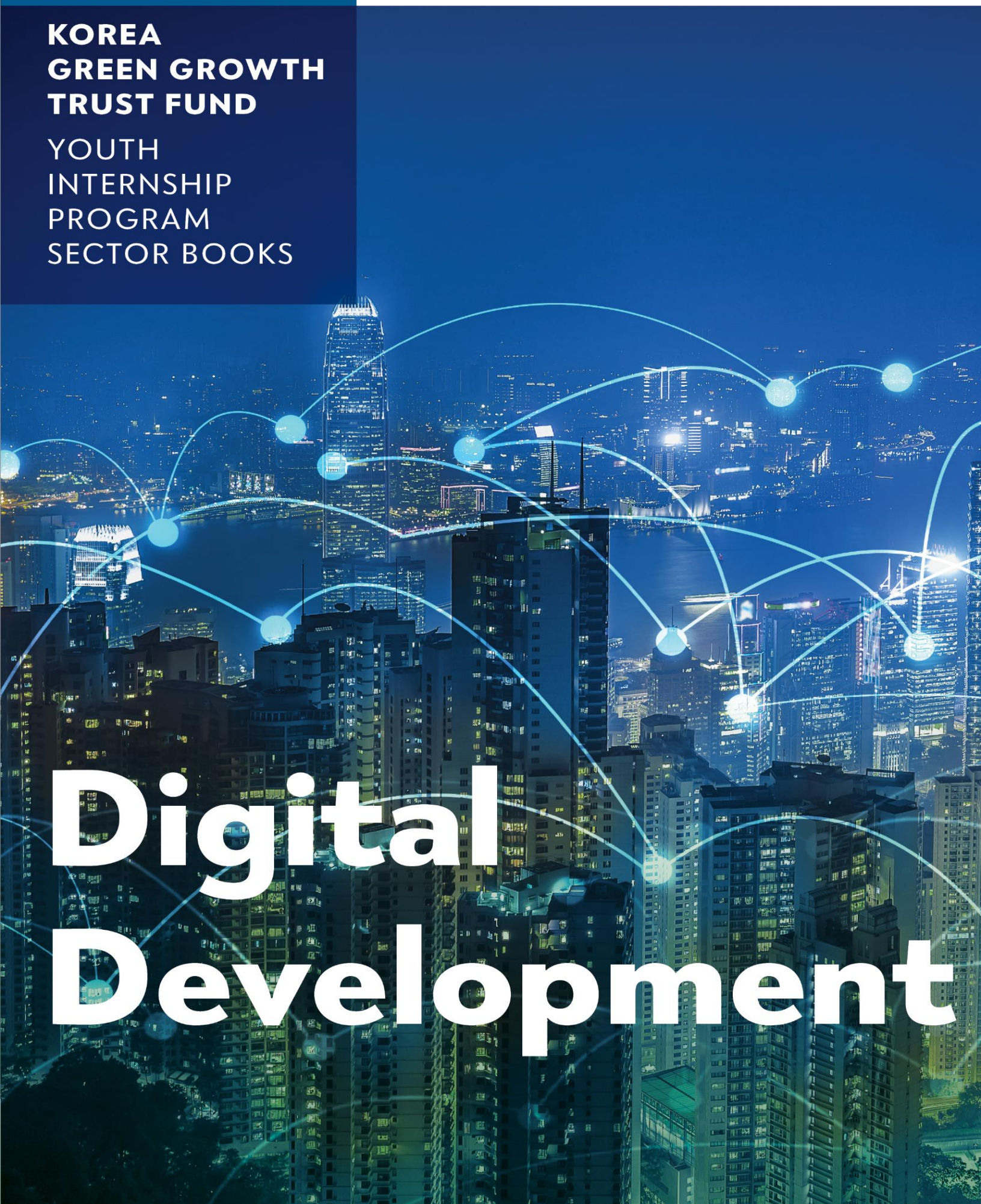
WORLD BANK GROUP

KOREA GREEN GROWTH TRUST FUND

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YOUTH INTERNSHIP PROGRAM SECTOR BOOKS



Digital Development

The original draft of this sectoral portfolio book was authored by the second internship cohort (**Junho Jeong, Sohyeon Park, Heeje Hwang**) and later revised and updated by the third (**Jooyeon Han, Seungil Yoo**) cohort.

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Korea Green Growth Trust Fund (KGGTF)

Digital Development Sectoral Book

Because the Korea Green Growth Trust Fund (KGGTF) supports all sectors, this book highlights KGGTF's digital programs to give World Bank teams a clear view of the breadth of support available and practical entry points to Korean expertise and institutions. For our Knowledge Partners (K-Partners), it offers insight into the kinds of digital initiatives the World Bank and KGGTF are advancing, serving as both a reference for collaboration and a source of new ideas. By showcasing a diverse set of projects, the portfolio demonstrates the scope of our joint efforts today while pointing to new opportunities for partnership and innovation in the future.

Introduction

The digital development sector is rapidly transforming how countries grow their economies, create jobs, and deliver services. At its best, digitalization enables governments and businesses to use real-time data, expand markets, and build smarter infrastructure. Connectivity, data, and digital platforms are now the backbone of modern economies, supporting sectors such as healthcare, education, energy, and agriculture and are essential to boosting productivity and competitiveness and employment. Digital transformation is not only about technology, it is about creating opportunities for people to participate in the economy and access better jobs.

The World Bank Group supports countries in accelerating digital transformation through financing, technical assistance, and knowledge exchange. Its work focuses on expanding broadband connectivity, building secure and interoperable data infrastructure, strengthening digital skills, and fostering entrepreneurship. By embedding digital solutions into development planning, the Bank supports countries unlock innovation, create employment opportunities, and integrate more fully into the global economy.

Challenges and Opportunities

The benefits of digitalization remain unevenly distributed. Gaps in broadband, electricity access, and integrated data systems limit participation in the digital economy -especially for rural communities, women, and small businesses. These gaps also restrict access to digital jobs and the ability to compete in emerging markets. At the same time, the rapid expansion of data centers, networks, and devices is energy-intensive, highlighting the need for countries to build digital infrastructure that is both inclusive and efficient.

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Without these foundations, many economies risk being left behind in the race for competitiveness and job creation.

