Water and Sanitation Development Project (WSDP) through analysis on climate-resilient sanitation infrastructure (K119).
   - In Indonesia, the NUWWMP received support through pre-investment planning for sustainable urban sanitation (K164).
   - n Bangladesh, strategic stakeholder consultations contributed to a $500 million lending project (P175166) targeting the Jamuna River Economic Corridor.

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Case Study: Innovative Technology to Support Brahmaputra-Jamuna River Economic Corridor Development (AR 2020)

The Jamuna Economic Corridor Development Project is a flagship initiative under the Bangladesh Delta Plan 2100 (BDP2100), which envisions up to US$6 billion in investments for river training, smart dredging, and navigation systems. Central to Bangladesh's vision of rapid, climate-resilient growth, the corridor aims to boost economic competitiveness while safeguarding ecosystems.

With KGGTF support, the Government of Bangladesh advanced a sustainable inland waterways transport system, leveraging innovative technologies to improve river navigability, strengthen resilience against floods and erosion, and spur inclusive green growth.

The program pioneered a "build with nature" approach, integrating river training, land reclamation, and environmentally sound dredging into corridor development. By embedding resilience and sustainability from the start, the grant ensured that investments in the Jamuna River deliver both economic and environmental dividends.

Key activities

- **Capacity Building:** Strengthened institutional and technical skills for climate-resilient river training and inland water transport infrastructure.
- **River Management Innovation:** Applied advanced modeling, dredging, and land reclamation practices under the *build with nature* framework.
- **Integration with Lending:** Supported preparation of the Jamuna River Economic Corridor Project and informed the India Assam Inland Water Transport Project, embedding green growth principles into lending.
- **Strategic Influence:** Shaped the Bangladesh Country Partnership Framework, ensuring alignment with national priorities under BDP2100.
- **Partnerships:** Worked with **K-water** to transfer expertise in integrated water resource management and navigation systems.

The program was catalytic in mobilizing financing, influencing **US$160 million** in World Bank support for Phase 1 of the Jamuna *Series of Projects (SOP)*. This four-year phase is laying the groundwork for a **15-year, US$3 billion investment program** to transform the Jamuna River corridor into a hub for inland transport, regional trade, and climate-smart economic growth.

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Looking ahead

The Jamuna River Economic Corridor will serve as a model for how climate-smart, nature-based infrastructure can balance growth and resilience in one of the world's most climate-vulnerable countries.

Quotes

"This program will help improve navigation channels, revive inland water transport, and boost regional connectivity and trade." — Mercy Tembon, Country Director for Bangladesh and Bhutan

4. **Promoting Cross-regional Learning**
   KGGTF connects World Bank teams with international experts who bring hands-on implementation experience. Through cross-regional exchanges and joint analysis, countries gain access to practical solutions—such as wastewater reuse, water–energy innovations, and sanitation planning—that can be adapted to local priorities.

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Case Study: Strengthening Capacity in Climate Resilience for Water Infrastructure Development in Uganda (AR 2020)

Uganda is advancing poverty reduction and economic growth while charting a green growth pathway that protects water and environmental resources. Although reforms established Integrated Water Resource Management (IWRM) as the foundation for its water sector, the country continues to face major capacity gaps in addressing climate variability, floods, and droughts. With extreme events becoming more frequent and severe, the government recognized the urgent need for specialized expertise and institutional strengthening to embed climate resilience into infrastructure planning and design.

With support from KGGTF, Uganda launched the Water Resources and Climate Resilience Institute (WRCRI) under the Ministry of Water and Environment. The program equipped the Institute with applied training modules, an institutional framework, and international partnerships to cultivate a cadre of experts capable of mainstreaming climate resilience across energy, urban, transport, and water infrastructure sectors. The effort transformed critical capacity gaps into the foundation of a long-term, sustainable system for professional training and knowledge transfer.

Key Activities

- **Institutional and Training Needs Assessment:** Conducted a sector-wide analysis to identify priority skills and institutional gaps for WRCRI.
- **Curriculum and Module Development:** Designed training modules on climate change mainstreaming, catchment management, and dam safety tailored to Uganda's infrastructure priorities.
- **Onsite & Online Training:** Trained 34 senior leaders in Korea at facilities such as the Sihwa Tidal Power Plant, IWRM Center, and Hapcheon Dam, while also developing online modules for wider reach.
- **Knowledge Exchange & Partnerships:** Partnered with the Korean Water Academy (K-Water) to transfer expertise in resilient water management and curriculum design.
- **Capacity Building for Scaling:** Established a "train-the-trainer" system, enabling graduates to educate future practitioners through WRCRI.

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Results and Impact

The program directly strengthened Uganda's institutional framework for climate resilience and influenced US$305 million in World Bank financing, embedding resilience measures into national water sector reforms. New training modules and the WRCRI framework are expanding Uganda's pool of experts able to address extreme climate events and integrate resilience into future infrastructure.

International Partners, K-Water provided applied expertise and hands-on training opportunities, enabling Ugandan leaders to benchmark advanced Korean approaches in integrated water management, flood control, and renewable energy. These insights are now being institutionalized within Uganda's water governance systems.

Looking forward

WRCRI will serve as Uganda's hub for training and knowledge-sharing, equipping practitioners across multiple sectors with the tools needed to integrate climate resilience. The trainers developed under the program will cascade their knowledge to future cohorts, amplifying the long-term impact on infrastructure development, water governance, and economic competitiveness.

Quotes

"The impact of this activity will only increase with time as more people are trained by the people who benefited from this activity, strengthening the capacity in climate resilience for water infrastructure development in Uganda." — Fook Chuan Eng, Lead Water Supply and Sanitation Specialist

Through this multifaceted engagement, KGGTF has strengthened the global water sector's capacity to manage water more sustainably, reduce climate vulnerability, and scale integrated water solutions through both World Bank operations and country-led programs. The use of Korean innovation and best practices has enabled countries to develop long-term strategies grounded in environmental resilience and institutional strength.

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Notable Innovations and Delivery Methods

KGGTF's water sector portfolio showcases a diverse set of technical innovations and delivery models that enhance climate resilience, improve service delivery, and build institutional capacity. These portfolio reflect a growing focus on digital transformation, circular water systems, and inclusive approaches to sanitation planning.

Technological Innovations

3D Hydrological Modeling for Riverbank Management (Bangladesh – K181)
KGGTF supported the application of **3D hydro-morphological modeling** in the Jamuna River Economic Corridor. This modeling informed the design of climate-resilient riverbank protection and integrated transport-water planning under a planned $500 million lending operation.

