



DA-PhilRice-IRRI Collaboration For rice research and development

WaterRice project

Water-efficient and risk mitigation technologies for enhancing rice production in irrigated and rainfed environments (WaterRice)

Farming is an occupation built on hard work and its success hinges on several factors, among which is the availability of sufficient water. When water is in short supply, farmers have a much harder time producing bountiful harvests.

Even in irrigated areas that have a reliable source of water, distribution is largely controlled by irrigation associations. Decisions made by these stakeholders can spell the difference between success or failure of a cropping season for a farmer. And, as irrigation is applied from field to field, it is important to target a turnout area to improve water management decisions.

When water is scarce, weeds become another problem for farmers. Weeds are even more pronounced in rainfed areas that constantly struggle with water shortage because of lack of irrigation.

Different planting times due to labor scarcity brings variability in the water demand period within a turnout. Uneven soil surfaces also increase required water input and thus reduce water-use efficiency.

In irrigated areas, the alternate wetting and drying (AWD) water management technique can save up to 30% of water without yield loss. The technology has other benefits, including



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reduction of methane emission from rice fields. However, AWD is knowledge-, labor-, and time-intensive. Identifying weeds correctly in order to implement proper control measures is also a knowledge-intensive task.

The WaterRice project's goal is to develop ICT tools for improving decision-making on water and weed management by recommending best management practices for rainfed environments and introducing mechanization for land leveling and planting to improve water-use efficiency.

Objectives

The project aims to increase production and reduce inputs through the development, dissemination, and adoption of appropriate crop management technologies in both irrigated and rainfed rice ecosystems.

Specific objectives are to:

- a. Develop, test, and evaluate an automated tool in using the "safe AWD" principle to guide farmers, irrigation associations, and extension personnel in irrigation scheduling;
- b. Investigate the effects of enabling technologies (e.g., laser leveling, mechanized crop establishment methods) on the implementation of safe AWD and improve productivity in rainfed environments;
- c. Develop best management practices to improve yield and net return and reduce investment risk in rainfed environments; and
- d. Develop integrated weed management practices for irrigated and rainfed environments.

Updates

WaterRice will operate in Regions I, II, III, VI, and XII, focusing on small water irrigation system associations (SWISAs), national irrigation schemes, and communal irrigation schemes. As the complexity of decision-making on water management lies in water governance, the project has done stakeholder mapping for Region III. At this stage, project focus is on automation of irrigation scheduling using a tool that automatically sends a text message to the farmer, water user association lead, or agricultural technician. The AutoMon (sensor) has been developed and is now being tested at the IRRI and PhilRice stations.

Partners

DA-Philippine Rice Research Institute (PhilRice)
National Irrigation Administration
Bureau of Soil and Water Management

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