

IRRI

AFRICA



Transforming Food Systems in Africa

EXTRACTS FROM
IRRI ANNUAL REPORT 2022





IRRI in Africa

IRRI-AFRICA has been developing and delivering solutions in Africa for nearly **60 years**. Across the countries, we are working in over **15 countries** in Africa with offices in five countries. IRRI-AFRICA leverages the extensive **technologies and expertise from its work globally**, to customize solutions for Africa in Africa.



The needs and opportunities—why it is critical to invest in rice in Africa

Consumption of rice is rising more rapidly than any other commodity in sub-Saharan Africa

Rice imports are soaring in sub-Saharan Africa, already costing the region USD 6.4 billion/year in 2018 and expected to reach USD 11 billion by 2030 unless serious measures are taken. Many countries in Africa have a high policy priority to reduce dependence on imported rice and be self-sufficient.

Over 230 million ha of inlands are estimated to be suitable for rice production yet roughly only 12 million ha are currently being used for the crop.

Yields have been improving but are still too low, at about half of the world average.

It is a critical time where the rice industry is significantly expanding in Africa, when we can achieve the greatest impact in ensuring sustainable and healthy rice systems that are resilient and profitable for the smallholder farmers.

IRRI-Africa Research Partners Adopt the Tricot Research Methodology



IRRI-AFRICA introduced this new method to help farmers identify the most suitable technologies and products via field trials. It has been widely adopted by three partner countries:

- In Kenya where 24 tricot trials were conducted in 11 rice-growing hubs.
- In Tanzania where 12 trials were distributed in 10 districts.
- In Mozambique where 14 trials were held in 10 rice-growing hubs.

These field trials—along with product profiling—generated key information on varietal advantages over the benchmark and local check varieties. This served as the basis for strategic product positioning and scaling in the respective market segments.

The introduction of the tricot methodology is part of IRRI-AFRICA's effort to unify and modernize existing

rice-breeding efforts in sub-Saharan Africa—as well as South Asia—under the Accelerated Genetic Gain in Rice (AGGRi) Alliance. Funded by the Bill & Melinda Gates Foundation, AGGRi's aim is to increase rice yield and improve livelihoods of farmers in these diverse regions by strengthening its partnership with national research and extension systems.



Komboka, a New Superior Rice Variety Reaches Farmers

One key rice variety promoted by IRRI-AFRICA is Komboka, which has several important traits superior to the commonly grown local varieties including producing a higher number of tillers, longer panicles, and higher yields. In addition, the grains are aromatic and easy to thresh.



In crop demonstration sites, African farmers unanimously preferred Komboka. The variety has achieved widespread adoption by farmers in Kenya, where certified seed sales increased from less than 1 ton in 2020–21 to 66 tons in 2021–22. A similar trend is also expected to take place in Tanzania and Mozambique.

Komboka was developed through a collaboration among the Kenya Agricultural and Livestock Research Organization (KALRO), the National Irrigation Authority, and IRRI-AFRICA. It was released in 2013 by KALRO. Other organizations such as the Mwea Rice Growers Multi-Purpose Co-operative Society, the County Government of Kirinyaga, the Alliance for a Green Revolution in Africa (AGRA), and the Kilimo Trust under the Competitive African Rice Initiative in East Africa provided support via assessment and demonstrations of Komboka.

Scaling Africa's Rice Seed Systems

A number of capacity building activities were conducted in Eastern and South Africa (ESA). More than 100 seed producers including smallholder farmers were trained in quality seed production and business development, out of which about 28% were female participants.

These efforts provide promising trends for women-led farmers' collectives in participating across both formal and informal seed markets in ESA. Capacity building efforts are geared to train and transition these women farmer groups into formal quality seed businesses.

Moreover, Komboka was scaled up significantly in Kenya. More than 80 tons of certified seeds of Komboka were sold in 2022 compared to mere 900 kgs sold in 2020.