Circular Wastewater Reuse for Energy Generation (Mongolia – K165)
In Ulaanbaatar, a feasibility study explored reusing treated wastewater from the central WWTP to supply cooling water for thermal power plants. The project emphasized circular water management and energy-water linkages in a water-stressed, rapidly urbanizing context.

Citywide Inclusive Sanitation (CWIS) Investment Frameworks (Indonesia – K119)
KGGTF supported the Government of Indonesia to develop CWIS frameworks and sanitation information systems in 12 cities, providing the foundation for city-level planning and enabling World Bank investments in inclusive and climate-resilient sanitation.

Smart NRW (Non-Revenue Water) Management and Digital Twins (Vietnam – K116)
In Vietnam, the grant assessed non-revenue water issues and introduced digital twin concepts to monitor real-time water losses and improve efficiency in water utilities. These tools support both operational optimization and long-term investment planning.

Delivery Methods

These grants often combine Knowledge Exchange (KE) and Technical Assistance (TA) to pair innovation with institutional strengthening.

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- **Knowledge Exchange**: Policy dialogues, workshops, and study tours that build government vision and capacity.
- **Technical Assistance**: Applied expertise through analysis, site visits, and framework development to pilot new technologies and inform policy tools.

Together, KE and TA ensure that projects not only introduce cutting-edge technologies but also address institutional capacity gaps, paving the way for scalable, sustainable adoption.

Types of Delivery Approaches

• **Knowledge Exchange Missions**: Utility leaders from Indonesia engaged in site visits to Korea to learn about advanced wastewater reuse and smart sanitation technologies, facilitating peer-to-peer learning and vision alignment.
• **Feasibility Studies and Framework Development**: Technical assessments in Mongolia and Bangladesh informed national infrastructure planning and policy dialogues on water reuse and flood risk management.
• **Water Academies and Operational Manuals**: Regional capacity-building workshops and co-created guides supported public officials and utility operators in adopting digital water solutions based on Korean models.
• **Digital Roadmap Design and Piloting**: In Vietnam, grants facilitated the development of phased transition plans for utilities to adopt digital systems and customer-oriented service models.

Together, these approaches allow KGGTF to deliver context-specific, scalable solutions. By combining upstream diagnostics, technical assistance, and peer learning, the fund ensures innovations are not only technically sound but also institutionally embedded—helping countries accelerate the transition to resilient, climate-smart water systems.

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Case Study: Turning Kenya's Water Utilities Green (Grant K119)

Kenya faces growing water and sanitation challenges driven by pollution, resource depletion, and recurring droughts. Despite significant World Bank financing through the US$300 million Water and Sanitation Development Project (WSDP) and a national sanitation program, inefficiencies in utilities, untreated wastewater, and weak planning continued to undermine service delivery and public health. To address these gaps, the KGGTF grant introduced Green Growth (GG) principles into water and sanitation planning—embedding climate resilience, efficiency, and sustainability into both urban and rural systems.

The program combined technical assistance and knowledge exchange to mainstream Integrated Urban Water Management (IUWM) and Citywide Inclusive Sanitation (CWIS) into Kenya's national water strategies. By aligning policy reforms with integrated planning and operational improvements, the initiative sought to transform water utilities from liabilities into drivers of resilience, efficiency, and competitiveness.

Key Activities

- Developed IUWM plans in two cities, including diagnostics, policy recommendations, and investment strategies.
- Conducted rapid sanitation assessments with CAPEX/OPEX comparisons of onsite vs. sewerage solutions, plus greywater reuse analysis.
- Embedded CWIS principles into the Government of Kenya's national sanitation strategies.
- Convened national conferences on IUWM and CWIS, alongside brown bag learning sessions and a study tour on green growth practices.
- Provided advisory services to shape assessments, work programs, and TORs for GG-related activities under WSDP.

Outcome

The grant improved efficiency by advancing non-revenue water reduction, energy efficiency programs, and ICT-enabled reforms to strengthen utility operations. It enhanced resilience through holistic planning for drought and flood response, ecological landscaping, and risk-sensitive urban design. It boosted competitiveness by

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reframing water bodies as urban assets, introducing revitalization strategies that restored riparian habitats, reduced flood risks, and improved urban livability.

Collectively, these outcomes laid the groundwork for greener, more reliable utility services in Kenya.

Partnerships were central to success. K-water and the Korea Institute for Advancement of Technology (KIAT) worked alongside Kenya's Ministry of Water and Irrigation and Ministry of Health, ensuring that international best practices—particularly Korea's experience in utility reform and water-sensitive urban development—were adapted to Kenya's local context.

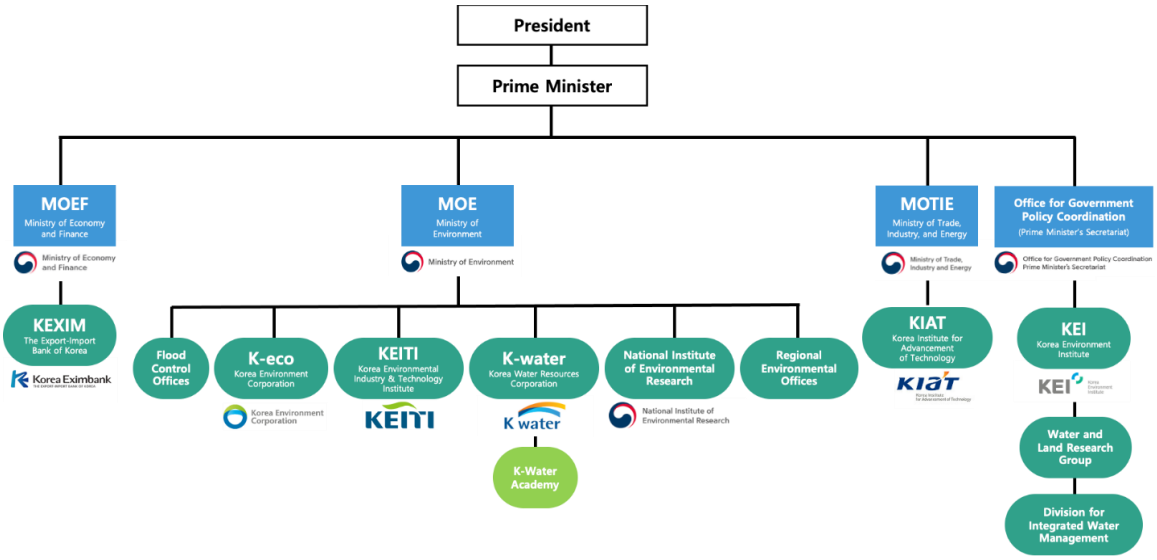
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Collaboration with Knowledge Partners (K-Partners)

Key Institutions and Roles

KGGTF's water-sector grants are strengthened through collaboration with Korea's leading institutions in water innovation, utility management, and environmental policy. These organizations bring cutting-edge expertise and practical experience, helping translate global knowledge into country-specific solutions.

