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Rice production and water crisis management

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DESCRIPTION

Rice is that the second most generally grown cereal crop and also the staple food for over half the world's population. Quite 3 billion people consume quite 100 kg of rice per annum. Rice is cultivated on 155.5 million ha with a median rate of growth of 0.39% a year, within the last 30 years. within the near future, the chance for expanding areas under rice-based systems will remain very limited thanks to the scarcity of world water resources for agriculture, the expansion of urban and industrial sectors in Asia where land is already limited and therefore the high costs of developing new lands that are suited to rice production in Sub-Saharan Africa and geographic region. The common rate of rice yield was 3.68% each year within the early 1980s, but it's decreased to 0.74% per annum within the late 1990s. Several factors may contribute to the decline of the world under cultivation and in yield growth. The foremost important of those factors are: limited returns as we approach the yield potential of the high yielding varieties, declining productivity in intensive rice production systems, pressures from abiotic and biotic stresses, low returns in developing countries, increasing production costs in industrialized countries, and increasing public concern for the protection of environmental resources. Rice science has made considerable progress. Within the area of rice varietal improvement, recent advances in hybrid rice and therefore the new rice for Africa (NERICA) are just two samples of the successful contributions of science to the event of rice. Research could also help reduce the gap between the potential yield obtained on experimental stations and also the actual yield obtained within the fields. This might be possible by developing and promoting rice integrated crop management (RICM) systems for improving productivity and reducing the assembly cost per unit of output. The requirement for a sustainable increase in rice production affects everyone.

Food security in Asia is challenged by increasing food demand and threatened by declining water availability. The water-use efficiency of rice is low, and growing rice requires large amounts of water. In Asia, irrigated agriculture accounts for 90% of total diverted freshwater, and over 50% of this isused to irrigate rice. Until recently, this amount of water has been taken with a pinch of salt, but now the world "water crisis" threatens the sustainability of irrigated rice production. The available amount of water for irrigation is becoming scarce. The explanations for this are diverse and location-specific, but include decreasing quality (chemical pollution, salinization), decreasing resources (e.g., falling groundwater tables, silting of reservoirs), and increased competition from other sectors like urban and industrial users. Due to the increasing scarcity of water, the prices of its use and resource development are increasing also. Therefore, farmers and researchers alike are trying to find ways to decrease water use in rice production and increase its use efficiency. A fundamental approach is to begin at the sphere level, where water and rice interact. For farmers with no control over the provision or distribution of water beyond their farm gates, the crucial question to be addressed is "What are the choices to deal with decreasing water system at the farm or field inlets?" To answer this question, we've got to seem at the flow of water in rice fields and understand where reductions in water use may be achieved without impairing yield.