

**LEVELING UP**

**GREEN GROWTH IMPACTS**

**KOREA GREEN GROWTH TRUST FUND**

**ANNUAL REPORT 2023**





## **2023 Korea Green Growth Trust Fund (KGTF)**

Contact: Hyoung Gun Wang: [kggtf@worldbank.org](mailto:kggtf@worldbank.org)

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1818 H Street NW, Washington, DC 20433, USA;  
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All amounts listed in this report are in U.S. dollars unless otherwise indicated.

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[www.wbkgggtf.org](http://www.wbkgggtf.org)

# LEVELING UP GREEN GROWTH IMPACTS

## KOREA GREEN GROWTH TRUST FUND ANNUAL REPORT 2023



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## ABBREVIATIONS

ADB	Asian Development Bank	GDP	Gross Domestic Product
AFR	Africa	GIS	Geographic Information System
AI	Artificial Intelligence	GIZ	German Society for International Cooperation
AMP	Agricultural Management Practice	GKEDC	Global Knowledge Exchange and Development Center
APR	Annual Progress Report	GG	Green Growth
ASA	Advisory Services and Analytics	GGKP	Green Growth Knowledge Platform
BESS	Battery Energy Storage Systems	GHG	Greenhouse Gas
CCB	Climate Co-Benefits	GP	Global Practice
CCDR	Country Climate and Development Report	GRID	Green, Resilient, and Inclusive Development
CPF	Country Partnership Framework	IBRD	International Bank for Reconstruction and Development
CPS	Country Partnership Strategy	ICSD	Interstate Commission on Sustainable Development
CRGE	Climate-Resilient Green Economy	ICT	Information and Communication Technology
CSA	Climate Smart Agriculture	IDA	International Development Association
DAT	Disruptive Agricultural Technology	IDB	Inter-American Development Bank
DT	Digital Technology	IEC	International Electrotechnical Commission
EAP	East Asia and Pacific	IFC	International Finance Corporation
ECA	Europe and Central Asia	ILIGS-GER	Integration of Land information and Geospatial Systems for Green Economic Recovery
EDCF	Economic Development Co-operation Fund	IMF	International Monetary Fund
EIP	Eco-Industrial Park	ISO	International Organization for Standardization
EMS	Energy Management System	ITS	Intelligent Transport Systems
EPIS	Korea Agency of Education, Promotion and Information Service in Food, Agriculture, Forestry and Fisheries	ITU-T	International Telecommunication Union Telecommunication Standardization Sector
EPI	Environmental Performance Index	JICA	Japan International Cooperation Agency
ESP	Energy Storage Partnership	KE	Knowledge Exchange
ESS	Energy Storage System	KGGTF	Korea Green Growth Trust Fund
EU	European Union	KGID	Korea Green Innovation Days
EV	Electric Vehicles	KPI	Key Performance Indicator
EWS	Early Warning System	KPOK	Korea Program for Operational Knowledge
FACT	Foundation of Agriculture Technology Commercialization and Transfer		
FAO	Food and Agriculture Organization		
GCF	Green Climate Fund		

KWPF	Korea-World Bank Partnership Facility	PPIAF	Public-Private Infrastructure Advisory Facility
LAC	Latin America and the Caribbean	PPP	Public-Private Partnership
LCR	Latin America and the Caribbean	PNG	National Geospatial Plan
LUTP	Leaders in Urban Transport Planning	R&D	Research and Development
LVBC	Lake Victoria Basin Commission	RECP	Resource Efficient and Cleaner Production
MaaS	Mobility-as-a-Service	RISE	Resilience, Inclusion, Sustainability, and Efficiency
MAFRA	Ministry of Agriculture, Food and Rural Affairs of Korea	RoK	Republic of Korea
MDB	Multilateral Development Bank	SAR	South Asia Region
M&E	Monitoring and Evaluation	SD	Sustainable Development
MIF	Micronesian Island Forum	SCD	Systematic Country Diagnostic
MNA	Middle East and North Africa	SDI	Spatial Data Infrastructure
MOEF	Ministry of Economy and Finance of Korea	SME	Small and Medium Enterprise
MOIC	Minister of International Cooperation	SSATP	Africa Transport Policy Program
MWP	Municipal Water Plans	STEP	Smart Technology and Energy Efficient Production
NARIGP	National Agricultural and Rural Inclusive Growth Project	TF	Trust Fund
NBS	Nature-Based Solutions	TOPIS	Transport Operation and Information Service Seoul
NDC	National Data Center	TTL	Task Team Leader
NDCs	Nationally Determined Contributions	UN	United Nations
NGO	Non-Governmental Organization	UNESCO	United Nations Educational Scientific and Cultural Organization
NMT	Non-Motorized Transport	URL	Urban Resilience and Land Global Practice of the World Bank
NSDI	National Spatial Data Infrastructure	UVI	Urban Vulnerability Index
ODA	Official Development Assistance	WASH	Water Sanitation and Hygiene
ODTS	On-Demand Transit Service	WBG	World Bank Group
OECD	Organization for Economic Cooperation and Development	WFP	World Food Programme
OLC	Open Learning Campus	WRCRI	Water Resources and Climate Resilience Institute
OPEX	Operational Expenditure	WRI	World Resources Institute
PASA	Programmatic Advisory Services and Analytics	WSSC	Water Supply and Sanitation
PIC	Pacific Island Countries	WTR	Water Global Practice of the World Bank
PPA	Pacific Power Association		
PPA	Power Purchase Agreement		

# KOREA GREEN GROWTH TRUST FUND (KGTF)





**Since its inception, grant-funded programs have been linked to over \$24 billion in World Bank lending and co-financing. This translates to \$202 invested in green growth programs for every \$1 grant fund approval.**



\$120 Million

**\$24 Billion**

KGTF  
Grant Support  
until 2023

World Bank  
Lending

# About KGGTF

**The Korea Green Growth Trust Fund (KGGTF) remains a vital partnership between the World Bank and the Republic of Korea, marking its eleventh year of operation in 2023.**

The KGGTF is a partnership between the World Bank and the Republic of Korea. It was established in 2011 to support the World Bank and its client countries operationalize inclusive green growth initiatives, strategies, and investments. The KGGTF's programs, including analytical and advisory services, are fully integrated within the World Bank's country financing and policy dialogue across seven sectors. By supporting and leveraging World Bank operations the KGGTF accelerates green growth and sustainable development and supports countries towards achieving their Sustainable Development Goals. The KGGTF is committed to help deliver the World Bank's new vision of creating a world free of poverty on a livable planet.

As the year 2023 concluded, many programs supported by the KGGTF proved successful and were able to access additional finance to support the operationalization of green growth.

Since its inception, grant-funded programs have been linked to **\$24 billion** in World Bank lending and co-financing, **translating to an impressive investment effect of \$202 for every \$1 of grant funds approved**. This year, the KGGTF endorsed **21 new grant activities totaling \$11.9 million across 16 countries**, bringing the Trust Fund's grant portfolio to approximately **\$120 million invested across 217 program activities**. These strides reflect the KGGTF's unwavering commitment to green growth.

# Korea: A Remarkable Transformation

The Republic of Korea's journey from being a recipient of World Bank aid to becoming a major donor and a leading figure in global initiatives is a remarkable tale of economic transformation. Within mere decades, Korea has evolved from a nation with limited resources and low income, reliant on World Bank aid, to a formidable force in economics and technology on the world stage, now contributing significantly as a World Bank donor. This journey stands as a beacon of hope and a source of inspiration for nations worldwide.

In more recent times, Korea has emerged as a frontrunner in the realm of green growth, pioneering in areas such as cutting-edge technologies, progressive governance models, and green finance. This transformation has garnered international attention, especially from developing countries eager to emulate Korea's success. A pivotal moment in Korea's journey was the integration of green growth into its national development strategy in 2008, marking a significant stride towards sustainable, low-carbon development. Korea is intensifying its global climate commitments with a green growth strategy that emphasizes job creation and sustainable economic opportunities. This approach is crucial in Korea's efficient transition to a green economy.

Over the years, Korea has emerged as a leader in integrating innovative policies and governance frameworks, skillfully balancing sector-wide development with environmental stewardship and economic growth. This approach, which harmonizes ecological preservation with economic advancement, sets a precedent for nations aspiring to achieve sustainable progress. The Korea Green Growth Trust Fund (KGGTF) is in line with the World Bank's renewed vision and mission: *to end extreme poverty and boost shared prosperity on a livable planet*. By continuing to provide World Bank staff and global leaders with Korean insights, strategies, and financial support, the KGGTF reinforces our collective goal of shaping a world where poverty is eradicated and where economic growth supports all people while preserving the resources of our planet.

**“Leveraging the wealth of knowledge and expertise Korea has amassed, the nation is uniquely positioned to significantly contribute to the advancement of developing countries.”**

**Ajay Banga, President of the World Bank Group  
Seoul National University on January 24, 2024**



### Trust Funds at the World Bank

Trust funds regularly co-finance World Bank projects, provide increased flexibility, scale, and reach, and fill knowledge and financing gaps. They help pilot projects get off the ground to test cutting-edge approaches for scale-up, and they provide grant financing when client countries cannot borrow, and private investors are wary of investing.

## KGTF Outcome Pillars



These approaches collectively constitute the foundation of the KGGTF's effective and impactful operation.

## Letter from the World Bank

As we reflect on the remarkable journey of the Korea Green Growth Trust Fund (KGGTF) and its collaboration with the World Bank and client countries, it is with immense gratitude and a sense of renewed commitment that we present the 2023 Annual Report. This year marks a significant milestone in our enduring partnership, one that has not only stood the test of time but is continuing to evolve and grow.

First and foremost, we extend our thanks to the Republic of Korea for the generous replenishment of an additional \$80 million for the next four years (2024-2027), which represents a 64% increase from the current contribution for 2020-2023. This substantial contribution is a testament to Korea's commitment to green growth and sustainable development. It ensures the continuity and expansion of our initiatives, allowing us to reach new frontiers in our mission to foster a greener, more resilient world.

This year was also marked by the successful Korea Green Innovation Days (KGID) held in Cairo, Egypt in October 2023. This conference served as a global platform for sharing knowledge, experiences, and strategies in the realm of green growth. It was a chance for global green growth experts, policymakers, and practitioners to learn from each other and find ways to deepen partnerships and collaborations. The insights and collaborations born from KGID will undoubtedly continue to blossom in the coming years.

Together with the World Bank, the KGGTF has been focused on the integration of the Green, Resilient, Inclusive Development (GRID) approach. This paradigm has become a cornerstone in our strategy, ensuring that economic growth, environmental sustainability, and social inclusion are interwoven in our global initiatives.

Our partnership with the Republic of Korea has been pivotal in this journey. Korea's remarkable economic success story, underpinned by its green growth policies, continues to inspire and guide developing countries in their quest for sustainable development. The innovative policies and technical expertise provided by Korea have been invaluable in shaping our approach and strategies.

KGGTF's Phase Four Program represents an evolution of our efforts, as we aim to amplify our impact and reach. We are committed to deepening our engagement with governments, Korean organizations, the younger people, and key climate change players working toward a more inclusive and sustainable future.

In closing, we extend our deepest gratitude to the Republic of Korea for being an innovative and steadfast partner. Your support has been instrumental in confronting global challenges and finding long-term, sustainable solutions. Together, we look forward to making even greater strides in the years to come.

**Richard Damania**

Chief Economist

Sustainable Development Practice Group

The World Bank





## Letter from the Donor

The recent replenishment from the Ministry of Economy and Finance (MOEF) of an additional \$80 million to the KGGTF stands as a reaffirmation of our commitment and belief in green growth strategies and the value in global green growth partnerships with organizations such as the World Bank.

As we continue our steadfast collaboration with the World Bank, we reaffirm our dedication to the Korea Green Growth Trust Fund (KGGTF). The trust fund has grown into a highly esteemed and impactful program, and we look forward to seeing it continue its growth and impact.

A particularly memorable moment this past year was the Korea Green Innovation Days (KGID) event held in Cairo, Egypt. This provided a chance to see the implementation of green growth solutions, with participants from client countries, World Bank project teams, Korean institutions, and passionate young practitioners. This global gathering was a testament to the far-reaching influence and success of KGGTF's programs over the past decade. The array of programs, from transportation partnerships, advanced energy solutions to agricultural enhancements, illustrates the fund's vital role in fostering sustainable development and environmental stewardship across the globe.

As we look ahead, the importance of global partnerships and cooperation in green growth becomes ever more critical. Amidst various global challenges, some may view climate resilience and green growth as less immediate concerns. Yet, addressing climate change offers not only a solution to an environmental challenge but also a pathway to sustainable economic prosperity. We value the World Bank's commitment to a development approach that is green, resilient, and inclusive.

As we embark on the Phase Four (2024-2027) journey, we envision the KGGTF continuing its pivotal role as a connector between the World Bank and Korea. We see a few areas on which we would like to the Trust Fund to focus: Firstly, on maximizing green growth investments through co-financing and green ODA. Secondly, fostering partnerships and engaging the private sector to meet these grand challenges. Thirdly, involving the youth, who are the future leaders and will bear the brunt of climate change effects, in green growth solutions from the early stages of their careers.

Despite uncertainties and challenges in the global economic landscape, our optimism for a sustainable future remains unwavering. Our experience with Korea's own economic transformation and green transition strengthens our resolve to support the international community in achieving sustainable development goals. We are proud to share our journey and insights in this annual report, offering a blueprint for resource-efficient, green, and resilient development for all.

We look forward to continuing our partnership.

**Eui S. Chang**

Director of Development Finance Division  
Ministry of Economy and Finance (MOEF)  
Republic of Korea



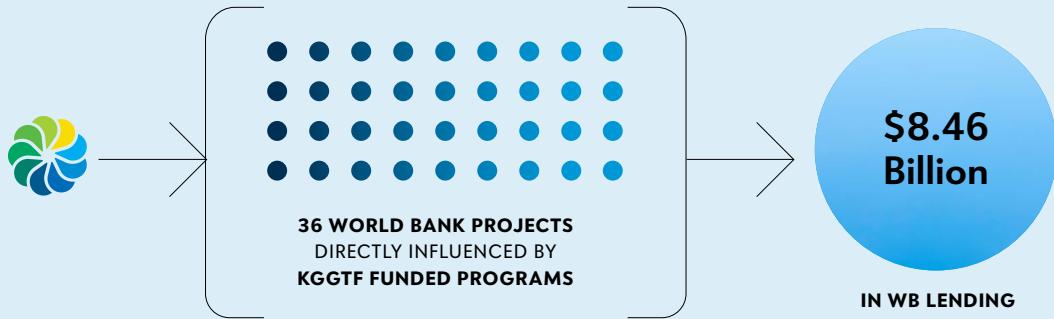
## A YEAR OF IMPACT

02



## 2023 RESULTS BY THE NUMBERS

**36** World Bank Projects directly influenced by KGGTF funded programs  
Resulting in **\$8.46 billion** in WB lending linked to KGGTF programs



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**24** Knowledge Exchange Programs took place



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**67** Green growth policies or laws are being implemented as a result of KGGTF programs.





**55** countries participated in **Knowledge Exchange** programs

Angola  
Bangladesh  
Brazil  
Cambodia  
China  
Colombia  
East African Community  
Egypt  
Ethiopia  
Ghana  
Haiti  
India  
Indonesia  
Kazakhstan  
Kenya  
Lao PDR  
Mali  
Mexico  
Mongolia  
Mozambique  
Namibia  
Nepal  
Philippines  
Sierra Leone  
Tanzania  
Thailand  
Uganda  
Uzbekistan  
Vietnam  
Zimbabwe  
and others



**28** Countries are adopting **green growth policies** because of a KGGTF program

Angola  
Bangladesh  
Ecuador  
Ethiopia  
India  
Indonesia  
Kazakhstan  
Kenya  
Kyrgyz Republic  
Lao PDR  
Liberia  
Mongolia  
Nepal  
Paraguay  
Rwanda  
Uganda  
Uzbekistan  
Vietnam  
and others



## Developing, Scaling, and Spreading Good Ideas

**4,209** Country leaders participated in capacity building programs



**692** Country leaders and WBG staff took part in Knowledge Exchange programs

## Building Partnerships

**179** Partnerships were established between KGGTF grant teams and external organizations



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**48** Knowledge resources were created to customize green growth technologies and solutions to client countries



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**132** K-Partners participated in knowledge exchange programs



# 2023 GRANT APPROVALS

In 2023, the KGGTF approved 21 grants, impacting 25 countries worldwide. The strategy behind these grants is to leverage our initial investment and expertise in green growth as a catalyst for greater change. Our objective is to lay a solid foundation with these grants, setting the stage for larger, more impactful investments in green growth initiatives from a variety of sources. This approach is aimed at ensuring that our initial contributions are not just one-time aids but act as multipliers, fostering more significant, enduring advancements in the realm of green growth.



## Uttarakhand Climate-Resilient, Low Carbon Agriculture Initiative

Agriculture | South Asia | India  
\$600,000



## Policy Support to Establish a Digital Agricultural Information System for Climate-Resilient Food Security in Honduras

Agriculture | Latin America and Caribbean | Honduras  
\$600,000

## Smart Farming for Agricultural Development in Jamaica and Dominica

Agriculture | Latin America and Caribbean |  
Dominica, Jamaica  
\$600,000



## Egypt Climate Smart Agriculture Innovation and Tech-based Entrepreneurship (EgCITE)

Agriculture | Middle East and North Africa | Egypt  
\$600,000





### Developing E-mobility and Energy Efficiency programs in the Pacific Island Countries

Energy | East Asia and Pacific | Palau, Tonga  
\$500,000



### Supporting Offshore Wind Development in Vietnam

Environment | East Asia and Pacific | Vietnam  
\$500,000



### Catalyzing Biodiversity and Protected Lands Remediation, Restoration and Expansion around Retired Mining Sites in South Africa

Environment | Africa | South Africa  
\$600,000

### Transformative Mobility and Battery Storage Program: Demonstration Projects for RE integration

Energy | South Asia | India  
\$500,000



### Exchange of Circular Economy Experiences with Korea

Energy | Global  
\$600,000



### East Asia Air Quality Management Program: A Regional Approach to Improving Air Quality and Promoting Green Growth

Environment | East Asia and Pacific | Indonesia, Lao People's Democratic Republic, Philippines  
\$600,000



# 2023 GRANT APPROVALS



## Mongolia Resilient Green Landscapes

Environment | East Asia and Pacific | Mongolia  
\$600,000



## Smart Travel Demand Management Policies for Developing Green and Sustainable Transportation: Deep Dive in LAC cities

Transport | Latin America and Caribbean | Argentina, Brazil, Colombia, Peru  
\$550,000

## Restoration and Development Program for Jordan's Zarqa River Basin

Environment | Middle East and North Africa | Jordan  
\$600,000



## Development of ITS-led Tanzania Railway System Strengthening Climate Resilient Infrastructure Based on GIS

Transport | Africa | Tanzania  
\$600,000



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

Water | Africa | Democratic Republic of the Congo  
\$520,000





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

Water | Africa | Angola  
\$600,000



### Transforming Mongolia's Developmental Trajectory towards Green Resilient Inclusive Development

Urban | East Asia and Pacific | Mongolia  
\$600,000



### From Recovery to Sustainable Growth: Building Resilient Cities through Enhanced Urban Housing and Spatial Planning Strategies

Urban | Middle East and North Africa | Yemen  
\$500,000

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

Water | Africa | Kenya  
\$500,000



### Developing a Digital Ecosystem Assessment Tool for Smart and Inclusive Cities

Urban | Global  
\$500,000



### Green Energy Solutions for Digital Connectivity and Services in Underserved Communities: Mozambique and Madagascar

Digital Development | Africa | Mozambique, Madagascar  
\$600,000



# 2023 YEAR IN REVIEW

**February 8-9**  
**The KGGTF program grant “Africa-Korea Agtech Innovation Challenge” was launched**  
 The event identified innovators of disruptive agricultural technologies from Korea, Kenya and Uganda and created bridges between innovators and incorporated DATs into their businesses. Finalists showcased their solutions to key government ministers from Kenya, Uganda and South Korea.

**Feb 16-17**  
 KGGTF co-hosted the International Workshop on Land Use Planning and Land Administration: Integration and Decentralization

**March 16**  
 “Trees, Cities, and Green Future” webinar connected policymakers, practitioners, and experts in urban forestry across Central Asia and the globe for in-depth discussion on land restoration and climate resilience.

**March 21-26**  
 Kigali, Rwanda: Leaders in Urban Transport Planning | Multi-day Training Workshop

**April 10-16**  
 Spring Meetings in Washington D.C.

**April 25**  
 BBL on Climate-Related Risks for Macroeconomic Financial Stability

**May 7-12**  
**Indonesia Knowledge Exchange**  
 Urban Wastewater Management



**May 11**  
 “Detox Development: Repurposing Environmentally Harmful Subsidies” report launched in Seoul, Korea

**May 25-27**  
 KGGTF team attends the World Climate Industry EXPO in Busan, Korea

**May 30-June 2**  
**Burundi, Kenya, Rwanda, Tanzania, Uganda Knowledge Exchange**  
 Improving Sanitation and Water Quality in Lake Victoria Basin

**June 5**  
 Ajay Banga begins tenure as President of the World Bank

**June 5-7**  
**Ukraine Knowledge Exchange**  
 Energy Storage and Market Development

**Jun 7-13**  
**Uzbekistan Knowledge Exchange**  
 Capacity Building and Water Academy, Africa

**July 10-14**  
**Ethiopia Knowledge Exchange**  
 Green and Climate Resilient Infrastructure

**July 10-14**  
**Mali Knowledge Exchange**  
 Greening Urban Development in Bamako

**September 11**  
 Richard Damania, Chief Economist of the Sustainable Development Practice Group visited the Republic of Korea



where he highlighted the role that KGGTF plays in the World Bank’s Green, Resilient, and Inclusive Development (GRID) Initiatives and the overall sustainable development agenda. His presentation, hosted by the Ministry of Economy and Finance of the Republic of Korea, and at the Global Green Growth Institute (GGGI), generated extensive inquiries and discussions, and showcased KGGTF’s contributions on the global stage.

**October 3-6**  
**Bangladesh Knowledge Exchange**  
 Enhancing Pollution Management through Green Growth Policies

**October 9-15****2023 Annual Meetings of the World Bank Group and the International Monetary Fund (IMF), Marrakech, Morocco**

The Annual Meetings brought together central bankers, ministers of finance and development, private sector executives, civil society, media, and academics to discuss issues of global concern, including the world economic outlook, global financial stability, poverty eradication, inclusive economic growth and job creation, climate change, and others.

**October 13**

**Replenishment** from the Korean Ministry of Economy and Finance (MOEF) that increased its contribution to the Korea Green Growth Trust Fund (KGTF) to \$80 million for the period from 2024 to 2027.

**October 17-19****Korea Green Innovation Days (KGID) 2023**

*Leveling Up Green Growth Impacts*, was held at the Nile Ritz-Carlton, Cairo on October 17-19, 2023, in Cairo, Egypt. KGID 2023 brought together over 350 green growth experts from the World Bank to discuss green growth solutions and build transformative partnerships. [Find out more.](#)

**October 19**

A KGTF-facilitated collaboration between Korea National University of Transportation (KNUT) and Egypt's Ministry of Transportation signed a Memorandum of Understanding (MOU) to explore establishing a dedicated transport higher education institution in Egypt.

**October 23-27****Vietnam Knowledge Exchange**  
Plastic Waste Management Solutions**November 15-17**

Housing and Regional Development event held in Cartagena, Colombia

**November 22****MOU for Green Growth Knowledge Partnership at the OECD's Green Growth and Sustainable Development (GGSD) Forum 2023 in Paris**

Richard Damania, the World Bank's Chief Economist for Sustainable Development, signed an MOU in Paris to continue the [Green Growth Knowledge Partnership \(GGKP\)](#), a global network established between key intergovernmental organizations to inform and support the policy, business, and finance communities with knowledge, guidance, data, and tools in the transition to an inclusive green economy. [Find out more.](#)

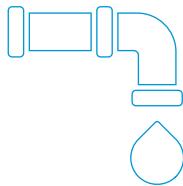
**November 30 – December 13**

KGTF program EgCITE was featured at COP28 by [Martien Van Nieuwkoop](#), Agriculture and Food Global Director, World Bank, where he was joined by [Her Excellency Dr. Rania Al-Mashat](#), Minister of International Cooperation (MOIC) of the Arab Republic of Egypt. [Learn more.](#)

**December 18****Launch of the KGTF Youth Internship Program**

Youth Internship Program welcomed 15 interns who were selected in collaboration with Korea's Ministry of Economy and Finance and three prestigious universities - Seoul National University, Yeungnam University, and Yonsei University. [Find out more.](#)

# 2023 KNOWLEDGE EXCHANGES



## Urban Wastewater Management

**Date:** May 07 – 12, 2023

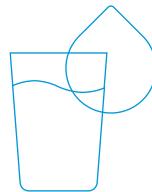
**Grant:** Support to Development of National Program for Citywide Inclusive Sanitation, Indonesia

**TTL\*:** Irma Magdalena Setiono, Senior Water Supply and Sanitation Specialist

Clients from the Indonesian government undertook a study tour to South Korea from May 7th to 12th. This tour was conducted in close collaboration with the Korea Environmental Industry & Technology Institute (KEITI). During their visit, the Indonesian delegates interacted with South Korean experts in urban wastewater management. The primary goal of this interaction was to gain insights and knowledge to aid Indonesia in implementing the Citywide Inclusive Sanitation (CWIS) approach.

**K-Partners:** Korea Environmental Industry & Technology Institute (KEITI), Korea Ministry of Environment (MOE), K-Water, Korea Environmental Corporation (KECO), Seoul Metropolitan Government (SMG), Korea Export-Import Bank (KEXIM), Hanam City

Read more [here](#)



## Improving Water Quality

**Date:** May 30 – June 02, 2023

**Grant:** Supporting Lake Wide Inclusive Sanitation for Improving Water Quality in Lake Victoria Basin

**TTL:** Shyam KC, Senior Water Resources Management Specialist

The K-water Academy team hosted the “Knowledge Exchange Visit for Supporting Lake-wide Water Quality Improvement in Lake Victoria Basin” from May 30 to June 2. Nine participants, including three World Bank (WB) organizers and six Lake Victoria Basin Commission (LVBC) experts, attended the event.

This knowledge exchange visit was to facilitate a dialogue on water and sanitation sector trends and challenges. It aimed to enhance understanding among LVBC experts and Korean counterparts and to gather insights for the World Bank’s ongoing technical assistance project, which focuses on developing a basin-wide strategy for improving water quality in the Lake Victoria Basin.

The participants interacted with practitioners in water and sanitation policy, infrastructure, technology, and investments, gaining firsthand experience of green growth.

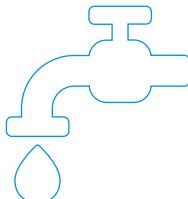
**K-Partners:** K-Water & K-Water Academy, Korea Environmental Corporation (KECO), Seoul Metropolitan Government (SMG) Cheonggyecheon Museum, Green Climate Fund (GCF)

Read more [here](#)



\*Task Team Leader

**Knowledge Exchange** (KE) study trips offer invaluable opportunities for leaders from diverse countries to observe and glean insights from Korea's successful implementation of green growth solutions. These tailored experiences empower participants to refine their visions for their cities and countries, equipping them with policy and technical solutions to achieve their goals. By witnessing Korea's effective deployment of green growth technologies and policies firsthand, leaders can acquire practical knowledge directly applicable to addressing their respective country's needs.



## Water Supply & Sanitation Services

**Date:** June 07 – 13, 2023

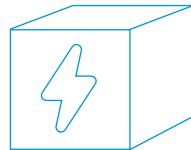
**Grant:** Capacity Building and Water Academy-Uzbekistan

**TTL:** Khairy Al-Jamal, Senior Water Supply and Sanitation Specialist

Ten managerial officials from Uzbekistan took part in a study tour organized by K-Water Academy. During the tour, they explored South Korean best practices in water supply and sanitation (WSSC) services. This experience significantly enhanced their expertise in WSSC-related issues and broadened their understanding of establishing a Water Academy.

**K-Partners:** K-water & K-water Academy, Korea Export-Import Bank (KEXIM), Korea Water and Wastewater Works Association (KWWA)

Read more [here](#)



## Energy Storage and Ancillary Services

**Date:** July 05 – 07, 2023

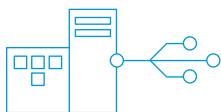
**Grant:** Ukraine energy storage and ancillary services market development support

**TTL:** Silvia Martinez Romero, Lead Energy Specialist

This Knowledge Exchange trip was focused on enhancing the capacity of the Ukrainian energy sector and exploring viable business models for energy storage operations. Furthermore, the objective was to solicit support from South Korea for Ukraine's energy initiatives. The trip also aimed to establish connections with potential equipment suppliers. Representatives from Ukraine's Ministry of Energy, Ukrrenergo, and Ukrhydroenergo interacted with counterparts from various Korean government ministries, utility companies, and industry leaders to explore energy solutions. The team visited several energy-related facilities throughout South Korea.