- **MOE (Ministry of Environment)**: Leads Korea's environmental governance and promotes carbon neutrality and nature-based solutions through integrated water policy, regional cooperation, and environmental capacity-building
- **K-Water & K-Water Academy:** Core partners for capacity building, digital solutions, and utility operations
- **KEITI (Korea Environmental Industry & Technology Institute)**: Supports innovation in wastewater reuse, urban water management, and nature-based infrastructure, and collaborates on circular water initiatives.
- **K-Eco (Korea Environment Corporation)**: Provides technical input on urban flood risk, water quality management, and ecosystem-based resilience planning.
- **NRERC (New and Renewable Energy Resource Center)**: Advances industrial green innovation by developing wastewater-to-energy systems and clean water-energy nexus technologies in partnership with MOTIE and research institutes.
- **KHNP (Korea Hydro & Nuclear Power)**: Leads Korea's renewable and nuclear energy operations and supports integrated infrastructure export, including water-energy partnerships in emerging markets.



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Case Study: Innovative technology to support Brahmaputra-Jamuna River Economic Corridor Development (K164)

Bangladesh's Jamuna Economic Corridor Development Project is a priority initiative under the Bangladesh Delta Plan 2100 (BDP2100), which envisions up to $6 billion in investments for river training, navigation, and smart dredging. The Jamuna River, one of South Asia's most dynamic waterways, is both an economic lifeline and a source of major flood and erosion risks. Unmanaged, it threatens livelihoods, infrastructure, and cross-border trade. To reconcile Bangladesh's urgent need for rapid growth and poverty reduction with environmental protection, the KGGTF supported a grant to integrate innovative technologies and green growth principles into corridor development.

Key Activities

- Capacity building for sustainable river training using the "building-with-nature" approach and planning for riverine Green Economic Zones.
- Preparation of Foundational Aids to Navigation, including preliminary research and Terms of Reference (ToR).
- Establishment of a Bilateral Navigation Facilitation Committee, supported by innovative ICT.
- Research and ToR on dynamic performance-based dredging and land reclamation activities.
- Development of 3-D hydro-morphological modeling and in-situ demonstrations of innovative river training activities.
- Training and knowledge-sharing to embed new technologies and practices within national institutions.

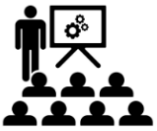
The grant improved efficiency by institutionalizing green growth practices in river management and influencing investment decision-making. It enhanced resilience by equipping institutions and the private sector to adopt cutting-edge technologies for flood protection and erosion control. It boosted competitiveness by generating feasibility studies, piloting innovative projects, and fostering new partnerships around green economic zones and smart dredging. Together, these activities helped position Bangladesh to unlock transformative, climate-smart investments under BDP2100.

The initiative aligned closely with the World Bank–Bangladesh Country Partnership Framework (CPF) and engaged national institutions in capacity building. By embedding international expertise in navigation, dredging, and river training, the

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grant laid the foundation for large-scale lending operations and future regional cooperation.





Seven delegations from Bangladesh and Angola participated in a knowledge exchange in Korea,



resulting in lessons learned on water resource management, drought risk management, dam safety, and river management.

Conclusion

KGGTF's contributions to the water sector have been instrumental in advancing climate-resilient infrastructure, inclusive service delivery, and digital innovation. By advancing integrated approaches to sanitation, governance, and water resource management, the trust fund has strengthened the foundations for long-term water security and sustainability.

Looking ahead, KGGTF will deepen its focus on:

- Expanding the use of digital water technologies and smart utility systems
- Promoting inclusive sanitation through citywide planning and service equity
- Enhancing water–energy nexus solutions and circular resource management
- Strengthening institutional capacity through collaboration with Korean partners

Through these priorities, KGGTF aims to support the development of water systems that are not only efficient and adaptive but also aligned with global climate and development goals—enabling countries to build resilient, inclusive, and future-ready water infrastructure.

If you are interested in applying for KGGTF grant funding or connecting with Korean expertise for your program, please contact the KGGTF team. We are here to help co-design impactful solutions that deliver results on the ground.

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Annex 1. Total Grant List

Approval Year	K#	Grant Name	Country	Amount Approved by Donor	K-partner	TF No.	Linked P-Code
2025	donor approval pending	Central Asia Water Supply and Sanitation (WSS) Capacity Development Program for Scaling Up Access, Resilience and Innovation	Kyrgyz Republic, Uzbekistan and Tajikistan	$1,200,000	Korea Water Resources Corporation (K-water)	TF0D0940	P500620
2025	245	Strengthening integrated WRM and modernizing water services for green growth in the DR	Dominican Republic	$450,000		TF0D1037	P177823
2025	244	India-Bangladesh-South Africa - KGGTF - AI – Ready Intelligent Water Utilities	India, Bangladesh, South Africa	$700,000		TF0D1161	P181147
2025	243	From Source to Tap: Transforming Water Security in Kathmandu Valley	Nepal	$650,000		TF0D0999	P176589
2025	241	Fostering Green Growth in Eswatini through Water Related Nature Based Solutions	Eswatini	$450,000		TF0D0808	P166697
2024	228	Scaling Digital Water: Phase II Advancing the Digital Journey with K-Water and KEITI	Global	$550,000	KEXIM, KHNP, KOEN	TF0C7909	P509807
2024	227	Smart Non-revenue water management and resilience - Uzbekistan	Uzbekistan	$500,000	K-Water	TF0C7398	P162263
2024	226	Support to the Ulaanbaatar Flood Protection and Sewer Rehabilitation Project	Mongolia	$500,000		TF0C7043	P508032
2023	215	Strengthening the Capacity of Kenya County Governments and Water Services Providers to Design and Implement Green and Climate Resilient Water Supply Systems	Kenya	$500,000	KOICA	TF0C3999	P179012
2023	214	Angola Human Resource Development and Capacity Building for Climate Resilience and Water Security	Angola	$600,000	NRERC	TF0C4606	P177004
2023	213	Green, Resilient and Inclusive Water Supply and Sanitation Services in the DRC	Congo, Democratic Republic of	$520,000	K-Water Academy; KEITI; KOICA; Embassy of Korea	TF0C3657	P178389
2022	197	Resilient Investments for Green, Resilient and Inclusive Water	Ethiopia	$400,000	KPX	TF0C0293	P177763
2022	196	Towards Effective Water Governance for Integrated River Basin Level Planning and Management in Nepal	Nepal	$600,000	Konkuk University, KERI, Korea Smart Grid, KSGI, K-MEG	TF0C0451	P176456
2021	181	Supporting Lake Wide Inclusive Sanitation for Improving Water Quality in Lake Victoria Basin	Uganda, Tanzania	$650,000	NRERC	TF0B7423	P172848
2021	180	Capacity Building and Water Academy-Uzbekistan	Uzbekistan	$285,000	K-Water, experienced Korean firms in the field of EE and RE	TF0B7459	P162263