Priorities for Action

Key priorities include expanding affordable, energy-efficient connectivity, scaling digital skills programs to prepare people for tomorrow's jobs, and supporting private-sector innovation and entrepreneurship. Strengthening cybersecurity and data governance, while mobilizing an estimated **US$400 billion by 2030** in financing, will be vital to ensure that digital transformation drives inclusive growth, higher productivity, and employment opportunities across all sectors.

KGGTF's Role

The Korea Green Growth Trust Fund (KGGTF) plays a catalytic role in shaping digital ecosystems that are both sustainable and jobs-rich. Through strategic grants, technical assistance, and partnerships with leading Korean digital innovators, the Trust Fund supports countries embed green digital strategies into national development plans. From AI-enabled early warning systems to energy-efficient data centers and smart utility platforms, KGGTF supports solutions that enhance competitiveness, expand opportunities for employment, and accelerate inclusive digital growth. By linking innovation with practical application, KGGTF enables countries to build digital economies that are more efficient, inclusive, and future-ready.

Why Korea?

Korea's transformation from an aid recipient to a global innovation leader is a powerful testament to what bold vision and smart policy can achieve. In just a few decades, the country moved from poverty to prosperity, leveraging science, technology, and human capital to fuel inclusive growth and sustainability. This journey, rooted in strategic policymaking and relentless innovation, offers a compelling blueprint for countries aiming to leapfrog development challenges and build resilient, future-ready economies.

Through the Korea Green Growth Trust Fund (KGGTF), Korea now shares these hard-earned lessons with the world - helping countries identify effective policies, adapt cutting-edge technologies, and connect with World Bank teams and partners to scale innovative, sustainable solutions.

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KGGTF Digital Development Strategic Priorities

KGGTF's Digital Development sector has progressed significantly since its inception. Early grants emphasized foundational infrastructure - expanding broadband networks, building open data platforms, and supporting digital readiness programs. These efforts primarily addressed the digital divide and enabled basic public service delivery, laying out the groundwork for more advanced, technology-driven solutions.

Today, the focus has evolved toward building integrated digital ecosystems that are resilient, low-carbon, and future-ready. This shift reflects the growing demand for smarter governance, resilient infrastructure, and innovation-driven growth. KGGTF's strategic vision now centers on harnessing digital technologies to unlock green growth, strengthen adaptive development, and expand access to jobs and opportunities.

Strategic Priorities

KGGTF's current digital development priorities reflect an integrated approach to sustainable development—one that leverages digital tools not only for connectivity but for resilience, efficiency, and inclusion:

• **Green ICT and Digital Infrastructure**: Supports energy-efficient data centers, low-carbon technologies, and smart grids to reduce emissions and enhance operational efficiency across sectors.

• **Climate Resilience and Disaster Preparedness**: Invests in advanced digital tools such as multi-hazard early warning systems and climate analytics platforms to strengthen risk forecasting, adaptive capacity, and emergency response.

• **Digital Inclusion and Capacity Building**: Promotes equitable access to digital tools and skills through digital literacy initiatives, workforce development, and affordable connectivity, particularly in underserved and climate-vulnerable communities.

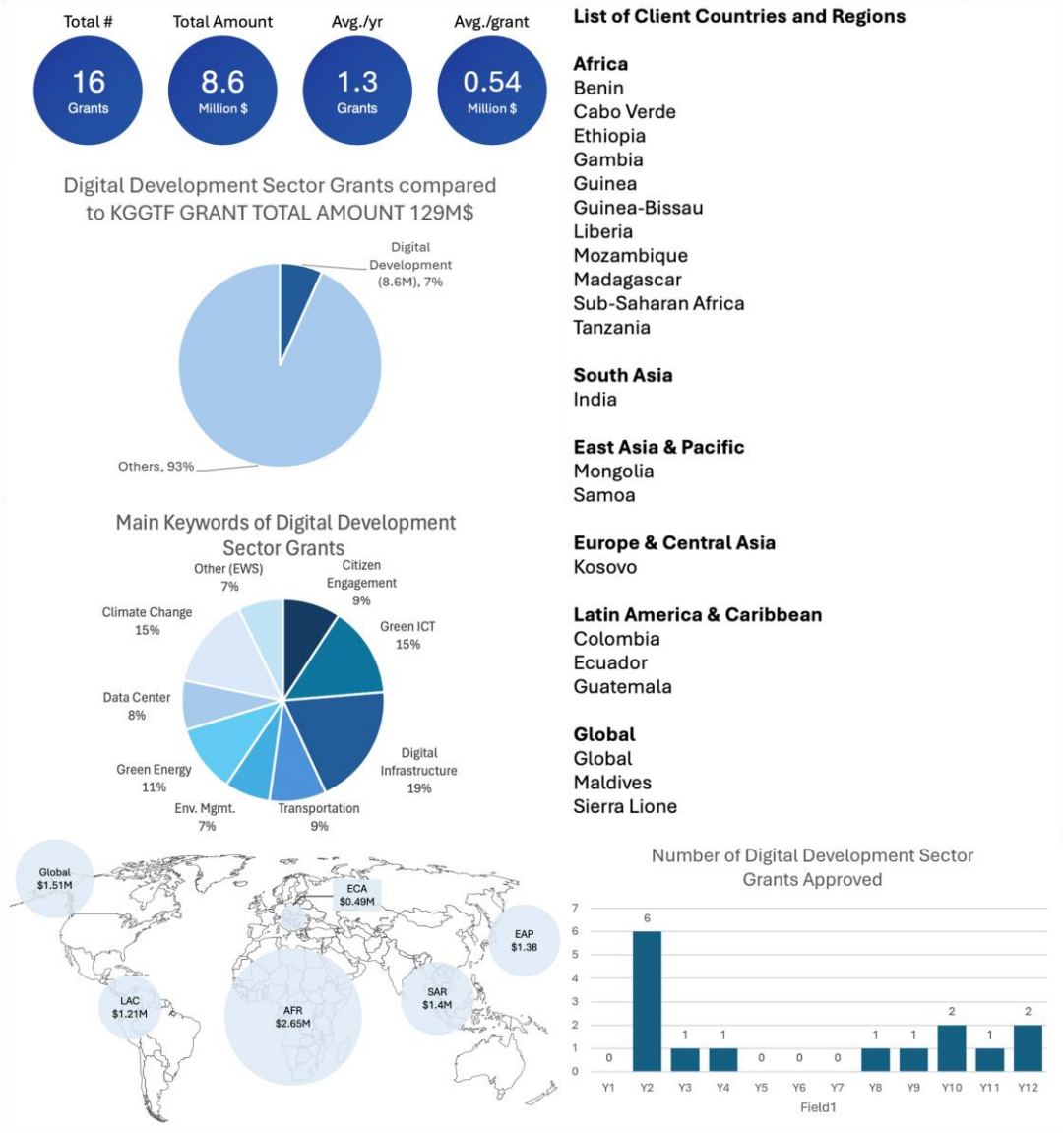
• **Data-Driven Governance and Smart Cities**: Leverages big data, IoT, and AI to enable evidence-based policymaking, optimize public service delivery, and support smarter urban planning and infrastructure management.

