Water Management Strategies to be adopted in Sri Lanka to Improve Food Productivity to Accommodate the Population Growth

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Abstract

Food production in Sri Lanka needs to increase to feed a growing population whereas water for irrigation is getting scarcer. Major challenges Sri Lanka is facing today is to save water, increase food productivity and produce more grain with less water. Water input can be reduced by reducing ponded water depths to soil saturation or by alternate wetting/drying. Water savings under saturated soil conditions were on average between 20 % and 25 % with yield reductions between 5 % and 8 %. Yields were reduced between15 % and 45 % when soil water potentials in the root zone were allowed to reach minus 125 mbar to minus 250 mbar. In clayey soils, intermittent drying may lead to shrinkage and cracking, thereby risking increased soil water loss, increased water requirements and decreased water productivity. It therefore does not produce more rice with less water on the same field. Field-level water productivity and yield can only be increased concomitantly by improving total factor productivity or by raising the yield potential. Total rice production can be increased by using water saved in one location to irrigate new land in another. If this is not done, a strategy of saving water at the field level potentially threatens total rice production at large in Sri Lanka. This article analyzes and recommends the ways in which water saving irrigation management is to be practiced to meet these challenges at the field level. The analyses were conducted using actual data collected mostly from Irrigation department and Agriculture department in all the regional offices.