**K-Partners:** Ministry of Trade, Industry and Energy (MOTIE), Korea Electric Power Corporation (KEPCO), Hyosung, Hyundai Electric, LS Electric, LG Energy Solution





## Digital Tools for Urban Development

**Date:** July 10 – 14, 2023

**Grant:** Greening Urban Development in Bamako, Mali

**TTL:** Megha Mukim, Senior Urban Economist

The primary purpose of this study tour was to gain insights from South Korea's expertise in employing and managing digital tools for urban development specifically tailored for the city of Bamako. The program also covered a range of additional subjects, such as recycling, circular economy practices, solid waste management, disaster prevention and response, flood control, and smart city planning.

**K-Partners:** Seoul Metropolitan Government (SMG), Sudokwon Landfill Site Management Corporation (SLC), Incheon Metropolitan Government



## Green Data Center Infrastructure and Value-Added Data Services

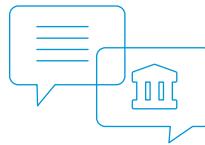
**Date:** July 10 – 14, 2023

**Grant:** Towards Green, Secure, and Climate-Resilient Data Infrastructure in Ethiopia

**TTL:** Timothy John Charles Kelly, Lead Digital Development Specialist

The Digital Ethiopia team, including eight Ethiopian government officials, embarked on a study tour from Addis Ababa to Seoul for the Digital Foundations Ethiopia Project. The goal was to learn from South Korea's experience in developing sustainable, green, secure, and climate-resilient data center infrastructure, which is crucial for Ethiopia's digital transformation. The program also covered the value-added use of data to support innovative SMEs and public services and how to secure the data ecosystem.

**K-Partners:** Ministry of Science and ICT(MSIT), Ministry of Interior and Safety (MOIS), National Information Society Agency (NIA), National Information Resources Services (NIRS), Seoul Metropolitan Government (SMG), Seoul Urban Solutions Agency (SUSA), Korea Data Centre Council (KDCC), Korea Telecom (KT), Naver



## High-Level Korea-Bangladesh Green Growth Policy Dialogue

**Date:** October 03 – 06, 2023

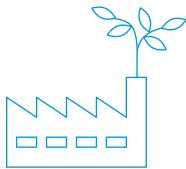
**Grant:** Strategic Green Growth Transitions in Bangladesh

**TTL:** Eun Joo Allison Yi, Senior Environmental Specialist

This study trip focused on integrated pollution management, covering plastics, e-waste, and wastewater, and it aimed to tackle waste management challenges in Bangladesh while supporting its long-term economic growth. The Government of Bangladesh expressed a keen interest in learning from South Korea's experiences and enhancing collaboration to design and implement effective interventions in mitigating environmental challenges and fostering job creation and economic opportunities. The high-level delegates from Bangladesh had the chance to have insightful discussions with Korean leaders in the green growth sector, including the Minister of Environment and the Assistant Mayor of Seoul Metropolitan Government.

**K-Partners:** Korea Environmental Corporation (KECO), Korea Ministry of Environment (MoE), Seoul Metropolitan Government (SMG), Sudokwon Landfill Site Management Corporation (SLC), Korean Environmental Institute (KEI), Korea Environmental Industry & Technology Institute (KEITI), Korea Overseas Infrastructure & Urban Development Corporation (KIND)





## Integrated Pollution Management

**Date:** October 16 – 20, 2023

**Grant:** Enhancing Pollution Management in Bangladesh through Green Growth Policies

**TTL:** Ana Luisa Lima, Senior Environmental Specialist

This study visit provided insight into integrated pollution management, including plastic waste, e-waste, and air pollution, through learning about regulatory reforms, environmental monitoring, IT infrastructure, and innovative green financing and PPP models. The delegation's visit encompassed meetings and field visits with Korean agencies across Incheon, Pangyo, Gyeonggi-do, Seoul, and Sejong, covering policy design, governance, financial mechanisms, private sector engagement, and challenges in circular economy and environmental management. It also provided opportunities to explore ODA and partnership prospects further.

**K-Partners:** Korea Environmental Corporation (KECO), Sudokwon Landfill Site Management Corp (SLC), Korea Industrial Complex Corporation (KICOX), Seoul Metropolitan Government (SMG), Korea Resource Circulation Agency (KORA), Korean Environmental Institute (KEI), Gyeonggi Housing & Urban Development Corporation (GH), Korea Environmental Industry & Technology Institute (KEITI), Land and Housing Corporation (LH), Sejong City Corporation



## Innovations in Plastic Management and the Path to a Circular Economy

**Date:** October 23 – 27, 2023

**Grant:** Supporting Identification of Riverine and Coastal Plastics Waste Management Solutions in Mekong countries: Technology, Innovation, Impacts

**TTL:** Ashraf El-Arini, Senior Environmental Specialist

This knowledge exchange was organized to share current issues and challenges associated with solid waste management, with a focus on plastics circularity, and to build an understanding of Korean policies, technologies, and good practices that contribute to promoting innovations in plastics circularity. Key topics covered were solid waste management, identifying and fostering innovation in plastic waste management, and designing a framework for the circular economy.

The participants engaged with national and municipal Korean officials, the World Bank, and Korean experts to gain insights and generate ideas to facilitate and accelerate the adoption of appropriate innovations and technologies to reduce plastic usage and boost plastic circularity.

**K-Partners:** Ministry of Environment (MOE), Korea Environmental Industry & Technology Institute (KEITI), Global Knowledge Exchange & Development Center (GKEDC), Seoul Metropolitan Government (SMG), Seoul Institute (SI), Seongdong-gu Office, Dobong-gu Office, Korea Environment Corporation (KECO), Sudokwon Landfill Site Management Corporation (SLC), Korea Resource Circulation Service Agency (KORA), Hanam City, SuperBin



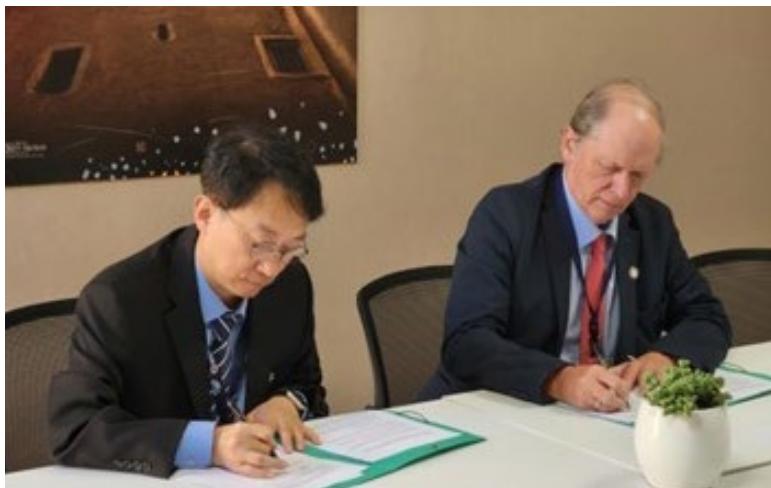
# REPLENISHMENT

**October 13, 2023**  
**Marrakesh, Morocco**

Jae Hwan Kim, the Director General of the Development Finance Bureau at the Ministry of Economy and Finance (MOEF) of South Korea and Juergen Voegele, the Vice President for Sustainable Development at the World Bank, signed a new Administrative Agreement during the 2023 World Bank Group-International Monetary Fund Annual Meetings marking a significant milestone for the Korea Green Growth Trust Fund (KGGTF).

MOEF reaffirms its unwavering dedication to advancing the principles of green growth through robust support for the KGGTF with this new Administrative Agreement that **elevates its financial contribution to the KGGTF to \$80 million** for the 2024 to 2027 four-year period. This substantial increase underscores MOEF's commitment to driving sustainable development and fostering green growth initiatives worldwide.

With MOEF's enhanced support, Phase Four of the KGGTF embarks on a new chapter of innovation, collaboration, and impact, advancing green growth ideas, forging strategic partnerships, and driving collaborative efforts with the World Bank and member clients across the globe.



**WORLD BANK GROUP**

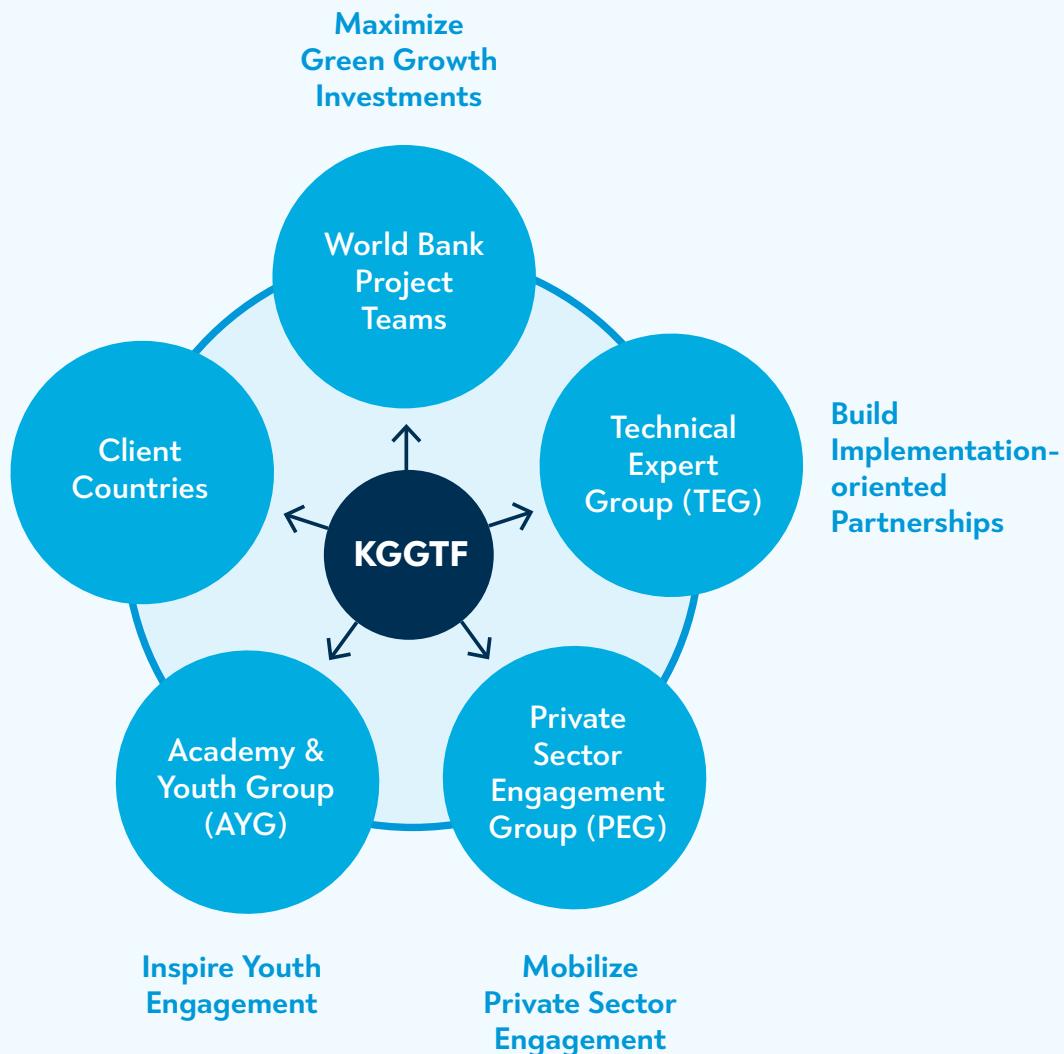


**Ministry of Economy  
and Finance**

## KGGTF PHASE IV PRIORITIES



KOREA  
GREEN GROWTH  
TRUST FUND





## **CONVENING GLOBAL LEADERS TO ACCELERATE ACTION ON CLIMATE CHANGE**

**Korea Green Innovation Days (KGID) 2023**

**“Leveling Up Green Growth Impacts,”  
was held at the Nile Ritz-Carlton  
on October 17-19, 2023, in Cairo, Egypt.**

KGID 2023 brought together over 350 green growth experts from Korea, Egypt, and around the world, including 100 officials from various Egyptian Ministries, 68 technical specialists from the World Bank and their clients from 12 developing nations, 37 leaders from Korea's public and private sectors, and 19 development partners. This diverse assembly fostered valuable learning, the exchange of innovative policies, the sharing of state-of-the-art technologies, and transformative green growth strategies and methodologies. KGID 2023 also facilitated 40 bilateral meetings, covering a wide range of policy and technical topics.

### What is KGID?

KGID is the flagship knowledge sharing event on Green Growth, funded by the Korea Green Growth Trust Fund (KGGTF). It promotes the exchange of innovative approaches for sustainable development, attracting global experts in green growth, climate change, and sustainability. KGID serves as a valuable platform for learning about cutting-edge solutions and fostering partnerships.



## Why Egypt?

The KGGTF has been investing in grant programs throughout the Middle East and North Africa (MENA) region for over a decade. Egypt was chosen as the venue for the KGID event due to its demonstrated commitment to leading regional efforts in climate change action. This commitment is notably exemplified by Egypt's role in hosting the 27th United Nations Conference of the Parties (COP27), which underscores its dedication to advancing climate change initiatives.





**“What sets the KGGTF apart from other endeavors at the Bank is that this is the only World Bank trust fund dedicated fully to green growth. I want to extend heartfelt gratitude to the Republic of Korea for its unwavering partnership, contributing to the quest for long-term solutions to global challenges ... and to thank the Korea Ministry of Economy and Finance, in particular, for its tremendous support in the MENA region over the last decade.”**

*Stephane Guimbert, Country Director for Egypt, Yemen and Djibouti, Middle East and North Africa, World Bank*

**“The Korea government firmly believes that climate change presents not just a challenge but also an opportunity for achieving economic growth and shared prosperity ... Korea has contributed more than \$136 million to KGGTF so far and I’m honored to announce that Korea will increase the commitment from \$50 million to \$80 million dollars for the next four years ... around 200 Korean organizations including government, academia and the private sector—have played a pivotal role in facilitating knowledge transfer and providing expert feedback on World Bank operations supported by KGGTF grants.”**

*Sang Kyoo Lee, Director, Ministry of Economy and Finance, Republic of Korea*



**Her Excellency Dr. Rania Al-Mashat, Minister of International Cooperation, Arab Republic of Egypt** highlighted the World Bank's collaboration with Egypt on several pillars of its Nexus of Water, Food and Energy Program that aims to accelerate Egypt's national climate agenda.

**Her Excellency Dr. Yasmine Fouad, Minister of Environment, Arab Republic of Egypt**, detailed various situations in which the World Bank and the Korea Green Growth Trust Fund (KGGTF) offered support. This support included providing technical assistance, building capacity, and aiding in collaboration with various stakeholders.





**Hyoung Gun Wang, Program Manager, KGGTF, World Bank** gave an overview of the KGGTF, highlighting its primary development objective of achieving sustainable development through green growth.

He also shared the four pillars of the KGGTF and its way forward to continue to serve as a strong bridge between the World Bank and Korea, realize the green growth journey of developing countries worldwide, and to build a more sustainable and carbon-neutral future.

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**Susan Lim, Senior Transport Specialist, World Bank** presented on the green transition of transport in Egypt and highlighted the KGGTF 2019 grant that helped to develop an updated understanding of mobility trends and a new strategic regional plan.



**Sung Woo Kim, the Presidential Commission on Carbon Neutrality and Green Growth of the Republic of Korea / Kim & Chang**

discussed the advancements South Korea has made since it began focusing on green growth. He highlighted that South Korea has set a goal to achieve carbon neutrality by 2050. To reach this target, the country is concentrating on several key areas: further developing essential green technologies and expertise, bolstering the green industry, nurturing climate-tech ventures, and increasing green financing along with the influx of investment capital.

**Menan Omar, Operations Officer, IFC**

highlighted the success of the Egypt STEP (Smart Technology and Energy Efficient Production Program), a KGGTF program that resulted in a new Egyptian decree. The program promotes the use of energy-efficient motors by supporting policies that encourage their adoption and by facilitating investment and manufacturing in related technologies.

Additionally, she mentioned that over a period of four years, Egyptian stakeholders made several trips to Korea. During these visits, they utilized global expertise to assist in the design, implementation, and formulation of the decree.





**Richard Damania, Chief Economist, Sustainable Development Practice Group, World Bank**

He characterized sustainability as a defining challenge of the 21st century, focusing on the concept of achieving growth by enhancing the environment instead of degrading it. He emphasized the crucial need to establish global partnerships for sharing knowledge and building capacity in order to overcome present challenges.

**Ali Abo Sena, Chief Executive Officer, Egyptian Environmental Affairs Agency; and Assistant to Egypt's Minister of Environment**

discussed how Egypt's established ambitious goals are transforming their economy and improving the quality of life for its citizens while becoming a leader in sustainable development for the entire region.



**Kisu Lee, Director, Korea Export-Import Bank (KEXIM)** described the establishment of the Economic Development Cooperation Fund (EDCF) and reiterated KEXIM's commitment to and support for sustainable development in developing countries.

**Sanghyup Lee, President, National Institute of Green Technology (NIGT) of the Republic of Korea** highlighted Korea's efforts in climate technology innovation and showcased NIGT's remarkable global technology cooperation status.





**Silvia Martinez Romero, Lead Energy Specialist, World Bank & Yana Valerievna Dubovitska, Lead Specialist, UkrEnergy** explained that a technical assistance program funded by the Korea Green Growth Trust Fund (KGGTF) has been instrumental in supporting Ukraine's energy restoration efforts. She emphasized the significance of utilizing international experience in green growth through knowledge exchanges, such as those sponsored by KGGTF, to expedite the recovery process in Ukraine.

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**Hongye Fan, Transport Specialist, World Bank** shared on Ghana's journey toward improving transport in the Greater Kumasi Metropolitan Area with KGGTF's grant support.



**Anuja Shukla, Environmental Specialist, World Bank** presented on the importance of India enhancing its capacity for green and resilient coastal management and how a KGGTF grant allows them to leverage successful Korean best practices and innovative approaches to produce new policy frameworks and toolkits.

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**Eirivelthon Santos Lima, Senior Agriculture Economist, World Bank** shared how a KGGTF grant is helping to identify options to achieve environmental and economic objectives in the state of Bahia, Brazil by identifying available resilience-building, and climate-smart agriculture technologies for small-scale farmers.





**Kyoungche Lee, Director of Alger office, Korea Environmental Industry & Technology Institute (KEITI)** showcased green financing opportunities and how KEITI collaborates with World Bank and client teams.

**Dao Harrison, Senior Housing Specialist, World Bank** shared lessons from Indonesia on the dilemma of affordable housing and how a KGGTF grant is helping them to generate knowledge and provide technical support to the Indonesian government.

**Component 3: Plastics and Waste Management**  
**Component 4: Project Management**



**Daeyong Kim, Director, Center for International Development, Korea Development Institute (KDI CID) Knowledge Sharing Program (KSP)**

highlighted KDI's whole support package program where policy and technical cooperation occurs for up to five years in key sectors including green energy, and smart cities amongst others.



*In addition to those mentioned above, many other speakers shared their experiences on how KGGTF grants are helping their clients implement green growth strategies.*

# TRAINING A NEW GENERATION OF GREEN GROWTH LEADERS

## Launch of the Academy and Youth Group Internship Program

The inaugural six-month internship program, launched on December 18, 2023 at Yonsei University in Seoul Korea, aims to nurture and empower young professionals in green growth through hands-on skill acquisition and capacity building. The program, a KGGTF Phase 4 priority, includes lectures with leaders in the field, site visits, knowledge exchange learning trips, and work experience supporting the KGGTF operations.



Lecture with Richard Damania, Chief Economist of the Sustainable Development Practice Group at the World Bank



January 24, 2024, KGGTF Youth Interns participated in a fire side chat with World Bank President, Ajay Banga, at Seoul National University, during his first official visit to Korea.

## Learning from World Bank Specialists



Lecture with Jason Allford,  
Special Representative of World  
Bank Group's Korea Office

Lecture with Zaki Khoury, Senior  
Digital Development Specialist at  
the World Bank



Site visit to Sudokwon Landfill site  
Management Corporation

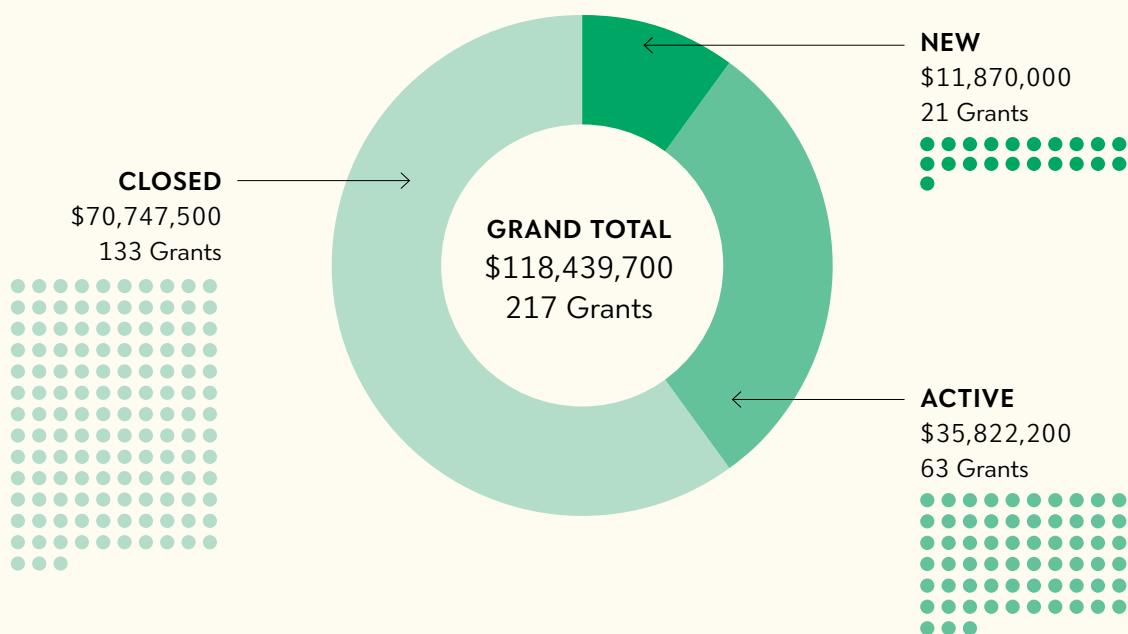
## 2023 PORTFOLIO OVERVIEW

03



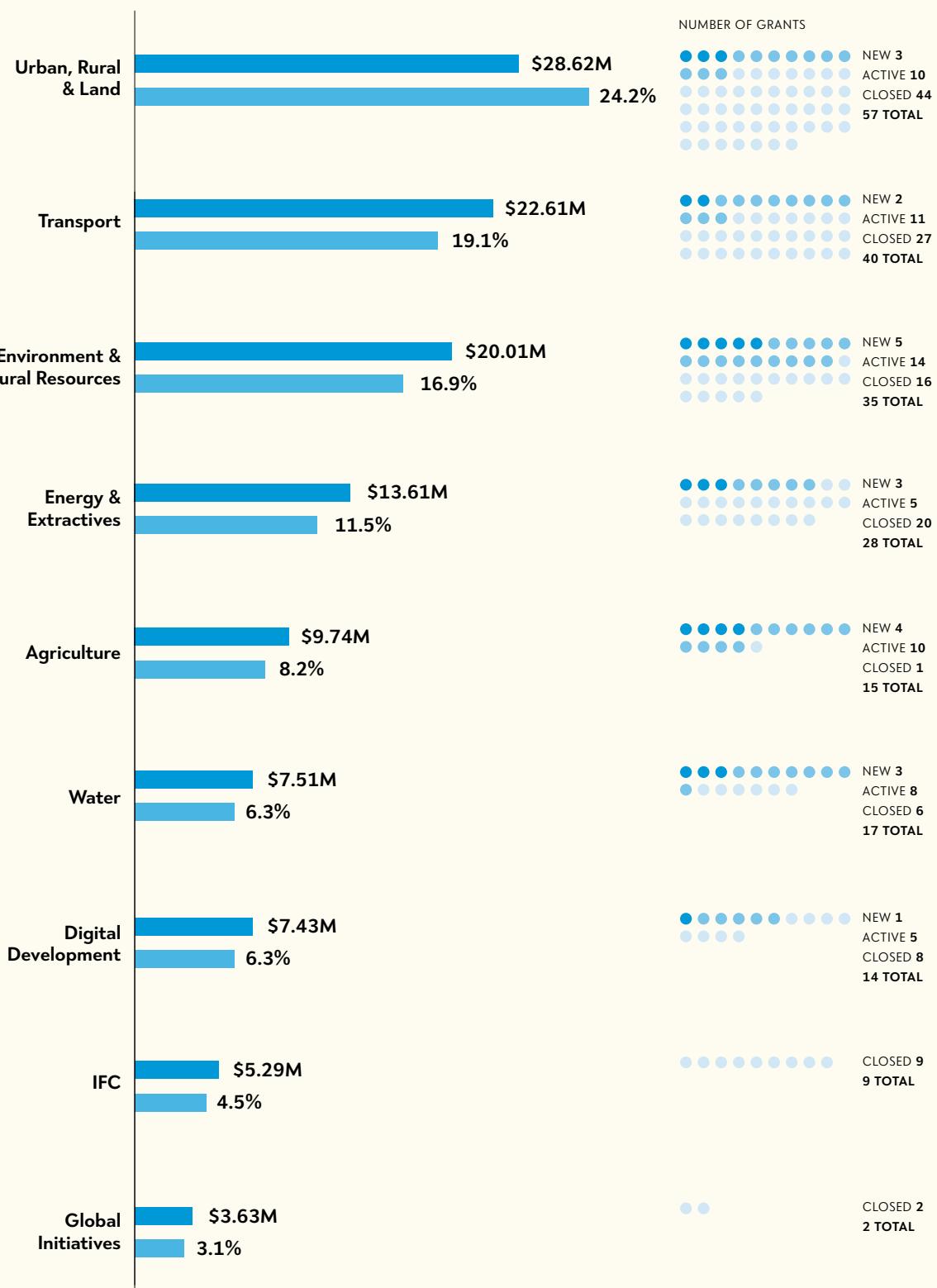
## 2023 PORTFOLIO REVIEW

### PORTFOLIO BY GRANT STATUS\*



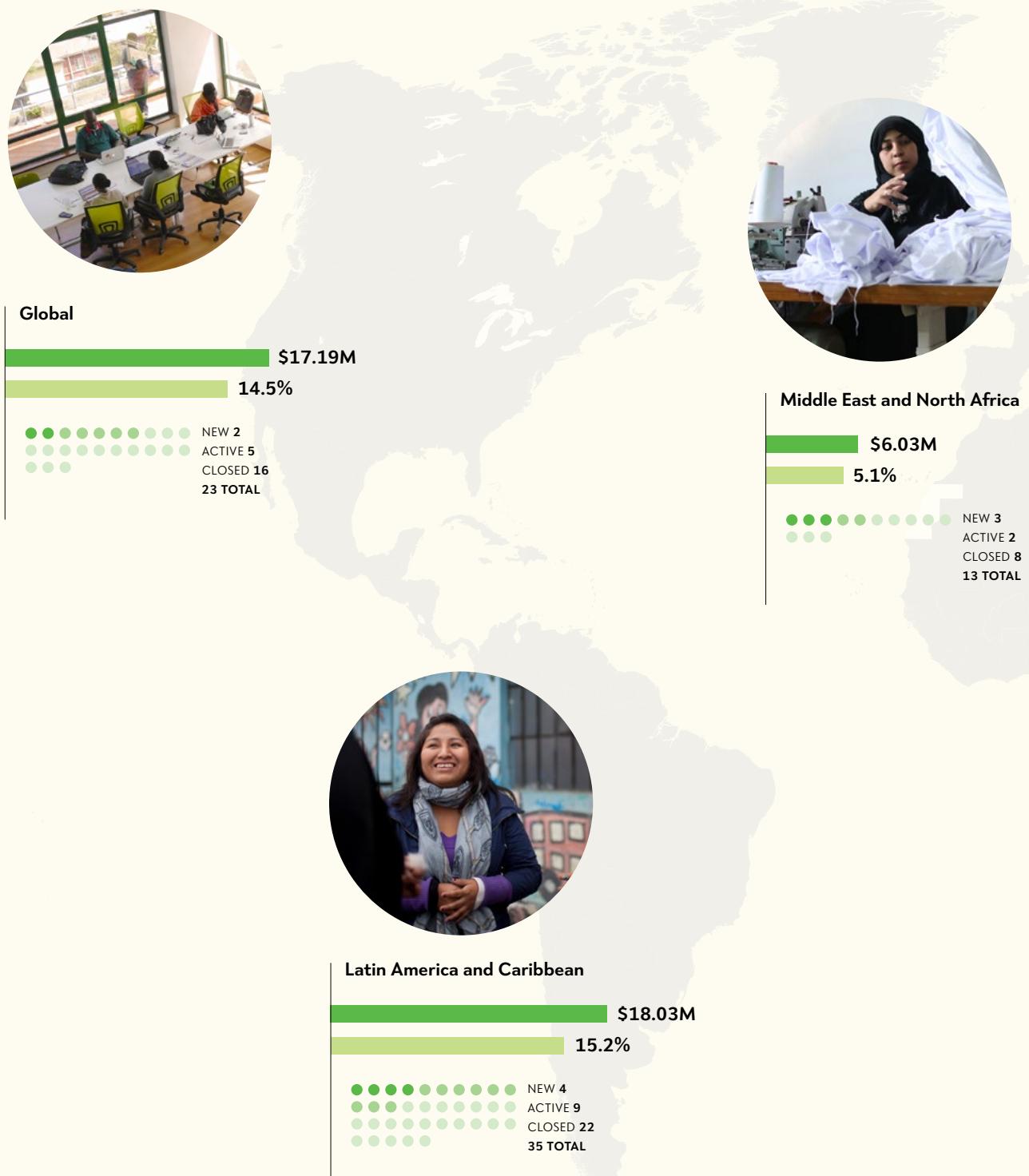
\*As of December 31, 2023

## PORTFOLIO BY SECTOR\*



\*As of December 31, 2023

## **PORTFOLIO BY REGION\***



\*As of December 31, 2023



# 2023 ANNUAL PROGRESS REVIEW

**The Annual Progress Review (APR)** plays a crucial role in the effective monitoring and evaluation of the Trust Fund and in assessing the performance of KGGTF grant programs. All KGGTF grant awardees with an active grant during the reporting period (January to December 2023) are required to submit an APR, as mandated by the Donor. In CY 2023, the KGGTF Team collected progress reports from 65 approved grants, encompassing 69 grant activities.

