



South Korea and IRRI

The Government of the Republic of Korea and the International Rice Research Institute (IRRI) have been working together since 1964. Through the Rural Development Administration (RDA), the partnership brought the Green Revolution to South Korea and helped transform the country from a rice importer to a self-sufficient producer.

South Korea has since donated more than USD 14.5 million to IRRI to fund 54 projects. In 2001, IRRI opened its office in Suwon to further strengthen collaboration on improvement of the temperate rice germplasm, regional and international cooperation and exchange of scientists and breeding materials, short-term consultancies for research on japonica rice, and training. Operational costs of the IRRI office are paid for entirely by the government.

In 2014, RDA became a member of the Hybrid Rice Development Consortium, a collaboration among public- and private-sector partners to improve the dissemination of hybrid rice technology. On 21 April 2014, RDA and IRRI signed a collaborative work plan for 2014-15 with these priority research areas: development of tolerance for abiotic stresses and resistance to disease in temperate japonica, as well as of rice cultivars with tolerance for high temperature.

Ongoing South Korea-supported projects

Germplasm Utilization Value Added (GUVA) Project

GUVA is a breeding program for developing high-yielding, high-quality, and high-value temperate japonica rice cultivars adapted to tropical regions. In addition to helping boost farmers'



In April 2014, Ki-Hun Park, general director of RDA's Department of Rice and Winter Cereal Crop, and Matthew Morell, IRRI director general, signed an agreement to develop the 2014-15 RDA-IRRI collaborative work plan.

Key achievements of Korea-supported work

- Developed premium quality varieties—Gopumbyeo and Unkwangbyeo—under the Large Scale Korean Seed Multiplication Project.
- Launched the Rice Technology Transfer Systems workshop, a 2-week course on models of technology transfer in rice, in 2002. Since then, 130 practitioners from 17 Asian countries have taken the course.
- Planted 1,500 lines to advance a second generation of rice cultivation not normally feasible during the country's winter season. More than 120 lines were also produced for small-scale seed increase.
- Developed high-quality and high-yielding temperate japonica rice varieties (IRRI 152 and MS11) suited to Philippine conditions. MS11 was released in the Philippines in 2008. IRRI 152 and MS11 were also approved for large-scale planting by the National Seed Industry Council of South Korea.

income, it aims to use germplasm toward improving the diversity of japonica for large-scale tropical ecosystems. GUVA developed photo-insensitive japonica rice cultivars with cold tolerance and high-grain quality adaptable in tropical regions.

As of 2014, several promising lines have been developed and undergoing continuous evaluation for stability across seasons as well as for responses to pests, disease, and environmental stresses. In 2015, RDA and IRRI started the second phase of the project, *GUVA*

Traits of Japonica Rice. GUYA Phase 2 will continue to evaluate the promising lines from the previous phase toward eventual release of new japonica varieties.

Korean Seed Multiplication Project (KSMP)

KSMP is a joint effort between RDA and IRRI that has been running for almost 5 decades. Multiplication of Korean rice seed in the Philippines has enabled Korea to accelerate its research programs and shorten the time required to develop new rice varieties.

A major achievement of KSMP is the development of the cultivar Tongil, which was instrumental in helping South Korea achieve self-sufficiency in rice. Many other premium quality cultivars, such as Gopumbyeo and Unkwangbyeo, were developed through the project.

In 2013-14, 1,600 pedigree lines were brought from RDA to IRRI. In 2014, 5,134 lines were transported back to RDA. Potential lines were used as parents for the next season and will undergo further evaluation by breeders under the GUYA project.

International Network for Genetic Evaluation of Rice (INGER)

South Korea has been an active participant in INGER's germplasm exchange and evaluation activities for 40



In December 2001, following a memorandum of understanding signed between RDA and IRRI the previous year, the IRRI office in South Korea was formally inaugurated.

years. More than 30,000 breeding lines were shared and evaluated and over a thousand were used in local varietal improvement programs. In 2011-15, 40 sets of 10 types of INGER nursery entries were sent to RDA and 1,826 elite breeding lines were evaluated for adaptation to various ecosystems as well as screened for resistance to biotic stresses and tolerance for abiotic stresses. An additional 6,407 breeding lines from IRRI were sent to RDA over the same period.

Through INGER, South Korean rice breeders acquired valuable germplasm

for improving japonica rice breeding in terms of resistance to biotic stresses, tolerance for abiotic stresses, grain quality, productivity, and special traits such as aroma.

Some 71 nursery entries developed by South Korea were tested in 32 countries while 21 breeding lines originating from the country were used as parents in varieties developed by China, Egypt, India, Iran, Myanmar, Nepal, and Vietnam. Korea also sent 2,273 seed lots to IRRI for use in the institute's breeding and research from 2011 to 2015. ■

International Rice Research Institute (IRRI)

The International Rice Research Institute (IRRI) is the world's premier research organization dedicated to reducing poverty and hunger through rice science; improving the health and welfare of rice farmers and consumers; and protecting the rice-growing environment for future generations. IRRI is an independent, nonprofit research and educational institute founded in 1960 by the Ford and Rockefeller foundations, with support from the Philippine government. The institute, headquartered in Los Baños, Philippines, has offices in 15 rice-growing countries in Asia and Africa, and about 1,180 staff members of some 40 nationalities.

Working with in-country partners, IRRI develops advanced rice varieties that yield more grain and better withstand pests and disease as well as flooding, drought, and other destructive effects of climate change. More than half of the rice area in Asia is planted to IRRI-bred varieties or their progenies. The institute develops new and improved methods and technologies that enable farmers to manage their farms profitably and sustainably, and recommends rice varieties and agricultural practices suitable to particular farm conditions as well as consumer preferences. IRRI assists national agricultural research and extension systems in formulating and implementing country rice sector strategies.

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