• **Knowledge Sharing and Cross-Border Collaboration**: Facilitates peer learning, international partnerships, and knowledge exchanges and the transfer of Korean digital expertise and policy know-how to accelerate digital transformation.

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Together, these priorities underscore KGGTF's commitment to helping countries leapfrog traditional development paths by advancing digital ecosystems that are technologically advanced, climate-smart, and aligned with national sustainability goals.

KGGTF Digital Development Portfolio Snapshot



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How KGGTF Supports Bank Teams

KGGTF's digital development grants support World Bank teams and client governments to drive transformative change - bridging digital divides, strengthening institutional capacity, and accelerating the deployment of climate-smart technologies. By providing early-stage support, technical expertise, and strategic partnerships, the Trust Fund supports countries moving from vision to implementation.

KGGTF's impact spans four key areas:

1. Policy Development and Strategic Planning

Grants support the design of national digital strategies, green data center standards, and inclusive ICT policies assuring that digital transformation is aligned with long-term development priorities and sustainable growth.

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Case Study: Smart-City Digital Approaches for Sustainable Urban Mobility in Latin American Cities

Latin American cities continue to grapple with fragmented, low-regulated bus systems that drive congestion, road accidents, and high GHG emissions. At the same time, governments are working to restructure transport supply chains, raise service quality, and improve accessibility, affordability, and safety.

To address these challenges, the Korea Green Growth Trust Fund (KGGTF) supported an initiative to advance greener, more resilient, and technology-driven mobility models through the integration of Intelligent Transport Systems (ITS) and Smart Mobility Solutions (SMS). The program drew on global best practices, including Seoul's landmark bus reform, while facilitating knowledge exchanges across cities such as Mexico City, Medellín, and Quito.

Key Activities

- **ITS Toolkit**: Developed three modules—a diagnostic manual, an integrated ITS implementation guide, and an open-source platform to integrate private mobility data into public planning.
- **Smart Mobility Readiness**: Created an assessment methodology and implementation guidelines to help cities evaluate capacity, prioritize investments, and adopt digital solutions.
- **Knowledge Exchange**: Convened bilateral meetings and a Smart Mobility Knowledge Exchange with cities in Ecuador, Bolivia, Peru, and Mexico, alongside Korean partners. Built an interactive global database showcasing smart mobility initiatives, including COVID-19 adaptations.
- **Policy & Institutional Strengthening**: Promoted collaboration between transport and urban agencies to improve efficiency, transparency, and resilience to climate risks and future crises.

Outcomes

- **Efficiency**: Integrated public transport reduces congestion, pollution, and emissions while offering attractive alternatives to private vehicles.
- **Resilience**: Enhanced institutional capacity to adapt to extreme weather, crises, and shifting urban mobility needs.
- **Competitiveness**: Stronger alignment between transport and urban planning improved decision-making, transparency, and economic growth.

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Partnerships

The initiative brought together KOTI, MOLIT, ITS Korea, Seoul Transport Authority, ORT Mexico, Medellín's AMVA, Transport for London, UITP, and WRI. These collaborations enabled South–South learning and positioned KGGTF as a catalyst for scaling smart, sustainable mobility solutions globally.

Looking Forward

The SMS readiness methodology is designed for global replication, equipping cities with the tools to craft smarter mobility policies and prioritize green infrastructure investments.

2. Policy Development and Strategic Planning

Grants support the design of national digital strategies, green data center standards, and inclusive ICT policies assuring that digital transformation is aligned with long-term development priorities and sustainable growth.

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Case Study: Negawatt Challenge for Energy Efficiency

African cities are facing mounting pressures from rapid urbanization, including worsening air quality and persistent energy constraints. Power shortages alone are estimated to cost African economies roughly 2.1% of GDP per year, vastly undermining productivity and urban livability. Simultaneously, city leaders and global networks are increasingly promoting innovative approaches to achieve "Negawatts" — reductions in energy consumption through efficiency gains rather than new generations.

To respond to these challenges and relevant efforts, the Korea Green Growth Trust Fund (KGGTF) supported a three-year Negawatt Challenge program in South Africa and Ghana. Building on earlier World Bank-supported innovation competitions, the initiative mobilized local, national, and global problem-solvers through hackathon and makeathon formats. The program aimed to co-create practical, implementable solutions that integrated indigenous knowledge with international expertise.

Beyond fostering innovation, the initiative promoted technology-enabled entrepreneurship, job creation, technology transfer, and the adoption of energy-efficient appliances and services. The program also piloted an open innovation model designed to strengthen private sector engagement and investment in urban energy efficiency and clean technology development.

Key Activities

- **Stakeholder Engagement**: Convened key stakeholders to identify and raise awareness of urban energy efficiency opportunities to their respective cities.
- **Innovation Challenge**: Engaged local ICT entrepreneurs and SMEs to design technology and business solutions through a competitive challenge.
- **Skills & Training**: Delivered hands-on training and capacity building for local entrepreneurs and engineers to develop and commercialize ICT solutions.
- **Global Dialogue**: Advanced international knowledge exchange on the application of ICT for enhanced urban energy efficiency.

Outcomes

- **Capacity Building**: Strengthened client and municipal capacity in innovation challenge design and implementation.