Several countries like Kenya, Tanzania and Mozambique have adopted these innovative models around varietal demonstration, positioning and scaling through critical partnerships with national partners and other scaling partners.

Some of the key partners working with IRRI-AFRICA who have adopted the innovations in support of rice seed sector transformation are:

- The Kenya Agricultural and Livestock Research Organization (KALRO),
- Tanzania Agricultural Research Institute (TARI),
- Mozambique Institute of Agricultural Research (IIAM)
- Mwea Rice Growers Multipurpose Co-operative Society Ltd. (MRGM)
- National Irrigation Authority (NIA), Kenya
- Nafaka Kilimo, Tanzania
- Nabwabini Environmental Health Care Intervention Programme (NEHCIP), Kenya

These efforts are tied to IRRI Flagships 3 and 4: Climate-Resilient Farming and Dissemination, respectively.

Eleven New Climate-Smart and High-Nutrient Rice Varieties for Burundi's Farmers



11 new climate-smart and nutritious rice varieties were developed and released to meet farmers' needs. These include:

- Two high-zinc rice varieties intended as a complementary intervention to help address malnutrition among target populations. Note that high levels of zinc has now been mainstreamed into the breeding pipeline for all future varieties.
- Two aromatic supra-type varieties with higher market value to boost farmers' income.
- Three high-yielding varieties to increase production.
- Three drought-tolerant varieties for areas prone to water scarcity.
- One variety resistant to rice yellow mottle virus to replace susceptible varieties in parts of the country.

Regarding near-future plans, the Institut des Sciences Agronomiques du Burundi (ISABU) will provide breeder seeds to individuals or groups of farmers to produce basic seeds for each season. Seeds will also be multiplied by producers and be made commercially available to farmers.

The new rice varieties were released by ISABU in collaboration with IRRI-AFRICA under the Great Lakes Regional Integrated Agriculture Development Project (PRDAIGL), which is the World Bank's program on improving productivity and reducing production cost.

These efforts are in conjunction with Flagship 2 and 3.

Training on New Technologies to Increase Burundi's Rice Yields

IRRI-AFRICA held Farmer Field School trainings to introduce science-based solutions to 537 rice farmers (over half were women) and 10 agricultural technicians. There were demonstrations on how these solutions can help them in their daily lives from their own perspective. As pointed out below, rice production in one target area increased by as much as 73% after one season.

The participants were trained on good agricultural practices (GAP), small-scale mechanization, and postharvest technologies. The training area covered more than 8 ha for the first season and 10 ha for the second season in Nyabikere and Gihogazi Communes in Karusi Province.

The impact of the training in improving rice yield was significant. In Gihogazi, there was a 70% yield increase from 2,504 to 3,585 kg/ha during the first season and a 62% increase from 2,766 to 4,438 kg/ha during the second season. In Nyabikere, there was a 73% yield increase from 2,614 to 3,596 kg/ha during the first season and a 65% yield increase from 2,729 to 4,205 kg/ha



