The 3rd International Forum on Water and Food
Tshwane, South Africa
November 14 – 17, 2011

CGIAR Challenge Program on WATER & FOOD
Andes • Ganges • Limpopo • Mekong • Nile • Volta

Co-hosted by: IWMI International Water Management Institute | FANRPAN Food, Agriculture and Natural Resources Policy Analysis Network

Aus-Aman Cropping System: A New Approach for Increasing Cropping Intensity in Southwest Coastal Bangladesh

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Session: Basin [Ganges] and Resilience

Key Message

Food security and rural livelihoods in the coastal zones of Bangladesh can be greatly increased by replacing the traditional single aman cropping system with a high yielding double cropping (aus-aman) system. Supplementary irrigation (where limited groundwater is available) can ensure good crop establishment of the aus crop. In water scarce areas, late aus establishment on rainfall, along with photoperiod-insensitive aman rice, also allows successful double cropping.

Summary

Most of the agricultural land in the coastal zones of Bangladesh is grown with a single rice crop (aman) during the rainy season, mainly with low-yielding local varieties. The land remains fallow during the dry season due to lack of fresh water and salinity. Field experiments were undertaken to test the possibility of growing 2 rice crops per year (double cropping) by growing aus rice prior to the aman crop. The experiments showed that high and stable productivity of the aus-aman cropping system can be achieved by dry seeding of a short duration, salt tolerant aus variety prior to the commencement of the rainy season, and use of a small amount of supplemental irrigation to ensure good establishment, followed by transplanting a high-yielding aman variety. This led to total cropping system yields of more than 8 t/ha, compared with typical farmers' yields of about 2.5 t/ha from their single aman crop. Where

fresh water is not available for supplementary irrigation of the aus crop for establishment, the crop can be sown later and established on rain and followed by a suitable photo-period insensitive aman variety to also achieve high yield. However, later sowing of the aus crop increases the risk of submergence during establishment of the aus rice due to heavy rains, and thus low yields. The risk can be reduced by transplanting after the rainy season starts, and by incorporation of submergence tolerance into aus varieties.