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2020	166	Mongolia: Utilization of treated water from over melting ice in the “ger” district area for the heating system in eastern part of Ulaanbaatar city	Mongolia	$489,000	KEITI	TF0B5315	P176394
2020	165	Support to Development of National Program for Citywide Inclusive Sanitation	Indonesia	$400,000	KEITI, K-Eco, K-Water, Korea Ministry of Environment (MOE), SMG, KEXIM, Hanam City	TF0B5021, TF0B9391	P158310, P179411
2020	164	Innovative technology to support Brahmaputra-Jamuna River Economic Corridor Development	Bangladesh	$400,000	KRC, KEITI, SMG - Seoul Waterworks Authority (Arisu)	TF0B4870	P172499
2019	137	Building Drought Resilience in the South of Angola through the use of geospatial information and nature-based infrastructure	Angola	$500,000	The Ministry of Environment Korean Water Resources Policy Bureau	TF0B2311	P170387
2017	120	Strengthening capacity in climate resilience for water infrastructure development in Uganda	Uganda	$600,000	K-Water, K-Water Academy	TF0A6622	P163782
2017	119	Turning Kenya's Water Utilities Green	Kenya	$400,000	KIAT	TF0A6381	P156634
2016	96	Water Initiatives to Support Green Growth and Sustainable Cities in Colombia	Colombia	$300,000	CGG, GTC	TF0A3588	P156239
2015	82	Greening Cities through a Water-Centric Urban Planning Approach	Colombia	$200,000		TF0A1543	P156239
2015	81	Central Asia Water Resources Management (CA-WARM) Phase-I Project	Regional	$370,000	K-Water Academy, Ewha University	TF0A2058	P152346
2013	23	Quantifying Tradeoffs of the Water- Energy Nexus	Morocco	$300,000	KEI,KHRIS,K-Water	TF016563	P144930

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Annex 2. Grant Summary

K245. Strengthening integrated WRM and modernizing water services for green growth in the DR

Grant Title	Strengthening integrated WRM and modernizing water services for green growth in the DR
Region	Latin America and Caribbean
Countries	Dominican Republic
Sector	Water
Program Year	Year 13
Amount	$450,000.00
Status	Active / Approved in 2025
Program Goal	The objectives of the Operation are to improve the planning capacity and operational and commercial efficiency of selected water supply and sanitation institutions and increase access to safely managed water and sanitation services in selected water stressed areas. The Grant promotes integrated, cross-sectoral water resources management that reduces climate vulnerabilities while improving the productivity and sustainability of critical economic sectors such as agriculture, strengthening the enabling environment for climate-resilience water infrastructure and contributing to greener growth pathways. It aligns with national strategies including the National Development Strategy 2030, Multiannual National Public Sector Plan 2025-2028, Water Pact 2021-2036, Nationally Determined Contribution 2020, and the National Plan for Gender Equity and Equality, while supporting the World Bank Green, Resilient, and Inclusive Development (GRID) framework and Country Partnership Framework 2022-2026, enhancing resilience to climate change by strengthening institutional capacity to allocate and manage scarce water resources efficiently and expand access to safely managed water supply and sanitation services.
Key Result	Advancing integrated water resources management strengthens legal and institutional frameworks, formalizes water-use rights, enhances governance, planning and hydromet systems, and optimizes dam operations with nature-based solutions, supported by technical recommendations and knowledge exchange workshops, improving legal frameworks and building capacity of WRM professionals. Enhancing institutional and technical capacity combines efficient irrigation, climate-adaptive agriculture, digital tools and hydrological modeling, and modernization of key water infrastructure, supported by digital and AI tools roadmaps and capacity-building trainings, promoting AI and climate-resilient irrigation practices and strengthening technical capacity for

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	sustainable agricultural planning. Modernizing governance, operational efficiency, and financial sustainability of WSS utilities improves performance, efficiency, digital upgrades, gender inclusion, and regulatory diagnostics, supported by policy and regulatory review, capacity-building training, and analytical work on private sector engagement, strengthening systems, management capacity, operational and commercial efficiency, and enabling greater private sector participation.

K244. India-Bangladesh-South Africa - KGGTF - AI – Ready Intelligent Water Utilities

Grant Title	India-Bangladesh-South Africa - KGGTF - AI – Ready Intelligent Water Utilities
Region	South Asia Region
Countries	India, Bangladesh, South Africa
Sector	Water
Program Year	Year 13 / Approved in 2025
Amount	$700,000.00
Status	Active
Program Goal	The objective of this activity is to catalyze private sector solutions to support a reduction in the water demand-supply gap through measures to address both the quality and volume of water availability. AI-enabled water management systems enhance climate resilience in water-stressed cities by accelerating green growth, improving system efficiency, and attracting private-sector investment. The development objective is to strengthen the institutional readiness of utilities in Bengaluru, Dhaka, and Johannesburg for AI-enabled water reuse and management. The grant identifies high-impact AI use cases, assesses readiness across data systems, governance, and skills, and provides practical roadmaps that guide future investments, while enabling knowledge transfer from global leaders, de-risking adoption, strengthening climate resilience, and positioning utilities to leverage on-going or upcoming government/World Bank Group investments.
Key Result	AI readiness opportunity assessment identifies priority areas for AI-enabled water reuse in Bengaluru, Dhaka, and Johannesburg, delivering an assessment of institutional, digital, and operational readiness for AI enabled wastewater reuse and water quality management, informing World Bank lending programs and shaping targeted AI interventions and future investment decisions. Utility-specific AI-readiness roadmaps define priority interventions for strengthening infrastructure, institutional frameworks, and capacity, supporting policy dialogue, informing World Bank operations, and aligning AI-enabled pathways with national and state policies. Institutional capacity building trains utility staff in AI analytics and

	automation to improve data-driven water recycling and resource management, and establishes AI-4-Reuse taskforces to drive public-private collaboration and coordinate AI initiatives through regional and global knowledge exchanges, strengthening knowledge, skills, institutional capacity, and public–private collaboration for AI enabled wastewater reuse and water quality solutions.

