WORLD BANK GROUP | KOREA GREEN GROWTH TRUST FUND

PARTNERSHIPS FOR IMPACT SERIES

AGRICULTURE

RURAL DEVELOPMENT ADMINISTRATION

How KGGTF Fosters Green Growth through Partnerships

The Korea Green Growth Trust Fund (KGGTF) is more than a funding mechanism. It is a catalyst connecting World Bank teams with Korean institutions that offer transformative solutions in sustainable development. KGGTF supports policy dialogue, study tours, and global learning exchanges that empower countries to scale climate-smart, inclusive, and green growth strategies.

This series highlights partnerships that deliver impact on the ground. Here, we spotlight the Rural Development Administration (RDA), a vital partner helping to advance agricultural innovation and sustainability worldwide.

Rural Development Administration (RDA)

Rural Development Administration

1. ABOUT RDA: KOREA'S LEADER IN AGRICULTURAL INNOVATION

Established in 1962, the Rural Development Administration (RDA) is South Korea's premier institution for agricultural research and development. It has played a pivotal role in transforming the country from food-scarce to food-secure through science-driven solutions and innovation.

Agriculture was one of the key driving forces behind Korea's transformation from an aid-recipient country to an aid-donor country.

Advancing Smart and Digital Farming

RDA leads Korea's smart farming revolution. It has created integrated digital platforms for data collection and decision support, and developed agricultural robotics, AI-powered diagnostics, and drone technologies that reduce labor while enhancing yield.

Pioneering Climate-Smart Agriculture

In response to climate change, RDA is spearheading the development of low-carbon farming practices, such as paddy water management, precision fertilization, and methane-reducing livestock feed. It has also bred GHG-reducing rice varieties and is scaling adoption of sustainable techniques nationwide.

Ensuring Food Security and Market Responsiveness

RDA focuses on high-value, resilient crop and livestock varieties tailored to changing consumer demands. Its smart livestock technologies boost productivity while reducing production costs.

Global Reach Through Innovation Platforms

Through bilateral and regional programs, including KOPIA, AFACI, KAFACI, KoLFACI, and KoCARIP, RDA shares its agricultural advances globally. These initiatives enhance productivity, climate resilience, and food security across 70+ countries in Asia, Africa, Latin America, and the CIS.

Strategic Partnerships for Global Impact

RDA collaborates with the World Bank, FAO, CGIAR, and leading global institutes (IRRI, IFPRI, World Vegetable Center, AfricaRice) to deliver joint research, expert exchanges, and capacity-building programs. It also contributes to global initiatives like the "4 per 1000" soil carbon initiative and the wheat initiative.

2. KEY AREAS OF COLLABORATION WITH THE WORLD BANK

Agricultural Innovation

- Smart farming and digital agriculture
- Climate-resilient crops and precision breeding
- Low-emission agricultural practices

Technology Transfer and Deployment

- Identification of scalable agri-tech solutions
- Joint R&D and feasibility assessments
- Deployment in diverse agro-climatic settings

Policy and Strategy Support

- Decision-making tools for sustainable agriculture
- National and regional food security strategies
- Support for international rule-making

Green Growth Financing

- Facilitating investment in sustainable agri-projects
- Engaging private sector innovators
- Scaling export-ready agri-tech and equipment

Watch a video to learn more about RDA

Korea is the only country in the world that has evolved from being an aid-receiving country to an aid-giving country. Agriculture was one of the key driving forces behind it.

—Jaehan Kwon, the Administrator of RDA

These technological advancements can support the goal of achieving more resilient productive and sustainable agriculture as well as food systems that better meet consumer needs.

—Kenyan Agriculture Secretary Josephat Muhunya

Korea Partnership for Innovation of Agriculture

The Rural Development Administration (RDA) shares cutting-edge agricultural technologies through a robust portfolio of international cooperation programs. These include both bilateral and multilateral efforts, with continent-focused platforms that foster research collaboration and innovation:

Common Areas of Technical Support Across All Platforms

- Climate-resilient crop variety development
- Soil health and pest management technologies
- Greenhouse gas (GHG) monitoring and mitigation tools

KOPIA
KOrea Partnership for Innovation of Agriculture, RDA

The Korea Program on International Agriculture (KOPIA) is a flagship initiative hosted by the Rural Development Administration (RDA) of Korea, designed to bring Korean agricultural innovation directly to partner countries. Through a network of **20 KOPIA centers across Asia, Africa, Latin America, and Central Asia,** the program enables hands-on collaboration and real-time knowledge exchange. Each center is staffed with in-country RDA agricultural experts who lead local projects—from boosting crop productivity and climate resilience to promoting smart farming and sustainable value chains.