The APR enables the KGGTF Team to monitor and evaluate the progress and performance of active grants within a 12-month reporting period. It tracks the status of grant activities and progress towards achieving the outputs and outcomes outlined in the approved grant proposal and Grant Funding Request (GFR). The APR gathers data for the Trust Fund's KPIs, which quantitatively monitor KPI progress and the performance of the KGGTF grant portfolio annually. It also highlights any current or anticipated issues, delays, or changes to the activity work scope, and provides an opportunity for grant awardees to request KGGTF action or support during grant implementation.

*The 2023 APR gathered data across 8 categories that align with KGGTF's 4 Outcome Pillars as are set out below:*

KGGTF OUTCOME PILLARS	DATA COLLECTION CATEGORIES
	<b>PILLAR 1:</b> Increased Mobilization of Green Growth Investments
	Link to WB Lending & Co-Financing External Investment Facilitated
	<b>PILLAR 2:</b> Adoption of Green Growth Policies, Regulations, Strategies, and Initiatives
	Influence on Client Country Policy/Strategy Influence on WB Strategy/Project Development
	<b>PILLAR 3:</b> Increased Capacity, Knowledge, and Technologies to Implement Green Growth in Action
	Knowledge Exchange Programs Held In-Country Capacity Buildings Held Knowledge Products Produced
	<b>PILLAR 4:</b> Strengthened Partnerships and Collaborations to Advance Green Growth
	Partnerships Leveraged

## KPI Progress



### OUTCOME PILLAR 1: INCREASED MOBILIZATION OF GREEN GROWTH INVESTMENTS

- Over \$4.5 billion in WB lending was leveraged by 16 KGGTF grants in CY 2023.
- \$363 million in co-financing (including counterpart funding and other sources, e.g., ADB, AIIB, EDCF, GCF, and GEF) was leveraged by 6 KGGTF grants in CY 2023.



### OUTCOME PILLAR 2: ADOPTION OF GREEN GROWTH POLICIES, REGULATIONS, STRATEGIES, AND INITIATIVES

- 39% (27 grants) of grants influenced client countries' adoption of green growth policies and strategies.
- 21.7% (15 grants) influenced the World Bank's green growth strategies, country engagements, or project development.
- 34 final outputs from KGGTF grants delivered to WB Management or CMU contributed to the Bank's adoption of green growth strategies, country engagements, or project development, benefiting 25 client countries.



### OUTCOME PILLAR 3:

#### INCREASED CAPACITY, KNOWLEDGE, AND TECHNOLOGIES TO IMPLEMENT GREEN GROWTH IN ACTION

- 28% (19 grants) of grants held Knowledge Exchange programs in partnerships with Korean organizations during CY 2023.
- 692 World Bank staff, government officials, and technical representatives of client countries participated in Knowledge Exchange programs with Korea in CY 2023.
- 132 Korean organizations participated in Knowledge Exchange programs in CY 2023.
- 62% (or 43 grants) of active grants held In-Country Capacity-Building activities in CY 2023, with a total of 4,209 participants.



### OUTCOME PILLAR 4:

#### STRENGTHENED PARTNERSHIPS AND COLLABORATIONS TO ADVANCE GREEN GROWTH

- During CY 2023, 55% (38 grants) of grants engaged in partnerships with external organizations.
- A total of 179 partnerships or collaborations between grant teams and external organizations were active in CY 2023.
- The KGGTF Team engaged in 66 collaborations with Korean organizations in CY 2023, including joint initiatives and active participation at knowledge sharing events organized by KGGTF.

### KEY MESSAGES AND GUIDING LESSONS FOR THE 2024 CALL FOR PROPOSALS AND GRANT MANAGEMENT

#### 1.

**In prioritizing lending support in 2023, APR data revealed a significant increase in WB lending associated with KGGTF grants. Analysis has confirmed a strong and positive link between this approach and the overall performance of the grants.**

Support for lending operations was made a strategic priority for the KGGTF for 2023 and one of the key selection criteria for the 2023 Call for Proposals. The strategy proved successful, with WB lending leveraged by grants in CY 2023 surpassing \$4.5 billion – a significant increase of \$1.6 billion from the previous year. This achievement highlights the impact of the KGGTF's focus on lending operations and the value of KGGTF grants that support and associate with these lending operations. At the same time, grants tied to lending operations demonstrate a stronger association with positive outcomes.

#### 2.

**Grants with Knowledge Exchange (KE) activities demonstrated strong performance, underlining the value of promoting knowledge sharing and practical partnerships.**

The 2023 APR showed an encouraging trend regarding Knowledge Exchange, capacity building, and partnership development. These activities, which were severely impacted by the Covid-19 pandemic in 2020 and 2021, have seen a strong rebound in 2023. Notably, the APR analysis identified a positive correlation between overall grant performance and the level of Knowledge Exchange activities and practical partnerships.

A photograph of a woman with dark hair and a white cloth wrapped around her head, smiling at the camera. She is wearing a white patterned shirt and a dark floral skirt. She is sitting behind a table covered with a red cloth, which has various food items on it, including what look like samosas and other fried snacks. There are also some green leafy vegetables on the table. In the background, there is a green metal fence and some buildings. A large white number '04' is overlaid on the bottom left of the image.

## FEATURED GRANTS

04



## ANGOLA

# Building Drought Resilience in the South of Angola through Geospatial Information and Nature-Based Infrastructure

### CONTEXT AND CHALLENGE



SECTOR  
Water



Since 2013, Angola's southern region has faced an unprecedented drought, the most severe in over three decades, impacting more than three-quarters of its population. This

environmental crisis has led to a cascade of issues including malnutrition, family disintegration, increased domestic violence, and environmental degradation through charcoal production and deforestation. Nomadic and pastoralist communities are clustering in densely populated areas in search of water and food and igniting social tensions. Alarmingly, 80% of boreholes are now dysfunctional, and less than 20% of rural communities have access to safe water. The agricultural sector has been particularly hard-hit, enduring losses exceeding \$561.7 million and contributing to an overall economic downturn of approximately \$749 million.



GEOGRAPHY  
Africa, Angola



APPROVAL YEAR  
2020

### PROGRAM GOAL: ENHANCING CLIMATE RESILIENCE IN THE SOUTH OF ANGOLA

This program is dedicated to supporting the development of drought resilience in the region. The five dimensions explored in this program are (1) the management of rural water points, (2) the links of agropastoral dynamics with drought, (3) the knowledge of water resources as a basis for investment planning, (4) regional targeting of nature-based solutions (NBSs) to complement water availability, and (5) planning for water security and drought at the municipal level. Recommendations focus on the elaboration of municipal water plans (MWP) as the natural instruments to integrate all the other dimensions, enabling drought preparedness and adaptation.

Central to the drought vulnerability is the sustainability of rural water points, for which the program includes an analysis of their use, functionality, and the long-term sustainability of their operation and maintenance. Such in-depth

#### KGGTF OUTCOME SUMMARY



**LINK TO WB LENDING & CO-FINANCING**  
\$300,000,000 WB Lending (+\$150 M external financing)



#### INFLUENCE ON CLIENT COUNTRY POLICY/STRATEGY

KGGTF Support led to the first analytical report on drought resilience and water security, and informed the design of the RECLIMA project (450M), contributing to the following approaches being adopted by the Government of Angola:

1. Integrated Storage Planning Strategy including watershed storage, groundwater storage and surface water storage, and their combined operation.
2. The adoption of Green Infrastructure and Nature Based Solutions as sustainable infrastructure program for community level investments.
3. The adoption of participatory Municipal Water Plans, integrating water supply with water resource management, as instruments to create ownership and climate preparedness at the local level.



#### KNOWLEDGE EXCHANGE PROGRAMS HELD

2 Knowledge Exchange Programs to Korea were conducted, 15 participants from Angola and Egypt gained insights into Korea's water resource management systems and policies.



#### EXTERNAL PARTNERSHIPS (KOREAN & NON-KOREAN)

6 partnerships were leveraged - with 3 Korean organizations: K-Water, KEITI and KRC; and 3 Non-Korean organizations: National Water Directorate, Basin Administration office of the Cunene Cuvelai and Cubango, Project Implementing Unit of the Water Ministry

## RECLIMA PROJECT

The Climate Resilience and Water Security in Angola Project or RECLIMA is investing \$450 million to finance to enhance water security and manage climate extremes in both urban and rural areas. This investment covers physical investments and institutional development activities at national, basin, and municipal levels. Implementation of the project will occur in the provinces of Zaire, Benguela, Huila, Kwanza Sul, Cuando Cubango, Cunene, Namibe, and Luanda, directly benefiting nearly 1.2 million people.

### KGGTF IMPACTS



KGGTF CATALYTIC INVESTMENT

\$500,000



INFLUENCING LENDING

\$450 Million

STRIVING TO PROVIDE WATER FOR  
1.2 Million People



1 Knowledge Exchange

TRIP TO KOREA WAS CONDUCTED.



3 Angolan leaders

GAINED INSIGHTS INTO KOREA'S WATER RESOURCES MANAGEMENT SYSTEMS AND POLICIES

#### 6 PARTNERSHIPS ESTABLISHED:

- K-Water
- Korea Environmental Industry and Technology Institute (KEITI)
- Korea Rural Community (KRC)
- National Water Directorate
- Basin Administration office of the Cunene Cuvelai
- WB Project Implementing Unit for the Water sector

"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*

"As climate variability and change affect water resources, and cities continue to grow, it's critical that we sharpen our understanding of water availability dynamics and management options. 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*



**“Climate change is a reality that can no longer be ignored, and Angola is suffering the most from its consequences. The World Bank is pleased to support Angola by putting in place sustainable adaption measures that mitigate the impact of climate change on people and their livelihoods.”**

*Jean-Christophe Carret,  
World Bank Country Director for Angola*

evaluations are vital for the strategic rehabilitation of existing water structures and the development of new investment programs.

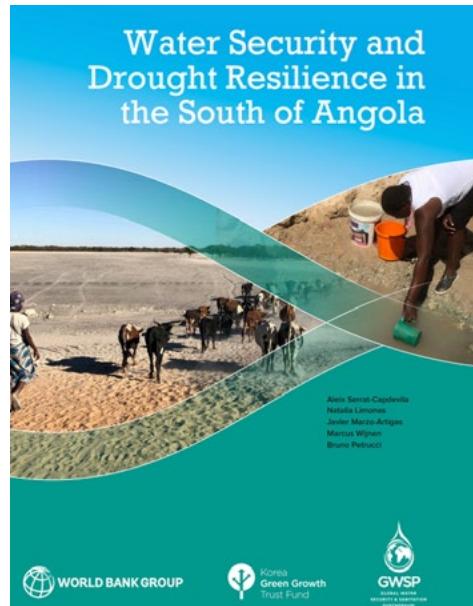
Additionally, there is a strong focus on strengthening local capacities, equipping technicians and leaders with essential skills, and securing necessary financing. By doing so, the program aims to bolster the nation's water resilience, addressing both immediate needs and long-term sustainability.

## KNOWLEDGE EXCHANGE VISITS AND CAPACITY BUILDING EVENTS

A knowledge exchange trip to Korea was organized for three Angolan national directors from November 27th to December 3rd, 2022. During this visit, they learned about various aspects of water resource management, utility operations, and sanitation, with the objective of applying these insights in Angola. They also presented Angola's experiences and discussed potential collaborations with Korea.

Additional capacity building events included:

- The National Workshop on Groundwater in the Cunene, Cuvelai, and Cubango basins, held in April 2022, focused on hydrogeological research and groundwater management discussions.
- In June 2022, the GRUPO TEMÁTICO DA ÁGUA workshop concentrated on water technologies in rural areas and shared the results of the KGGTF grant.
- A World Bank workshop in collaboration with the Egyptian Government in July 2022, where approaches to assessing drought vulnerability were exchanged.
- Innovative approaches to Nature-Based Solutions for drought in Southern Angola were presented at the 7th Congress of the International Association for Hydro-Environment Engineering and Research.
- The Secretary of State for Water of Angola, H.E. Manuel Quintino, highlighted Angola's experiences in a World Bank-organized session on floods and droughts at Cairo Water Week in October 2022.
- A technical workshop in November 2022 in Lubango, Angola, focused on evaluating Water Management Models and their effectiveness.
- In December 2022, a workshop at the Angolan Ministry of Agriculture shared the results of a Remote Sensing Study pertinent to water resource management projects.



## OUTCOMES

The "Water Security and Drought Resilience in the South of Angola" report analyzed the region's susceptibility to drought by examining how households access water. This approach **informed the strategic prioritization of water infrastructure investments across 130 communes in five southern provinces**. The report recommended community-based strategies, tailored to the local physical environment and water resource availability.

This peer-reviewed and goal-oriented report successfully mapped and characterized drought vulnerabilities in Central and Southern Angola and evaluated the available water resources for focused investment. It guided the Angolan Government and the World Bank in developing the Climate Resilience and Water Security Project (RECLIMA), which was approved on March 30, 2022.

## RESULTS

**This report was crucial in shaping the design of the RECLIMA project.**

### TASK TEAM LEADERS

Aleix Serrat Capdevila, Senior Water Resources Specialist  
Camilo Lombana Cordoba, Senior Water Supply and Sanitation Specialist

# Greening Urban Development in Bamako

## CONTEXT

Bamako, known as the world's sixth fastest-growing city, actively confronts substantial urban challenges. From 1998 to 2009, its metropolitan population grew by 5.4% annually with projections indicating it will reach 4.2 million by 2025. This rapid expansion has led to unequal service access and poor urban mobility, aggravated by the low infrastructure investment of just US\$ 0.72 per person. Weak institutional structures and unreliable data further hinder effective, resilient, and inclusive urban planning.

In response, Bamako is launching the most significant revision to its urban master plan since the 1980s, that presents crucial opportunities to:

- Integrate digital information with public involvement in decision-making.
- Create cohesive urban planning that aligns with community needs and incorporates resilient, future-proof infrastructure.
- Boost local and national abilities to effectively manage urban growth.

Previously, inadequate technical and administrative skills contributed to poor data management, evident in the lack of flood risk information, unsuccessful transport network

mapping, and disjointed investments in water management systems. Furthermore, failure to engage with local leaders led to urban development projects that overlooked local risks and opportunities.

The World Bank is spearheading a major project to enhance Bamako's urban development.

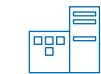
## PROGRAM GOALS

To support this project, the KGGTF undertook comprehensive technical assistance for resilient metropolitan planning and capacity building. This involved supporting Bamako's urban planning practice with risk data collection, feasibility studies for eco-friendly infrastructure, and disaster risk assessments and creating an extensive data platform. These initiatives aimed to strengthen Bamako's continuous ability to address urban challenges.

## PUTTING IDEAS INTO ACTION

### GATHERING DATA FOR DECISION MAKING

The team developed a comprehensive set of data and maps for Bamako through aerial image capture, drone mapping, citizen mapping and mapping of formal and informal transport systems. To make it available to the public, the collected data was published on an open digital platform for the Greater Bamako Area, which



SECTOR  
Urban



GEOGRAPHY  
Africa, Mali



APPROVAL YEAR  
2019

#### KGGTF OUTCOME SUMMARY

1	<b>LINK TO WB LENDING &amp; CO-FINANCING</b> \$250,000,000 WB Lending
2	<b>INFLUENCE ON CLIENT COUNTRY POLICY/STRATEGY</b> Influenced the development of the Bamako Urban Master Plan (financed by the Bank operations) (Mali)
3	<b>KNOWLEDGE EXCHANGE PROGRAMS HELD</b> A Knowledge Exchange Program to Korea was conducted, 9 government officials from Bamako gained insights into Korea's urban development strategy and policy development, in collaboration with 9 Korean organizations: 1. Dobong-gu district waste recycling center 2. Nanjido Park in Mapo-gu district 3. Han River Flood Control Office 4. Seonam wastewater treatment center (SSWTC) 5. Urban planning division in charge of GIS at Seoul City 6. Cheonggyecheon River Museum 7. Sudokwon landfill 8. Incheon smart city control tower 9. Seoul City Council officials on the International Cooperation development project



was developed in parallel as part of Program activities. By being able to visualize and overlay different layers of geographic information, this geoportal provides essential, reliable, and up-to-date information to policymakers and urban planners that helps them to make informed investment decisions for enhancing urban resilience.

#### PHASE I: AERIAL DATA COLLECTION

In the first phase, which focused on aerial data collection, digital technologies presented significant opportunities for cities like Bamako. The collection of this data was allowed to create a base map that would serve as a background and facilitate the seamless integration of additional datasets, offering a clear and comprehensive understanding of the overall landscape.

Additionally, a **comprehensive training in drone data collection was provided**. This included a one-week online course, followed by a one-week in-person training session focused on drone operation techniques. Increased capacity in drone mapping will provide local authorities with the possibility of regularly updating the aerial image of the city, particularly in rapidly developing peri-urban areas.

#### PHASE II: CITIZEN MAPPING

##### TRAINING YOUTH AND BUILDING CAPACITY

The project engaged 120 students and unemployed recent graduates from different communities. They received two training sessions in remote and field data collection. The first training session focused on how to use a specialized application for remote collection of geospatial data, called "MapSwipe" and the second training session focused on the use of a geolocation-based field data collection application.

#### KGGTF IMPACTS



KGGTF CATALYTIC  
INVESTMENT

\$500,000



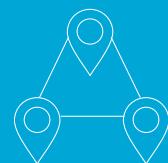
INFLUENCING  
LENDING

\$250 Million



LEVERAGE EFFECT

\$500 for every \$1  
of grant support



Created 270 jobs

IN MAPPING AND DATA COLLECTION



IMPROVING SANITATION FOR

3 million people

## KNOWLEDGE EXCHANGE TRIP IN ACTION

A study tour was held in Seoul from July 10 to 14, 2023 with the aim of learning from South Korea's experience in using digital tools for urban development.

The tour, which included six members of a Malian delegation, was greatly appreciated by the participants who gained a wealth of lessons for the implementation of the PRUBA. The PRUBA has many lessons to learn from the efficient management of solid waste, the treatment of wastewater with odor containment and the discharge of clean water into the Han River, the controlled use of GIS to monitor urban planning in the Seoul metropolis, and digital equipment for flood management.



### Sudokwon landfill

The Sudokwon site is a center for the treatment and landfilling of non-recyclable waste from the cities of Seoul, Incheon and Gyeonggi-Do. The operation of this center proves that waste sorting at household level and recycling at municipal centers must be strict and controlled to receive the least amount of solid waste for landfill.

### Sudokwon landfill



### Seonam wastewater treatment center

Of the four wastewater treatment centers in Seoul Metropolis, Seonam is the largest. Recycling wastewater creates renewable energy through biogas, and some of the treated water is used to supply the city's fire hydrants and to water public green spaces. The next phase of modernization involves burying a large part of the treatment system and extending the park to include a cinema, aquarium, museum and restaurants.

### Seonam wastewater treatment center

### Nanjido Park in Mapo-gu district



### Nanjido Park in Mapo-gu district

The rehabilitation of the former Nanjido landfill site into an eco-park is an example of successful decision-making and consultation between public, private and citizen stakeholders in this project. The methane produced by the former landfill continues to be recovered through 106 extraction wells around the park. This gas is used to heat 3 public sites, including the stadium, 40 municipal buildings and 16,335 households in the urban areas around the park, demonstrating once again that waste recovery generates financial income and environmental protection.



### Incheon smart city control tower

Incheon is a smart city managed by a control tower (G-Tower, 33 floors), which provides continuous, real-time information from cameras installed throughout the city (fire, security, mobility, public transport, weather conditions, etc.). Agents are responsible for collecting and analyzing the data using software and artificial intelligence.

### Incheon smart city control tower



#### Urban planning division in charge of GIS at Seoul City

The municipality of Seoul covers 12% of the national territory. The city's development is structured around three plans: the City Plan Charter, the Master Development Plans and the district plans, with contributions from specialists (scientists and engineers) and the public. The use of GIS in city development has been a considerable asset in integrating the green city dimension into all decisions taken by the authorities.

#### Seoul city council urban planning division Seoul City council officials on the International Cooperation development project



#### Seoul City Council officials on the International Cooperation development project

Bamako faces many difficulties in managing wastewater, rainwater and solid waste, which is stored uncontrolledly in the city, creating floods by clogging drainage channels.

This study tour enabled the delegation to see South Korea's expertise in these fields. This expertise will benefit Bamako through cooperation between governments and the private sector, particularly in technical and material assistance, studies or research, and capacity building.

#### Dobong-gu district waste recycling center



#### Dobong-gu district waste recycling center

The ACI recycling center processes 25,000 thousand tons of waste per year on a 1.8-hectare site. It specializes in the engineering, operation and treatment of waste using MBT (Mechanical Biological treatment), MRF (Material recovery Facility), SRF (Solid Recovered Fuel) and WEEE (Waste of Equipment electronic). A circular economy is created around waste. Each municipality is responsible for processing its own waste and there are 25 sites in the Seoul metropolitan.

#### Cheonggyecheon River Museum



#### Cheonggyecheon River Museum

In downtown Seoul, the delegation was able to see first-hand the successful rehabilitation of the Cheonggyecheon River, intersecting the city of Seoul. The team learned how Seoul was able to transform an urban river to enhance biodiversity, provide recreational spaces, and effectively control floods.

#### Natural Disaster Management System

#### Visit to Korea's Natural Disaster Management System

The visit aimed to learn from Korea's disaster prevention and management institution. After devastating floods in 1999, Korea significantly reformed and updated this system. The reforms included installing digital measuring equipment and building key infrastructure like dams and improved river systems. Additionally, there was a significant policy revision for flood prevention and management, leading to an integrated watercourse management system now overseen by the Ministry of the Environment. This shift represents Korea's dedication to modern, technology-driven disaster management approaches and provided relevant learning for how Bamako can plan and manage natural disasters.

**"The use of technology and mapping allows us to obtain information about a Bamako district's territory through a geoportal. This will enable the development of new tools for better management and participatory urban planning. It will give us a complete overview of the state of water and sanitation, including hygiene facilities such as water points and handwashing facilities. The mapping will additionally support financing and management of flood-prone areas. This will guide decisions for vulnerable neighborhoods based on the real needs of the population and will direct financing to the best areas."**

*Babadian Diakité, Coordinator of the Bamako Urban Resilience Project*

## **YOUTH MAPPING**

Following their training, the participants went into the field to gather information. Their focus was on collecting data about buildings, educational facilities, cultural sites, drainage canals, green spaces, and waste sites in their respective communities. They identified details such as the number and condition of sanitary facilities in each building, the presence of solid waste collection points, the construction materials of the buildings, and more.

In parallel, participants also used MapSwipe to remotely identify waste sites using aerial imagery collected during Phase 1. This enabled the creation of a map showing the concentration of waste in Bamako (see below). By providing an overview of the city's waste distribution, such mapping allows for directing project efforts toward focused collection and targeted interventions in areas with higher waste accumulation.

**This program resulted in over 270 young individuals gaining skills in data collection, remote mapping, and conducting focus groups within local communities.**

**"Citizen mapping offers a meaningful opportunity for community members to actively contribute to enhancing local resilience."**

*Lucas Bouchud, Land and Geospatial Specialist, World Bank*

The collected data is now a vital resource, enabling authorities to make well-informed decisions for effective and risk-sensitive urban planning and investments.

## **PHASE III: DATA SHARING**

### **Establishing a Digital Map Portal**

The team then integrated all datasets into an online map portal. Stakeholders participated in training sessions covering the utilization and maintenance of the digital platform alongside proficiency in the use of the open-source QGIS tool. Additionally, a final report on these training sessions and a sustainability roadmap for the geoportal was produced.

## **OUTPUTS FROM THE PROGRAM**

Based on the information, key data sets are now integrated into Bamako's urban planning practice to take account of hazard, exposure, and vulnerability. For instance, overlaying these data sets allows local authorities to pinpoint entities like schools and health centers situated in flood-prone areas, making it easier to estimate the associated risks (i.e. assets and population impacted) and strategically plan



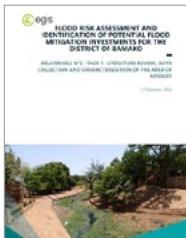


for increased preparedness and preventive measures, including through enhanced project design.

As part of the program activities, the team also produced:

- A detailed flood risk assessment report for Bamako that includes a series of options and a pre-feasibility study for both grey and green infrastructure investments on the main river basin, as well as for upgrading public spaces
- Multiple presentations and workshops with Bamako policy and government leaders on how to integrate resilience and flood mitigation into project design, including stakeholder workshops in Bamako to review risk assessment outputs and discuss potential investments.

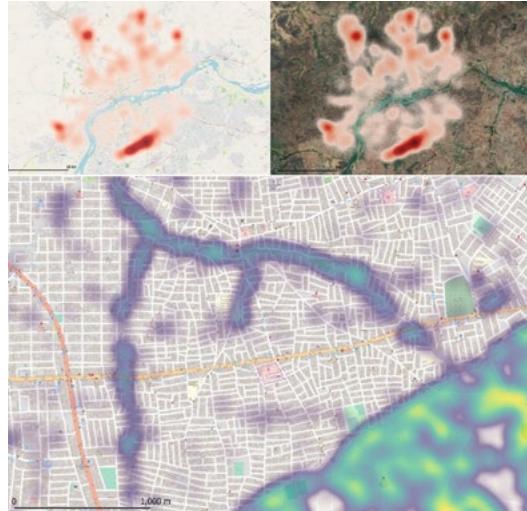
## RESULTS



The collected data, research, and mapping are now integral to the development of Bamako's solid waste infrastructure and flood resilience. This advancement is set to enhance sanitation for approximately 3 million residents.

This initiative is a part of the ["Bamako Urban Resilience Project"](#) which is financed by a \$250 million loan. The project's key objectives include improving urban waste, sanitation, and water services, as well as enhancing flood resilience in select areas of Bamako and surrounding communes.

The KGGTF grant played a crucial role in providing knowledge, building capacity, and developing the datasets to support this project.



Map of Waste concentration in Bamako

### TASK TEAM LEADERS

*Vivien Deparday, Senior Urban Specialist  
Edouard Ereno Blanchet, Senior Disaster Risk Management Specialist  
Mare Lo, Senior Urban Development Specialist  
Lucas Bochud, Land and Geospatial Specialist*

## UGANDA

# Building a Green Agri-Food Ecosystem in Uganda



## CONTEXT AND CHALLENGES

Agriculture is vital to Uganda's economy, contributing 27% to its GDP and employing 73% of its workforce. However, it is also responsible for 46.25% of the country's greenhouse gas emissions. Recognizing the connection between the rise in poverty in 2017 and climate issues like droughts and crop failures, Uganda's National Development Plan (NDPIII) 2020-2025 and the Uganda Vision 2040 stress the need for sustainable land use and management (SLM). This approach is a vital part of climate-smart agriculture (CSA) practices.

The uptake of CSA practices in Uganda is currently limited to 30% due to various obstacles such as policy shortcomings, insufficient supply of CSA technologies, lack of advisory services, a general lack of knowledge, challenges in accessing input markets, and the high costs initially involved. Moreover, tackling post-harvest losses, which vary between 30 to 80%, is critical in applying greener technologies.

Digital technologies present innovative ways to enhance CSA practices and ensure continuous business operations, which is especially crucial in the wake of the economic downturn caused by COVID-19.

## PROGRAM GOAL

The grant was designed to aid Uganda's agricultural sector in its recovery from the COVID-19 crisis and establish more resiliency

in the future by leveraging digital technologies and identifying policies to support market development, emergency contingencies, and project management of the sector.

## PROGRAM COMPONENTS

### Comprehensive Analysis of Weather Stations

The team carried out thorough surveys to evaluate the condition of weather stations throughout Uganda and the in-depth analysis is improving early warning systems. A detailed report on their findings has been published.

### Weather sensors deployed across country

Seventy-five high-quality weather sensors, placed in five different regions, are gathering detailed local weather data that will help in developing better early warning systems for weather-related events.