K243. From Source to Tap: Transforming Water Security in Kathmandu Valley

Grant Title	From Source to Tap: Transforming Water Security in Kathmandu Valley
Region	South Asia Region
Countries	Nepal
Sector	Water
Program Year	Year 13 / Approved in 2025
Amount	$650,000.00
Status	Active
Program Goal	The Project Development Objective (PDO) is to strengthen the sector's institutional capacity for service delivery under federalism and to provide safely managed water supply services in participating municipalities. The grant generates evidence to inform government policies and investment decisions for expanding access to climate-resilient bulk water supply services in Kathmandu Valley - Nepal's largest urban agglomeration of over 3 million people and comprising 18 municipalities. It addresses the lack of sufficient bulk water capacity as a key constraint to safely managed water supply, while supporting institutional capacity for investment planning and preparation through technical assistance with the Ministry of Water Supply (MoWS) and Kathmandu Valley Water Supply Management Board (KVWSMB). It aligns with Nepal's transition to greener, inclusive, and more resilient urban development under the Country Partnership Framework (FY25-31).
Key Result	Upstream studies evaluate current and future water availability and demand in Kathmandu Valley, considering population growth, system inefficiencies, water quality, and management practices, including demand and supply assessment, demand forecasting, demand characterization, demand-side management, and an investment prioritization framework, resulting in a consolidated Water Security Planning document. Climate-stress testing assesses risks to the bulk water system under climatic and demographic change using a Decision Tree Framework, producing a technical report on system resilience, a stress-testing model simulating climate variability, population growth, and land use change, and a summary of findings. Assessment of private sector involvement identifies technical, financial, and regulatory barriers and

	recommends strategies to mobilize private sector engagement and financing, including PPP options, financial models, and a PPP policy note.

Knnn. Central Asia Water Supply and Sanitation (WSS) Capacity Development Program for Scaling Up Access, Resilience and Innovation

Grant Title	**Central Asia Water Supply and Sanitation (WSS) Capacity Development Program for Scaling Up Access, Resilience and Innovation**
Region	Europe and Central Asia (ECA)
Countries	Kyrgyz Republic, Uzbekistan, and Tajikistan
Sector	Water
Program Year	Year 13
Amount	$1,200,000.00
Status	Approved in 2025 (K# donor approval pending)
Program Goal	The objective of the Program is to enhance service delivery capacity, focusing on advancing climate resilience and innovation in the Water Supply and Sanitation (WSS) sector across Central Asian countries. The Grant addresses persistent challenges such as skill shortages, financial and operational inefficiencies, and infrastructure vulnerabilities exacerbated by climate change and growing regional water demand. By harnessing digital solutions and state-of-the-art technologies from Korean expertise, the Program seeks to incentivize WSS delivery efficiency, facilitate policy and skills development, and drive the transition to a green economy to achieve universal access to safely managed water and sanitation in the region.
Key Result	Establishing the Central Asia Water Utilities Learning Platform (CAWULP) promotes regional knowledge sharing and skills development for water sector professionals through expert-led training on operational efficiency, water management, and green technologies. Fostering youth engagement and innovation is achieved through regional hackathons and immersive internships at Korean water utilities, generating sustainable and scalable WSS solutions to be piloted in World Bank-financed projects. Furthermore, facilitating private sector partnerships advances the adoption of climate-smart technologies and digital tools via technical pilots and exchange visits, ultimately improving the operational performance of water utilities and enhancing climate resilience across the WSS sector.

K241. Fostering Green Growth in Eswatini through Water Related Nature Based Solutions

Grant Title	Fostering Green Growth in Eswatini through Water Related Nature Based Solutions
Region	AFR

Countries	Eswatini
Sector	Water
Program Year	Year 13
Amount	$450,000
Status	Active
Program Goal	The project aims to increase access to improved water supply and sanitation services in targeted areas of Eswatini. The objective of identifying targeted investments in nature-based solutions (NbS) that will promote water security and leverage private sector finance for fostering green growth in Eswatini will be achieved through the grant by supporting an options analysis study for NbS, evaluating opportunities for leveraging private sector finance into the NbS identified through the study, and assessing the potential for these solutions to contribute to climate adaptation and risk mitigation within the financial sector.
Key Result	Situational analysis of NbS for water security in Eswatini would generate the NbS situational analysis report that presents a menu of potential NbS for options analysis study, trainings or workshops and a blog or summary report, leading to an increased awareness and understanding of NbS for water security in Eswatini and strengthened collaboration amongst national and international stakeholders. Options analysis study on NbS for water security in targeted areas of Eswatini would yield a NbS Options Analysis Study, trainings or workshops and a blog or summary report, and a technical exchange or study tour and short summary report. It contributes to activities identified and included in new World Bank lending for a water security project in targeted areas of Eswatini, increased awareness and understanding of NbS for water security in Eswatini, and strengthened collaboration amongst national and international stakeholders. Finally, exploring a financial risk-based approach for private sector investment opportunities for NbS would commit to a NbS Financial Risk Reduction and private sector opportunities report. This also contributes to a regulatory guidance and increased awareness among financial institutions on climate financial risks, including NbS adaptation and a blueprint produced on private sector financing for NbS for water resilience.

K228. Scaling Digital Water: Phase II Advancing the Digital Journey with K-Water and KEITI

Grant Title	Scaling Digital Water: Phase II Advancing the Digital Journey with K-Water and KEITI
Region	Global
Countries	LAC: Peru, Colombia SAR: India, Sri Lanka

	EAP: Cambodia, Solomon Islands AFR: Kenya
Sector	Water
Program Year	Year 12
Amount	$550,000
Status	Active
Program Goal	The project supports the digital transformation in the water and sanitation sector, through (i) awareness raising on the benefits and impacts of digitalization, (ii) the prioritization of impactful activities along the digital journey, and (iii) capacity building for World Bank clients and staff.
Key Result	This program advanced digital water management through the Digital Water Client Engagement Program by partnering with K-Water Academy, K-Water, and Spain's MINECO. Developed digitalization strategies, provided advisory services, and delivered capacity-building materials. Hosted knowledge-sharing events and produced case studies, achieving 10–20% efficiency gains, cost reductions, and increased technology adoption across utilities.

K227. Smart Non-revenue Water Management and Resilience - Uzbekistan

Grant Title	Smart Non-revenue Water Management and Resilience - Uzbekistan
Region	Europe and Central Asia
Countries	Uzbekistan
Sector	Water
Program Year	Year 12
Amount	$500,000
Status	Active/ Approved in 2024
Program Goal	The program aims to strengthen Uzbekistan's water sector by introducing smart non-revenue water (NRW) management systems and building resilience against climate change. It focuses on reducing water losses, improving efficiency, and integrating digital monitoring tools to ensure sustainable and reliable urban water supply. By embedding smart technologies and resilience measures, the program supports inclusive growth, climate adaptation, and long-term sustainability of water services.
Key Result	Introduced digital tools and precision monitoring systems to detect and reduce NRW across urban water utilities. Designed investment strategies and policy recommendations to integrate smart NRW management into national water sector reforms. Strengthened the technical capacity of utilities and government counterparts through training and knowledge exchange on resilience-based water management. Developed scalable models for resilient urban water systems, aligning with broader World

	Bank operations and paving the way for sustainable, climate-smart infrastructure development in Uzbekistan.