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- **Methodological:** Developed a replicable, step-by-step competition framework documented in a technical report.
- **Entrepreneurship**: Enhanced local entrepreneurs' capacities to develop and market ICT-based energy solutions, with emphasis on women's participation.

- **Sustainable Impact**: Supported the sourcing and scaling of solutions aimed at reducing urban energy intensity and improving energy management in Sub-Saharan African cities.

Partnerships

The Negawatt Challenge connected green growth and energy efficiency innovations with experienced Korean experts and institutions, including the Green Technology Center of Korea and the National Information Society Agency. Through technology transfer and know-how sharing, the initiative supported emerging technology communities in Africa while leveraging partnerships with South African ministries and city authorities. These collaborations fostered cross-regional learning and strengthened the project's role in scaling sustainable solutions.

Looking Forward

Ultimately, the project aims to envisage the usage of open innovation challenge methodologies to create urban energy management solutions.

Technical Assistance and Capacity Building

KGGTF connects teams to technical training, workshops, and advisory services that build the skills of government officials and technical staff. This support strengthens local capacity to adopt digital solutions and manage complex digital systems effectively.

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Case Study: Green Data Center Strategy in Mongolia

Mongolia is at the early stage of its digital transformation, with growing demand for secure and sustainable data infrastructure. The government currently operates one national data center, while the private sector has built eight. Rising demand—accelerated by the COVID-19 pandemic—has strained capacity but also revealed Mongolia's potential to become a regional hub, given its cold climate and strategic location.

The Korea Green Growth Trust Fund (KGGTF) supported Mongolia in designing a **Green Data Center Strategy**, providing assessments, technical guidance, and capacity building to align national infrastructure with climate-friendly standards and international best practices. The grant also shaped the World Bank's broader lending agenda, including the **Smart Government II Project**.

Key Activities

- **Market Assessment**: Evaluated Mongolia's potential as an international data center hub through SWOT analysis of regulations, energy efficiency, connectivity, and geopolitical positioning. Identified government agencies and private businesses as anchor tenants.
- **Technical Guidelines**: Produced Mongolia-specific guidance on virtualization, modular backup centers, advanced cooling, multiple power sources, and waste-heat reuse, benchmarked against ITU-T and ISO standards.
- **Capacity Building**: Trained over 40 staff from 15+ government agencies on energy-efficient green data centers and cloud computing, building institutional knowledge and technical capacity.
- **Policy Influence**: Findings informed the Ministry of Digital Development and Communications (MDDC) and are now embedded in national strategies, ensuring new facilities meet global standards while lowering operational costs.

Outcomes

- Informed the **Smart Government II Project** ($40.7 million, signed January 2023), which will upgrade Mongolia's digital infrastructure, expand public services, and promote climate adaptation through eco-friendly standards.

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- Strengthened alignment with Mongolia's **Green Development Policy (2014–2030)**, **National Adaptation Plan (2018–21)**, and **NDC targets for 2030**.
- Enhanced Mongolia's role in international dialogue, including at the **Singapore–Mongolia Data Center Roundtable (2022)**, highlighting investment opportunities.
- Contributed insights to the World Bank's **Global Climate Business Line flagship report** through a case study feature.

Partnerships

The initiative engaged the Prime Minister's Office, MDDC, Korean partners, and international stakeholders, ensuring knowledge exchange and global visibility.

"This grant activity funded by the Korea Green Growth Trust Fund is crucial in helping the Smart Government II Project support the government's climate change adaptation efforts through establishing green data center standards in Mongolia."
— Jennifer Gui, TTL and Senior Digital Development Specialist, The World Bank

"The Ministry of Digital Development and Communications (MDDC) will use the assessment findings for the development of its data center policy. Further expansion will follow the direction of becoming an eco-friendly green data center."
— Bilegdemberel Badamdorj, Director General, MDDC

"The training significantly provided us with the necessary information to realize our goal of reducing costs and increasing efficiency by becoming an eco-friendly green data center in line with international standards and technological trends."
— Battulga Munkhdorj, Director, National Data Center, Mongolia

3. Innovation and Pilot Projects

Grants enable governments to test cutting-edge digital solutions that strengthen climate resilience, enhance data management, and improve service delivery. These pilots create scalable, real-world models that guide policy and attract future investment.

4. Promoting Cross-Regional Knowledge Sharing Accelerating Digital Transformation through Global Collaboration

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Knowledge exchange is central to KGGTF's digital development strategy. By connecting governments, institutions, and technical experts across regions, KGGTF enables the transfer of ideas, innovations, and partnerships that scale impact. Through study tours, technical workshops, and international conferences, it brings proven digital practices—particularly from Korea's advanced ecosystem—to countries seeking to build climate-resilient, data-driven solutions.

These engagements go beyond information-sharing: they spark collaboration, unlock local innovation, and build enduring global networks that accelerate digital transformation.

Knowledge exchange plays a vital role in KGGTF's digital development approach. By facilitating peer learning across countries and regions, KGGTF helps connect governments, institutions, and technical experts with the ideas, innovations and partnerships needed to scale impact. Through study tours, technical workshops, and international conferences, KGGTF fosters the transfer of proven digital practices—particularly from Korea's advanced ecosystem-to countries seeking to build climate-resilient, data-driven solutions. These engagements do more than share information—they spark collaboration, unlock local innovation, and build lasting global networks for digital transformation.

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Case Study: Towards Green, Secure, and Climate-Resilient Data Infrastructure in Ethiopia

Ethiopia, home to more than 120 million people, is one of Africa's fastest-growing economies and is rapidly advancing its digital transformation. To sustain this growth, the government is prioritizing secure, sustainable, and climate-resilient infrastructure, including a new national data center and stronger policies for digital governance and services.

The Korea Green Growth Trust Fund (KGGTF) provided catalytic support to strengthen Ethiopia's technical capacity, introduce international best practices, and shape national strategies for digital infrastructure. By linking strategic knowledge exchange with policy and investment planning, the grant positioned Ethiopia to design and implement secure, scalable, and green digital systems.

