



Traditional rice varieties: Unlocking a diverse genetic pool

South Asia is among the world's leading areas of rice diversification. The traditional rice varieties of South Asia are exceptionally rich in genetic diversity and possess excellent traits, including better grain quality profile, health and nutritional values, and resistance to climate-related stress, pests, and diseases.

Traditional rice varieties have potential for export but the production and utilization of these varieties are limited because of their lower yield as compared to modern rice varieties. Cultivation of upland varieties are also seasonal.

COMPARATIVE ADVANTAGE

GRAIN QUALITY – better grain quality profile, with sweet aroma and excellent palatability

HEALTH – health benefits can include low sugar content, making them a better choice for consumers who are suffering from diabetes, overweight, or are regulating their sugar intake.

NUTRITION – rich in fiber, antioxidants, vitamins, and micronutrients (iron, zinc, manganese, selenium, etc.)

CLIMATE-RESILIENT – show high levels of resistance to pests and diseases and tolerance to environmental stresses (drought, flood, salinity)

ECONOMIC SUPPLEMENT – cheaper to cultivate; yields valuable byproducts including fodder for cattle, mulch for soil, and hay for thatching roof.

HEIRLOOM RICE PROJECT IN THE PHILIPPINES

In the Philippines, most high-quality traditional rice varieties, called “heirloom rice”, are grown in the northern Cordillera Autonomous Region (CAR) and certain regions in the southernmost part of the country such as the Arakan Valley and Lake Sebu in Cotabato.

The potential of heirloom rice is hindered by the inability to produce higher seed quality and quantity. Moreover, certain heirloom varieties are gradually disappearing, with some even close to extinction. Market and product development, alongside maintaining biodiversity in the region, are crucial in encouraging farmers to continue growing these threatened rice varieties.

The Heirloom Rice Project, a collaboration between the Department of Agriculture, Philippine Rice Research Institute, and IRRI, focused on product development through varietal characterization of 80 traditional rice varieties. From 2005-2014, about 2,098 farmers from CAR produced and exported 142.4 million tons of heirloom rice valued at Php 8.6M.



Harnessing the full potential of traditional rice varieties



CONSERVE TRADITIONAL RICE VARIETIES

- IRRI, through the International Rice Genebank, ensures the long-term preservation of rice biodiversity as part of the global rice genetic resources
- Enhance the productivity and enrich the legacy of traditional rice varieties through empowering farmers and communities in unfavorable rice-based ecosystems



CHARACTERIZE EXISTING TRADITIONAL RICE VARIETIES OR LANDRACES AND MODERN CLIMATE-RESILIENT VARIETIES INTO VARIETAL PRODUCTS.

- Collection, inventory, cataloging, definition of morphology, and maintenance and conservation
- Determine relatedness or diversity and further identify genes associated with important traits



IMPROVE RESISTANCE TO DISEASE AND TOLERANCE OF ENVIRONMENTAL STRESSES

- Evaluation for resistance to biotic (bacterial and fungal diseases) and tolerance to abiotic (drought, submergence, or salinity) stresses using standard methods
- Molecular level analysis on resistance or tolerance inherent in pigmented traditional varieties



DOCUMENT GOOD MANAGEMENT PRACTICES

- Trainings for increased crop production and better market linkages that will aid the distribution and promotion of clean, healthy, and good quality seeds
- Participatory needs and opportunities assessment to identify indigenous knowledge and priority interventions



ENHANCE LOCAL CAPACITY AND ENTERPRISE BUILDING IN FARMING COMMUNITIES

- Assess market opportunities and address production gaps through value chain analysis and development approach will be adopted.
- Business models to establish value opportunities and diversify investment



IDENTIFY OPPORTUNITIES FOR ADDING VALUE AND CREATING MARKET LINKAGES FOR HEIRLOOM OR TRADITIONAL RICE VARIETIES

- Monitoring and evaluation of project impact
- Technology screening or modification

Traditional rice varieties in the
IRRI RICE GENE BANK

41

Afghanistan

3011

Bangladesh

367

Bhutan

2826

India

1251

Nepal

797

Pakistan

1821

Sri Lanka

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International Rice Research Institute

IRRI aims to improve livelihoods and nutrition, abolishing poverty, hunger, and malnutrition among those who depend on rice-based agri-food systems. In doing so, IRRI's work protects the health of rice farmers and consumers, and the environmental sustainability of rice farming in a world challenged by climate change. IRRI's work promotes the empowerment of women and supports opportunities for youth in an equitable agri-food system.

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