

Strategies to improve irrigation water management for rice production in Pulangui River Irrigation System

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Abstract

Rice has always been the anchor of food security in the Philippines and the government is adamant about sustaining rice production by ensuring reliable irrigation water availability. Among the numerous irrigation schemes, the importance of the Pulangui River Irrigation System (PRIS) is undeniable, as it is the largest and primary irrigation source for rice production areas which are considered the food basket in Northern Mindanao. However, the ageing irrigation structures, unlined canals, long-standing water delivery systems, and climate change are compromising the performance of PRIS; and every year, during the dry and wet season, the maximum rice irrigable area is not achieved. From the field-scale water management perspective, untimely irrigation application, an unregulated roster of turn for irrigation among farmers, and the traditional practice of flooding the rice fields are the main causes of substantial water losses in conveyance, distribution, and farm application of irrigation water. Hence, proper irrigation scheduling is crucial to cultivate the maximum irrigable area by ensuring equity among the farmers and to increase the water use efficiency and yield. In this study, the FAO single crop coefficient approach was adopted to estimate rice water requirements, which were subsequently used to suggest appropriate irrigation schedules based on the recommended field-scale rice cultivation practices. The study results would improve the irrigation system management in the study area by facilitating in regulating the canal water flows and releases according to suggested irrigation schedules that could lead to increased benefited area, yield, and water efficiency without straining the available water resources.

Keywords : rice, crop water requirement, irrigation schedules, water management, Philippines

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