Key Activities

- **Strategic Knowledge Exchange**: Two study tours (2023, 2024) connected Ethiopian officials with KAIST, NAVER, Korea's ICT and Energy ministries, and the Digital Development Centre to learn about green data centers, cybersecurity, cloud migration, and AI.
- **National Data Center Strategy**: Lessons from Korea directly informed the design and bidding process for a new facility in Addis Ababa, embedding sustainability and security.
- **Capacity Building**: Trained officials to manage energy-efficient, resilient infrastructure and strengthen digital governance.
- **Knowledge Products**: Produced three reports that guided Ethiopia's digital sector planning and investment frameworks.

Outcomes

The $350,000 KGGTF grant directly influenced Ethiopia's **$200 million Digital Foundations Project**, which will expand broadband access, enhance cybersecurity, and support digital startups. This represents a leverage effect of **$571 for every $1 of grant funding**, underscoring KGGTF's catalytic role.

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Partnerships

Collaboration with KAIST and NAVER shaped Ethiopia's approach to sustainable data center operations and green computing. By aligning global expertise with local priorities, the program laid the foundation for Ethiopia's secure, scalable, and climate-resilient digital future.

KGGTF's impact extends beyond policy frameworks and pilot projects to strengthen technical capacity, deeper institutional knowledge, and expands global networks among governments and partners. Together, these contributions accelerate digital transformation and advance resilient, green digital infrastructure.

Notable Innovations and Delivery Methods

Driving Scalable Digital Transformation through Technology and Tailored Support

The Digital Development portfolio reflects a bold and strategic commitment to innovation—both in the advanced technologies it deploys and in thoughtful, adaptive ways these solutions are delivered. Together, these innovations address some of the toughest challenges facing countries, such as limited technical capacity, fragmented data systems, and rising climate vulnerabilities.

Technological Innovations

Grants advance next-generation tools that strengthen climate resilience, enhance governance, and expand inclusive digital access. These solutions are practical, scalable, and grounded in local needs.

- **Data-Driven Early Warning Systems**: Harness real-time data, satellite imaging, and predictive analytics to improve disaster preparedness and enable life-saving responses such as in this case.
- **Green ICT and Digital Infrastructure**: Support energy-efficient data centers and smart grids that cut emissions while improving operational efficiency.
- **AI-Enabled Governance Tools**: Apply AI, IoT platforms, and big data analytics to modernize public service delivery and enable real-time decision-making.

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- **Digital Inclusion Solutions**: Bridge gender, income, and geographic divides by expanding access to digital tools and training, empowering underserved communities.

Adaptive Delivery Approaches

To ensure innovations take root and scale, KGGTF applies an integrated delivery model that combines **Knowledge Exchange (KE)** and **Technical Assistance (TA)** with pilots and regional platforms.

- **Knowledge Exchange (KE)**: Facilitates peer learning missions, policy dialogues, and study tours, that connect countries with proven digital innovations.
- **Technical Assistance (TA)**: Provides advisory services and hands-on technical support to design roadmaps, platforms, and implementation strategies.
- **Pilot Projects and Tools**: Develops and tests prototypes, diagnostics, and models that respond to country-specific challenges and lay the foundation for reform.
- **Regional Learning Platforms**: Builds continuous collaboration through toolkits, e-modules, and knowledge hubs that link countries and communities across regions. These flexible, modular delivery methods keep digital transformation efforts agile and context-specific while maximizing long-term development and climate impact.

Collaboration with Korean Partners (K-Partners)

A defining strength of the digital development portfolio is its collaboration with Korean partners—institutions that draw directly from Korea's own path of digital transformation. Korea's experience moving from an analog economy to a global digital leader offers practical lessons on how to implement new technologies, overcome barriers, and build resilient, inclusive ecosystems.By sharing these first-hand insights, Korean partners provide client countries with tailored policy advice, technical know-how, and proven implementation models. This collaboration not only strengthens the design and delivery of projects but also ensures that digital development efforts align with sustainability and climate goals.

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Key Institutions and Their Roles

Ministry of Science and ICT (MSIT):
Leads Korea's digital policy development and supports the deployment of green ICT solutions, including energy-efficient data centers and smart infrastructure.

National Information Society Agency (NIA):
Provides technical expertise in digital inclusion, big data, and smart city technologies, while advising on digital governance and capacity-building strategies.

Korea Institute of Science and Technology (KIST):
Conducts advanced research on emerging technologies—including AI, IoT, and smart grids—and supports their integration into climate resilience initiatives.

National Information Resources Service (NIRS):
Specializes in strengthening transparency and digital infrastructure for public institutions, helping governments deliver more responsive and efficient services.

Korea Advanced Institute of Science and Technology (KAIST):
Offers cutting-edge research in digital engineering, data science, and AI, contributing to the development of innovative platforms and analytics for informed policymaking

By drawing on Korea's digital growth experience, KGGTF delivers innovative solutions that drive sustainability and resilience in developing countries.



This multi-layered collaboration model increases the scalability and relevance of KGGTF's digital development grants, ensuring Korean innovations are effectively adapted to diverse countries' contexts.