K226. Support to the Ulaanbaatar Flood Protection and Sewer Rehabilitation Project

Grant Title	Support to the Ulaanbaatar Flood Protection and Sewer Rehabilitation Project
Region	East Asia and Pacific
Countries	Mongolia
Sector	Water
Program Year	Year 12
Amount	$500,000
Status	Active/ Approved in 2024
Program Goal	The project aims to reduce flood risks and improve sanitation services of selected areas in Ulaanbaatar City. Contributions of this grant towards the project development objective is to provide technical assistance and support to the Municipality of Ulaanbaatar (MUB) in order for them to develop required preparation documents.
Key Result	This program supported flood risk reduction planning in Ulaanbaatar by conducting technical due diligence, hydraulic modeling, and cost-benefit analysis in collaboration with K-Water and K-Eco. Delivered feasibility and safeguards documents aligned with World Bank standards and facilitated stakeholder workshops. The work informs a potential $100M lending operation and strengthens MUB's capacity to coordinate donor-supported flood protection and sewer rehabilitation projects.

K215. Strengthening the Capacity of Kenya County Governments and Water Services Providers to Design and Implement Green and Climate Resilient Water Supply Systems

Grant Title	Strengthening the Capacity of Kenya County Governments and Water Services Providers to Design and Implement Green and Climate Resilient Water Supply Systems
Region	Africa
Countries	Kenya
Sector	Water
Program Year	Year 11 Approval Year: 2023
Amount	$500,000
Status	Active
Program Goal	The objective of this grant is to support capacity building and institutional strengthening of County Governments and their Water Services Providers (WSPs) to facilitate high quality planning, design, and development of

	climate resilient rural water sector investments that support green growth, and to ensure that these investments are sustainably operated and maintained.
Key Result	The program strengthened climate-resilient rural water management in Kenya by developing County-wide Water and Sanitation Strategies and Performance Improvement Action Plans. It trained 95 managers and engineers on rural WASH design standards and facilitated a knowledge exchange tour to Korea for 30 county and WSP staff, enhancing capacity to deliver green, inclusive, and sustainable water services.

K214. Angola Human Resource Development and Capacity Building for Climate Resilience and Water Security

Grant Title	Angola Human Resource Development and Capacity Building for Climate Resilience and Water Security
Region	Africa
Countries	Angola
Sector	Water
Program Year	11
Amount	$600,000
Status	Active/ Approved in 2022
Program Goal	The program aims to improve water supply services and strengthen water resources management for climate resilience in selected areas of Angola. The grant enhances RECLIMA outcomes and supports building in-country human resources capacity to plan, implement, and manage climate-resilient infrastructure, increasing water security as requested by GoA and supported by CMU.
Key Result	This program advanced climate-resilient water management in Angola by designing a human resources program, training officials, developing resilience plans for the Cunene River Basin, and co-designing urban drainage and sanitation solutions with green and grey infrastructure, fostering inclusive urban growth and laying groundwork for World Bank-financed resilience projects

K213. Green, Resilient and Inclusive Water Supply and Sanitation Services in the DRC

Grant Title	Green, Resilient and Inclusive Water Supply and Sanitation Services in the DRC
Region	Africa
Countries	Congo, Democratic Republic of
Sector	Water

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Program Year	10
Amount	$520,000
Status	Active/ Approved in 2023
Program Goal	The program aims to operationalize Green, Resilient, and Inclusive Development (GRID) approaches in the Democratic Republic of Congo's water supply and sanitation sector. It focuses on reducing persistent service gaps by enhancing REGIDESO's digital and operational capacity, promoting non-revenue water reduction and energy efficiency, and advancing fecal sludge and wastewater management solutions. By embedding GRID principles into service delivery and sector reforms, the program seeks to improve efficiency, resilience, and inclusiveness, while supporting large-scale WSS investments and long-term sustainability.
Key Result	Strengthened REGIDESO's customer service and accountability through digital transformation and NRW management strategies. Promoted energy-efficient and green operations by introducing renewable energy and circular economy solutions for fecal sludge treatment and reuse. Enhanced policy and regulatory frameworks for sanitation and integrated water resources management, ensuring alignment with GRID principles. Built capacity of utilities, local governments, and private sector actors for resilient service delivery. Fostered partnerships with Korean institutions and development partners, enabling knowledge exchange and scalable models for sustainable WSS services in DRC.

K197. Resilient Investments for Green, Resilient and Inclusive Water

Grant Title	Resilient Investments for Green, Resilient and Inclusive Water
Region	Africa
Countries	Ethiopia
Sector	Water
Program Year	Year 10
Amount	$400,000
Status	Active/ Approved in 2022
Program Goal	The program promotes green growth by prioritizing investments to decarbonize water supply and sanitation (WSS) services, enhance sustainability, and incorporate climate resilience. Supporting Ethiopia's One WASH– Consolidate WASH Account (CWA) Project (P167794), it strengthens institutional capacity and service delivery, targeting urban and rural communities to address water demand, pollution risks, and climate vulnerabilities in selected hotspots.
Key Result	The program advanced resilient water management in Ethiopia by developing data-driven rural hotspot assessments and a water system

	model for Addis Ababa to prioritize green, inclusive investments. It integrated climate risk assessments into planning and established a roadmap to strengthen rural systems and urban water security, supporting sustainable growth and long-term resilience.

K196. Towards Effective Water Governance for Integrated River Basin Level Planning and Management in Nepal

Grant Title	Towards Effective Water Governance for Integrated River Basin Level Planning and Management in Nepal
Region	South Asia Region
Countries	Nepal
Sector	Water
Program Year	Year 10
Amount	$600,000
Status	Active/ Approved in 2022
Program Goal	The program supports Nepal's Green, Resilient, and Inclusive Development (GRID) agenda by improving water sector governance at the river basin level. With water underpinning productive sectors, livelihoods, and public services, proper management addresses seasonal variability, infrastructure gaps, and health burdens to enable a greener, more resilient, and inclusive economy.
Key Result	The program advanced integrated water resources management in Nepal by assessing institutional and legislative gaps, establishing a stakeholder participation framework, and identifying priority areas for basin-level planning. It strengthened partnerships with Korean institutions and supported capacity-building through knowledge exchange visits, promoting inclusive governance and sustainable water management.