## ECOSYSTEM PILOT PROGRAM

In collaboration with the Korean firm Sherpa Space, an extensive pilot program is being developed that will help farmers boost their crop production while reducing environmental harm. The program is concentrated on detecting pests before damage can be done, optimizing irrigation and fertilization schedules, integrating weather data, and implementing automation.

The recent publication of Project Implementation Manual for the Climate Smart Agricultural Transformation Project.

KGGTF OUTCOME SUMMARY	
	<b>LINK TO WB LENDING &amp; CO-FINANCING</b> \$350,000,000 WB Lending
	<b>IN-COUNTRY CAPACITY BUILDINGS HELD</b> 5 participants in Madagascar, facilitated by Korean partners Sherpa Space
	<b>EXTERNAL PARTNERSHIPS (KOREAN &amp; NON-KOREAN)</b> 3 partnerships were leveraged with private companies - Sherpa Space (Korea), Jabba Engineering (Uganda) and Arable Labs (US)



## RESULTS

The program was instrumental to the recently approved \$350 million lending through the [Uganda Climate Smart Agricultural Transformation Project](#). The Uganda Climate Smart Agricultural (CSA) Transformation Project is working to increase agricultural productivity, market access, and resilience. It comprises five key components:

### 1. Strengthening CSA Research and Systems:

Developing and distributing CSA technologies and practices, including:

- Research and innovation in CSA.
- Competitive and sustainable seed systems.
- Improved agro-climate monitoring and information systems.
- Enhancing institutional capacity for CSA technologies at research institutes and resource centers.

### 2. Promoting CSA Technologies and Practices:

Expanding CSA technologies with three aims:

- Increasing productivity and resilience for income generation.
- Enhancing food and nutrition security in refugee settlements.
- Strengthening institutional capacities for productivity and service delivery.

### 3. Market Development and Linkages:

Aiming to enhance market access through:

- Investments in market development for selected value chains.
- Market improvements for farmers in refugee settlements and host communities.

### 4. Contingency Emergency Response:

A financial reserve for responding to crises such as droughts, floods, or economic shocks.

### 5. Project Management, Coordination, and Implementation:

Overseeing, monitoring, and evaluating the project.

This project aims to modernize and strengthen Uganda's agriculture and make it more efficient, market-focused, and resilient to environmental and economic challenges. Funding from KGGTF was crucial for the research in this program and played a pivotal role in its development.

#### TASK TEAM LEADERS

*Pushina Kunda Ng'andwe, Senior Agriculture Economist  
Jeehye Kim, Senior Agriculture Economist*

## KGGTF IMPACTS



KGGTF CATALYTIC  
INVESTMENT

\$535,000



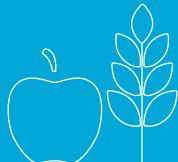
INFLUENCING  
LENDING

\$350 Million



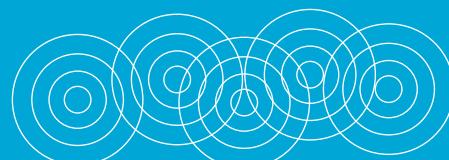
LEVERAGE EFFECT

\$654 for every \$1  
of grant support



IMPROVING ACCESS TO FOOD FOR

48 million people



75 sensors deployed  
in 5 regions

FOR EARLY WARNING SYSTEMS

## MONGOLIA

# On-Demand Transit Service to Improve the Accessibility of Ulaanbaatar's Vulnerable Population

### CONTEXT AND CHALLENGES



SECTOR  
Transport



GEOGRAPHY  
East Asia,  
Mongolia



APPROVAL YEAR  
2021

In Ulaanbaatar where nearly 50 percent of the country's population resides, travel demand has been increasing due to rapid urbanization. The city's current 1,300-km-long street network is sparse and disconnected, while traffic management and road safety facilities are insufficient, causing delays, traffic accidents, and congestion. Poor public transport services and vulnerability to natural hazards such as flooding are affecting residents' livelihoods and disproportionately hurting vulnerable and low-income populations. Simultaneously, lack of evidence-based planning and management, and weak institutional capacity have hampered efficient allocation of limited financial resources.

Ulaanbaatar's public transport system, reliant solely on conventional buses, struggles financially and in service provision. The city's sprawling layout, sparse road network, and congestion make efficient public transport challenging. Around 60% of UB's population resides in peripheral areas, where there are little or no public transport services due to low density and lack of paved roads. These issues particularly impact the city's vulnerable and low-income groups.

To address these challenges, a proposed initiative seeks to establish an innovative public transport solution, focusing on improving accessibility of low-income residents in peripheral areas. The

initiative explores enabling Mobility-as-a-Service (MaaS) and piloting On-Demand Transit Services (ODTS) to promote customer-centric and multi-modal travel solutions.

### PROGRAM GOAL

This initiative focuses on enhancing Ulaanbaatar's urban transport system through a series of interconnected outcomes.

Firstly, it aims to establish a solid analytical foundation for the World Bank's lending activities, directly supporting the city's capacity to plan and deliver accessible, affordable, and innovative public transport services through piloting of an **On-Demand Transit Service (ODTS)**.

The KGGTF grant supported development of the Pre-Feasibility Study for ODTS, which provides analysis of options for a potential ODTS in Ulaanbaatar, and includes references to international practice, recommendations for a pilot study area, analysis of stakeholders, financial viability, business models, and options on integration within the existing institutional structures.

The methodology for selecting the pilot area included quantitative data analysis, stakeholder engagement, and public engagement. The results identified a primary candidate for the ODTS Pilot: the area of Songinokhairkhan north of Ard Ayush Avenue.

KGGTF OUTCOME SUMMARY	
	<b>LINK TO WB LENDING &amp; CO-FINANCING</b> \$100,000,000 WB Lending
	<b>IN-COUNTRY CAPACITY BUILDINGS HELD</b> 4 In-Country Capacity Building activities were held, 50 participants from Mongolia were trained
	<b>EXTERNAL PARTNERSHIPS (KOREAN &amp; NON-KOREAN)</b> A partnership with Korea Transport Institute (KOTI) was leveraged

Improving traffic conditions in Ulaanbaatar has become a top priority for the municipality and the Mongolian government, and the World Bank is pleased to be providing support in this area through its expertise and financial resources, ... The project is designed to benefit all road users including vulnerable users such as pedestrians in Ulaanbaatar through reduced traffic congestion, improved road safety, and less disruptions from natural hazards."

Andrei Mikhnev, Former World Bank Country Manager for Mongolia



### KGGTF IMPACTS



KGGTF CATALYTIC  
INVESTMENT  
\$400,000



INFLUENCING  
LENDING  
\$100 Million



IMPROVING TRANSPORTATION FOR  
3 million residents



TRAINED  
15 city leaders



This development is crucial for the World Bank to confidently finance pilot ODTS implementation under the Ulaanbaatar Sustainable Urban Transport Project (USUTP).



#### MOBILITY-AS-A-SERVICE STUDY (MaaS)

The KGGTF grant funded the development of the first ever Mobility-as-a-Service Study (MaaS) for Ulaanbaatar, as an analytical base to plan and implement MaaS solutions and MaaS driven urban mobility development, and to provide contextualized and actionable guidelines for implementing MaaS in Ulaanbaatar.

MaaS represents a seamless integration of various transportation services—including public transport, ride-sharing, car-sharing, bike-sharing, scooter-sharing, taxi, car rental, and ride-hailing—within a single digital mobility platform. Innovative MaaS system has the potential to provide integrated planning, booking, and payment options, along with real-time enroute information, enabling a car-free lifestyle while empowering users to meet their specific travel needs efficiently.

The MaaS Study funded by KGGTF reviewed the opportunities and constraints of establishing a low-carbon MaaS system, identified the existing building blocks of MaaS in Ulaanbaatar, and carried out a readiness assessment from legal, policy, institutional, technology, and demand points of views. The MaaS study identified suitable MaaS development models and offered the implementation plan for each of the options.

Data Driven Model	Passenger Information Model	Payment Driven Model
<p><b>DESCRIPTION</b></p> <ul style="list-style-type: none"> <li>An open platform that facilitates MaaS application and other transportation innovation</li> <li>Government does not necessarily own a MaaS application</li> </ul> <p><b>KEY SUCCESS FACTOR</b></p> <ul style="list-style-type: none"> <li>Good regulation and legislation to ensure fair use of data and data privacy</li> <li>Good data exchange architecture and infrastructure to support data sharing</li> <li>Task force to drive innovation</li> </ul> <p><b>EXAMPLE</b></p> <ul style="list-style-type: none"> <li>London's TfL Open Data</li> </ul>	<p><b>DESCRIPTION</b></p> <ul style="list-style-type: none"> <li>A one-stop super app approach to provide transportation information and potential payment integration</li> </ul> <p><b>KEY SUCCESS FACTOR</b></p> <ul style="list-style-type: none"> <li>Strong technical and operational capability to maintain the app and ensure good user experience</li> <li>Good data exchange architecture and infrastructure to support data sharing</li> </ul> <p><b>EXAMPLE</b></p> <ul style="list-style-type: none"> <li>Singapore's My Transport</li> </ul>	<p><b>DESCRIPTION</b></p> <ul style="list-style-type: none"> <li>Provide a more open and user-friendly payment approach for different mobility solutions</li> </ul> <p><b>KEY SUCCESS FACTOR</b></p> <ul style="list-style-type: none"> <li>Identify a mechanism to balance the interest of different stakeholders to insure participation and contribution</li> </ul> <p><b>EXAMPLE</b></p> <ul style="list-style-type: none"> <li>Hong Kong's Octopus Card</li> </ul>



Moreover, the KGGTF grant funded the update of the **Public Transport Sector Reform Plan for Ulaanbaatar** city. Public transport policy and operational circumstances have been re-assessed to identify relevant strategies and measures to improve public transport. The reform plan has identified implementable and time-bound actions for provision of accessible, reliable, safe, and quality public transport services in UB.

Together, these outcomes represent a coordinated effort to modernize Ulaanbaatar's transport infrastructure and services, addressing both current challenges and future needs.

## AREAS OF FOCUS

**1. Greening the Post-COVID Recovery:** The COVID-19 pandemic significantly impacted Mongolia's economy and population, with a substantial recession and widespread income loss. Although recovery has begun, the pandemic intensified the urban transport system's shortcomings. An observed shift to private car usage and the need for social distancing in public transport underscore the importance of introducing On-Demand Transit Service in the post-COVID era, enhancing public transport's appeal over private cars.

**2. Alignment with Regional Priorities:** This program provided the multiple feasibility reports focused on improving access to jobs, economic opportunities, and services for those in peripheral areas. It also supports the World Bank Group's Mongolia CPF for 2021-2025, particularly in improving urban livability. The MaaS and ODTs approach align with global sustainable mobility goals of universal access, efficiency, safety, and green initiatives.

**3. Identifying and Deploying Innovative Solutions:** the program developed a digital ODTs platform, is piloting services on select routes, exploring business models for ODTs, and potentially utilizing existing private minibuses. It is also informing the USUTP project by implementing a smart, integrated public transport system that leverages

new mobility technologies.

## OUTCOMES

- Improved capacity and readiness of the Municipality of Ulaanbaatar to carry out public transport sector reform
- Improved capacity and readiness of MUB to pilot ODTs
- Improved capacity and readiness of MUB to develop MaaS Strategy and Implementation Plan; and implement MaaS based urban mobility development.
- Improved capacity of MUB to plan and implement sustainable urban transport development

## TRAINING CITY LEADERS

Over 15 clients from the Municipality of Ulaanbaatar benefitted from the knowledge sharing that took place during Korea Green Innovation Days held in South Korea in 2022 and in Cairo, Egypt 2023.

City leaders also participated in a [Leaders in Urban Transport Planning](#) training workshop in Seoul, South Korea (2023).

## RESULTS

### [Ulaanbaatar Sustainable Urban Transport Project](#)

\$100 million Linked to Lending The Ulaanbaatar Sustainable Urban Transport Project (USUTP) for Mongolia is developing a comprehensive framework for sustainable urban mobility in Ulaanbaatar that will reduce congestion, improve road safety, and address climate resilience for its 1.5 million residents. Component 2 of the Project will finance piloting of On-Demand Transit Services in a target area where there is currently no public transport access. Upon successful implementation of the pilot program the city will expand the service area and provide the city's vulnerable and disconnected population access to public transport. Component 3 of the Project will finance the development of MaaS Strategy and Implementation Plan based on the findings and recommendations of the MaaS Study funded by KGGTF.

### TASK TEAM LEADERS

*Khaloun Bat-Orig, Transport Analyst, East Asia and Pacific Transport*

*Noroarisoa Rabefaniraka, Senior Transport Specialist, East Asia and Pacific Transport*

## UKRAINE

# Leveraging Korea's Expertise in Battery Storage for Ukraine's Energy Sector



SECTOR  
Energy



GEOGRAPHY  
Europe  
Ukraine



APPROVAL YEAR  
2021

### THE IMPACT OF WAR

The ongoing war with Russia has inflicted severe damage on Ukraine's energy infrastructure, incurring over \$10.6 billion in costs and slashing electricity production capacity by 61%. This crisis underscores the urgent need for a comprehensive overhaul of the energy system. Central to this reconstruction is a strategic pivot from coal and gas reliance towards renewable energy and green power technologies. This transition is crucial to ensure continuous power supply and support for Ukrainian communities, particularly those hit hardest by the energy crisis.

The average Ukrainian household faced power outages for five weeks in 2022, illustrating the widespread impact of the crisis. With 12 million people having limited or no energy access, 22 of 36 power plants compromised, and significant heating infrastructure damage in war-torn areas, the urgency to create a more sustainable and resilient energy system is clear. Concurrently, Ukraine is advancing efforts to fully integrate its power grid with the European network, a move expected to enhance sector reliability, security, competition, and transparency. This integration, supported by the adoption of battery storage solutions, will facilitate the management of renewable energy, and contribute to Ukraine's decarbonization goals. This dual strategy of renewable energy investment and grid flexibility enhancement through battery storage is pivotal for modernizing Ukraine's power infrastructure and aligning it with European standards.

### PROGRAM AIM

The program aims to support Ukraine in developing its ability to increase its energy resiliency by expanding renewable energy sources. Specifically, the program will focus on refining the country's legislative and regulatory framework. It will explore the most effective business models to encourage private sector participation in developing renewable energy and energy storage. The program will support Ukraine's immediate crisis management and long-term recovery by expanding power system resilience, flexibility, and energy security. Additionally, the program will work to support Ukraine in developing plans that facilitate integration into the European power grid and ensure a reliable, efficient electricity supply.

### CAPACITY BUILDING ACTIVITIES ON ENERGY STORAGE REGULATIONS AND BUSINESS MODELS

#### KNOWLEDGE EXCHANGE

The KGGTF-funded activity and study program "Ukraine Energy Storage and Ancillary Services Market Development Support," includes an analysis of the effectiveness of Battery Energy Storage Systems (BESS) in enhancing the damping of troublesome inter-area low-frequency oscillations of the entire European power network. Additionally, as part of the KGGTF program, a successfully executed study trip involved 14 government officials from the Ministry of Energy, Ukrenergo, and Ukrhydroenergo visiting Korea to explore viable

#### KGGTF OUTCOME SUMMARY

	<b>LINK TO WB LENDING &amp; CO-FINANCING</b> \$177,000,000 WB Lending and \$38,000,000 Co-financing
	<b>IN-COUNTRY CAPACITY BUILDINGS HELD</b> An in-country capacity building event was held, 15 participants from Ukraine were trained in collaboration with Korea's Ministry of Energy and KEPCO



### Battery Storage as a Green Solution

Battery storage is increasingly recognized as pivotal for decarbonizing the power sector. Its modular design allows for rapid deployment and fast response and adoption has grown worldwide over the past decade. Technological advancements and cost reductions have expanded battery storage applications (particularly in frequency regulation), renewable energy integration, and provision of ancillary services. As Ukraine aims for reconstruction and decarbonization, renewable energy investments become crucial, with a spotlight on enhancing power system flexibility. Battery storage emerges as the most promising solution.

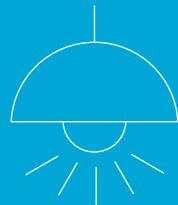
## KGGTF IMPACTS



KGGTF CATALYTIC  
INVESTMENT  
\$500,000



INFLUENCING  
LENDING  
\$250 Million



WORKING TO RESTORE POWER TO  
12 million people





business cases for energy storage and seek support. This study trip collaborated with the World Bank's GFDRR-funded endeavors to fortify disaster resilience in Ukraine's power transmission infrastructure. It significantly enhanced the capacity within the Ministry of Energy, Ukrenergo, and Ukrhydroenergo, offering valuable insights into South Korea's advanced power industry and critical technologies urgently required in Ukraine, such as transformers and energy storage.

- Series of training workshops.
- Capacity building activities on energy storage regulations and business models.

## OUTPUTS

- Assessment of suitable business models to increase private sector participation in battery storage projects.
- Expert reports on business model assessments for battery storage development in Ukraine
  - Series of workshops with key stakeholders.
- Analysis on battery storage use case for grid stability.
- Expert assessment reports on optimal heating options and roadmap prepared.
- Train key staff in Ministry of Energy and Ukrenergo.

**"This is one of the most innovative projects that the World Bank is launching in the Europe and Central Asia region. It will help Ukraine integrate its power system with the European power grid, reduce the influence of vested interests, and contribute to the achievement of a more energy independent Ukraine. I am pleased that the project also helps Ukraine align with the European Green Deal,"**

*Arup Banerji, World Bank Regional Country Director for Eastern Europe.*

## Similar History | Reliance on Nuclear

Ukraine can benefit from South Korea's expertise in creating large-scale battery storage systems and its world-leading position in battery technology production. Korea's state-owned energy company, KEPCO, along with its subsidiaries, generates about 93% of South Korea's electricity. KEPCO's background, which includes a significant reliance on nuclear power and a recent shift towards incorporating battery storage, makes their partnership with Ukraine especially pertinent.

- Established relationships and improved understanding of the manufacturers' production capacity through study trip to Korea
- Expert reports on sustainable heating option for Ukraine, which will inform specific investments for the new IPF operation ([P180332](#) Restoration Project of Winterization and Energy Resources - Procurement Plan (English))

## RESULTS

### INFLUENCING LENDING: \$215 MILLION

#### Improving Power System Resilience for European Power Grid Integration

The project's goal is to enhance the flexibility and efficiency of the Ukrainian power grid. This enhancement will be achieved through investments in storage technologies and market expansion, facilitating synchronization with the European electricity grid and supporting the decarbonization of the power sector.

The project is divided into two main components:

##### 1. Installation of Battery Energy Storage

##### Systems (BESS) and Solar Photovoltaic

**(PV) Plants:** This component includes the establishment of an energy management system (EMS) and supervision consultancy. It is further subdivided into:

- BESS combined with PV plants and EMS to provide ancillary services.

- BESS dedicated to e-mobility applications.
- PV plant specifically designed for e-mobility.
- Supervision consultancy and implementation support.

##### 2. Technical Assistance for Ukrhydroenergo

**(UHE):** This component provides comprehensive technical support to UHE in various areas, including:

- Developing technical procedures for battery storage, decommissioning and recycling.
- Conducting a gender assessment of UHE's human resources policies to enhance gender diversity and inclusion, along with specific recommendations.
- Implementing, supervising, and monitoring environmental and social aspects of the project, such as establishing a grievance redress mechanism and engaging citizens.
- Strengthening UHE's capacity in operation and maintenance best practices, safety measures, and battery recycling through trainings, workshops, and study tours.

#### TASK TEAM LEADERS

*Silvia Martinez Romero, Lead Energy Specialist  
Koji Nishida, Senior Energy Specialist*

## COLOMBIA

# Supporting Green and Resilient Housing and Urban Development as Part of the COVID-19 Recovery in Colombia



SECTOR  
Urban



GEOGRAPHY  
Latin America  
Colombia



APPROVAL YEAR  
2021

## CONTEXT AND CHALLENGES

Colombia is facing major urban planning challenges, largely due to a massive influx of Venezuelan refugees. In the past few years, over 7.7 million Venezuelans, which is more than a quarter of Venezuela's population, have fled their country. Nearly 3 million of these refugees have settled in Colombia, significantly increasing the demand on Colombia's already strained housing and urban infrastructure.

It is critical for Colombia to enhance and fortify sustainable and inclusive urban planning strategies that meet the needs of both existing residents and newcomers. This involves:

- improving the skills of policymakers in devising and applying effective urban planning methods, with a particular focus on improving neighborhood environments;
- focusing on policies for urban regeneration, housing welfare, the implementation of green building practices, and the development of carbon-neutral urban areas;
- and integrating strategies that foster social cohesion through infrastructure development.

Colombia is actively addressing these urban planning challenges by developing a municipal climate agenda that emphasizes resilience to environmental changes and natural events. This approach prioritizes sustainable building practices and aims for the development of environmentally friendly urban areas. Central to these efforts is the *Neighborhood Improvement Program* (Mejoramiento Integral de Barrios, MIB) that is designed to support the well-being of communities, especially those impacted by migration, by fostering inclusivity and improving living standards.

To support these goals, Colombia is updating regulatory and institutional frameworks to better integrate environmental data and risk assessments into urban planning, which are critical for implementing effective urban development strategies and improving urban planning and land management practices.

## PROGRAM GOAL

To improve the quality of housing and public space for vulnerable households, including migrants from Venezuela, in 30 municipalities.

### KGGTF OUTCOME SUMMARY

	<b>LINK TO WB LENDING</b> \$100,000,000 WB Lending
	<b>INFLUENCE ON CLIENT COUNTRY POLICY/STRATEGY</b> The KGGTF grant activities has informed Housing Policy in Colombia
	<b>KNOWLEDGE EXCHANGE PROGRAM HELD</b> 1 KE was held with 200 participants from Colombia



## Improving Housing in 30 Municipalities

Arauca  
Barranquilla  
Bello  
Bogota D.C.  
Bucaramanga  
Buenaventura  
Cali  
Cartagena de Indias  
Cienaga  
Fonseca  
Floridablanca  
Itagui  
Maicao  
Medellin  
Pereira  
Quibdo  
Riohacha  
San Jose de Cucuta  
San Juan del Cesar  
Santa Marta  
Saravena  
Sincelejo  
Soacha  
Soledad  
Turbo  
Tibu  
Valledupar  
Villa del Rosario  
Villavicencio

### KGGTF IMPACTS



KGGTF CATALYTIC  
INVESTMENT

\$800,000



INFLUENCING  
LENDING

\$100 Million

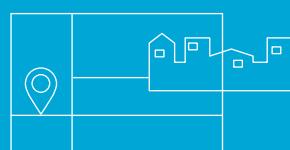


LEVERAGE EFFECT

\$125 for every \$1  
of grant support



IMPROVING HOUSING FOR  
30 municipalities



TRAINED  
200 city leaders  
IN URBAN PLANNING

# DEVELOPING MUNICIPAL CLIMATE AGENDAS

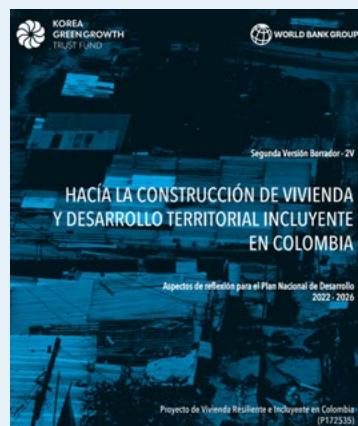
## 1

### Enhancement of housing and urban renewal programs

#### **Technical Note: Towards the Construction of Inclusive and Resilient Housing and Territorial Development.**

A detailed technical note was created that proposes a resilient strategy for Colombia's housing and territorial development, drafted in partnership with the Colombian Government. It provides inputs for the Colombian *National Development Plan* within the framework of the housing project. The technical note, aiming for a comprehensive approach to regional development needs, also:

- identifies gaps in current housing policies, particularly the exclusion of vulnerable families;
- addresses challenges like the oversight of multifamily and high-risk housing;
- advocates for strengthening local governments and improving governance coordination;
- suggests a results-based payment strategy to incentivize local innovation; and
- promotes diverse housing solutions, emphasizes credit access for the informal sector, and supports self-reliance in housing construction.



## 2

## Integration of climate risk data into regulatory and institutional planning

An Urban Vulnerability Index (UVI) tool was developed by the Government of Colombia to combine national policies related to housing and urban resilience as they are integral to identifying and addressing urban vulnerability, especially in precarious settlements. Its production involved building geospatial databases and carrying out studies to establish criteria for sustainable construction. It supports the objectives of the 2018-2022 and 2022-2026 National Development Plans by focusing on the improvement of physical and social conditions in marginalized areas.



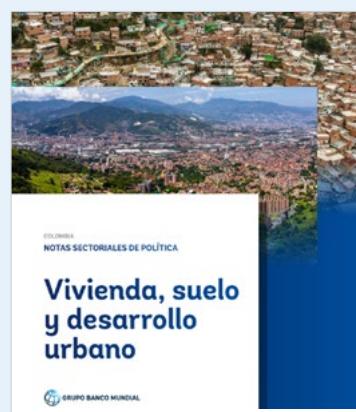
## 3

## Improvement of housing, urban planning, and land management tools

A policy note was written on the complex challenges and strategic proposals to improve housing, land, and urban development in Colombia. It highlights the urgent need to update housing programs for better services in both rural and urban areas.

While the overall number of people without homes has decreased, the quality of housing has declined, especially with the arrival of 1.7 million migrants and though projects like *Casa Digna Vida Digna* and *Semillero de Propietarios* provide housing subsidies and rental assistance show progress, they are limited in scope and have complicated processes for acquiring property.

Specifically, the policy note points out major issues in city housing, like the widespread use of rental housing, and suggests a complete revamp of rental subsidy programs. Its key recommendations include supporting housing microfinance, making program operations more efficient, strengthening program structures, and concentrating on sustainable building and the redevelopment of urban areas to effectively address Colombia's housing challenges.



## DEVELOPMENT OF URBAN TRANSFORMATION PROJECTS

The KGGTF grant team, in collaboration with the National Planning Department, is supporting the formulation of the *National Program for Inclusive Urban Revitalization in Colombia*, with a specific focus on the capital city, Bogota. It is supported on several fronts to include:

- Ongoing work to establish indicators for the environmental, social, and financial impacts (benefits and lessons learned) of regeneration projects, with an aim to set up a scalable and replicable evaluation methodology for future application in similar contexts.
- Assessments of urban renewal zones to identify strategic areas with significant transformation potential and develop a methodology to evaluate opportunities for future urban regeneration operations. *This would be done from the real estate perspective in the context of the recent regulatory framework (Land Use Plan – POT and District Development Plan - PDD)*
- Establishing the provision of legal and institutional frameworks for urban transformations within the city's regulatory environment, including innovative financial models such as selling construction rights.

While outcomes are pending, preliminary activities are already enhancing Colombia's urban policy and defining criteria for revitalization, marking a significant step in urban development and regeneration in Bogota.

## OUTCOMES

The collaboration between the Colombia Resilient and Inclusive Housing Project and the KGGTF has catalyzed significant progress in the housing program. A **primary outcome has been the democratization of credit**, with innovative strategies increasing the accessibility and equity of financial solutions. **This has empowered numerous low-income families to enhance their living conditions**, directly impacting social and economic dynamics within communities.

Following these strides, the National Government, in partnership with Findeter, introduced a subsidized rate product specifically aimed at financing Social Interest Housing (VIS) and Priority Interest Housing (VIP). This move enables organizations executing housing projects to access credit for funding, further democratizing credit access. Additionally, a zero real interest rate credit (UVR + 0) was introduced for new VIP housing, marking the initial steps towards developing new financing instruments under the National Development Plan.

The initiative has successfully integrated local voices in both the development and execution of housing policies. This approach ensures that housing solutions are both effective and resonant with the specific needs of different communities, fostering a sense of ownership and long-term sustainability.

Structured urban planning and land use, another focus of the program, has led to the development of resilient, environmentally friendly infrastructure, which contributes to more sustainable urban ecosystems.

The diversification of housing programs to include self-construction, rental options, and customized housing typologies, has broadened housing accessibility and catered to diverse demographic needs. Notably, the collaboration with municipalities in identifying varied financing sources has amplified the impact and reach of these initiatives.

## RESULTS

**Colombia: Resilient and Inclusive Housing Project** is a \$136.7 million project that significantly benefits from the data, research, and capacity-building efforts funded by the KGGTF program. It is strategically designed to enhance the living conditions of vulnerable populations, with a particular focus on providing support to migrants from Venezuela. One of the key elements of this project is the utilization of insights, resources, capacity building, and data provided by KGGTF-funded research, which plays a crucial role in shaping and informing the project's approach.

The project aims to substantially improve the quality of housing in Colombia by leveraging this research to ensure that these structures are not only resilient but also tailored to meet the specific needs of the communities they serve. The focus on resilience is particularly important in addressing the challenges faced by migrants.

The project's comprehensive approach goes beyond merely addressing immediate housing needs. It also focuses on fostering community development and integration. The KGGTF's support in research and capacity building has been instrumental in ensuring that the project is well-informed and effectively targeted to meet the complex needs of these vulnerable groups.