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

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Annex 1. Total Grant List

Year	K#	Grant Name	Country	Amount	K-Partners	TF No.	Linked P-Code
Year 12	238	Towards a Green, Secure, and Climate-Resilient Data Infrastructure and Environment in West Africa	Cabo Verde, Benin, Gambia, Guinea, Guinea-Bissau, Liberia	$ 600,000	NAVER; NIA; MOIS-NIRS; SAMSUNG SDS	TF0C7145	P500628
Year 12	237	Design the implementation roadmap and provide capacity building for the development in Samoa of (i) a Climate Data Sharing Platform and (ii) AI-based Early Warning Systems.	Samoa	$ 600,000	GKEDC; NIA; NIGT	TF0C8018	P180807
Year 11	202	Green energy solutions for digital connectivity and services in underserved communities: Mozambique and Madagascar	Mozambique, Madagascar	$ 600,000	MSIT; KAIST	TF0C3441	P176459
Year 10	183	Development of Data-driven Multi-Hazard Early Warning Systems	Maldives, Sierra Leone	$ 600,000	NIA; KMI	TF0C0693, TF0C7644	P177256, P507042
Year 10	182	Towards Green, Secure and Climate-Resilient Data Infrastructure	Ethiopia	$ 350,000	MOIS; KIST	TF0C0113	P171034
Year 9	169	Greening Digital: Implementing Green Digital Infrastructure Development	Global	$ 610,000	MSIT; IITP; NIA	TF0B7794	P178597
Year 8	150	Green Data Center Strategy in Mongolia	Mongolia	$ 350,000	MOIS-NIRS	TF0B5255	P176424
Year 7	145	Intelligent Transport Systems, smart-city and digital tools to improve urban mobility in LAC cities	Ecuador, Colombia	$600,000	KOTI; MOLIT; ITS Korea	TF0B1976, TF0C5952	P173185, P179175
Year 4	98	Smart Tanzania - Strengthening Data Services and Planning	Tanzania	$ 600,000	LX; NIA; ePeople	TF0A4028	P158349
Year 3	65	Unlocking Data Innovations for Smarter Urban Transport	Global	$ 300,000	KOTI; NIA; MSIT; MOIS	TF0A1544	P133406
Year 2	46	ICT Applications to Achieve Green Growth in an Indian Cities (PhaseII)	India	$ 700,000	N/A	TF0A3522	P152288
Year 2	29	Negawatt Challenge for Energy Efficiency	Sub-Saharan Africa	$ 500,000	GTC; NIA	TF018221	P152261
Year 2	28	Using ICT to Increase Green Competitiveness in Guatemala	Guatemala	$ 605,000	MSIT; KEMCO; KICOX	TF017940	P160763
Year 2	27	ICT Applications to Achieve Green Growth in an Indian City	India	$ 700,000	MSIT; NIA; KETEP; KEMCO; K-WATER; KOREA SMART CARD	TF018012	P152288
Year 2	26	Innovative and Green Growth for Rural Areas: Investing & Scoping	Kosovo	$ 485,000	NIA; KCC	TF018211	P151939
Year 2	25	SMART Gov - Civic Innov. Solving Old Problems in New Ways	Mongolia	$ 430,000	N/A	TF017827	P130891

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Annex 2. Grant Summary

K-238 Towards a Green, Secure, and Climate-Resilient Data Infrastructure and Environment in West Africa

Grant Title	Towards a Green, Secure, and Climate-Resilient Data Infrastructure and Environment in West Africa
Region	AFR
Countries	Cabo Verde; Benin; Gambia; Guinea; Guinea-Bissau; Liberia
Sector	Digital Development
Program Year	Year 12 / 2024
Amount	$ 600,000
Status	Active
Program Goal	The program enhances the safety and efficiency of data infrastructure to promote better data management, improved service delivery, and strengthened institutional frameworks. The program supports energy-efficient, sustainable, green, climate-resilient, and cost-effective data hosting and storage solutions through an integrated approach including strategic planning, Just-in-Time (JIT) implementation support, and capacity building.
Key Results	The program organized a study tour to Korea in May 2025 to share knowledge on green, secure, and climate-resilient data infrastructure. Countries will develop a regional framework and guidelines for sustainable data hosting and disaster recovery, supported by strategic planning, best practices, market research, and capacity-building workshops to strengthen institutional readiness.

K-237 Design the implementation roadmap and provide capacity building for the development in Samoa of (i) a Climate Data Sharing Platform and (ii) AI-based Early Warning Systems

Grant Title	Design the implementation roadmap and provide capacity building for the development in Samoa of (i) a Climate Data Sharing Platform and (ii) AI-based Early Warning Systems
Region	EAP
Countries	Samoa
Sector	Digital Development
Program Year	Year 12 / 2024
Amount	$ 600,000
Status	Active
Program Goal	The program strengthens Samoa’s climate resilience by enabling data-driven policy decision-making in response to adverse climate events.

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	The program examines climate data needs and infrastructure, sets guidelines and roadmap to enhance the data platform, improves early warning systems with accurate data and integration, and builds capacity in climate data management.
Key Results	The program conducts a study tour and participation in Korea Green Innovation Days to learn from Korea's experience in climate data management and green technology. The program delivers a roadmap for Samoa's Climate Data Sharing Platform, strengthens early warning systems, and conducts workshops to enhance readiness for climate resilience.

K-202 Green energy solutions for digital connectivity and services in underserved communities

Grant Title	Green energy solutions for digital connectivity and services in underserved communities
Region	AFR
Countries	Mozambique, Madagascar
Sector	Digital Development
Program Year	Year 11 / 2023
Amount	$ 600,000
Status	Active
Program Goal	The program aims to increase digital adoption and inclusion by supporting accelerated digital transformation. The program enhances digital capability in Mozambique and Madagascar through assessment of technical solutions, deployment of joint climate-smart energy and digital systems, and development of an enabling environment for renewable energy and energy-efficient infrastructure.
Key Results	The program developed good practice notes and guidelines on green energy solutions for digital infrastructure, including technical assessments and standards for solar-powered systems. The program conducted policy and regulatory assessments in Mozambique and Madagascar, delivered training programs, workshops, and a study tour to Korea including participation in the Korean Green Growth Innovation Days to strengthen institutional capacity and promote resilient digital infrastructure.

K-183 Development of data-driven Multi-Hazard Early Warning Systems (MHEWS)

Grant Title	Development of data-driven Multi-Hazard Early Warning Systems (MHEWS)
Region	Global

Countries	Maldives, Sierra Leone
Sector	Digital Development
Program Year	Year 10 / 2022
Amount	$ 600,000
Status	Closed
Program Goal	This program supports countries to achieve digital transformation that is green, resilient, inclusive and data-driven by capitalizing on digital opportunities (enablers) while managing risks (safeguards). It aims to maximize the benefits of MHEWS with a data-driven approach through analytical research, knowledge exchange, capacity development, advisory service, country diagnostics, technical assistance, and program engagement.
Key Results	This program developd a diagnostic tool for data-driven multi-hazard early warning systems (MHEWS) and piloting it in Maldives and Sierra Leone, producing country-specific status reports and strategic roadmaps. Refined the tool for broader application by applying Korea's expertise through knowledge exchange with NIA and KMI. A global knowledge exchange event and training materials further built institutional capacity and strengthens disaster preparedness and climate resilience.

