



The DA-IRRI Heirloom Rice Project

Raising productivity and enriching the legacy of heirloom or traditional rice by empowering communities in unfavorable rice-based ecosystems

The Heirloom Rice Project is an initiative under the Food Staples Sufficiency Program (FSSP) of the Philippine Department of Agriculture (DA). With support from the various agencies of the DA and the International Rice Research Institute, this collaborative project aims to enhance the productivity and enrich the legacy of heirloom or traditional rice through empowered communities in unfavorable rice-based ecosystems. It holds the promise of becoming a remarkable endeavor for culturally rich communities in isolated regions of the world, particularly the hinterlands of Asia, Latin America, and Africa.

Heirloom rice varieties, handed down for several generations through family members and grown by small landholders in their ancestral farms, have exceptional cooking quality, flavor, aroma, texture, color, and nutritional value. Hence, there is high demand for these varieties and they command higher prices in both the domestic and international markets. These varieties are also resilient, showing high levels of resistance to diseases and tolerance of environmental stresses, thus helping farmers make a good income out of every crop.

In the Philippines, heirloom rice varieties are grown in the Cordillera Autonomous Region (CAR) and certain regions of Mindanao such as the Arakan Valley Complex and Lake Sebu in Cotabato. Since 2005, the Rice Terraces Farmers Cooperative has exported 97 metric tons of grain from heirloom varieties, such as Tinawon and Unoy, to the US market. This includes a 2012 shipment of 24.4 metric tons valued at PhP1.3 million. Production of heirloom rice varieties has increased by almost 80% in six years.

But the huge potential of heirloom rice as a lucrative livelihood is hindered by the inability of local farmers to produce these with higher seed quality and purity and in greater quantity. Moreover, certain heirloom varieties preferred in the market are gradually disappearing, some even close to extinction. Market and product

development, alongside maintaining biodiversity in the region, could be crucial in encouraging farmers to continue growing these threatened rice varieties, both traditional in the Cordillera Region and traditional and improved in the Arakan Valley Complex in Mindanao. Adding value to every step—from varietal development to market linkages—will benefit farmers in the long term.

To make the production and market terrain friendlier for heirloom rice, the following interrelated activities will be considered:

- 1. Characterize existing heirloom or traditional varieties or landraces and modern climate-resilient varieties in selected provinces into varietal products.** These effort will include collection, inventory, cataloguing, definition of morphology, and maintenance and conservation for active use. To identify the best-performing varieties, high-quality seeds will be grown and multiplied in field plots and will be evaluated based on participatory varietal selection (PVS) criteria. A deeper look will be taken into the genetic makeup of these varieties to determine their relatedness or diversity and to further identify genes associated with important traits. Combining these unique traits in each variety will provide identity as well as purity of preferred varieties for export. Nutrition and grain quality analyses will also be made for nutritional content and cooking and eating quality for market

and consumer preferences. To protect farmers' rights as regards ownership of these varieties, a community registry will be established.

2. **Enhance local capacity and enterprise-building in farming communities.** Existing communities will be strengthened, based on needs assessment, through training for increased crop production and better market linkages that will aid the distribution and promotion of clean, healthy, and good quality seeds. To package management technologies suitably for a target environment, socioeconomic and biophysical characteristics will be determined through participatory needs and opportunities assessment, a baseline survey, and gender analysis. The information generated, along with indigenous knowledge, will be used to identify priority interventions for better project design and knowledge sharing. Capacity enhancement activities that include building entrepreneurial skills will be organized.

3. **Identify opportunities for adding value and creating market linkages for heirloom or traditional rice varieties.** To better assess market opportunities and address production gaps, a value chain analysis and development approach will be adopted. This will encompass the full range of activities and services required to bring a product or service from inception to sale in the market. Business models will be established at each stage, including opportunities to add value and diversify investment.

4. **Documentation of good management practices will be packaged and disseminated through modern and traditional information, education and communication channels.** Monitoring and evaluation of project impact will be conducted through consultation with the communities involved, with baseline surveys as reference. These efforts are expected to provide the basis for technology screening or modification, as well as appropriateness for adoption by target farming communities with similar environments and circumstances.

5. **Improve resistance to disease and tolerance of environmental stresses of selected heirloom varieties.** Traditional varieties identified for improvement, especially pigmented varieties collected from on-farm upland areas and from IRRI's Genebank, will be evaluated for resistance to biotic (bacterial and fungal diseases) and tolerance of abiotic (drought, submergence, or salinity tolerance) stresses using standard methods. Resistance/tolerance inherent in pigmented heirloom varieties will be analyzed at the molecular level. These varieties will thus become useful genetic resources in breeding programs.

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