### TASK TEAM LEADERS

Andre Herzog, Senior Urban Specialist, World Bank



## OUTPUTS

### Partnerships and Collaboration

The team worked with local governments on solutions for urban development. Elements included:

- Established strategic partnerships to develop data-driven tools and methodologies for assessing and addressing urban vulnerability and enhancing resilience in housing policies.
- Fostered collaboration with national and local authorities to innovate urban financial strategies and promote sustainable development and inclusive housing solutions.

### Happy Housing Families Program

Seoul has recently implemented a widely appreciated program that offers affordable housing to young families, the elderly, and individuals with disabilities that strategically places housing units in commercial districts primed for revitalization but with already easy access to public transportation. The program not only provides young homeowners with housing opportunities but also simultaneously rejuvenates areas that were previously underdeveloped.

## EGYPT

# Improving Transport Data Collection and Policymaking in Egypt

### CONTEXT AND CHALLENGES

As per a World Bank study, Cairo, grappling with severe congestion and pollution, faces economic setbacks due to these issues, costing about 3.6 percent of Egypt's GDP. The city's rapid growth and significant contribution to Egypt's population and GDP worsen the situation. To tackle these challenges, the Egyptian Government and the World Bank focus on green transport and digital transformation, targeting job creation, inclusive development, and enhanced public service efficiency, particularly in transport and logistics. Key to these efforts is the adoption of big data and Intelligent Transport Systems (ITS) to alleviate traffic woes, reduce emissions, and improve road safety.

No Egyptian agency has historically been engaged in systematically collecting urban traffic data. Consequently, planning for transportation systems relies on outdated projections from decades-old data. However, the government has recognized the importance of endorsing green transport solutions, including digital technologies, as vital to managing the traffic congestion that adversely affects multiple aspects of the country's economy. To address this, the World Bank is supporting the Egyptian Ministry of Transport with transport investment projects and institution building, emphasizing the digital transformation of the transport sector.



SECTOR  
Transport



GEOGRAPHY  
Middle East and  
North Africa  
Egypt



APPROVAL YEAR  
2019

### PROGRAM GOAL

Establish a comprehensive data platform to inform decision-making in public transport.

The program involved large-scale data collection, which had not been done in a very long time, and a robust analysis to assess the performance of the region's transport systems. Having a data platform enables evidence-based decision-making and coordination of activities among stakeholders in the transport sector, which private and public entities can contribute to and benefit from. The renewed understanding of the mobility trend in the region is enabling the identification of opportunities to improve public transport services to mitigate traffic congestion and associated environmental and economic losses.

Because of the KGGTF and World Bank support, the Government of **Egypt is investing in sustainable transport in the region, and the emphasis on digital technologies** to improve public transport services **will further inform green growth investments in the rapidly growing city.** Furthermore, the Government of Egypt is commencing the effort with the support from Japan International Cooperation Agency (JICA) to develop a vision on land use in the region to strengthen the complementarity of transport systems, and expectations are high to benefit from the data, analytics, and recommendations from the World Bank's KGGTF-supported activities.

#### KGGTF OUTCOME SUMMARY



##### INFLUENCE ON CLIENT COUNTRY POLICY/STRATEGY

The Land Transport Regulatory Authority has been taking initiatives aligned with the KGGTF-supported World Bank green growth policy recommendations as part of the Greater Cairo Ring Road BRT project and the BRT Central Unit.



##### IN-COUNTRY CAPACITY BUILDINGS HELD

An in-country capacity building event was held, 25 participants from Egypt were trained

##### IN-COUNTRY CAPACITY BUILDINGS HELD

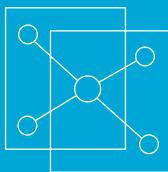
A KE was held with 16 participants from Egypt, in collaboration with Korean National University of Transport



##### EXTERNAL PARTNERSHIPS (KOREAN & NON-KOREAN)

A partnership with Korean National University of Transport was leveraged

Team also strengthened partnerships with Egypt Ministry of Transport & Egypt Transport Planning Authority



ESTABLISHED

## Comprehensive Data Collection Platform



EGYPTIAN TRANSPORT  
MINISTRY PARTNERS WITH  
KOREAN UNIVERSITY FOR

## Ongoing Capacity Building



\$30 million  
invested  
IN WOMEN-CENTRIC  
ELECTRIC BUS FLEET

### BUILDING CAPACITY TO ACCELERATE ACTION

Capacity building took place with multiple leaders from the Government of Egypt participating in the Leaders in Urban Transport Planning (LUTP) program in South Korea (December 2022). Transport leaders learned about green and inclusive public transport, BRT operational and financial models, and how best to integrate with multiple urban agencies to create a system that benefits all citizens.

Nobuhiko Daito, Transport Specialist in the World Bank Middle East and North Africa Region and the Task Team Leader for the grant, commented: *“Our Egyptian clients are grateful for the task team’s collaboration with KGGTF because of the exposure to the good practices in transforming urban transport in Seoul and the opportunities to engage with the South Korean experts. I have not seen such enthusiasm about capacity building from international knowledge exchange.”*

Representatives from the Government of Egypt participated in the Leaders in Urban Transport Planning (LUTP) program in South Korea.

### PARTNERSHIPS AND COLLABORATION

The Egyptian Ministry of Transport and Planning Authority, in collaboration with the Korean National University in Transport, formalized a partnership through the signing of a Memorandum of Understanding (MOU). This MOU sets the foundation for comprehensive training and capacity building initiatives tailored for Egypt. While the program is poised for further growth and expansion in the years ahead, the initial phase involves the deployment of Korean transport technical experts to Egypt for capacity building.

### NEXT STEPS

Based on the results from the KGGTF-supported Greater Cairo Mobility Assessment and Public Transport Improvement Study (MAPTIS), the World Bank continues policy dialogue on opportunities for green transition of public transport in Greater Cairo. As part of the dialogue, the **Government of Egypt has requested the World Bank technical support with establishing a Bus Rapid Transit (BRT)** Central Unit to regulate private operators of BRT projects. The World Bank and Egypt are looking to further integrate green growth principles as the city continues to scale up the BRT network.



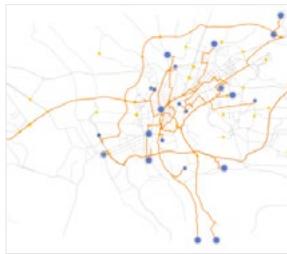
### Leaders in Urban Transport Planning (LUTP)

LUTP program empowers policymakers and practitioners with the knowledge and skills needed to diagnose urban mobility challenges and craft effective strategies to promote more livable, more sustainable cities. LUTP material is built around case-studies -many from Seoul-and was funded a few years back by a KGGTF. Additionally, session hosts include Seoul Metropolitan Government and Korea Transport Institute among others.

## Cairo Mobility Assessment and Public Transport Improvement study



### Data Collection Strategy



**"In Greater Cairo, public transit has a sizeable impact on public health and environmental conditions,"**

*Ibrahim Dajani, Practice Manager for Transport in the World Bank's Middle East and North Africa region*

### OUTPUTS

The program produced several assessments, reports, and databases, and identified strategies to support Cairo to build a green and resilient transport system. A few of the highlights include:

### WOMEN'S MOBILITY

Historically, the planning and design of transport infrastructure have not adequately considered gender differences. The report's primary goal is to provide insight into women's travel patterns in the Greater Cairo Region, their social obstacles, and how transportation infrastructure and services limit mobility based on gender. Specifically, it seeks to comprehend gender disparities in accessing resources, markets, training, information, and employment opportunities. This knowledge will be instrumental in guiding the development of public

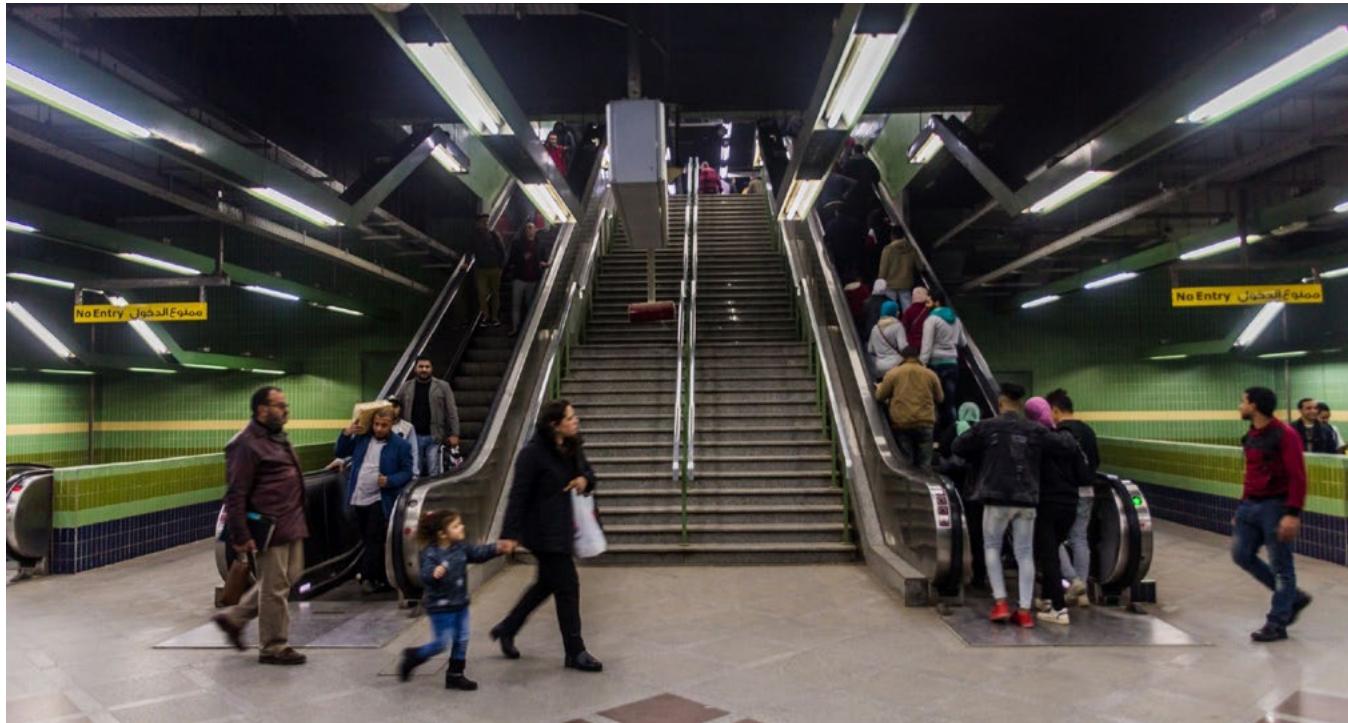
transportation infrastructure and services to facilitate women's access to economic resources, education, healthcare, and other critical components for promoting women's empowerment.

### RESULTS

Underpinned by the research and findings from this KGGTF program, the World Bank-financed Greater Cairo Air Pollution Management and Climate Change Project is now investing \$30 million in the demonstration of electric buses for operation by Cairo Transport Authority, where the bus fleet features designs that mitigate women's concerns in riding buses such as safety and security, among others.

### TASK TEAM LEADERS

*Nobuhiko Daito, Transport Specialist*



**“Egypt is undertaking steps to accelerate the transition towards a more green, sustainable, resilient, and inclusive development model. This operation is an integral part of our work to improve the quality of life for Egyptians, including the most vulnerable groups of society, enabling them to benefit from a whole array of development projects, while staying healthy and productive.”**

Marina Wes, World Bank Country Director for Egypt, Yemen, and Djibouti



Signing of MOU (October 2023) between the Egypt Ministry of Transport and Transport Planning Authority with the Korean National University of Transport.



Egypt hosted the 2023 Korea Green Innovation Days event in Cairo October 9-20, 2023, and the World Bank's Egypt Transport team hosted two events: "Transportation: Building Capacity at Home" and "Transport: Creating Safe and Resilient Railway Systems" with contributions from Egyptian transport authorities. The KGGTF-supported collaboration with the GOE has also led to a request for support in establishing a national transport university. With another KGGTF Just-in-Time grant support, the World Bank team facilitated the collaboration with the Korean National University of Transport, which is expected to lead to an official agreement.



# Strategic Green Growth Transitions in Bangladesh: Toward a Post-COVID Recovery

## CONTEXT AND CHALLENGES

Bangladesh has made notable advancements in crafting environmental policies, guidelines, and laws. However, the country has experienced significant environmental degradation and loss of natural resources over recent decades. This decline has adversely affected human health, agriculture, forestry, fisheries, industrial productivity, and environmental services. For example, an estimated 19 million people in Bangladesh rely on forests for their livelihoods, which are now threatened by rapid changes in land use. These forests are crucial for supporting the poor and providing protection against climate change effects, such as increasing soil salinity in coastal areas. The economic cost of this environmental degradation is substantial, amounting to approximately \$6.5 billion annually, or 3.4 percent of the country's GDP. Pollution is a major health concern, with air and water pollution being responsible for nearly 28 percent of deaths in the country.

Despite significant economic growth and poverty reduction, these achievements in Bangladesh have come at a high environmental cost, including high carbon emissions, resource inefficiency, escalating pollution levels, reduced resilience to climate change, and continued environmental degradation. The country also faces a growing energy crisis and relies heavily on a few industries, posing risks to sustainable growth and its ambition to become a high-income nation by 2041.

The Government of Bangladesh has expressed a strong commitment to transitioning to green growth through various national plans. However, effectively implementing these green growth strategies remains a significant challenge.

## CAPACITY BUILDING TO SUPPORT REGIONAL PRIORITIES

The KGGTF program is assisting Bangladesh in establishing the essential institutional, policy, knowledge, and investment framework for planning and executing green growth initiatives. In the short to medium term, this involves developing strategies, action plans, and policies; identifying investment opportunities; generating and managing knowledge; executing strategic communication; and creating government-led multi-sector platforms, all supported by well-coordinated development partners.

In the long term, the aim is for Bangladesh's national planning and implementation processes, including the 8th Five-Year Plan, Mid-Term Implementation Review, and Annual Development Plans (ADP), to fully integrate green growth principles. Similarly, in Nepal, the World Bank's upcoming Country Partnership Framework and Core Climate Diagnostic, developed in FY22, present further opportunities to incorporate green growth.

The program further supported bringing international experiences and learning from green growth initiatives such as the Green New



SECTOR  
Environment



GEOGRAPHY  
South Asia  
Bangladesh



APPROVAL YEAR  
2021

### KGGTF OUTCOME SUMMARY



#### INFLUENCE WB LENDING

\$500,000,000 WB Lending

#### INFLUENCE ON CLIENT COUNTRY POLICY/STRATEGY

The KGGTF grant supported analytics and policy dialogue that directly influenced key reforms:

1. 2023 Environmental Conservation Rules – with a broad reform on the EIA and environmental clearance system
2. Addendum to integrate green and climate resilience goals to the Guidelines for the Preparation, Processing, Approval and Revision of Projects in the Public Sector.
3. Introduction of Block Grant System to transfer funds from national to local governments for green growth priority activities.
4. (Upcoming) National Air Quality Management Plans.



## KGGTF IMPACTS



KGGTF CATALYTIC  
INVESTMENT

\$500,000



INFLUENCING  
LENDING

\$500 Million



LEVERAGE EFFECT

\$1,000 for every  
\$1 of grant support



6 Reports



TRAINING

500 Government  
leaders in Bangladesh  
to improve air quality

Deal and similar projects in the European Union, Korea, Vietnam, and other parts of the world, helping Bangladesh understand their challenges and successes.

## EMBEDDING GREEN GROWTH PRINCIPLES INTO BANGLADESH

Innovative Approaches and Cutting-Edge Solutions to Mainstream Green Growth into Bank Lending Operations:

Other World Bank global practices (GPs) will closely collaborate with this process to address the priority issues for green recovery for Bangladesh and Nepal. The work is becoming central to the Bank's country policy dialogues, potential dedicated green growth development policy lending, SCD and CPF processes for Bangladesh and Nepal, and the development of investment lending pipelines.

### OUTPUTS

- Green Growth Diagnostics
- Country Environmental Analysis
- Report on Natural Capital Valuation for the Southwest region
- Report on Strengthening institutions and policies to assess and manage environmental risk
- Green Growth Framework for Bangladesh Report
- Green Financing Report
- Creation of Green Growth for Bangladesh (GG4B) Platform
- Series of high-profile stakeholder events on Green Growth
- Series of workshops covering topics such as: Energy Smart city, Waste, among others
- Regional Air quality workshop with key constituents and stakeholders



The **GG4B Platform** brings together government and non-government actors, line ministries and agencies, think tanks, the private sector, and civil society organizations for green growth for collaboration and capacity building. The platform hosts events, provides learning materials and ensures coordination.

## GREEN GROWTH CAPACITY BUILDING AND PILOT GREEN SKILLS

Seven in-country capacity building programs and events for 500 people with support from SLC and KEI

1. Review policy for green growth
2. Scoping mission to Korea
3. Natural Capital Accounting (NCA) workshop
4. Drone green skills pilot and technical engagement

### RESULTS

The KGGTF grant supported analytics and policy dialogue that **directly influenced key reforms**:

1. 2023 Environmental Conservation Rules – with broad reform on the EIA and environmental clearance system
2. Addendum to integrate green and climate resilience goals to the Guidelines for the Preparation, Processing, Approval, and Revision of Projects in the Public Sector.
3. Introduction of Block Grant System to transfer funds from national to local governments for green growth priority activities.
4. (Upcoming) National Air Quality Management Plan

World Banks projects directly informed with the analytics and engagement supported by KGGTF.

**“Bangladesh is among the countries most vulnerable to climate change. And as the intensity and frequency of natural disasters increase, Bangladesh must do more to tackle environmental and climate risks and sustain its strong growth performance. Green growth will help Bangladesh build long-term resilience against climate risks and potentially achieve its vision of becoming an upper-middle-income country”**

*Abdoulaye Seck, World Bank country director for Bangladesh and Bhutan*

## **FIRST GREEN AND CLIMATE RESILIENT DEVELOPMENT CREDIT \$500 MILLION**

The development objective of the First Green and Climate Resilient Development Credit for Bangladesh is to support the Government of Bangladesh to transition to green and climate resilient development by (i) enhancing public planning, financing, and delivery of green and climate resilient interventions and (ii) promoting key sector reforms for greener and more efficient production and services. Framed around two pillars, the development policy credit (DPC) series supports structural reforms to (i) enhance public planning, financing, and delivery of green and climate resilient (GCR) interventions and (ii) promote key sector reforms for greener and more efficient production and services. This DPC series complements the parallel recovery and resilience DPC series, which has supported reforms to sustain growth in the post-COVID-19 recovery and enhance resilience to

future shocks. The reform program funded under this DPC series operationalizes vital policy recommendations from the recently completed country climate and development report (CCDR).

### **PARTNERSHIPS AND COLLABORATION**

- Korean Ministry of Environment (MOE)
- Korea Environmental Corporation (KECO)
- Sudokwon Landfill Site Management Corporation (SLC)
- Korea Environmental Industry & Technology Institute (KEITI)
- Land and Housing Corporation

#### **TASK TEAM LEADERS**

*Eun Joo Allison Yi, Senior Environmental Specialist*

*Stephen Danyo, Sector Leader for Sustainable Development*



### **What Does Green Growth Mean for Bangladesh**

Watch the short film explaining the idea of green growth created for social media. It was aimed at engaging both the public and key stakeholders.

[Watch this short film.](#)



Watch more about how Bangladesh is implementing Green Growth and working to improve the quality of life for roughly 170 million people.

## NEPAL

# Green Growth Transition in Nepal



### CONTEXT AND CHALLENGES

Economic development in Nepal faces a set of complex inter-related challenges, including a jobless and slow-paced economic recovery from COVID-19, a changing climate, environmental degradation, and persistent poverty and social exclusion. Good investments and policy implementation need to be accelerated while creating inclusive opportunities and green jobs for the poor and vulnerable who are disproportionately impacted by climate change. Addressing these challenges simultaneously and systematically are necessary to build a better-performing economy.

Nepal has committed to a green and sustainable recovery strategy in response to the COVID-19 pandemic that focuses on long-term investments that align with the nation's sustainable development goals. The government launched the **Green Resilient and Inclusive Development (GRID)** platform in a shift from short-term COVID-19 relief to a more sustainable recovery strategy that encompasses various sectors including green finance, sustainable agriculture, clean energy, and environmentally friendly infrastructure.

Critical components of the strategy include a new advisory program and a development policy credit dedicated to fostering green growth, that lays the groundwork for future green investment endeavors.

### Identifying Solutions

The KGGTF program includes the creation of knowledge in multiple sectors and the establishment of collaborative platforms to support those sectors in implementing their new plans. Multiple knowledge exchange trips took place to Korea that showcased how green growth can be deployed.

### Integrating Green Growth Principles at the National Level

Over the long term, this initiative aims to weave green growth principles into Nepal's national planning and implementation processes. An essential aspect of this plan is enhancing coordination between different government agencies, informed by global best practices and lessons learned from similar international initiatives.

The KGGTF grant has been instrumental in fostering the operationalization of GRID in Nepal through policy dialogue and alignment. Some notable achievements include:

### KGGTF IMPACTS



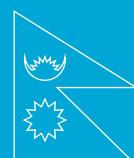
KGGTF CATALYTIC INVESTMENT

\$350,000



INFLUENCING LENDING

\$100 Million



Developed National Action Plan

#### KGGTF OUTCOME SUMMARY



INFLUENCE WB LENDING  
\$100,000,000 WB lending

**“Nepal’s GRID approach focuses on the quality of development and growth—the type of growth that reduces extreme poverty, narrows structural inequalities, protects the environment, sustains the growth process, and makes it more resilient.”**

*Anna Bjerde, World Bank Managing Director for Operations*

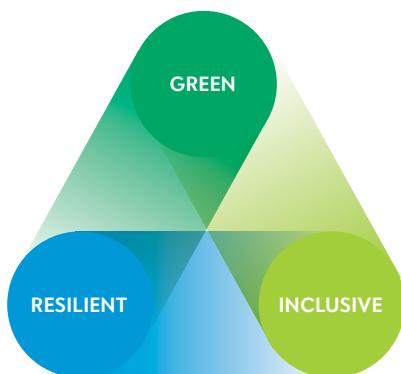
The GRID Strategic Action Plan identified ten priority action areas including:

- managing land, water, and forests in a more productive, sustainable, and integrated way for more resilient infrastructure, ecosystems, and food systems
- equipping people with new skills and resilient livelihoods
- greening urban development
- scaling up water supply and sanitation
- reducing air pollution
- managing solid waste
- scaling up renewable energy
- boosting the sustainability and resilience of transport

- strengthening disaster risk management
- and enhancing social protection and health systems to be more responsive to shocks

Sub-national consultations will be held in all seven provinces across Nepal to seek feedback from relevant stakeholders on priorities and implementation.

GRID Policy Roundtables were held that brought together a wide range of stakeholders to discuss Nepal’s policies on plastics and solid waste management, sustainable forest management, inclusion, shock-responsive social protection, green buildings, and air pollution.



While development practitioners have long worried about poverty, inequality and climate change, a **Green, Resilient and Inclusive Development (GRID)** approach pursues poverty reduction and shared prosperity with a long-term sustainability lens. Achieving GRID implies simultaneously and systematically addressing sustainability, resilience and inclusiveness through a balanced approach tailored to each country’s needs. Such a path will achieve lasting economic growth shared across the population that provides a robust recovery and restores momentum toward the Sustainable Development Goals (SDGs).

## UNITING STAKEHOLDERS

This initiative seeks to unite diverse stakeholders, including government bodies, non-governmental organizations, the private sector, and civil society groups, to integrate green growth principles into the World Bank's lending operations and beyond, drawing inspiration and insights from global experiences, particularly from nations that have implemented Green New Deals or similar programs.

## ADVOCATING FOR CHANGE

The KGGTF grant has contributed to promoting GRID by funding the creation of a GRID Flyer, available in both English and Nepali. This flyer, which is updated regularly to showcase ongoing progress, provides an overview of the GRID concept, its significance for Nepal, and the advancements made so far. Additionally, the grant facilitates the production of twenty-one videos

illustrating "GRID-In-Action," that will highlight successful initiatives in Nepal that could lead to transformative impacts on a larger scale.

In 2023 the Helpline has provided over **50,000 survivors with safe shelter, counseling and legal advice**

## RESULTS

### \$100 million Funding for Green, Resilient and Inclusive Programmatic

With a comprehensive and clear strategy across multiple sectors, the country now has a clear pathway to improve the enabling environment for Nepal's green, climate-resilient development plans.

#### TASK TEAM LEADERS

Stephen Danyo, Sector Leader for Sustainable Development

Markus Olavi Kukkonen, Senior Land Administration Specialist



*"In Nepal, we have already internalized the GRID approach to build a greener, more resilient, and more inclusive economy that can withstand shocks, protect our environment, and uplift the lives of our people, ... Nepal's new GRID Strategic Action Plan can be a policy vehicle that accelerates growth and job creation, strengthens livelihoods, and boosts the prosperity of Nepali people sustainably."*

*Honorable Finance Minister, Dr. Prakash Sharan Mahat*

### Innovations in Green, Resilient, and Sustainable Roads in Nepal



**Nepal also has one of the highest rates of road deaths in South Asia.**

### Investing in Landscape

### Resilient Water Supply



**Only 19 percent of households have access to safely managed drinking water.**



**The soil, water, forests, animals, people, and infrastructure in the landscape are all inter-connected.**

### Bringing Women and Local Citizens into Participatory Government



**Participatory local budgeting will help transform conversations**

**Creating Green Jobs: 449 small livestock businesses are using this financing model. They created or sustained over 45,000 jobs in 2023.**



**449 other small livestock businesses are using this model. They created or sustained over 45,000 jobs in 2023.**

### Forest Conservation



**Nepal is one of very few developing countries that expanded forest cover.**

**Helpline for Gender-Based Violence Survivors in Nepal**



**Improving the lives of people is a high priority of greener, more resilient, and**

GLOBAL

# Greening Digital: Implementing Green Digital Infrastructure Development



SECTOR  
Digital  
Development



GEOGRAPHY  
Global



APPROVAL YEAR  
2023

## CURRENT CHALLENGE

Governments across the world are looking for solutions that match the urgency and scale of the climate crisis – digital technologies are a key tool in this effort.

At the country level, digital technologies are increasingly powering adaptation efforts and supporting low carbon development pathways. The digital sector is however energy intensive and competes for often times scarce energy resources. It also emits as much carbon as the airline industry. A more strategic approach is needed to support sustainable digital transformation at country level.

The grant supports the examination of the interplay between digital development and climate change and identifies solutions for a green digital transformation.

## RESPONSE

The World Bank Group's Climate Action Plans, based on GRID principles (Green Resilient Inclusive Development) and Country Climate and Development Reports (CCDRs), provide climate diagnostics at the country level. As digital development and climate change become key focuses in World Bank regional strategies, the KGGTF program continues to contribute significantly by offering operational tools to implement regional climate strategies, CCDRs, and National Climate Action Plans effectively.

The digital sector is the largest purchaser of renewable energy and efforts are being made to enhance energy efficiency. Yet, while the

importance of these measures are increasingly recognized, more practical knowledge is needed through policy, regulation, and investment.

Korea has been at the forefront of merging digital and green strategies in global climate efforts, as evidenced by the Korean New Deal and the 2050 Carbon Neutral Strategy. The Korean government's green infrastructure priorities matched the program's objectives to assist client countries in shifting to a green digital economy. The program capitalized on Korea's expertise in green digital infrastructure, applying their successful strategies to tool development.

These comprehensive tools, designed to enable green, advanced digital solutions in lending operations, underwent rigorous testing and refinement through partnerships with client governments and are now being integrated into the World Bank and helping countries to invest in climate-resilient digital infrastructure and reduce GHG emissions.