K-182 Towards a Green, Secure and Climate-Resilient Data Infrastructure

Grant Title	Towards a Green, Secure and Climate-Resilient Data Infrastructure
Region	AFR
Countries	Ethiopia
Sector	Digital Development
Program Year	Year 10 / 2022
Amount	$ 350,000
Status	Closed
Program Goal	This program expands access to energy-efficient data center facilities in Ethiopia by developing and adopting innovative ways to build sustainable, green, secure, and climate-resilient data center.It creates guidelines for green data centers and data digitalization, and develops data management capacity to increase the inclusiveness, affordability of digital services, and digital job creation in Ethiopia.
Key Results	The program developed 'Green Data Centers Strategy and Guidelines' and 'Data Digitalization and Classification Guidance' to support green, resilient, and inclusive digital infrastructure including implementation of

	cloud data storage. Strengthened government agencies' data management capacity and promoted sustainable, energy-efficient digital transformation through knowledge-sharing workshops, a benchmarking visit to Korea, and collaboration with Korean institutions.

K-169 Greening Digital: Implementing Green Digital Infrastructure Development

Grant Title	Greening Digital: Implementing Green Digital Infrastructure Development
Region	Global
Countries	Global
Sector	Digital Development
Program Year	Year 9 / 2021
Amount	$ 610,000
Status	Closed
Program Goal	The program supports Low and Middle Income (LMIC) countries to implement climate change strategies in the digital sector. The program focuses on reducing GHG emission, developing necessary tools, and inspiring client governments to integrate them in planning and implementing digital programs. The program addresses the gap in practical knowledge for digital in climate change, a small but significant source of emission.
Key Results	The program organized global knowledge-sharing events, including KGID sessions and a dedicated event in Korea, to integrate best practices on green digital infrastructure. Developed guidance materials, a case database, and digital GHG accounting tools, partnered with MSIT, IITP, and NIA, strengthened capacity, refineed tools through country-level needs assessments, and promoted knowledge dissemination.

K-150 Green Data Center Strategy in Mongolia

Grant Title	Green Data Center Strategy in Mongolia
Region	EAP
Countries	Mongolia
Sector	Digital Development
Program Year	Year 8 / 2020
Amount	$ 350,000
Status	Closed
Program Goal	The program increases the use of energy and resource-efficient data centers in Mongolia through the green and sustainable data center.

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	The program informs the Government of Mongolia on establishing energy-efficient green data centers for government use and explores ways to motivate the private sector data center operators to invest on data center establishments in Mongolia.
Key Results	The program developed technical guidelines for green data centers in Mongolia and provided technical assistance on energy-efficient infrastructure. Conducted online training to strengthen capacity in sustainable data center management, prepared a market assessment on investment potential, and included outreach through blog posts and news releases to disseminate findings and raise awareness among key stakeholders.

K-145 Intelligent Transport Systems, smart-city and digital tools to improve urban mobility in LAC cities

Grant Title	Intelligent Transport Systems, smart-city and digital tools to improve urban mobility in LAC cities
Region	LAC
Countries	Ecuador, Colombia
Sector	Transport
Program Year	Year 7 / 2019
Amount	$ 600,000
Status	Active
Program Goal	The program promotes resilient, greener, intelligent, and sustainable urban mobility models in LAC cities. The program develops a toolkit with manuals and an open-source platform, documents international experiences and client needs, and provides reports and dissemination. The program improves transit efficiency, supports planning and integration, and strengthens resilience through collaboration with KOTI, ITS Korea, and MOLIT.
Key Results	Documented international best practices, including Seoul's bus reform, and analyzed client needs. Produced manuals for ITS system diagnosis and implementation, guiding city-wide reforms. Developed an open-source platform for fleet control to integrate private data into public planning. Created toolkit and dissemination channels to expand adoption. Strengthened urban mobility efficiency, resilience, and competitiveness, enabling cities to reduce congestion, emissions, and health risks while improving affordability, safety, and accessibility of public transport.

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K-98 Smart Tanzania - Strengthening Data Services and Planning

Grant Title	Smart Tanzania - Strengthening Data Services and Planning
Region	AFR
Countries	Tanzania
Sector	Digital Development
Program Year	Year 4 /2016
Amount	$ 600,000
Status	Closed
Program Goal	The program aids stakeholder engagement, mapping, surveying, risk assessment, and service delivery in economic sectors. The program advances unmanned aerial vehicles (UAV) use, improves citizen engagement, and supports transport infrastructure assessment. The program promotes efficiency, resilience, and competitiveness through digital services, mobile access, and policy innovation, with collaboration from Korean partners in knowledge exchange, training assistance, and advisory.
Key Results	Established UAV labs at universities, trained government staff, and released publicly accessible survey data to support planning and disaster risk management. Piloted digital services in transport, water, and waste management, including Bus Rapid Transit demonstrations. Produced policy recommendations on UAV regulation and smart service standards. Facilitated study visits, international competitions, and advisory partnerships, strengthening institutional capacity, and fostering innovation. Enhanced resilience through flood risk assessment and efficiency gains from shared economy models and smart service delivery.

K-65 Unlocking Data Innovations for Smarter Urban Transport

Grant Title	Unlocking Data Innovations for Smarter Urban Transport
Region	Global
Countries	Global
Sector	Transport
Program Year	Year 3 / 2015
Amount	$ 300,000
Status	Closed
Program Goal	The program uses open and big data best practices to prevent urban traffic congestion, reduce environmental damage, and improve the lives

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	of citizens. The program develops a structured methodology, supports client countries to adopt Open Government Data initiatives, applies traffic data, and produces action-oriented recommendations. The program collaborates with Korean institutes to improve energy efficiency, competitiveness, and sustainable transport systems.
Key Results	Developed and piloted an Open Transport Data Assessment methodology in multiple cities. Conducted assessments and produced city-level action plans to guide transport data reforms. Created an Open Transport Data Guide and delivered training for World Bank staff. Supported early implementation activities that improved transport planning, reduced congestion, and enhanced energy efficiency. Disseminated results globally, influencing lending projects and positioning transport as a pioneer sector for green growth – focused open data applications.