K181. Supporting Lake Wide Inclusive Sanitation for Improving Water Quality in Lake Victoria Basin

Grant Title	Supporting Lake Wide Inclusive Sanitation for Improving Water Quality in Lake Victoria Basin
Region	Africa
Countries	Tanzania; Uganda
Sector	Water
Program Year	Year 9
Amount	$650,000
Status	Closed / Approved in 2021

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Program Goal	This program develops a regional strategy for inclusive sanitation services in cities and towns releasing untreated waste into the lake, creates low-skill green jobs with private sector collaboration, and integrates green and gray technologies to promote resource recovery, reuse, and a greener post-COVID recovery.
Key Result	The program advanced a basin-wide inclusive sanitation strategy for the Lake Victoria Basin by supporting feasibility studies on green-gray wastewater solutions and disruptive technologies. It strengthened institutional capacity and investment pathways to expand safe sanitation access across five countries, while promoting private sector engagement and job creation for sustainable water quality management.

K180. Capacity Building and Water Academy-Uzbekistan

Grant Title	Capacity Building and Water Academy-Uzbekistan
Region	Europe and Central Asia
Countries	Uzbekistan
Sector	Water
Program Year	Year 9
Amount	$285,000
Status	Active/ Approved in 2021
Program Goal	The objectives of the Water Services and Institutional Support Project for Uzbekistan are to: (i) improve coverage, quality and efficiency of water supply and sanitation services in selected project areas; and (ii) strengthen the planning and regulatory capacity of the water supply and sewerage sector.
Key Result	The program supported the establishment of the Uzbekistan Water Academy by developing a five-year training strategy, Uzbek-language modules, and a certification system for drinking water and sewage facility operators. It strengthened institutional capacity through national trainers and enhanced international networking to advance sustainable water sector development.

K166. Mongolia: Utilization of Treated Water from Overmelting Ice in the "Ger" District Area for the Heating System in Eastern Part of Ulaanbaatar City

Grant Title	Mongolia: Utilization of Treated Water from Overmelting Ice in the "Ger" District Area for the Heating System in Eastern Part of Ulaanbaatar City
Region	East Asia & Pacific
Countries	Mongolia
Sector	Water

Program Year	Year 8
Amount	$489,000
Status	Active/ Approved in 2020
Program Goal	The program supports sustainable growth in Mongolia by treating melting ice overflow and untreated wastewater from the National Mental Health Center to augment water supply for Amgalan Thermal Power Plant expansion. These measures aim to save 24% of freshwater used in power generation and improve living standards for 343,000 individuals.
Key Result	The program advanced green growth in Ulaanbaatar by developing feasibility studies and an action plan for wastewater treatment and reuse, improving water security for 343,000 people and reducing freshwater demand. It strengthened policy frameworks, promoted circular economy strategies, and engaged private sector partners to scale national water-energy nexus solutions.

K165. Support to Development of National Program for Citywide Inclusive Sanitation

Grant Title	Support to Development of National Program for Citywide Inclusive Sanitation
Region	East Asia & Pacific
Countries	Indonesia
Sector	Water
Program Year	Year 8
Amount	$400,000
Status	Active/ Approved in 2020
Program Goal	The program supports Indonesia's preparation of a national urban sanitation program and the National Urban Wastewater Management Project (NUWWMP) to increase access to safely managed sanitation through a CWIS approach. Grant activities strengthen national and local government capacity, support enabling environments, and establish model sanitation cities to improve wastewater management in selected urban areas.
Key Result	The program advanced urban wastewater management in Indonesia by piloting Citywide Inclusive Sanitation (CWIS) strategies, creating an investment framework for 30 priority cities, and upgrading the Sanitation Management Information System (SMIS). It informed the National Sanitation Bill and supported preparation of the $200M NUWWMP lending operation, strengthening institutional capacity, climate resilience, and sustainable urban sanitation planning.

K164. Innovative technology to support Brahmaputra-Jamura River Economic Corridor Development

Grant Title	Innovative technology to support Brahmaputra-Jamura River Economic Corridor Development
Region	South Asia
Countries	Bangladesh
Sector	Water
Program Year	Year 8
Amount	$400,000
Status	Closed/ Approved in 2020
Program Goal	The program aims to enhance Jamuna River's resilience to flooding and erosion, improve navigability, and strengthen institutional capacity. Initial priorities include capacity building for regional inland water transportation, with training on 'build with nature,' and preparation for dredging, land reclamation, modeling, and demonstration of river training activities.
Key Result	The program supported green growth integration in Bangladesh's Jamuna River Economic Corridor by aligning river management and inland water transport planning. It delivered capacity-building, pilot studies on nature-based dredging, and innovative navigation systems through Korean partnerships, informing a $160M lending operation and long-term plans for the $3B corridor development.

K137. Building Drought Resilience in the South of Angola through the use of geospatial information and nature-based infrastructure

Grant Title	Building Drought Resilience in the South of Angola through the use of geospatial information and nature-based infrastructure
Region	Africa
Countries	Angola
Sector	Water
Program Year	7
Amount	$500,000
Status	Active/ Approved in 2019
Program Goal	The program aims to strengthen drought resilience and water security in southern Angola by combining geospatial information with nature-based infrastructure. It seeks to move from reactive emergency responses to proactive preparedness through mapping, groundwater recharge, and community-based management. Ultimately, it intends to reduce the social, economic, and environmental costs of drought, enhance local adaptive capacity, and build resilient socio-ecological systems.
Key Result	Established a comprehensive water point inventory, functional mapping system, and geospatial database to guide investments. Assessed and

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	prioritized sites for nature-based interventions such as aquifer recharge and sand dams. Strengthened community water committees, regional repair systems, and private sector capacity for well drilling and maintenance. Enhanced food and water security through better livestock and agricultural resource management. Fostered academic partnerships, training programs, and knowledge dissemination, creating a replicable model of climate resilience grounded in nature-based solutions.