## RESEARCH, DATA AND IDENTIFYING SOLUTIONS

The grant has also made important **contributions to the global agenda** through the generation of novel primary research, including the report *Measuring the Emissions and Energy Footprint of the ICT Sector Implications for Climate Action and Practitioner's Guide to Green Telecom* (Forthcoming). This research also contributed to the World Bank's participation in Green Digital Action at COP 28, which played an important role in convening the digital sector around green commitments. Outputs include:

### KGGTF OUTCOME SUMMARY

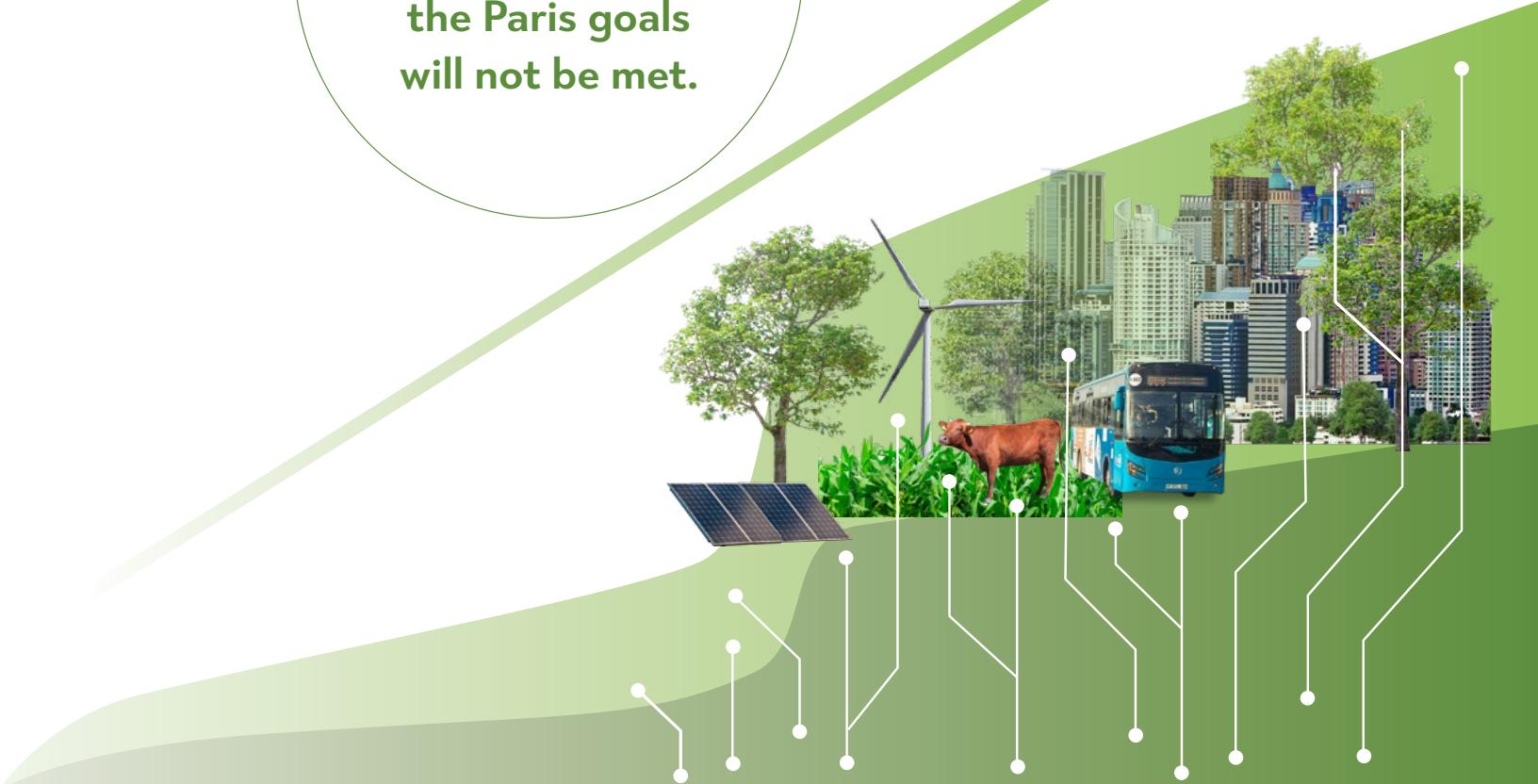


#### EXTERNAL PARTNERSHIPS (KOREAN & NON-KOREAN)

3 external partnerships with ITU, GSMA, the European Commission were leveraged

At the current speed of climate action, the Paris goals will not be met.

PARIS GOALS 2030



### KGGTF IMPACTS



KGGTF CATALYTIC INVESTMENT

\$610,000



Influencing lending across all digital investments at the World Bank



Establishing global standards for measuring emissions



Publication of 2 Reports shaping global conversation

- Development of Practitioner's Guide to Green Telecom, including GHG accounting tools.
- Research contribution to the report *Measuring the Emissions and Energy Footprint of the ICT Sector - Implications for Climate Action* (co-published with ITU)
- Extensive global stakeholder consultation and dialogue, including multiple workshops and conferences with client countries and partner multi-development banks
- Case data base on green measures in telecom
- Dissemination and training, including communication and training material developed for World Bank internal use.

## PARTNERSHIPS TO SPUR GLOBAL ACTION

The team collaborated with the Korean Ministry of Science and ICT (MSIT) and its affiliated organizations. The program also formed a vital part of the 3-year Digital Development plan in partnership with Korea (FY22-24), focusing on the interplay between digital and green innovation.



## SHAPING THE GLOBAL CONVERSATION

The Footprint report was launched following the [COP 28 Green Digital Action](#) which aims to spur industry-wide commitments to tackle climate challenges, prioritizing inclusive digital solutions. This ITU initiative, supported by the World Bank, endeavors to cultivate commitments and accountability, driving the adoption of green and digital transitions across businesses, governments, and other stakeholders. The following organizations have pledged transparency regarding their emissions, aiming to enhance accountability and set higher standards to support policymakers in refining policies.

More than 44 organizations have already pledged to annually disclose emission standards and the list continues to grow, [find out more](#).





Short film created for the launch of the flagship and viewed by over 10,000 people.

## FROM DATA TO ACTION: HARNESSING EMISSION METRICS FOR CHANGE

### *Measuring the Emissions and Energy Footprint of the ICT Sector*

#### **Implications for Climate Action**

The rapid global digitalization surge is escalating energy consumption and greenhouse gas (GHG) emissions. The KGGTF funded, World Bank and International Telecommunication Union (ITU) report examines how the internet and communication technology (ICT) sector's contribution to global carbon emissions (at least 1.7 percent) is only set to grow. Bridging this digital divide will necessitate additional infrastructure and devices, exacerbating energy demand and emissions without targeted interventions.

This report aims to: Analyze the energy and emissions footprint of the ICT sector, focusing on the 30 highest emitting countries for telecommunications and providing global estimates for other ICT segments, utilizing the greenhouse gas protocol corporate standard. The report identifies policy and regulatory implications derived from the data and examine these issues through various country case studies and provides solutions going forward.

The program has supported the development of tools and guidance notes that assist task teams and clients in improving the greening of telecom investments. The tools relate to GHG accounting principles for the digital sector as well as good

practice guidance material on greening measures along the telecom value chain. This guidance has been applied across several test projects and will be mainstreamed to all telecom related projects in the Digital Development Global Practice.

#### **RESULTS**

Greater green growth consideration in new public digital infrastructure investment programs and policies, in lower- and middle-income client countries, especially related to the priority areas covered by guidance notes

Project design reflects good practices on energy efficient telecom networks and use of renewable energy in digital infrastructure in existing and pipeline Bank lending operations. For new projects measured by increase in Climate Co-Benefits %CB) % compared to average CCB baseline at project start

Mainstream approaches to quantify the footprint of the digital sector and digital investments leading to lower carbon investments and client projects.

Contribute to cross Multilateral Bank (MDB) knowledge sharing and to global discussion on digital greenhouse gas emissions accounting principles.

#### **TASK TEAM LEADERS**

*Sara Ballan, Senior Digital Development Specialist  
Do Kyu Lee, Senior Digital Development Specialist*



STRATEGIC COMMUNICATIONS

AND KNOWLEDGE MANAGEMENT

05



**Clear and effective communication and dissemination are integral components of the KGGTF's mission.** It is imperative that we widely share the green growth solutions we have identified across the World Bank to facilitate learning and integration across sectors. Throughout the past year, we have diligently captured and disseminated outcomes from both the KGGTF program as a whole and its individual grant initiatives. Our steadfast commitment to promoting green growth as a comprehensive, cross-sectoral approach applicable worldwide has been evident throughout the past decade.

We continue to actively support our programs in their dissemination objectives. This past year, in addition to webinars, and workshops, several teams produced short films targeting both policy makers and the general public of the countries they are working in. The films introduce green growth and demonstrate how various projects (improving water and air quality for example) will tangibly improve quality of life.

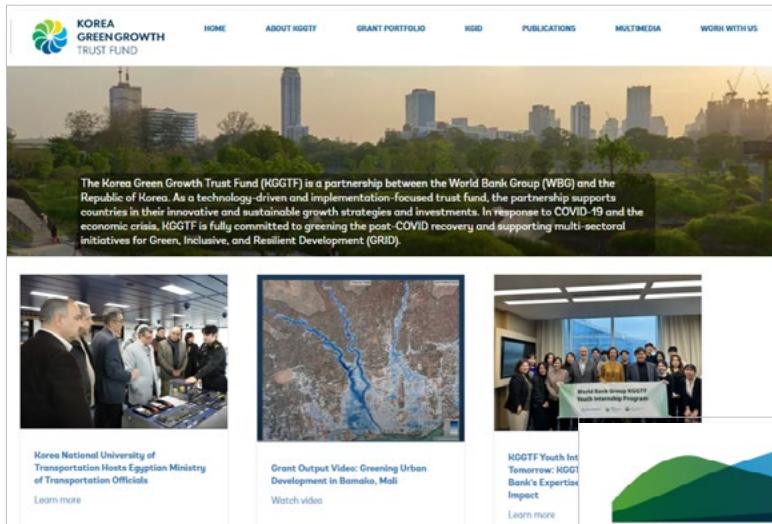
Our goal is to furnish KGGTF stakeholders with a variety of informative materials while also broadening awareness of green growth amongst the general public. Through these efforts, we seek to create a supportive environment for policymakers endeavoring to implement green growth solutions.

## WEBSITE

The website [wbgkggtf.org](http://wbgkggtf.org) remains a dynamic knowledge platform, offering comprehensive updates on trust fund activities, events, and program outputs. It serves as a central hub for stakeholders to access the latest information, ensuring transparency and facilitating engagement with our initiatives.

## MONTHLY NEWSLETTER

The monthly newsletter remains a vital channel for delivering regular updates and valuable insights on our programs. Each edition is curated to include highlights of recent activities, success stories, and impactful outcomes. Additionally, subscribers gain access to the latest research findings, reports, and invitations to upcoming events. With a focus on keeping our audience informed and engaged, the newsletter also provides access to recordings of past events, ensuring that valuable content is accessible to all stakeholders.



The Korea Green Growth Trust Fund (KGGTF) is a partnership between the World Bank Group (WBG) and the Republic of Korea. As a technology-driven and implementation-focused trust fund, the partnership supports countries in their innovative and sustainable growth strategies and investments. In response to COVID-19 and the economic crisis, KGGTF is fully committed to greening the post-COVID recovery and supporting multi-sectoral initiatives for Green, Inclusive, and Resilient Development (GRID).

**Korea National University of Transportation Hosts Egyptian Ministry of Transportation Officials**  
[Learn more](#)

**Grant Output Video: Greening Urban Development in Bamako, Mali**  
[Watch video](#)

**KGGTF Youth Internship Program**  
[Learn more](#)



**KGGTF NEWSLETTER**

**May 2023**  
[wbgkggtf.org](#)

**FEATURE STORY**



[Ajay Banga Begins Tenure as 14th President of the World Bank](#)

The Executive Directors of the World Bank selected Ajay Banga as President of the World Bank for a five-year term beginning June 2, 2023. Ajay Banga most recently served as Vice Chairman at General Atlantic. Previously, he was President and CEO of Mastercard, a global organization with nearly 24,000 employees. Under his leadership, MasterCard launched the Center for Inclusive Growth, which advances equitable and sustainable economic growth and financial inclusion around the world. [Read more...](#)

## PUBLICATIONS



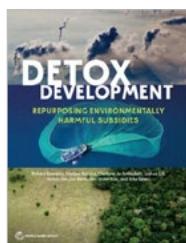
### [Innovations from Korea: Integrating Air Quality Management and Climate Change Mitigation](#)

Tackling air pollution and climate change is crucial for humanity's short, medium, and long-term well-being. Currently, air pollution kills around 7 million people every year. Mitigating emissions offers opportunities to curb climate change and increase the quality of life through improved air quality and rising labor productivity. This paper identifies opportunities that promote climate action in low- and middle-income countries.



### [Pioneering Marine Spatial Planning in Morocco: An Opportunity to Articulate Conservation and Development](#)

With its rich blue assets in the Mediterranean Sea and the Atlantic Ocean, Morocco has a high potential for developing its Blue Economy. The country has a wealth of marine resources underpinned by high levels of biodiversity, with over 600 identified fish species. Morocco's coastal areas contribute 59 percent of the country's gross domestic product (GDP) and provide 52 percent of its jobs. The fisheries sector alone contributes 1.5 percent of GDP and provides 700,000 direct and indirect jobs. This comprehensive report explores how Morocco can best develop its natural assets to create jobs and strengthen the economy.



### [Detox Development: Repurposing Environmentally Harmful Subsidies](#)

The Detox Development report examines the impact of subsidies on foundational natural assets. Explicit and implicit subsidies—estimated to exceed US\$7 trillion per year—not only promote inefficiencies but also cause much environmental harm. Poor air quality is responsible for approximately 1 in 5 deaths globally. And as the new analyses in this report show, a significant number of these deaths can be attributed to fossil fuel subsidies. Although the literature on subsidies is extensive, this report fills important knowledge gaps using new data and methods. In doing so, it enhances understanding of the scale and impact of subsidies and offers solutions to reform or repurpose them in efficient and equitable ways.



### [Training for Construction Workers: General Induction: Safety, Health, and the Environment](#)

This safety guide will help contractors build the capacity of workers. It provides the minimum actions workers should take to protect the environment, respect local communities, and to keep them and others safe & healthy.



### [Digital Technology for Traceability in Vietnam's Fruit and Vegetable Value Chains](#)

This report assesses the current state of existing traceability systems in Vietnam's fruit and vegetable value chains, examines pertinent policies and regulations, shares international good practices, and explores their potential applicability to Vietnam. It identifies potential intervention areas and recommends to policymakers and food business operators (FBOs) in Vietnam regarding implementing digital traceability systems and the regulatory environment that facilitates their use. The interventions would contribute to re-establishing public confidence in the quality and safety of Vietnamese agri-food and its current food safety oversight regime.



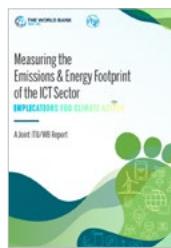
### [Innovative Korea: Leveraging Innovation and Technology for Development](#)

Innovative Korea focuses on Korea's successful transition from a middle-income to a high-income economy. Korea escaped from the "middle-income trap" by fundamentally transforming its growth paradigm to a more private-sector-led model emphasizing market competition, innovation, and technology. This report was prepared jointly by the World Bank and the Korea Development Institute (KDI).



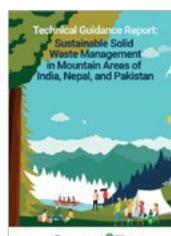
### [Green Digital Transformation: How to Sustainably Close the Digital Divide and Harness Digital Tools for Climate Action](#)

The report examines how digital technologies have the potential to shape and support climate change action. Green digital transformation can help countries adapt effectively to the impacts of climate change and create greener growth pathways. The report was featured at COP27 and COP28.



### [Greening Digital: Implementing Green Digital Infrastructure Development](#)

Digitalization is increasing rapidly worldwide, requiring more energy, and resulting in greenhouse gas (GHG) emissions. According to International Telecommunication Union (ITU), two thirds of the world's population are now online. Estimates of the internet and communication technology (ICT) sector's share of global carbon emissions vary across the literature ranging from 1.5 to 4 percent. The report addresses the policy and regulatory implications of this data and dives deeper into these issues through country case studies. This report was jointly developed by the World Bank Group and ITU.



### [Solid Waste Management in South Asia](#)

Mountain areas present numerous challenges for sustainable solid waste management (SWM) by virtue of their remoteness, topography, scattered settlements, sensitive and fragile ecosystems, lack of infrastructure and road networks, and poor institutional and financial capacity. This report presents various recommendations and related implementable actions to overcome SWM challenges faced in mountain areas.



## ONLINE TRAINING COURSES

**Insect Farming** provides a supply of nutritious food and healthy proteins for humans and animals. Opening a business is viable at a low cost and does not emit carbon emissions. Insect farming offers immense opportunities to create climate-resilient jobs and empower women, youth, and refugees by increasing their access to livelihoods and agricultural resources. The KGGTF Year 8 Grant - Novel Protein: Insect Farming for Food and Feed for a Circular Green Growth Economy supported the development of training modules on insect farming and hydroponics to build skills of small entrepreneurship for women in Kenya and Gambia, grow their own food, and have more access to income-earning opportunities. [Find out more.](#)

The Korea Green Growth Trust Fund (KGGTF) supported the partnership between the World Bank and the RDA for the Soil Management Bite Sized Learning Series through the KGGTF Year 7 Grant Program - Leveraging technology for Uzbekistan's agricultural modernization.



**Bite Size Learning Series for Soil Management:** The World Bank Agriculture and Food Global Practice, in partnership with the [Korea Rural Development Administration \(RDA\)](#), organized Bite Sized Learning Series (Bite+) to introduce the rich experience of the RDA that has benefited the World Bank's engagement in client countries regarding soil testing, soil information systems, and climate-smart agriculture. The Bite+ includes expert presentations on (i) soil functions, (ii) soil investigation, (iii) soil mapping, (iv) digitalization of soil information systems, (v) soil properties,

and (vi) climate-smart agriculture, and virtual site visits to the relevant facilities. This Bite+ provides an opportunity for soil management experts, from researchers to senior management officials, to understand the need for investments in agricultural soil fertility management through Korea's experience in designing and implementing the related programs. Watch the Bite+ Series to learn how Korea developed sophisticated methods to improve the soil management system.

[\*\*English - Soil Management Bite Sized Learning Series \(English\)\*\*](#)

[\*\*Russian - Soil Management Bite Sized Learning Series \(Russian\)\*\*](#)



[\*\*Water Pollution and Management Approaches\*\*](#)

[\*\*Self Paced Open Learning Campus Course\*\*](#)

The world's water system faces many critical challenges, from shortages to increased pollution, degrading the quality of available freshwater. This series provides:

An overview of water pollution.

Critical sources of pollutants.

The potential impacts of poor water quality on human health and ecosystems.

## SHORT VIDEOS

### GRID in Action—Strategic Green Growth Transitions in Nepal: Toward a post-COVID recovery:

The team released a series of Green, Resilient, and Inclusive Development (GRID) videos that showcase how GRID will improve the quality of life for citizens in Nepal. The grant aims to advance inclusive green growth across multiple sectors in Nepal and inform decision-making as Nepal works to transition to a greener more sustainable economy.

TTL: Stephen Danyo (SD Sector Leader for Nepal, World Bank)

Grant Approval Year: 2021



[Watch Modelling Innovations in Green, Resilient, and Sustainable Roads in Nepal.](#)



[Watch KGID 2023 Conference Highlights.](#)

## IN PERSON AND VIRTUAL EVENTS

### In-Person Event | February 8-9, 2023

#### The Africa-Korea AgTech Innovation Challenge and Summit

The Africa-Korea Agtech Innovation Challenge was launched by the World Bank on February 8 and 9, 2023. The event aimed to identify and collaborate with innovators of disruptive agricultural technologies (DATs) from Korea, Kenya and Uganda and create bridges between innovators and incorporate DATs into their businesses. The event held a session on learning from other successful agricultural innovation ecosystems and the growth of scalable DATs in Africa over the last decade.

Twenty-one finalists were selected with three winners from distinct categorizes provided the opportunity to present at the Africa-Korea Agtech Innovation Summit in Nairobi, Kenya, on February 8 and 9, 2023. The Summit showcased the finalists to key government officials from Kenya, Uganda and South Korea, World Bank stakeholders, prominent accelerators, and venture capital firms. The winning solutions would have an opportunity to join the One Million Farmers Platform in Kenya. The Challenge and Summit were supported by the KGGTF Year 8 Grant - Leveraging Digital Technologies for Scaling up Climate Smart Agriculture in Kenya (TTL: Vinay Kumar Vutukuru, Senior Agriculture Economist, Agriculture and Food GP).



DATs are considered as digital and non-digital innovations that enable smallholder farmers to leapfrog their current constraints and improve their yields, incomes, nutritional status, and climate resilience. These technologies range from mobile apps to digital identities for farmers, solar applications for agriculture, portable agriculture devices, and bio-fortified foods. The challenge invited DATs whose solutions address the following themes:

- Improving agricultural productivity and efficiency
- Improving market access and providing downstream and upstream linkages
- Financial inclusion of farmers

### Watch the Challenge

### In-Person Workshop | February 16-17, 2023

#### The International Workshop on Land Use Planning and Land Administration: Integration and Decentralization

Hosted by the Ministry of Land Management, Cooperatives and Poverty Alleviation of Nepal at the Land Management Training Center in Dhulikhel, Nepal on February 16 and 17, 2023, the event provided an opportunity to share research, international practices, professional experiences in the fields of land administration and land use planning, and learn from international experiences on integration and decentralization of land administrative services in the local context of Nepal. Representative from the Korea Research Institute for Human Settlements (KRIHS) presented Korea's greenbelt, urban expansion control, and agricultural land protection policies.

### In-Person Workshop | May 21-26, 2023

#### Leaders in Urban Transport Planning: Unlocking Urban Mobility in East African Cities

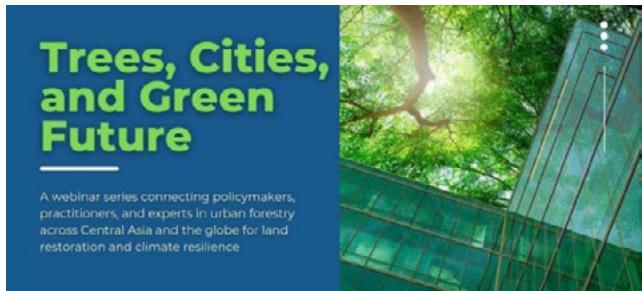
Urban transport practitioners and policymakers from cities in Eastern Africa convened in Kigali, Rwanda for a workshop facilitated by the Leaders in Urban Transport Planning (LUTP) program. The workshop was part of an ongoing advisory service entitled, Unlocking Urban Mobility in Four East African Cities, covering Kigali, Rwanda; Kampala, Uganda; Nairobi, Kenya; and Dar es Salaam, Tanzania.

[Find out more.](#)

### Webinar | March 16, 2023

#### Trees, Cities, and Green Future

The webinar was held under the World Bank's RESILAND CA+ Regional Landscape Restoration Program (Uzbekistan, Kazakhstan, Tajikistan), which is working to prevent land degradation and increase resilience in Central Asia. Topics included the complex interconnections between trees, urban environments, and sustainable cities and provided



**Trees, Cities, and Green Future**

A webinar series connecting policymakers, practitioners, and experts in urban forestry across Central Asia and the globe for land restoration and climate resilience

an online knowledge platform. By harnessing examples of best practices from cities such as Seoul, Barcelona, Milan, and Melbourne, the webinar addressed progressive planning processes including Master Planning for Urban Trees, novel financing mechanisms, and foundational frameworks to ensure project sustainability. The KGGTF supports RESILAND CA+ Program through Year 8 Grant – Promoting Forest Information and Communication Technology in Uzbekistan.

[Find out more.](#)

### Webinar | April 25, 2023

#### Climate-Related Risks for Macroeconomic and Financial Stability and Role of DFIs and MDBs in Scaling Up Green Finance

Professors Suk Hyun and Seong-Hoon Kim from Yonsei University presented their recent report that examines the impacts of climate change on the macroeconomy and financial markets of Korea, Thailand, and the Philippines by constructing a climate index from extreme weather events to understand the macroeconomic impacts on the economy. These results suggest that policies may need to be tailored to individual countries to stabilize economic fluctuations caused by extreme weather events.

### Webinar | July 10, 2023

#### Energy Transition and Green Growth

Co-hosted by the Energy Sector Management Assistance Program (ESMAP) and the Korea Green Growth Trust Fund (KGGTF) featured Dr. Yoonhee Ha, Professor, Graduate School of Energy and Environment (Green School), Korea University where she discussed how green growth policies have evolved in Korea. Dr. John Byrne, Distinguished Professor, Biden School of Public Policy & Administration, University of Delaware, served as the session's discussant.

### In-Person Workshop | October 18, 2023

#### Establishing a Higher Education System for Transportation Experts in Egypt: Collaborative Approach with Korea National University of Transportation

Egypt's Ministry of Transport and the Korea National University of Transportation (KNUT) held a workshop, establishing a comprehensive higher education system focused on transportation in Egypt and nurturing a skilled workforce of transportation experts to meet the sector's growing demands. The workshop featured discussions on fostering knowledge exchange, research partnerships, and collaboration between Korean and Egyptian academic institutions and strengthening industry-academia cooperation to bridge the gap between theoretical education and practical industry needs. The partnership discussion was facilitated by the World Bank Egypt Transport Team and the Korea Green Growth Trust Fund.

### Webinar | October 25, 2023

#### Identifying effective tools for measuring climate change mitigation & adaptation in the construction sector

At this webinar, IFC presented two effective tools for measuring climate change mitigation and adaptation in the construction sector—[EDGE](#) & [BRI](#). Additionally, Korea's Land & Housing Research Institute presented on green certification and green housing policy cases in Korea and the World Bank EAP Urban Team shared ongoing work with the Indonesia Green Building Council and the Mongolia Green Building Council rating system.

[Find out more.](#)



## FINANCIAL REVIEW

06

## TF072537 - KGGTF Trust Fund CY2023

	07/01/2022 - 12/31/2022	07/01/2022 - 06/30/2023	07/01/2023 - 12/31/2023	01/01/2023 - 12/31-2023
<b>INFLOWS</b>				
Beginning balance 01/01/23				\$29,002,203
<b>Receipt</b>				
Cash contributions	\$10,440,000	\$10,440,000	\$12,260,000	\$12,260,000
Other receipts	\$-	\$-	\$-	\$-
<b>Total Receipts</b>	<b>\$10,440,000</b>	<b>\$10,440,000</b>	<b>\$12,260,000</b>	<b>\$12,260,000</b>
<b>OUTFLOWS</b>				
Project disbursements	\$4,474,496	\$12,022,648	\$4,723,783	\$12,271,935
Non-project disbursement	\$-	\$-	\$-	\$-
<b>Total Disbursement</b>	<b>\$4,474,496</b>	<b>\$12,022,648</b>	<b>\$4,723,783</b>	<b>\$12,271,935</b>
<b>FUND BALANCE</b>				
End of period balance 12/31/23				\$28,990,267

## ANNEXES

07





## ANNEX 1 KPI PROGRESS

The table below shows the average progress towards the end of CY 2024 target across the KGGTF Outcome Pillars 1 to 4. On average, Pillar 1 (Increased mobilization of green growth investments) shows great progress towards target set by the end of CY 2024. On average, Pillar 3 (increased capacity, knowledge, and technologies to implement green growth in action) indicates a similar rate of progress to that of Pillar 1, exceeding the target at 112%. On average, Pillar 2 (adoption of green growth policies, regulations, strategies, and initiatives) and Pillar 4 (strengthened partnerships and collaborations to advance green growth) show robust progress ahead of the projected rate at 91% and 95%, respectively.

In summary, the overall progress has reached 97.5% towards the estimated target by the end of the CY 2024.

