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Village-Level Studies on Rice-Based Cropping Systems in the Low-Lying Areas of Bangladesh : II. Toposequence, hydrology, land classification and cropping patterns in the Bogra District of the Barind Tract

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Abstract:

An intensive village-level survey on the change of land use and cropping systems was conducted in the village of Aira (Bogra District of the Barind Tract, a Pleistocene terrace) from the Aman season 1992 to the Boro season 1993. The village's land is classified locally into nine categories according to its utilization, location and soil characters. Based on this classification, the relationship between the toposequences and the establishment of cropping patterns in the village was investigated. Single cropping of transplanted Aman rice (T. Aman) was predominant, while deep-water Aman rice, Aus rice and Rabi crops were grown in limited areas before the 1970s due to shallow inundation during the wet season and the limitation of water sources during the dry season. Since the introduction of shallow tube-wells (STWs) in the late 1970s, however, the major cropping pattern has drastically changed from the [T. Aman-fallow] pattern to [T. Aman-Boro]. The rapid expansion of Boro-rice cultivation was achieved because (1) Boro rice did not interfere with the traditional main crop of T. Aman and (2) STW irrigation removed the hindrance of soil hardness during the dry season. Although the villagers have experienced a drastic change in cropping patterns, they have maintained their tradition of varietal choice, which seems to be adaptive to the variation of the micro toposequence.

Keywords:

Bangladesh, Cropping pattern, Land classification, Multiple cropping, Shallow tube-well irrigation, Toposequence

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