For World Bank and KGGTF grant teams, **KOPIA offers a unique advantage: experienced technical partners already embedded in the field, with deep knowledge of local conditions and a shared commitment to green, climate-smart agricultural solutions.**

Recent KOPIA programs reflect its commitment to practical, on-the-ground impacts.

More information on KOPIA

KoCARIP (Korea-Caribbean Agriculture Research Innovation Platform)

Key Result: Strengthening resilience through customized agricultural technologies and capacity building.

Supporting innovation in the Caribbean

Development of Drought-Tolerant Frijol Varieties

KoLFACI (Korea-Latin America Food & Agriculture Cooperation Initiative)

Key Result: Developed and disseminated four drought-tolerant Frijol 4 bean varieties, enhancing food self-sufficiency across the region.

Active in 14 Latin American countries

Including Colombia, Guatemala, Haiti, Paraguay, and Ecuador

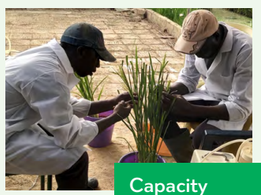
Provision of Virus-Free Seed Potato Production Technology in Pakistan

KAFACI (Korea-Africa Food & Agriculture Cooperation Initiative)

Key Result: Boosted rice productivity by 25% in partner countries through the African Rice Development Partnership, directly improving food security.

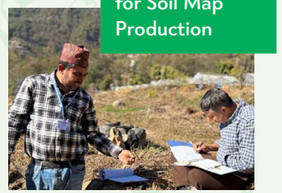
Active in 37 African countries

Including Ghana, Ethiopia, Nigeria, Kenya, Tanzania, and Senegal



Capacity Building of Rice Breeders

Soil Sampling for Soil Map Production



AFACI (Asian Food & Agriculture Cooperation Initiative)

Key Result: In collaboration with FAO, published the Soil Atlas of Asia (2023), providing comprehensive soil data for 13 countries to inform sustainable land management policies.

Active in 16 countries across Asia

Bangladesh, Bhutan, Cambodia, Indonesia, Kyrgyzstan, Laos, Mongolia, Myanmar, Nepal, the Philippines, Sri Lanka, Tajikistan, Thailand, Pakistan, Uzbekistan, Vietnam

3. HOW RDA AND KGGTF COLLABORATE

Knowledge Sharing and Capacity Building

- Jointly designed knowledge exchange programs with World Bank teams
- Technical training at RDA facilities for professionals from developing countries
- In-country capacity building and remote learning support
- E-learning modules through the World Bank Open Learning Campus (OLC)
- Development of multilingual educational resources

Research and Customized Solutions

- Collaborative research responding to country-specific needs
- AI and IoT-powered monitoring technologies
- Technical guidance for digital agriculture frameworks
- Policy advisory services to support institutional reforms

Collaborating with RDA was an inspiring experience that provided valuable insights into agricultural digitalization policies. RDA's R&D centers featured a range of impressive smart agricultural machinery and highly-advanced smart farm models, each tailored to specific crops. This exposure not only motivated our Mexican counterparts to explore further smart farm implementation at pilot sites but also expanded our collaboration with smart farm experts in the private sector.

—Elena Mora Lopez, Agricultural Economist at the World Bank

4. SPOTLIGHT: COLLABORATION EXAMPLES

Digital Soil Management – Uzbekistan

For decades, Uzbekistan's state-led agricultural model prioritized the production of cotton and wheat—often at the expense of soil health and long-term sustainability. **Nearly half of the country's irrigated land is now saline,** a result of monoculture cropping and inefficient water use. Recognizing the need for change, the Government of Uzbekistan adopted a bold **Agriculture Development Strategy (2020–2030)** to transition toward a market-driven, climate-smart model of agricultural growth.