KGGTF OUTCOME PILLARS		AVERAGE PROGRESS TOWARDS TARGET (%)
	Increased Mobilization of Green Growth Investments	92
	Adoption of Green Growth Policies, Regulations, Strategies, and Initiatives	91
	Increased Capacity, Knowledge, and Technologies to Implement Green Growth in Action	112
	Strengthened Partnerships and Collaborations to Advance Green Growth	95
	Average Overall	97.5

## KPI ACHIEVEMENTS AND PROGRESS TOWARDS TARGET



### Outcome Pillar 1: Increased mobilization of Green Growth Investments<sup>1</sup>

OUTCOME INDICATORS	BASELINE - ACCUMULATIVE TO END 2020	PROGRESS TO DATE - ACCUMULATIVE TO END 2023	TARGET - ACCUMULATIVE TO END 2024	PROGRESS TOWARDS TARGET (%)
<b>1.1 WB lending influenced by KGGTF funded activities</b>				
1.1.1. Total number of WB lending projects linked to KGGTF funded activities	58	94	100	86%
1.1.2. Total value of WB lending projects linked to KGGTF funded activities	\$12,250,918,000	\$20,289,048,000	\$17,391,518,000	156%
<b>1.3 Co-financing to WB lending influenced by KGGTF funded activities</b>				
1.3.1. Total number of co-financings to WB lending projects linked to KGGTF funded activities including counterpart funding and other sources (e.g., ADB, AIIB, EDCF, GCF and GEF)	35	47	48	92%
1.3.2. Total value of co-financing to WB lending projects linked to KGGTF funded activities including counterpart funding and other sources (e.g., ADB, AIIB, EDCF, GCF and GEF)	\$2,564,640,000	\$3,646,836,000	\$4,160,200,000	68%



### Outcome Pillar 2: Adoption of Green Growth Policies, Regulations, Strategies, and Initiatives

OUTCOME INDICATORS	BASELINE - ACCUMULATIVE TO END 2020	PROGRESS TO DATE - ACCUMULATIVE TO END 2023	TARGET - ACCUMULATIVE TO END 2024	PROGRESS TOWARDS TARGET (%)
<b>2.1 Client countries' adoption of green growth policies, regulations, strategies and initiatives influenced by KGGTF funded activities</b>				
2.1.1. Number of green growth policies, regulations, strategies, and initiatives adopted by client countries that were influenced by KGGTF funded activities and outputs	25	153	145	107%
2.1.2. Number of client countries adopting green growth policies, regulations, strategies, and initiatives that were influenced by KGGTF funded activities and outputs	17	113	140	78%
<b>2.2 WB's adoption of green growth strategies, country engagements and project development influenced by KGGTF funded activities</b>				
2.2.1. Number of KGGTF funded outputs delivered to WB Management and CMUs which influenced WB strategies, country engagements and project development	16	97	90	109%
2.2.2. Number of client countries for which CMU used KGGTF funded outputs to influence country engagements and project development	13	134	190	68%

<sup>1</sup> Climate co-benefit data (Indicator 1.2.1, 1.2.2, 1.2.3, 1.2.4) was not included due to World Bank's restriction on publishing the data



**Outcome Pillar 3:**  
**Increased Capacity, Knowledge, and Technologies to Implement Green Growth in Action**

OUTCOME INDICATORS	BASELINE - ACCUMULATIVE TO END 2020	PROGRESS TO DATE - ACCUMULATIVE TO END 2023	TARGET - ACCUMULATIVE TO END 2024	PROGRESS TOWARDS TARGET (%)
<b>3.1 Knowledge Exchange programs supported by KGGTF funded activities</b>				
3.1.1. Number of Knowledge Exchange programs supported by KGGTF funded activities *Virtual KEs must be more than half day.	58	117	110	113%
3.1.2. Number of WB staff, government officials & technical representatives of client countries that participated in Knowledge Exchange programs supported by KGGTF funded activities	1,345	4610	3,800	133%
3.1.3. Number of client countries that participated in Knowledge Exchange programs supported by KGGTF funded activities	26	154	170	89%
3.1.4. Number of Korean organizations that participated in Knowledge Exchange programs supported by KGGTF funded activities	11	254	230	111%
<b>3.2 Capacity building activities supported by KGGTF funded activities</b>				
3.2.1. Number of in-country capacity-building activities* supported by KGGTF funded activities *including workshops for dissemination of outputs/findings	5	148	85	179%
3.2.2. Number of participants in in-country capacity-building activities supported by KGGTF funded activities *including workshops for dissemination of outputs/findings	75	9591	5,700	169%
3.2.3. Number of client countries that participated in in-country capacity building activities* supported by KGGTF funded activities *including workshops for dissemination of outputs/findings	3	149	125	120%
3.2.4. Number of Korean organizations represented in in-country capacity-building activities supported by KGGTF funded activities *including workshops for dissemination of outputs/findings	0	11	15	73%
<b>3.3 Creation of knowledge products to transfer green growth technologies and solutions</b>				
3.3.1. Number of knowledge products to transfer green growth technologies and solutions, created by KGGTF grants	21	134	150	88%
3.3.2. Number of knowledge products to transfer green growth technologies and solutions, disseminated by KGGTF Team	49	78	110	48%



## Outcome Pillar 4: Strengthened Partnerships and Collaborations to Advance Green Growth

OUTCOME INDICATORS	BASELINE - ACCUMULATIVE TO END 2020	PROGRESS TO DATE - ACCUMULATIVE TO END 2023	TARGET - ACCUMULATIVE TO END 2024	PROGRESS TOWARDS TARGET (%)
<b>4.1 External organizations engaged with KGGTF grant teams</b>				
4.1.1. Number of partnerships and/or collaborations between KGGTF grant teams and all external organizations (Korean & Non-Korean)	68	506	590	84%
4.1.2. Number of partnerships and/or collaborations between KGGTF grant teams and Korean organizations	40	213	185	119%
<b>4.2 External organizations engaged with the KGGTF Team</b>				
4.2.1. Number of collaborations with external organizations (Korean & Non-Korean) including joint initiatives and active participation at knowledge sharing events organized by the KGGTF Team	110	269	290	88%
4.2.2. Number of collaborations with Korean organizations including joint initiatives and active participation at knowledge sharing events organized by the KGGTF Team	110	254	270	90%

## ANNEX 2 PORTFOLIO

COUNTRY	SECTOR	PROGRAM TITLE	APPROVAL YEAR	STATUS	DONOR APPROVED AMOUNT
<b>AFRICA</b>					
African Cities	Urban, Rural & Land	Improving Solid Waste Service Delivery in African Cities.	2015	Closed	\$600,000
Burundi; Kenya; Rwanda; Tanzania; Uganda	Water	Supporting Lake Wide Inclusive Sanitation for Improving Water Quality in Lake Victoria Basin	2021	Closed	\$650,000
Regional	Urban, Rural & Land	Improving Solid Waste Management in African Cities	2017	Closed	\$500,000
Sub-Saharan Africa	IFC	Greener Cement Industries in Africa	2015	Closed	\$700,000
Sub-Saharan Africa	IFC	Green Cities and Low Carbon Industries Initiative	2014	Closed	\$600,000
Sub-Saharan Africa	Digital Development	Negawatt Challenge for Energy Efficiency	2014	Closed	\$500,000
Sub-Saharan Africa	Transport	Africa Sustainable Transport Forum	2014	Closed	\$1,000,000
Sub-Saharan Africa	Transport	Streets as Drivers of Green Growth and Urban Prosperity in Africa	2014	Closed	\$600,000
<b>EASTERN &amp; SOUTHERN AFRICA</b>					
Angola	Water	Human Resource Development and Capacity Building for Climate Resilience and Water Security	2023	Active	\$600,000
Angola	Water	Building Drought Resilience in the South of Angola Through the Use of Geospatial Information and Nature-based Infrastructure	2019	Closed	\$500,000
Congo, Democratic Republic	Water	Green, Resilient and Inclusive Water Supply and Sanitation Services in the DRC	2023	Active	\$520,000
Ethiopia	Digital Development	Towards Green, Secure and Climate-Resilient Data Infrastructure	2022	Active	\$350,000
Ethiopia	Water	Resilient Investments for Green, Resilient and Inclusive Water	2022	Active	\$400,000
Ethiopia	Energy & Extractives	Grid Integration of Variable Renewable Energy in Ethiopia	2020	Active	\$300,000
Ethiopia	IFC	Ethiopia Green Industrialization support program	2017	Active	\$550,000
Ethiopia	Transport	Resilience of the Ethiopian Roads Network	2016	Active	\$700,000
Ethiopia	Urban, Rural & Land	TA to promote solid waste management and urban greenery in selected Ethiopian secondary cities	2015	Closed	\$400,000
Ethiopia	Transport	TA to promote integrated urban planning in Addis Ababa to foster green growth	2013	Closed	\$1,100,000
Kenya	Water	Strengthening the Capacity of Kenya County Governments and Water Services Providers to Design and Implement Green and Climate Resilient Water Supply Systems	2023	Active	\$500,000
Kenya	Agriculture	Leveraging Digital Technologies for Scaling up Climate Smart Agriculture in Kenya	2020	Closed	\$400,000
Kenya	Water	Turning Kenya's Water Utilities Green	2017	Closed	\$400,000
Kenya; Malawi; Zimbabwe	Agriculture	Novel Protein: Insect Farming for Food and Feed for a Circular Green Growth Economy (IF4FF)	2020	Active	\$800,000
Kenya; Rwanda; Tanzania; Uganda	Transport	Preparing East Africa 4 future megacities for moving 50 million people by 2050	2020	Active	\$450,000
Malawi	Transport	Digital Skies in East Africa	2020	Active	\$450,000
Mozambique, Madagascar	Digital Development	Green energy solutions for digital connectivity and services in underserved communities: Mozambique and Madagascar	2023	Active	\$600,000
Rwanda	Urban, Rural & Land	Secondary Cities program	2014	Closed	\$650,000
South Africa	Environment & Natural Resources	Catalyzing Biodiversity and Protected Lands Remediation, Restoration and Expansion around Retired Mining Sites in South Africa	2023	Active	\$600,000
Tanzania	Transport	Development of ITS-led Tanzania Railway system strengthening climate resilient infrastructure based on GIS	2023	Active	\$600,000
Tanzania	Digital Development	Smart Tanzania - Strengthening Data Services and Planning	2016	Closed	\$600,000
Uganda	Agriculture	Building a Green Agri-Food Ecosystem in Uganda	2020	Active	\$535,000

COUNTRY	SECTOR	PROGRAM TITLE	APPROVAL YEAR	STATUS	DONOR APPROVED AMOUNT
Uganda	Water	Strengthening capacity in climate resilience for water infrastructure development in Uganda	2017	Active	\$600,000
Uganda	Transport	Green Logistics Policy and Strategy for Uganda	2016	Closed	\$500,000
Uganda +	Transport	Developing skills to support transport and logistics	2014	Closed	\$400,000
Uganda, Tanzania, SA	Urban, Rural & Land	Enhancing Green Urban Development in Sub-Saharan Africa	2013	Closed	\$1,000,000

### WESTERN & CENTRAL AFRICA

Benin, Burkina Faso, Cote d'Ivoire, Gambia, The Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo	Energy & Extractives	Strengthening Utility Capabilities by Capacity Building and South-South KE (SUCCESS-KE)	2017	Closed	\$600,000
Benin	Urban, Rural & Land	Leveraging Korea's Experience in the Solid Waste	2014	Closed	\$225,000
Ecowas member countries (Benin, Cote d'Ivoire, Burkina Faso, Ghana, Gambia, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo)	Energy & Extractives	Energy Storage application studies and knowledge exchange framework for Sustainable Green Growth in WAPP	2016	Closed	\$765,000
Mali	Urban, Rural & Land	Real Time Urban Flood Risk Management and Decision Support Tool for Bamako Greater Area	2015	Closed	\$495,000
Mali	Urban, Rural & Land	Greening Urban Development in Bamako (Mali)	2019	Closed	\$500,000
Senegal	Urban, Rural & Land	Strengthening the Senegalese Spatial Data Infrastructure	2020	Active	\$500,000
Ghana	Agriculture	Go mechanization! Piloting digitally-linked agricultural mechanization services in West Africa	2022	Active	\$500,000
Ghana	Transport	Developing a Green, Integrated and Smart Public Transit System in Kumasi	2022	Active	\$600,000
West Africa	Environment & Natural Resources	West Africa Fishery Partnership for Competitiveness and Sustainability	2015	Closed	\$670,000

### EAST ASIA & PACIFIC

China; Indonesia; Mongolia; Philippines; Vietnam	Energy & Extractives	Programmatic Technical Assistance (TA) on Energy Transition in the East Asia and Pacific (EAP) region	2021	Active	\$600,000
Cambodia; Lao PDR; Myanmar; Thailand; Vietnam	Environment & Natural Resources	Supporting Identification of Riverine and Coastal Plastics Waste Management Solutions in Mekong countries: Technology, Innovation, Impacts	2020	Closed	\$400,000
Indonesia	Urban, Rural & Land	Accelerating Indonesia Climate-Resilient, Sustainable and Inclusive Housing	2022	Active	\$600,000
Indonesia	Transport	Greening the Maritime Sector in Eastern Indonesia	2020	Active	\$550,000
Indonesia	Water	Support to Development of National Program for Citywide Inclusive Sanitation	2020	Closed	\$400,000
Indonesia	Urban, Rural & Land	City Planning Labs and Spatial Planning	2017	Closed	\$200,000
Indonesia	Urban, Rural & Land	Sustainable Urban Growth Analytics and Planning Systems	2013	Closed	\$375,000
Indonesia	Urban, Rural & Land	Inclusive Green Growth for East Asia Pacific Cities	2013	Closed	\$150,000
Indonesia, Philippines	Transport	Improving Urban Mobility Using Big Data Analytics	2015	Closed	\$500,000

COUNTRY	SECTOR	PROGRAM TITLE	APPROVAL YEAR	STATUS	DONOR APPROVED AMOUNT
Lao PDR	Environment & Natural Resources	Pollution Solutions for Lao PDR's Green Growth Policy and Investment Agenda	2019	Closed	\$700,000
Lao PDR	Environment & Natural Resources	Green Growth Platform for Lao PDR	2016	Closed	\$900,000
Lao PDR, Cambodia	Transport	Green Mobility for Luang Prabang and Seam Reap	2019	Closed	\$600,000
Mongolia	Urban, Rural & Land	Transforming Mongolia's developmental trajectory towards Green Resilient Inclusive Development	2023	Active	\$600,000
Mongolia	Environment & Natural Resources	Mongolia Resilient Green Landscapes	2023	Active	\$600,000
Mongolia	Agriculture	Mongolia Smart Agrifood Systems Technical Assistance	2021	Active	\$800,000
Mongolia	Transport	On-Demand Transit Service to Improve the Accessibility of Ulaanbaatar's Vulnerable Population	2021	Active	\$400,000
Mongolia	Water	Mongolia: Utilization of treated water from over melting ice in the "ger" district area for the heating system in eastern part of Ulaanbaatar city	2020	Active	\$489,000
Mongolia	Digital Development	Green Data Center Strategy in Mongolia	2020	Closed	\$350,000
Mongolia	Digital Development	SMART Gov - Civic Innov. Solving Old Problems in New Ways	2014	Closed	\$430,000
Myanmar, Cambodia, Philippines	Environment & Natural Resources	Myanmar, Cambodia, Sustainable Solid Waste & Plastic Management	2018	Closed	\$700,000
Myanmar, Lao PDR, Cambodia	Agriculture	Harnessing digital agriculture technologies for smallholder farmers	2020	Closed	\$750,000
Palau, Tonga	Energy & Extractives	Developing E-mobility and Energy Efficiency programs in the Pacific Island Countries	2023	Active	\$500,000
Pacific Island Countries and Territories	Energy & Extractives	Regional E-mobility and Battery Storage Programmatic Technical Assistance (TA) for Pacific Island Countries and Territories	2019	Active	\$300,000
Philippines	Urban, Rural & Land	Metro Manila Citywide Slum Upgrading Project	2014	Closed	\$350,000
Philippines	Transport	East Asia & Pacific Green Transport ICT	2013	Closed	\$400,000
Vanuatu	Urban, Rural & Land	Vanuatu Affordable and Resilient Housing	2015	Closed	\$675,000
Vietnam	Energy & Extractives	Supporting Offshore Wind Development in Vietnam	2023	Active	\$500,000
Vietnam	Urban, Rural & Land	Integration of Land Information and Geospatial Systems for Green Economic Recovery (ILIGS-GER)	2021	Closed	\$400,000
Vietnam	Agriculture	Enhancing agricultural green growth in Vietnam by applying disruptive technology to facilitate export of quality, safety and climate resilient agricultural products from Vietnam to Korea	2019	Closed	\$800,000
Vietnam	Energy & Extractives	KGGTF - Improving readiness for energy efficiency investment in Vietnam's industries	2018	Closed	\$350,000
Vietnam	Transport	Public Transport Development Strategy for Sustainable Urban Mobility in Hanoi	2017	Closed	\$550,000
Vietnam	Energy & Extractives	Scaling-Up Rooftop Solar in Vietnam	2016	Closed	\$350,000
Vietnam	Energy & Extractives	Scaling-Up Rooftop Solar in Vietnam II	2015	Closed	\$91,379
Vietnam	Environment & Natural Resources	Scaling up Implementation of Vietnam's Green Growth Priorities	2015	Closed	\$780,100
Vietnam	IFC	Promoting Green Growth in Industrial Zones	2014	Closed	\$750,000
Vietnam, Indonesia	Urban, Rural & Land	Inclusive Green Growth for EAP Cities	2015	Closed	\$150,000
Thailand, Philippines	Environment & Natural Resources	Technical and Capacity Support towards the implementation of plastics circularity in the select ASEAN countries	2022	Active	\$600,000
Indonesia, Philippines, Lao People's Democratic Republic	Environment & Natural Resources	East Asia Air Quality Management Program: A Regional Approach to Improving Air Quality and Promoting Green Growth	2023	Active	\$600,000

COUNTRY	SECTOR	PROGRAM TITLE	APPROVAL YEAR	STATUS	DONOR APPROVED AMOUNT
<b>EUROPE AND CENTRAL ASIA</b>					
Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine	Transport	Greener Transport Connectivity for the Six Eastern Partnership Countries	2017	Closed	\$960,000
Azerbaijan	Environment & Natural Resources	Towards green growth of Baku: enhancing people's quality of life through sustainable cleanup of polluted lakes	2017	Closed	\$600,000
Georgia	Transport	Georgia Green Freight Transport and Logistics	2013	Closed	\$250,000
Georgia; Kazakhstan; Kyrgyz Republic	Transport	INNOVATIVE GREEN SMART URBAN MOBILITY FOR BISHKEK, NUR-SULTAN AND TBILISI	2021	Active	\$1,000,000
Kazakhstan	Agriculture	Support to the preparation of the Sustainable Livestock Development Project in Kazakhstan	2019	Closed	\$500,000
Kazakhstan	Transport	Kazakhstan Green Growth In Road Sector Through E-tolling	2016	Closed	\$700,000
Kazakhstan	Environment & Natural Resources	Developing Integrated and Green Solutions for Municipal Solid Waste Management in Kazakhstan	2015	Closed	\$200,000
Kazakhstan; Uzbekistan	Transport	A Tale of Two Smart and Green Cities: Innovative Solutions for Urban Mobility in Almaty and Tashkent	2020	Closed	\$600,000
Kosovo	Digital Development	Innovative and Green Growth for Rural Areas: Investing & Scoping	2014	Closed	\$485,000
Kyrgyz Republic	Environment & Natural Resources	Reducing Health Risks through Improvement of Air Quality in Bishkek City of the Kyrgyz Republic	2020	Closed	\$350,000
Kyrgyzstan	Urban, Rural & Land	Moving Towards Green Urban Development of Kyrgyz Cities	2015	Closed	\$300,000
Moldova	Energy & Extractives	Energy Efficiency Transformation in DH	2015	Closed	\$530,000
Poland	Transport	Piloting Sustainable and Green Urban Transport Solutions for Sub National Governments	2013	Closed	\$625,000
Regional	Water	Central Asia Water Resources Management (CA-WARM) Phase-I Project	2015	Closed	\$370,000
Turkey	Energy & Extractives	Scaling Up Rooftop Solar PV	2018	Closed	\$300,000
Turkey	IFC	Greener Manufacturing in Turkey	2017	Closed	\$450,000
Turkey	Urban, Rural & Land	Developing Green Growth Strategies for Metropolitan Municipalities	2014	Closed	\$500,000
Ukraine	Energy & Extractives	Ukraine energy storage and ancillary services market development support	2021	Active	\$500,000
Ukraine	Transport	Towards Greener and More Efficient Logistics in the Ukraine: An Integrative Approach	2016	Closed	\$700,000
Ukraine	Transport	Sustainable Urban Transport for the City of Kyiv	2013	Closed	\$350,000
Uzbekistan	Urban, Rural & Land	Innovations in land valuation, taxation and land use planning to support land policy reforms and green growth transformation	2022	Active	\$500,000
Uzbekistan	Environment & Natural Resources	Promoting Forest Information and Communication Technology in Uzbekistan	2020	Closed	\$350,000
Uzbekistan	Water	Capacity Building and Water Academy-Uzbekistan	2021	Active	\$285,000
Uzbekistan	Agriculture	Leveraging technology for Uzbekistan's agricultural modernization	2019	Closed	\$500,000
Uzbekistan	Urban, Rural & Land	Leveraging green growth for balanced spatial development in Uzbekistan	2017	Closed	\$300,000
Uzbekistan	Energy & Extractives	Support the Development of a National Industrial Energy Management Program in Uzbekistan	2015	Closed	\$400,000
Uzbekistan and Kazakhstan	Environment & Natural Resources	Action on Circular Economy for Green Growth in Uzbekistan and Kazakhstan	2019	Closed	\$500,000

COUNTRY	SECTOR	PROGRAM TITLE	APPROVAL YEAR	STATUS	DONOR APPROVED AMOUNT
<b>LATIN AMERICA AND THE CARIBBEAN</b>					
Argentina	Environment & Natural Resources	Circular Economy for Waste Management in Province of Buenos Aires	2022	Active	\$600,000
Argentina	Urban, Rural & Land	Greening Urban Growth in Metropolitan Buenos Aires	2017	Closed	\$300,000
Argentina	Urban, Rural & Land	Implementing Green Solution for Waste Management	2014	Closed	\$400,000
Argentina, Brazil, Colombia, Peru	Transport	Smart Travel Demand Management Policies for Developing Green and Sustainable Transportation: Deep Dive in LAC Cities	2023	Active	\$550,000
Argentina, Province of Santa Fe	IFC	Non-Revenue Water (NRW) project for Santa Fe Province – Argentina	2018	Closed	\$400,000
Bolivia, Mexico	Environment & Natural Resources	Promoting equitable access to sustainable development in Bolivia and Mexico	2016	Closed	\$700,000
Brazil	Agriculture	Sparking adoption of Agricultural Technologies that promote climate change resilience through productive alliances	2022	Active	\$600,000
Brazil	Urban, Rural & Land	Rio de Janeiro Low Carbon City Development Program	2013	Closed	\$625,000
Brazil	Urban, Rural & Land	A Sustainable Vision for the Rio de Janeiro Metropolitan Region	2013	Closed	\$320,000
Central America: Guatemala, Honduras, Nicaragua, El Salvador, Costa Rica and Panama	Energy & Extractives	Sustainable Green Growth in Central America	2016	Closed	\$700,000
Colombia	Transport	Piloting Electromobility in the Integrated Transport System of the Aburra Valley (Medellin, Colombia)	2018	Closed	\$870,000
Colombia	Transport	Improving Public Transit & Sustainable Territorial Dev in Bogota	2017	Closed	\$650,000
Colombia	Environment & Natural Resources	Support to the Colombia Green Growth Policy	2016	Closed	\$500,000
Colombia	Water	Water Initiatives to Support Green Growth and Sustainable Cities in Colombia	2016	Closed	\$300,000
Colombia	Water	Greening Cities through a Water-Centric Urban Planning Approach	2015	Closed	\$200,000
Ecuador	Energy & Extractives	Supporting Ecuador's Energy Transition through an Energy Storage Program	2021	Active	\$600,000
Ecuador, Colombia	Digital Development	Smart-city digital approaches for sustainable urban mobility in Latin-American cities	2019	Active	\$600,000
Guatemala	Digital Development	Using ICT to Increase Green Competitiveness in Guatemala	2014	Closed	\$605,000
Haiti	Environment & Natural Resources	Green jobs in Haiti through enhanced resource efficiency, renewable energy and waste management in industrial parks	2021	Active	\$700,000
Haiti	Energy & Extractives	Haiti Green Growth Through Renewable Energy Integration	2015	Closed	\$250,000
Honduras	Agriculture	Policy Support to Establish a Digital Agricultural Information System for Climate-Resilient Food Security in Honduras	2023	Active	\$600,000
Honduras	Energy & Extractives	Tackling Power Sector Barriers for Green Growth in Honduras	2015	Closed	\$450,000
Jamaica, Dominica	Agriculture	Smart Farming for Agricultural Development in Jamaica and Dominica	2023	Active	\$600,000
Mexico	Agriculture	An agri-tech smart farm pilot for greening growth in Mexico's post COVID-19 recovery	2021	Active	\$950,000
Mexico	Urban, Rural & Land	Supporting green and resilient urban development as part of the COVID-19 recovery in Mexico	2021	Active	\$800,000
Mexico	Urban, Rural & Land	Strengthening Mexico's Capacity for Integrated Solid Waste Management	2015	Closed	\$400,000
Mexico	Urban, Rural & Land	Strengthening urban management in Mexican cities	2015	Closed	\$400,000
Mexico	Urban, Rural & Land	Mexico Instruments for Urban Redevelopment	2013	Closed	\$150,000
Mexico	Urban, Rural & Land	Green Growth Strategies for Mexican Cities	2013	Closed	\$250,000
Panama	Urban, Rural & Land	Supporting Green Growth Urban Dev. Strategy in Ecuador	2013	Closed	\$300,000

COUNTRY	SECTOR	PROGRAM TITLE	APPROVAL YEAR	STATUS	DONOR APPROVED AMOUNT
Paraguay	Urban, Rural & Land	Building Coastal Resilience in Asuncion through Climate Smart Solutions	2020	Active	\$500,000
Peru	Energy & Extractives	Distributed generation and grid flexibility for an efficient energy transition in Peru	2022	Active	\$500,000
Peru	Energy & Extractives	Greening Peru's Energy System: promoting clean energy for a resilient power system	2016	Closed	\$600,000
Peru	Environment & Natural Resources	Investments in Environmental Management and Green Growth	2015	Closed	\$430,000
Regional	Urban, Rural & Land	Regional Resource Recovery and Recycling	2013	Closed	\$150,000

## MIDDLE EAST AND NORTH AFRICA

Egypt	Agriculture	Egypt Climate Smart Agriculture Innovation and Tech-based Entrepreneurship (EgCITE)	2023	Active	\$600,000
Egypt	Transport	Egypt Green Transport Master Plan and Data Management System to Support Digital Transformation of the Transport Sector and Intelligent Transport Systems	2019	Closed	\$600,000
Egypt	IFC	Smart Technology and Energy Efficient Production (STEP Phases 1 & 2)	2015	Closed	\$700,000
Egypt	Environment & Natural Resources	Air and Water Pollution Management Program	2015	Closed	\$450,000
Egypt	Urban, Rural & Land	Cairo Smart Service Delivery Project	2015	Closed	\$575,000
Jordan	Environment & Natural Resources	Restoration and Development Program for Jordan's Zarqa River Basin	2023	Active	\$600,000
Jordan	Urban, Rural & Land	Greening growth for the displaced in Jordan	2016	Closed	\$600,000
Lebanon	Transport	Implementing congestion reduction measures in Beirut	2013	Closed	\$200,000
Morocco	Environment & Natural Resources	Boosting the Blue Economy Potential in Morocco	2020	Active	\$400,000
Morocco	Transport	Climate Change Adaptation in the Road Sector	2013	Closed	\$200,000
Morocco	Water	Quantifying Tradeoffs of the Water- Energy Nexus	2013	Closed	\$300,000
Tunisia	Environment & Natural Resources	Blue Economy	2018	Closed	\$300,000
Yemen	Urban, Rural & Land	From Recovery to Sustainable Growth: Building Resilient Cities through Enhanced Urban Housing and Spatial Planning Strategies	2023	Active	\$500,000

## SOUTH ASIA

Bangladesh	Environment & Natural Resources	Enhancing Pollution Management in Bangladesh through Green Growth Policies	2022	Active	\$600,000
Bangladesh	Water	Innovative technology to support Brahmaputra-Jamuna River Economic Corridor Development	2020	Closed	\$400,000
Bangladesh	Energy & Extractives	An efficient, resilient, and green grid for the Bangladesh power system	2015	Closed	\$500,000
Bangladesh; Nepal	Environment & Natural Resources	Strategic Green Growth Transitions in Bangladesh and Nepal: Toward a post-COVID recovery	2021	Active	\$850,000
Bhutan	Transport	Green Transport Initiative	2014	Closed	\$300,000
Bhutan, Nepal, Pakistan	Environment & Natural Resources	Integrated Catchment Management for Sustainable Hydropower in Bhutan, Nepal and Pakistan	2016	Closed	\$750,000
India	Energy & Extractives	Transformative Mobility and Battery Storage Program: Demonstration Projects for RE integration	2023	Active	\$500,000
India	Agriculture	Uttarakhand Climate-Resilient, Low Carbon Agriculture Initiative	2023	Active	\$600,000
India	Environment & Natural Resources	Capacity Strengthening of India's Forest Sector	2022	Active	\$403,200
India	Environment & Natural Resources	Enhancing India's capacity for Green and Resilient Coastal Management	2022	Active	\$550,000

COUNTRY	SECTOR	PROGRAM TITLE	APPROVAL YEAR	STATUS	DONOR APPROVED AMOUNT
India	Transport	Decarbonizing freight for a new era of resilient and efficient logistics in India	2021	Closed	\$1,000,000
India	Urban, Rural & Land	Metropolitan Kolkata Urban Transport and Spatial Planning	2020	Active	\$400,000
India	Transport	Kolkata Metropolitan Transport Efficiency Improvement	2015	Closed	\$400,000
India	Transport	Intelligent Transport Systems and PPP in City Bus Systems for Indian Cities	2015	Closed	\$350,000
India	Urban, Rural & Land	Green Regional Development Plan for Growth Centers in India	2015	Closed	\$350,000
India	Digital Development	ICT Applications to Achieve Green Growth in an Indian City	2014	Closed	\$700,000
India	Energy & Extractives	Towards Green Growth in DVC through use of ICT and Investment in Clean Energy Generation	2014	Closed	\$600,000
India	Transport	Promoting the use of Green Construction Technology in Road Sector	2014	Closed	\$500,000
India	IFC	E-Waste Advisory Project KGGTF funds	2014	Closed	\$840,000
India	Digital Development	ICT Applications to achieve Green Growth in Indian Cities (Phase II)	2014	Closed	\$700,000
India	Urban, Rural & Land	Design and Preparation of Tamil Nadu Sustainable Urban Development	2014	Closed	\$600,000
India	Urban, Rural & Land	Regional Economic and Infrastructure Investment Strategy	2014	Closed	\$400,000
India	Urban, Rural & Land	Options Study for Development Along the Eastern Dedicated Freight Corridor	2013	Closed	\$400,000
India, Bangladesh	Transport	Smartcard Integration for Better Connected Public Transport System	2015	Closed	\$400,000
India, Nepal, Pakistan	Environment & Natural Resources	Solid Waste in Mountainous Regions of India, Pakistan and Nepal	2017	Closed	\$500,000
Nepal	Urban, Rural & Land	Nepal Green Land and Buildings	2022	Active	\$500,000
Nepal	Water	Towards Effective Water Governance for Integrated River Basin Level Planning and Management in Nepal	2022	Active	\$600,000
Nepal	Urban, Rural & Land	Supporting Green Growth Urban Development and Planning Processes in Nepal	2017	Closed	\$400,000
Pakistan	Environment & Natural Resources	Catalyzing Green Investments in Pakistan	2018	Closed	\$400,000
Pakistan	Energy & Extractives	Renewable Energy Scale-Up to Support Green Growth in Pakistan	2017	Closed	\$747,021
Pakistan	Urban, Rural & Land	Green Karachi through improved service delivery system	2016	Closed	\$500,000
Pakistan	Urban, Rural & Land	Initial Assessment of Karachi Economy and Role as a Growth Center	2013	Closed	\$400,000
Pakistan, India and Bangladesh	Environment & Natural Resources	Resource Efficient Cleaner Production in South Asia	2016	Closed	\$600,000
Sri Lanka	Energy & Extractives	KGGTF Sri Lanka Energy	2017	Closed	\$400,000
Sri Lanka	Energy & Extractives	Sri Lanka Renewable Energy Integration	2016	Closed	\$400,000
Sri Lanka	Urban, Rural & Land	Sri Lanka Strategic Cities	2014	Closed	\$500,000
Sri Lanka, Bangladesh, and India	Urban, Rural & Land	Transforming Cities through Public Space	2015	Closed	\$600,000