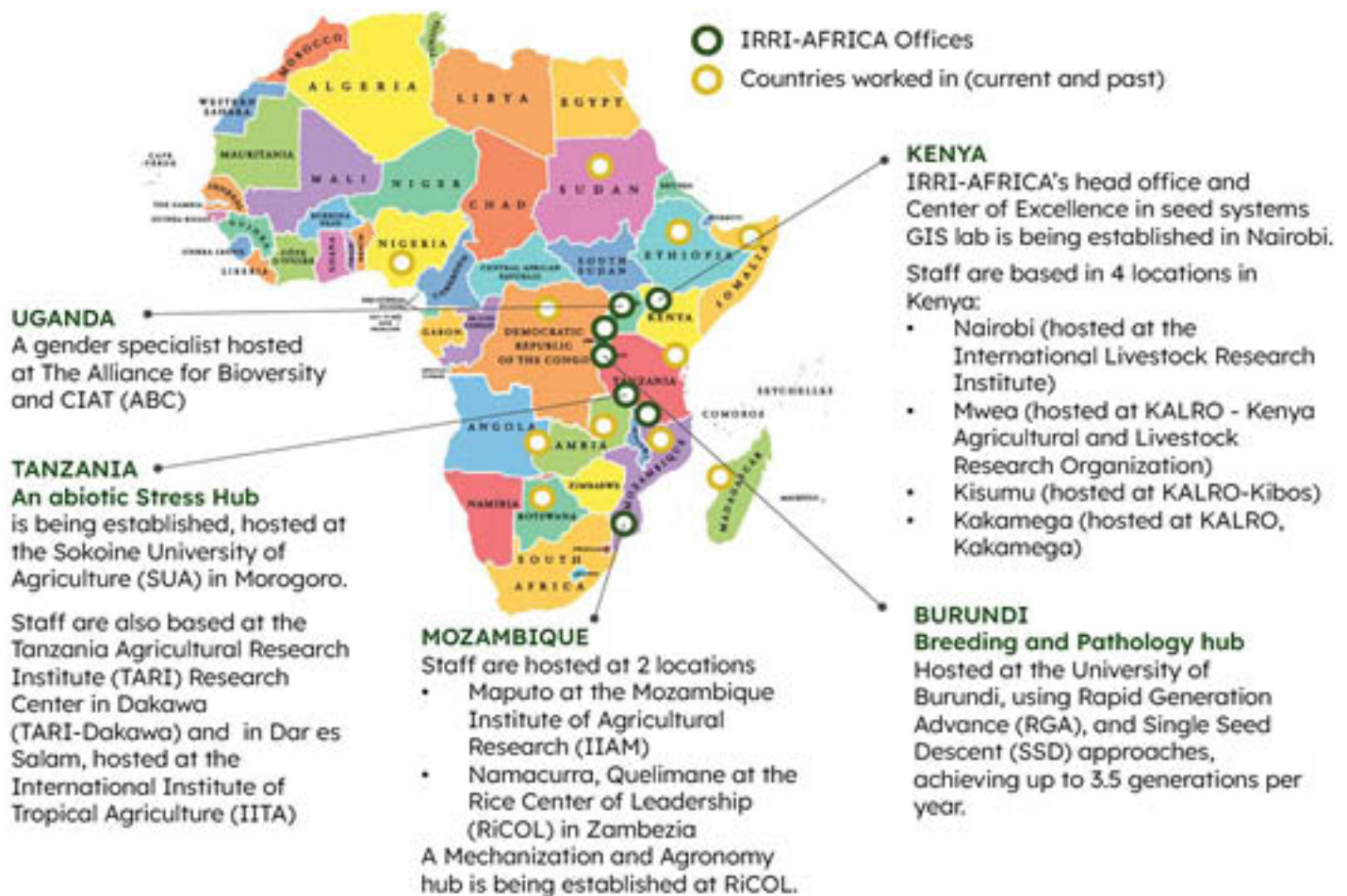
during the second season.

The training was part of the fifth phase of Increasing Economic and Food Security in Burundi through Rice Production Project implemented by IRRI-AFRICA from July 2020 to June 2022. The work is funded by George Liang, a philanthropist based in Hong Kong, who has funded this farmer capacity building for nine consecutive years.

This is part of IRRI's Flagship 4.



Facilities @ IRRI-AFRICA



Let us work together.

Throughout this annual report, IRRI has demonstrated its scientific leadership to the key stakeholders in the public and private sectors to critically address food and nutrition insecurity, poverty, climate change, and social equity.

In the face of possible food crises in various parts of the world and climate change globally, the Institute is urgently looking for critical funding from philanthropic foundations, private sector institutions, state government, and international and local organizations.

If your organization wishes to inquire about how we can work together, please email us at info@irri.org.