To support this shift, the World Bank launched the **$500 million Agriculture Modernization Project (AMP)**, with a strong emphasis on productivity, sustainability, and digitalization. However, a critical gap remained: Uzbekistan's soil testing and fertility management systems were outdated and underdeveloped, limiting progress on both productivity and climate resilience.

To address this, the World Bank partnered with **Korea's Rural Development Administration (RDA)** through funding from **KGGTF and KPOK.** The partnership brought advanced **smart farming techniques** and **soil information systems** to Uzbekistan, laying the foundation for transformative sector-wide reform. Activities included technical assessments, investment planning for modern soil laboratories, and extensive knowledge exchange—featuring **online workshops, technical missions, and study tours.** Despite challenges posed by COVID-19, the collaboration remained dynamic and effective.

A major output of this initiative was the **global digital learning program on soil fertility management,** launched in 2022 on the **World Bank's Open Learning Campus.** Built upon the Uzbekistan-Korea collaboration, the course was created in **multiple languages—English, Korean, and Russian—to ensure broader accessibility and global uptake.**

Key topics include:

- **Soil mapping and spatial data integration** for precision agriculture
- **Custom fertilization techniques** adapted to specific crops and soil types
- **Climate-smart agricultural practices** to promote resilience
- **Early warning systems** to address climate and soil-related risks

The virtual course combines expert video lectures, field demonstrations, and multilingual subtitles, making cutting-edge knowledge broadly accessible.

This joint effort not only informed **$5 million in AMP investments** but also catalyzed broader institutional reforms in Uzbekistan's agriculture sector. With enhanced soil fertility management systems and stronger international partnerships, Uzbekistan is charting a greener, more productive path forward—one that regional neighbors are now looking to replicate.

Insects for Impact – AfricaBuilding a Circular Green Growth Economy in Africa
Food. Feed. Fertilizer. Waste Recovery. Jobs. Resilience.

In the face of rising food insecurity, depleted soils, and mounting organic waste, a surprising solution is gaining momentum across Africa: insect farming. The KGGTF program "Insect Farming for Food and Feed for a Circular Green Growth Economy" (IF4FF) is piloting a new initiative supporting countries grow bugs at scale—quickly, cheaply, and sustainably.

Housed in vertical farms, black soldier fly larvae and mealworms thrive on food scraps and market waste, transforming low-value organic matter into high-value protein in just days. These fast-growing insects are then processed into a fine, odorless powder—packed with protein, iron, and micronutrients—that can be used in breads, pastas, porridges, and more. It's a scalable, culturally adaptable way to boost nutrition without changing the taste of traditional foods.

The process doesn't stop at food. Insects also create frass, a nutrient-rich natural fertilizer that helps restore soil health—reducing the need for costly synthetic alternatives. And as local feed sources, insects offer farmers a cheaper, greener substitute for imported soy and fishmeal.

RDA is a key partner, sharing cutting-edge expertise to help African countries design, build, and scale insect-based value chains. Through training, pilots, and policy guidance, RDA and the World Bank are working to turn today's challenges into tomorrow's green jobs and climate solutions.

From refugee camps to city rooftops, insect farming is proving to be a small-scale innovation with transformative potential. With Korean know-how and World Bank support, Africa is showing how bugs can power a more circular, resilient future.

5. FURTHER RESOURCES

The collaboration between RDA, KGGTF, and World Bank teams showcases the power of knowledge exchange to tackle pressing global challenges. By bridging Korean innovation with local development priorities, these partnerships help countries scale sustainable, resilient, and inclusive agricultural systems.

Additional Resources:

- RDA Website
- RDA Agricultural Innovation Video (2023)
- World Bank's Open Learning Campus (OLC)
- Listen to the World Bank podcast: Can Bugs Help End Hunger

RDA's International Programs:

- Korea Program on International Agriculture (KOPIA)
- Asian Food and Agriculture Cooperation Initiative (AFACI)
- Korea-Africa Food & Agriculture Cooperation Initiative (KAFACI)
- Korea-Latin America Food & Agriculture Cooperation Initiative (KoLFACI)

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