K-46 ICT Applications to achieve Green Growth in Indian Cities (Phase II)

Grant Title	ICT Applications to achieve Green Growth in Indian Cities (Phase II)
Region	SAR
Countries	India
Sector	Urban
Program Year	Year 2 / 2014
Amount	$ 700,000
Status	Closed
Program Goal	The program analyzes areas where ICT applications mitigate serious environmental challenges. The program shares lessons, collects data, develops indicators, and establishes pilot objectives. The program identifies greening the ICT for infrastructure, smart water management, smart grid adoption, and urban administration as key areas, and conducts feasibility studies to assess possibilities, costs, and potential for pilot demonstrations.
Key Results	Collected and analyzed data to design ICT-based pilots in areas such as green data centers, smart water management, smart grids, and ICT-driven urban administration. Developed feasibility studies, indicators, and pilot roadmaps with objectives, timelines, and responsible entities. Disseminated global lessons learned to participating governments and stakeholders. Established a platform and knowledge-sharing network involving over 100 cities and organizations, providing tools and best practices to scale ICT-enabled, resource-efficient urban solutions across South Asia.

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K-29 Negawatt Challenge for Energy Efficiency

Grant Title	Negawatt Challenge for Energy Efficiency
Region	AFR
Countries	Sub-Saharan Africa
Sector	Digital Development
Program Year	Year 2 / 2014
Amount	$ 500,000
Status	Closed
Program Goal	The program pioneers an open innovation model for private sector engagement and investment in energy technology development and adaptation. The program supports entrepreneurship, job creation, and energy-efficient services through hackathon and makeathon initiatives. The program promotes training, dialogue, and replicable solutions, leveraging local talent and international expertise to address urban challenges and improve air quality in Africa.
Key Results	Engaged local entrepreneurs in South Africa and Ghana through innovation challenges that generated practical ICT-based energy efficiency solutions. Delivered hands-on training, mentoring, and financial support to finalists, strengthening their capacity to commercialize energy-saving technologies. Produced a replicable methodology guide for implementing innovation competitions. Facilitated cross-sector dialogues and global knowledge exchange with Korean experts, enabling technology transfer and linking local solutions to international green growth practices for broader scaling and replication.

K-28 Using ICT to Increase Green Competitiveness in Guatemala

Grant Title	Using ICT to Increase Green Competitiveness in Guatemala
Region	LAC
Countries	Guatemala
Sector	Digital Development
Program Year	Year 2 / 2014
Amount	$ 605,000
Status	Closed
Program Goal	The program enhances Guatemala's energy policy through ICT and clean production. The program promotes industrial efficiency, supports SMEs, and builds institutional capacity. The program implements energy

	management systems (EMS) in industrial clusters, develops a tested model, and introduces a Clean Production Strategy. The program collaborates with Korean institutions to provide technical expertise and support sustainable, energy-efficient production systems.
Key Results	Developed and operationalized a Market Exchange Platform to connect SMEs with energy efficiency service providers. Piloted ICT-enabled Energy Management Systems (EMS) in industrial clusters, enabling real-time monitoring of resource use. Produced a national Clean Production Strategy and Action Plan with defined goals and accountability mechanisms. Facilitated South-South cooperation with Korean partners, transferring ICT and EMS expertise. Strengthened institutional capacity, raised awareness among firms, and supported SME adoption of clean production technologies.

K-27 ICT Applications to Achieve Green Growth in an Indian City

Grant Title	ICT Applications to Achieve Green Growth in an Indian City
Region	SAR
Countries	India
Sector	Digital Development
Program Year	Year 2 / 2014
Amount	$ 700,000
Status	Closed
Program Goal	The program facilitates knowledge sharing to create greener, sustainable cities. The program enhances energy efficiency, minimizes GHG emissions, and introduces cost-effective innovations. The program supports ICT applications for green growth, assesses cities for smart transformation, and explores smart grid, water management, and urban planning. The program collaborates with Korean experts to implement green city initiatives.
Key Results	Conducted diagnostic assessments and feasibility studies that informed city-level green ICT initiatives. Developed policy roadmaps with objectives, timelines, and responsible entities for pilot demonstration. Delivered awareness and capacity-building activities through seminars, workshops, and conferences. Strengthened partnerships with Korean institutions and private sector actors, transferring technical expertise in smart ICT, water management, and energy efficiency. Established a foundation for scaling up sustainable, ICT-enabled urban projects in India and beyond.

K-26 Innovative and Green Growth for Rural Areas: Investing & Scoping

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Grant Title	Innovative and Green Growth for Rural Areas: Investing & Scoping
Region	ECA
Countries	Kosovo
Sector	Digital Development
Program Year	Year 2 / 2014
Amount	$ 485,000
Status	Closed
Program Goal	The program expands broadband access and enhances digital skills to improve economic opportunities in rural Kosovo. The program trains women and young men for online jobs, increases employability, and supports job creation. The program inspires regional replication, promotes digital workforce development, and reinforces Kosovo's role as a pioneer through collaboration with the World Bank and international partners.
Key Results	Produced comprehensive guidelines on how rural broadband can enable green growth through ICT applications. Provided technical advice to the Government of Kosovo for designing a nationwide rural broadband program. Identified pilot opportunities demonstrating cost savings and efficiency gains from applying green ICT in public and private sectors. Facilitated knowledge transfer from Korean institutions on broadband rollout and ICT integration, creating a replicable model for rural connectivity and sustainable digital development in other contexts.

K-25 SMART Government - Civic Innovations Solving Old Problems in New Ways

Grant Title	SMART Government - Civic Innovations Solving Old Problems in New Ways
Region	EAP
Countries	Mongolia
Sector	Digital Development
Program Year	Year 2 / 2014
Amount	$ 430,000
Status	Closed
Program Goal	The program supports Mongolia's government in finding green, tech-driven solutions to urban service demand. The program engages the technical community through hackathons, leverages digital technologies, and promotes citizen engagement. The program builds SMART government foundations, incorporates ICT infrastructure, and fosters

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	open data ecosystems to improve public and private services, reduce costs, and enhance urban, transport, and energy systems.
Key Results	Engaged Mongolia's technical community and stakeholders through hackathons and co-creation platforms to design innovative ICT solutions. Developed open data frameworks and strengthened foundations for SMART government service delivery. Enhanced citizen engagement and feedback mechanisms, improving transparency and responsiveness. Produced digital applications and concepts that improved transport and energy services, reducing congestion and environmental impacts, while building institutional capacity and scaling the open data ecosystem nationwide.

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