K120. Strengthening capacity in climate resilience for water infrastructure development in Uganda

Grant Title	Strengthening capacity in climate resilience for water infrastructure development in Uganda
Region	Africa
Countries	Uganda
Sector	Water
Program Year	5
Amount	$600,000
Status	Active/ Approved in 2017
Program Goal	The program aims to build Uganda's institutional and technical capacity for climate-resilient water infrastructure development. By establishing a Water Resources and Climate Resilience Institute (WRCRI) and developing applied training modules, it seeks to equip government officials with advanced analytical tools and skills to integrate climate resilience into infrastructure planning across water, energy, transport, and urban sectors. Ultimately, the program intends to strengthen Uganda's preparedness for climate variability, improve infrastructure efficiency, and foster long-term green growth.
Key Result	Conducted institutional and training needs assessments to design the WRCRI framework. Developed and piloted applied training modules in collaboration with K-Water, IHE-Delft, and MIT, tailored to Uganda's climate and water sector needs. Trained government technocrats in modern analytical tools for planning and design, embedding resilience principles into infrastructure development. Designed a sustainability plan to ensure WRCRI's long-term role as a national hub for climate resilience. Strengthened cross-sectoral partnerships and knowledge networks, enhancing Uganda's competitiveness in building climate-smart infrastructure and supporting green growth strategies.

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K119. Turning Kenya's Water Utilities Green

Grant Title	Turning Kenya's Water Utilities Green
Region	Africa
Countries	Kenya
Sector	Water
Program Year	5
Amount	$400,000
Status	Closed/ Approved in 2017
Program Goal	The program facilitated knowledge flow among institutions and stakeholders to foster green growth practices in national and county policies. KGGTF financed activities supporting WSDP and the National Sanitation Initiative, influencing smart water investment. Advisory services and knowledge activities strengthened flagship projects and promoted information sharing between Kenya and Korea.
Key Result	The program supported Kenya's water and sanitation sector by assessing utility performance, developing inclusive countywide sanitation strategies, and piloting the City-Wide Inclusive Sanitation (CWIS) approach. It strengthened six water utilities through turnaround frameworks, non-revenue water workshops, and technical training, while facilitating Korean knowledge exchange to inform policy reforms and future World Bank sanitation investments.

K96 Water Initiatives to Support Green Growth and Sustainable Cities in Colombia

Grant Title	Water Initiatives to Support Green Growth and Sustainable Cities in Colombia
Region	Latin America & Caribbean
Countries	Colombia
Sector	Water
Program Year	4
Amount	$300,000
Status	Active/ Approved in 2016
Program Goal	The program aimed to advance Colombia's green growth agenda by supporting the design of policies and regulatory frameworks that integrate environmental sustainability into economic development. Through macroeconomic analysis, sector assessments, and cross-sectoral policy recommendations, it sought to identify priority investments, green jobs, and innovation pathways. Ultimately, it intended to guide Colombia toward a

	low-carbon, resource-efficient, and socially inclusive growth model aligned with the SDGs.
Key Result	Delivered macroeconomic studies and baseline assessments to quantify Colombia's green growth potential. Identified and prioritized cross-sectoral policies and investment needs, while proposing economic instruments and adjustments to regulatory frameworks. Generated strategic indicators and targets for 2030 and developed policy proposals validated with ministries and stakeholders. Supported consensus building across government, private sector, and civil society, culminating in a draft 2030 Green Growth Policy that articulated economic, social, and environmental priorities in alignment with international best practices.

K82 Greening Cities through a Water-Centric Urban Planning Approach

Grant Title	Greening Cities through a Water-Centric Urban Planning Approach
Region	Latin America & Caribbean
Countries	Colombia
Sector	Water
Program Year	3
Amount	$200,000
Status	Active/ Approved in 2015
Program Goal	The program aimed to integrate water into urban planning in Panama City and Montevideo by applying Integrated Urban Water Management (IUWM) principles. It sought to link water supply, sanitation, stormwater, and waste management with broader urban development and river basin management. The ultimate goal was to provide sustainable water and sanitation services, improve flood control, and build national strategies for water-centric urban growth that maximize economic, social, and environmental benefits across LAC countries.
Key Result	Conducted IUWM tools assessment and established multi-stakeholder task teams in Panama and Uruguay. Developed city-level IUWM plans with actionable recommendations for scaling up in Montevideo and Panama City. Designed national IUWM roadmaps to guide policy and investment priorities. Produced practical guidelines on IUWM and shared them with key agencies to strengthen institutional capacity. Facilitated regional knowledge exchanges and disseminated case studies, leading to increased adoption of IUWM principles in local planning instruments and investment strategies, and building national capacity to support integrated urban water policies.

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K81 Central Asia Water Resources Management (CA-WARM) Phase-I Project

Grant Title	Central Asia Water Resources Management (CA-WARM) Phase-I Project
Region	Europe and Central Asia
Countries	Regional (Central Asia)
Sector	Water
Program Year	3
Amount	$370,000
Status	Active/ Approved in 2015
Program Goal	The program aimed to enhance green growth in Central Asia by improving management of the Amu Darya and Syr Darya rivers, which are critical for hydropower, irrigation, and regional economies. It sought to address severe challenges such as widespread salinization of agricultural land and the drying of the Aral Sea by strengthening regional water resource information, institutions, and investments. Ultimately, the program intended to provide reliable data, foster regional cooperation, and identify priority investments to secure water, energy, and food security for nearly 70 million people.
Key Result	Reviewed international best practices for water data exchange to inform regional programs. Established regional working groups and a Steering Committee that agreed on a joint work program for improved water resources management. Convened a knowledge forum with participation from six Central Asian countries and international experts to promote dialogue and shared learning. Laid the groundwork for a potential $85 million CAWaRM project to modernize water information systems and strengthen analytical capacity. Built momentum for improved access to reliable water data, stronger disaster management coordination, and institutional pathways for integrated regional water governance.

K23 Quantifying Tradeoffs of the Water- Energy Nexus

Grant Title	Quantifying Tradeoffs of the Water- Energy Nexus
Region	Middle East & North Africa
Countries	Morocco
Sector	Water
Program Year	1
Amount	$300,000
Status	Active/ Approved in 2013
Program Goal	The program aimed to strengthen Morocco's green growth leadership by addressing the water-energy nexus and its implications for sustainable development. It sought to optimize interdependencies between water, energy, and food systems through integrated planning, modeling, and policy guidance. By leveraging global knowledge from China, Korea, and South

	Africa, the program intended to equip planners, policymakers, and private sector actors with technical tools and strategies to balance competing demands and incorporate nexus thinking into Morocco's green growth agenda.
Key Result	Conducted a rapid assessment of Morocco's water-energy tradeoffs and produced a detailed work plan for integrated planning. Developed and refined energy-water nexus tools, supported by case studies tailored to Morocco's context. Produced strategy documents and policy recommendations disseminated across multiple audiences, from technical experts to high-level decision-makers. Organized South-South knowledge exchanges, workshops, and training sessions to share lessons and strengthen regional collaboration. Showcased findings and the water-energy nexus toolkit at the World Water Forum 2015 in Korea, contributing to the global Green Growth Knowledge Platform and advancing Morocco's role as a regional leader in sustainable resource management.

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