COUNTRY	SECTOR	PROGRAM TITLE	APPROVAL YEAR	STATUS	DONOR APPROVED AMOUNT
<b>GLOBAL</b>					
Global	Urban, Rural & Land	Developing a Digital Ecosystem Assessment Tool for Smart and Inclusive Cities	2023	Active	\$500,000
Global	Environment & Natural Resources	Exchange of Circular Economy Experiences with Korea	2023	Active	\$600,000
Global	Digital Development	Development of Data-driven Multi-Hazard Early Warning Systems	2022	Active	\$600,000
Global	Digital Development	Greening Digital: Implementing Green Digital Infrastructure Development	2021	Active	\$610,000
Global	Transport	Transforming urban transport to support green and resilient recovery - Leaders in Urban Transport Planning (LUTP)	2020	Closed	\$500,000
Cambodia, Mongolia, Philippines, Vietnam	Urban, Rural & Land	Geospatial Information Management for Green Growth Operationalization (GIMGGO)	2019	Closed	\$700,000
Global	Energy & Extractives	Capacity building and technical Learning workshops on Energy storage to Accelerate energy Transition (CLEAN)	2019	Closed	\$700,000
Global	Energy & Extractives	Hydropower climate change resilience guidelines development	2018	Closed	\$300,000
Myanmar, Pakistan, Kosovo	Urban, Rural & Land	Fostering Green Growth in Fragile States	2018	Closed	\$800,000
Global	Environment & Natural Resources	Learning from Korea's Green Growth Experience to Tackle Environmental Health Challenges	2017	Closed	\$875,000
Global	Environment & Natural Resources	Green Growth via Green Infrastructure Construction	2017	Closed	\$650,000
Honduras, El Salvador, Paraguay, Pakistan, Uganda, Burkina Faso	Urban, Rural & Land	Land Records and Geo-Spatial Information Systems Linked to Green Growth (LRGIGG)	2017	Closed	\$600,000
Global	Global Initiatives	Investing in green growth under uncertainty	2016	Closed	\$2,475,000
Global	Transport	Mainstreaming GHG Mitigation in Rail Freight and Developing Strategies for Sustainable Transport Infrastructure	2016	Closed	\$500,000
Egypt	IFC	MENA Cleaner production for Companies	2015	Closed	\$304,000
Global	Digital Development	Unlocking Data Innovations for Smarter Urban Transport	2015	Closed	\$300,000
Global	Urban, Rural & Land	An Integrated Approach to Urban Sustainability Planning	2015	Closed	\$1,560,000
Global	Transport	Training Hub "Transportation for Green Growth"	2014	Closed	\$500,000
Global	Urban, Rural & Land	Low Carbon City Development	2014	Closed	\$1,370,000
India, Tunisia	Urban, Rural & Land	Green Smart City Development with Citizen Participation	2014	Closed	\$800,000
Global	Global Initiatives	Decision Making Under Uncertainty	2013	Closed	\$1,150,000
Global	Urban, Rural & Land	Capacity Building for Green Urban Growth	2013	Closed	\$500,000
Global	Urban, Rural & Land	City Creditworthiness Program	2013	Closed	\$500,000
Global	Transport	Capacity Building for Leaders in Energy Efficient Urban Transport Planning	2013	Closed	\$500,000

## ANNEX 3 K-PARTNERS

**K-Partners** bring innovative technologies, research, new governance structures and methods of green growth that are valuable to World Bank staff and client countries. K-Partners are an important part of KGGTF by engaging with grant teams and providing site visits, living case-studies and real-world examples. But the collaboration of K-Partners is not just limited to sharing their experience, knowledge and cutting-edge technology. They work with KGGTF and grant teams on exploring how to translate know-how and expertise into different local environments. K-Partners leverage diverse partnerships to adapt knowledge and best practices for local contexts, ultimately bringing greater impact to client countries.

### **APEC Climate Center (APCC)**

APCC is leading the climate prediction technology development to increase the accuracy and reliability of climate prediction information by using state-of-the-art technologies while conducting research and development on the analysis and prediction technology for global climate change.

### **Asian Forest Cooperation Organization (AFoCO)**

AFoCO is an intergovernmental organization in Asia aiming to strengthen forest cooperation by transforming proven technology and policies into concrete actions in the context of sustainable forest management to address the impact of climate change.

### **Carbon-Free Alliance (CF Alliance)**

Launched in October 2023, the CF Alliance was proposed by the president of South Korea. It is a private-led cooperative organization pushing the CFE Initiative, a global campaign to accelerate the achievement of carbon neutrality by promoting extensive utilization of various carbon-free energy sources according to each circumstance.

### **Electronics and Telecommunications Research Institute (ETRI)**

ETRI is a national AI research institute that contributes to the nation's economic and social development through research, development and distribution of industrial core technologies in the fields of Information, Communications, Electronics, Broadcasting and Convergence technologies.

### **Ewha Womans University**

Ewha Womans University is a private women's university in Seoul founded in 1886. Ewha is one of the world's largest female educational institutes and one of the most prestigious universities in South Korea.

### **Export-Import Bank of Korea (KEXIM)**

KEXIM is an official export credit agency. The bank provides export credit and guarantee programs to support Korean enterprises in conducting overseas business and offers products and services including trade finance, overseas investment credit, natural resources development credit, import credit and information services.

### **Global Green Growth Institute (GGGI)**

GGGI is a treaty-based international, inter-governmental organization dedicated to supporting and promoting strong, inclusive and sustainable economic growth in developing countries and emerging economies.

### **Global Knowledge Exchange & Development Center (GKEDC)**

The GKEDC is an open space for learning and exchanging knowledge on Korea's socio-economic development experience. GKEDC offers exhibition of artifacts, documents and interactive learning programs on economic development, industrial development, human story, and future innovation.

### **Gyeonggi Housing & Urban Development Corporation (GH)**

GH contributes to building local communities desirable to live in and improving welfare for residents. It is dedicated to generating a livable and pleasant Gyeonggi Province.

### **Institute for Information & Communications Technology Promotion (IITP)**

IITP promotes information and telecommunication technologies and industries by supporting research and development in the ICT sector. Work includes R&D policy research, information survey, analysis and service. Along with agreement, assessments and support of ICT technology into development projects.

### **Intelligent Transport Society of Korea (ITS Korea)**

ITS Korea promotes cooperation among the public and private sectors for efficient implementation of ITS and contribute to the development of ITS field through various research, policy consultation, technology promotion, and business activities related to ITS.

### **International Contractors Association (ICAK)**

ICAK was established in 1976 as the nation's only promotion agency for the overseas construction industry. The main function of the ICAK is to facilitate Korean contractors' overseas business and to develop the industry as a whole.

### **Industrial Bank of Korea (IBK)**

IBK commits to creating new values and improving everyday lives while also contributing to the economic growth of Korea. They aim to evolve into an SME financing-centered, comprehensive financial group by 2020, as well as become the best-performing SME financing bank in all of Asia.

### **Jeju Research Institute (JRI)**

JRI is a policy research think tank that develops issue-oriented policies and conducts practical research to promote a happy life and brighter future for Jeju people. JRI enhances a knowledge ecosystem by enforcing global research collaboration and networking and strengthening communication with policy recipients.

### **Kim and Chang (KC)**

One of the most prestigious top legal firms in ROK, providing an international model for legal services with 23 overseas law firms, advising 72 companies based in 27 countries, covering all continents. KC specializes in a wide range of legal areas including corporate law, finance, intellectual property, and international arbitration.

### **Korea Advanced Institute of Science and Technology (KAIST)**

KAIST is the first research-oriented science and engineering institution in Korea and is leading the field in developing new technologies to tackle world problems such as energy consumption and congestion in cities.

### **Korea Agency of Education, Promotion and Information Service in Food, Agriculture, Forestry and Fisheries (EPIS)**

EPIS was established in 2012 with an aim to strengthen competitiveness of Korean agriculture and promote the growth of rural area by nurturing capacity of agricultural population, providing reliable information and promoting informatization of agricultural system of the country.

### **Korea Battery Industry Association (K-BIA)**

KBIA is the most influential battery industry association in Korea. KBIA established more stringent standards for battery with reference to Korean national industrial standards and international IEC/ISO standards.

### **Korea Data Center Council (KDCC)**

KDCC is the representative association of Korea's data center industries. It was established in 2017. KDCC's goal is to strengthen the basis of Korea's data center and data center related industries. To that end, KDCC is working to develop government and related industries policies as well as data center industry standards.

### **Korea Development Institute (KDI)**

KDI, since its establishment in 1971, has been recognized as a leading think tank of Korea significantly contributing to the economic and social development of Korea. For over three decades, KDI has consistently provided policy recommendations and guidance based on in-depth analyses of international and domestic economic conditions and projections while conducting preemptive and empirical studies.

### **Korea Development Institute Center for International Development (KDI CID)**

KDI CID is a specialized institute in development cooperation, which provides policy solutions based on Korea's development experience by conducting in-depth studies and identifying the specific needs and key issues confronted by developing countries in major policy areas.

### **Korea Electric Power Corporation (KEPCO)**

KEPCO is the largest electric utility in South Korea and responsible for the transmission and distribution of electricity and the development of electric power projects including those in nuclear power, new & renewable energy, and coal.

### **Korea Energy Agency (KEA)**

KEA is a governmental agency that carries out national energy policies for energy efficiency improvement, new and renewable energy dissemination and climate change mitigation for smart and efficient demand side management based on Energy Use Rationalization Act.

### **Korea Energy Technology Evaluation and Planning (KETEP)**

KETEP is a government-affiliated research organization in South Korea that focuses on energy and environment issues through research, policy development, and technology evaluations. It collaborates with other organizations to promote energy efficiency and reduce greenhouse gas emissions, with the goal of contributing to the sustainable development of the Korean economy and enhancing quality of life.

### **Korea Environmental Corporation (KECO)**

KECO contributes to eco-friendly national development through resource recycling and waste-to-energy facilities. KECO focuses on international conventions on climate change, policy research on pollution and carbon emissions, the operation of water facilities and sustainable urban development.

### **Korea Environmental Industry & Technology Institute (KEITI)**

KEITI is committed to achieving both environmental protection and economic growth inside and outside of Korea. KEITI financially supports the creation of environmental technologies, nurturing environmental industries and promoting an eco-friendly lifestyle.

### **Korea Expressway Corporation (KEC)**

KEC constructs and manages expressways throughout Korea. The corporation uses IT technologies to develop truly "intelligent highways" and promotes "smart highways" that will seamlessly integrate people, automobiles, and roads.

### **Korea Fisheries Infrastructure Public Agency (FIPA)**

FIPA works to develop and manage fishing villages and ports, efficiently preserve and use fisheries, advance related technology, and promote tourism. The organization aims to create added values from oceans and fisheries and contribute to balanced economic development and a better quality of life.

### **Korea Fisheries Resources Agency (FIRA)**

FIRA aims to ameliorate the marine environment through fostering marine forestation. The organization focuses on building an abundant marine ecosystem, including the establishment of spawning nursery grounds, the release of marine seeds and the implementation of Total Allowable Catch for the systematic management of fisheries production.

### **Korea Forest Service (KFS)**

KFS is responsible for the establishment and implementation of forest policies and laws. KFS implements forest policies that support the public with improving quality of life by offering recreation forests, forest restoration and support, mountaineering services, and the expansion of urban green spaces.

### **Korea Hydrographic and Oceanographic Agency (KHOA)**

KHOA provides observations data about the ocean. The data includes oceanographic observation data such as tidal observation, water temperature and salinity observation, tidal benchmark surveys, and sea parting surveys as well as hydrographic survey data such as types and methods, current hydrographic surveys and plans, coastline survey and coastal waters survey.

### **Korea Institute for Advancement of Technology (KIAT)**

KIAT implements grant-based ODA programs related to industrial technology and energy. KIAT's Industrial Technology & Energy ODA utilizes modern industrial technologies to tackle a variety of challenges faced by developing countries, aiming to contribute to improving the quality of life by supporting industrial development.

### **Korea Institute for Animal Products Quality Evaluation (KAPE)**

KAPE is a public institution that certifies livestock products that have been produced by farms and conducts scientific grade-based assessments of livestock products to provide new value, maintaining the livestock products traceability system to increase trust and contribute to the healthy and happy lives of the people.

### **Korea Institute of Aviation Safety Technology (KIAST)**

The Korea Institute of Aviation Safety Technology (KIAST) is a specialized aviation safety institute dedicated to fostering experts in aviation safety technologies. Particularly, Advanced Aviation Research Division is leading Korea UAS & UAM field with government.

### **Korea Institute of Civil Engineering and Building Technology (KICT)**

KICT contributes to the development of the Korean construction industry, improves quality of life standards, furthers national economic growth, and improves social welfare. It promotes original technology in the fields of land, infrastructure, and construction.

### **Korea Institute of Industrial Technology (KITECH)**

KITECH was founded in 1989 to support industry sector especially SMEs as an application-oriented research institute and has been trying to take the lead in this flow. KITECH focuses on 3 key research areas: advanced manufacturing technology, industrial technology convergence, and sustainable manufacturing system technology.

### **Korea Institute of Ocean Science and Technology (KIOST)**

KIOST strives to develop cutting-edge scientific technology and acquire new knowledge to discover advanced life, minerals, and energy resources in the ocean and establish future-oriented port city infrastructure and coastal landscapes.

### **Korea Land and Geospatial InformatiX Corporation (LX)**

LX is a semi-governmental agency under Korea's Ministry of Land, Infrastructure and Transport (MOLIT), which can contribute to the provision of technical assistance to ICT platforms for land and geospatial information, geospatial dataset management and training/capacity building.

### **Korea Local Information Research & Development Institute (KLID)**

KLID was established for promoting the quality of life of community residents through developing local informatization, which will lead to balanced regional development and enhance the productivity of local governing bodies.

### **Korea Meteorological Administration (KMA)**

KMA is the national meteorological agency of South Korea, responsible for providing weather forecasts, warnings, and other meteorological services to the public and various industries. The KMA operates a network of observation stations across the country and employs advanced technologies to monitor and analyze weather patterns.

### **Korea Marine Environment Management Corporation (KOEM)**

KOEM works to preserve and protect our ocean, implementing various projects such as disposing marine litter, restoring the marine ecosystem, designating and managing Marine Protected Areas (MPAs), responding to oil spills, and operating the Marine Environment Research and Training Institute.

### **Korea Maritime Institute (KMI)**

KMI is a policymaking think tank for Korea's maritime and fisheries industry. The institution conducts systematic and comprehensive research on current issues related to the marine, fisheries, shipping, and ports industries, as well as national policy.

### **Korea Meteorological Institute (KMITI)**

KMITI is a public institution, established to promote the meteorological industry and support the utilization of weather information. The institute is leading innovative growth of the industry by supporting R&D, technology commercialization, and entry to global market. It also contributes to the climate change response by developing and implementing meteorological modernization projects in developing countries.

### **Korea National Railway (KNR)**

Korea National Railway is a state-owned organization set up in January 2004 to manage national rail infrastructures on behalf of the government. Our aims are to build a well-structured national rail network and to see to efficient management of rail infrastructures and assets.

### **Korea Overseas Infrastructure & Urban Development Corporation (KIND)**

KIND is an organization established in June 2018 by the government of the Republic of Korea to support global Public-Private Partnership (PPP) business. KIND supports Korean companies for project planning, feasibility studies, project information and project bankability. Through the activities KIND is aiming to contribute to life quality improvement and sustainable growth in the partner countries.

### **Korea Photovoltaic Industry Association (KOPIA)**

KOPIA is the only government approved national PV association dedicated to the photovoltaic industry with 90 members representing all facets of the photovoltaic value chain in Korea.

### **Korea Power Exchange (KPX)**

KPX is the quasi-government agency under the Ministry of Trade, Industry and Energy responsible for fair and transparent operation of the electricity market and efficient operation of the electric power system and grid in Korea.



### Korea Real Estate Board (REB)

REB, a state-owned enterprise, formerly known as Korea Appraisal Board (KAB), is responsible for real estate assessment, price statistics, market management, appraisal review, expropriation and compensation services, urban renewal consulting, green building certification, and R&D.

### Korea Research Institute for Human Settlements (KRIHS)

KRIHS conducts research on the efficient use, development, and conservation of territorial resources and contributes to sustainable territorial development, balancing development and conservation, and housing and infrastructure provision.

### Korea Rural Community Corporation (KRC)

KRC is responsible for rural development and maintenance of agricultural infrastructure such as reservoirs, dams, and irrigation facilities, operation of Farmland Bank to secure efficient use of farmland, reclamation, and rural community development.

### Korea Rural Economic Institute (KREI)

KREI has been a cornerstone for the progress of agricultural, rural and food industries in Korea since its foundation in 1978, by shaping agricultural policy directions through a wide range of agricultural research. KREI will undertake empirical research down the road to fulfill its role as a think tank for rural areas and work hard to lead rural development and innovation with sustainability.

### Korea Smart Grid Institute (KSGI)

KSGI implements Korea's Smart Grid Initiative aimed at modernizing electric power systems and managing the government's Smart Grid Roadmap and develops technology that converges electric power and IT to build a nationwide Smart Grid and achieve low carbon green society.

### Korea Trade-Investment Promotion Agency (KOTRA)

KOTRA is a platform for expanding business activities between companies in Korea and abroad. KOTRA has a history as a pioneer in multilateral economic cooperation, discovering and promoting global partnerships and international investment opportunities. KOTRA maintains 127 overseas offices to support and promote trade and will help support companies identify and partner with Korean partners.

### Korea Transport Institute (KOTI)

KOTI is a leading national think tank in Korea's transport and logistics sector. KOTI provides recommendations for the nation's transport policy and human centered highly convenient transport systems and creates an efficient transport system through technical innovations.

### Korean Transport Safety Authority (KOTSA)

KOTSA carries out transportation projects under the Ministry of Land, Infrastructure and Transport. Encompassing road, rail, and air transportation, KOTSA promotes various traffic-safety programs for a safe and happy society with no traffic accident.

### K-Water (Korea Water Resources Corporation)

K-water has played a key role in enhancing people's welfare by developing and managing water resources for more than half a century. Recently they have been utilizing the know-how to protect the world from water disaster caused by severe climate change. Quantity-quality-ecology nexus of water management with ICT technologies and the futuristic eco-friendly city are typical issues they focus on.

### K-Water Academy

K-water Academy is a hub for global water capacity building. Water management experts provide professional training courses for government officials, water companies and international participants. The Academy offers high quality educational content based on cutting-edge technology and its 50-year know-how.

### Korea Chamber of Commerce and Industry (KORCHAM/KCCI)

The KCCI is the oldest and largest business organization in Korea. It was established in 1884 as a public legal person by a special act. They aim to contribute to strengthening and promoting the competitiveness of commerce and industry by coordinating members, the government and local governments.

### Korea Forestry Promotion Institute (KOFPI)

KOFPI promotes forestry by increasing the income of forestry workers and creating high-value-added forestry industries through the practical use of research and development results in forest science and the production, distribution, and information sharing of forest products.

### **Korea Industrial Complex Corporation (KICOX)**

KICOX was established to develop and manage industrial complexes, support industrial activities of companies, and promote industry-academic cooperation.

### **Korea National University of Transport (KNUT)**

KNUT is the only university in Korea specializing in transportation with 111 years of history. They envision fostering global leaders and creative specialists coping actively with a rapidly changing society.

### **Korea Resource Circulation Agency (KORA)**

KORA promotes the public interest by achieving recycling obligations on behalf of producers and importers of EPR products and packaging and stabilizing the recycling industry by creating a stable supply and demand for recyclable resources.

### **Korea Telecom (KT)**

KT has been leading the development of the information and communications industry of Korea since its foundation in 1981. They focus on wired and wireless communication and Digital Transformation capability, including AI, Big Data, and Cloud.

### **LH (Korea Land and Housing Corporation)**

LH was established to improve the quality of life of the people and advance the national economy. LH's responsibilities include housing welfare, ICT-based smart city development, urban regeneration for smarter and more sustainable cities, and regional development through urban development and housing, and solid industrial infrastructure foundations.

### **Ministry of Agriculture, Food and Rural Affairs (MAFRA) of Korea**

MAFRA is responsible for developing policies related to agriculture, food, and rural areas. MAFRA aims to enhance the competitiveness of the agricultural sector, promote sustainable rural development, and ensure food safety for the public. Its mission is to contribute to the nation's economic growth and social stability by ensuring a stable food supply and promoting sustainable rural development.

### **Ministry of Economy and Finance (MOEF) of Korea**

MOEF is committed to developing a strong economy and building growth engines through the concerted efforts of its offices and bureaus. The Ministry works to ensure macroeconomic and financial stability, effective policy coordination, efficient allocation of national resources, fiscal soundness, rational tax policies, and robust international cooperation.

### **Ministry of Environment (MOE) of Korea**

MOE oversees environmental protection in Korea by enforcing laws and regulations, sponsoring ecological research, planning mid to long term comprehensive measures for environmental conservation, providing administrative and financial support for environmental management to local government and promoting international cooperation on climate change and carbon neutrality.

### **Ministry of Land, Infrastructure and Transport (MOLIT) of Korea**

MOLIT is responsible for establishing and coordinating national territory policy and basic laws related to national territory, preserving and developing national territory and water resources, construction of urban, road and housing, construction of coastal, river, and land reclamation, and land reclamation.

### **Ministry of Oceans and Fisheries (MOF) of Korea**

MOF is responsible for maritime and fisheries sectors including the promotion of maritime safety and security, the protection of the marine environment, the development of port and fishing ports, the research and development on polar issues to the management and sustainable use of fishery resources and the promotion of marine leisure activities.

### **Ministry of Science and ICT (MIST) of Korea**

MSIT focuses on accelerating innovation across society through building an environment that promotes autonomous and audacious research, securing source technologies and growth engines and converging science and technology with ICT in Korea.

### **Ministry of Trade, Industry and Energy (MOTIE) of Korea**

MOTIE regulates economic policies related to the industrial and energy sectors and encourages foreign investment in the areas of commerce, investment, industry and energy in Korea. MOTIE helps to reinforce traditional industrial strengths while developing new growth engines.

### **National Federation of Fisheries Cooperation (Suhyup)**

Suhyup develops fishing villages through a democratic, cooperative organization to enhance the social and economic status of fishermen, and to increase the incomes of fishing households and their capacity to produce fishery products.

### **National Fishery Products Quality Management Service (NFQS)**

NFQS is responsible for quarantine and inspection of exporting and importing fish and fishery products. NFQS quarantines aquatic organisms for transplantation and serves as a guide for information-oriented administration and scientific development to provide safe and quality fish and fisheries products.

### **National Geographic Information Institute (NGII)**

NGII promotes spatial information and technology for managing geodetic VLBI center, setting up three-dimensional aerial information, modifying national base map in real time and establishing human geographical DB. The institute conducts research and development on spatial information, provides geographic training services and strengthens international cooperation.

### **National Information Society Agency (NIA)**

NIA is a national think tank for information and digital transformation. NIA provides optimal methodologies, strategies, and solutions. Priority sectors include ICT Policy, ICT Convergence (Healthcare and welfare, Education and culture, Land and transport, Environment, etc.), Digital culture, Big Data, Open data and Innovation, E-Governance, ICT Platforms and Services (AI, Cloud, Network, etc.)

### **National Institute of Green Technology KOREA (NIGT)**

NIGT is a government-funded think tank that coordinates and supports national green technology R&D policies in collaboration with Korea's ministries and agencies. NIGT serves as Korea's gateway for global green technology cooperation as it connects developed and developing countries for growth and diffusion of green technology and strategies.

### National IT Industry Promotion Agency (NIPA)

NIPA is a government-affiliated agency that supports the growth of the IT industry through technology development, commercialization support, and global market expansion assistance. NIPA's mission is to foster a collaborative environment among industry, academia, and government to create a thriving IT ecosystem and contribute to the nation's social and economic development.

### Presidential Commission on Carbon Neutrality and Green Growth of the RoK (PCCNGG)

A cross-organizational presidential commission under the supervision of the prime minister of ROK, ensuring the basic direction for Korea's transition to a Carbon-Neutral society by implementing a coherent national vision and mid-to-long term goals and policies while promoting public understanding and domestic and international cooperation on Korea's Carbon-Neutral goals.

### Rural Development Administration (RDA)

RDA is a national R&D institution in the agriculture sector in Korea which promotes innovation in agricultural technology. RDA conducts agricultural R&D in parallel with deploying customized extension services to disseminate technologies that reduce costs and produce high-quality products covering Agricultural Sciences, Crop Science, Horticultural and Herbal Science, and Animal Science.

### Seoul Energy Corporation (SEC)

Seoul Energy Corporation implements "One Less Nuclear Power Plant" program of Seoul Metropolitan Government to encourage energy independence in Seoul. Key projects include decentralized energy supply, alternative transport vehicles and energy efficiency, energy sharing, and interregional cooperation.

### Seoul Metropolitan Government (SMG)

SMG is a local government of South Korea, dealing with and responsible for the administrative affairs for the capital city of South Korea. SMG shares its knowledge and best practices with partner cities, international organizations and MDBs and provides policy consulting on urban development projects.

### Seoul National University (SNU)

Seoul National University is considered the most prestigious university in South Korea as a Community of Knowledge which leads the future. The university envisions fostering global convergence talent, building an innovative knowledge ecosystem, creating knowledge-based social values, and establishing a foundation for sustainable university development.

### Seoul Urban Solutions Agency (SUSA)

SUSA is a dedicated entity to share and provide integrated urban solutions to cities needing Seoul's experience to grow into a smart, livable, environmentally, and economically sustainable urban domain. It was established in 2015 by Seoul Metropolitan Government (SMG) under the umbrella of Seoul Housing and Communities Corporation (SH). From cultivating project opportunities to providing technical consultation, project implementation, and evaluation, SUSA brings public/private expertise and resources together. Creating partnerships that leverage each other's competencies focuses on bringing integrated urban solutions, including transferring policy knowledge and operational expertise to ensure sustainability.

### Shinhan Card

Shinhan Card, a wholly owned subsidiary of the Shinhan Financial Group (SFG), is Korea's No. 1 credit card company. Shinhan Card focuses on credit sales services, generating added value through short- and long-term card loans, installment loans, and brokerage of various goods and services. Shinhan Card is working hard to grow into a Life & Finance platform business with the growth of digital finance.

### SK ecoplant

A subsidiary of SK Inc, SK ecoplant is a general construction contracting company offering engineering, procurement and construction (EPC) services in the areas of housing, petrochemical, infrastructure, industrial, and technology sectors. The company has been focusing on green innovations to execute the construction of residential buildings, intelligent buildings, cultural facilities, hostels, sports complexes and other construction and engineering-related projects.

### Sudokwon Landfill Site Management Corporation (SLC)

SLC is a government-affiliated organization in South Korea that manages and operates the largest landfill site in the country. Its mission is to provide safe and efficient waste management, reduce environmental pollution, and promote sustainable development practices. In addition, SLC applies amassed waste collection techniques and utilizes landfill methane as fuel to drive power generators to minimize environmental impacts.

### The Korea Environment Institute (KEI)

KEI is the national leading think tank on environmental policies and environmental impact assessment. KEI engages actively in the research and development of environmental policies and technology in the areas of air pollution, water quality, waste management, ecosystem protection and sustainable development. Furthermore, KEI is mandated to review the statement of environmental impact assessment on the major development projects.

### The SK Center for Social Value Enhancement Studies (CSES)

CSES is a research institution in South Korea focused on promoting social value creation and sustainable development. Affiliated with the SK Group, CSES conducts research, educational programs, and conferences to foster partnerships between academia, industry, and government to address societal challenges.

### University of Seoul (UOS)

UOS is a public university funded and supported by the Seoul Metropolitan Government. UOS has a 100-year history of learning and sharing that promotes innovative and future-oriented research, cultivates competitive human resources, and leads to social change through public outreach.

### Yonsei University

Considered one of the most prestigious universities in South Korea, Yonsei University has been at the forefront of higher education and research.

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