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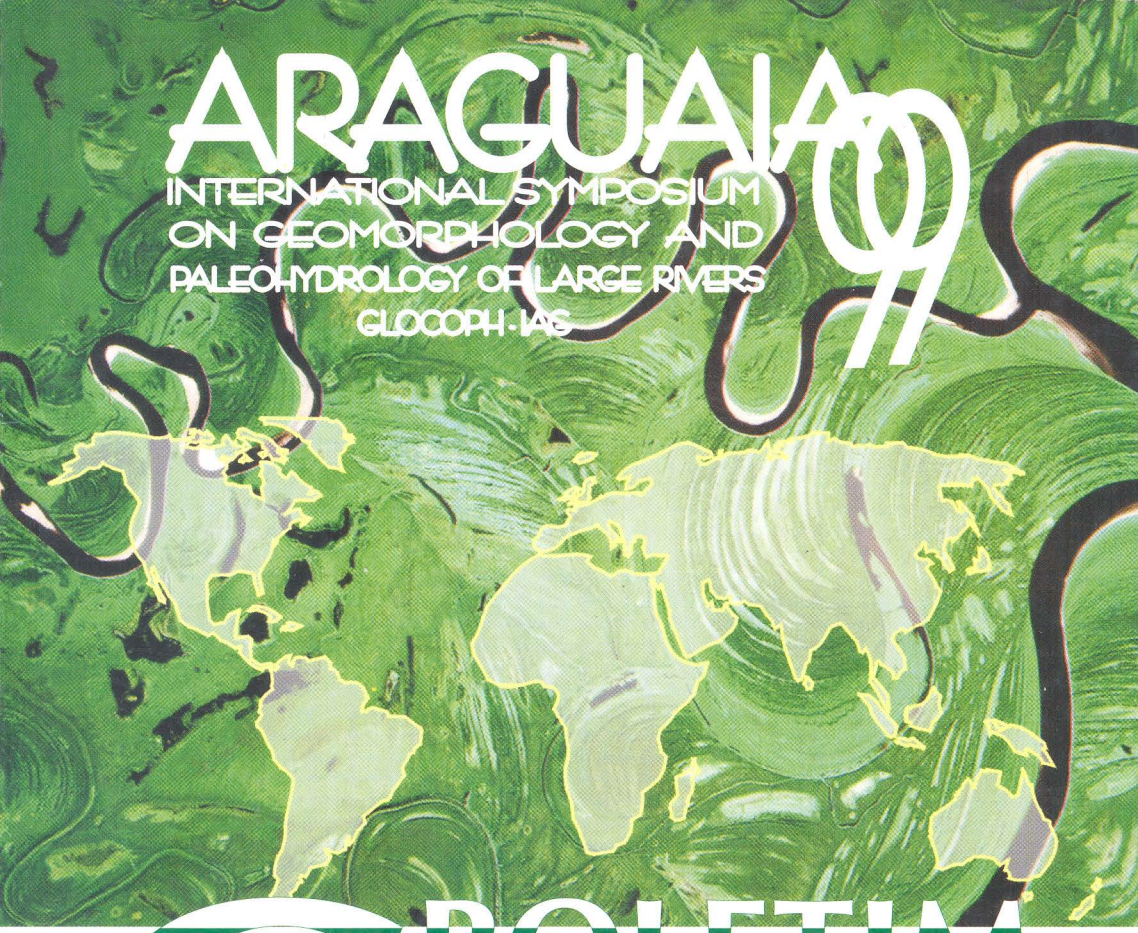

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FLOOD HAZARD AND ITS MITIGATION IN NW BANGLADESH

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The northwest Bangladesh is bordered by two large rivers; the Brahmaputra-Jamuna and the Ganges. This area is divided into four major geomorphological units; 1) Himalayan piedmont plain, 2) Barind Tract, 3) Alluvial lowland along the Brahmaputra-Jamuna river and 4) Alluvial lowland along the Ganges. They show different flood characters.

1) In the Himalayan piedmont plains, embankments are frequently broken by floods because of the piedmont fan rivers. 2) There is a little flood issues in the Barind Tract but droughts. 3) In the alluvial lowland along the Brahmaputra-Jamuna, the river channels are unstable and change their courses frequently during annual floods with breaching embankments, since the B.-Jamuna changed its course in the 18th Century. 4) Distinct large natural levees are seen along the Ganges while a broad back-marsh area lies in the Lower Atrai Basin.

After the severe floods in 1988, the World Bank proposed two major flood mitigation projects in this area, namely, an Interceptor drain from the Upper Atrai into the B.-Jamuna, and a Diversion channel from the Lower Atrai into the Ganges. The main technical problem on both the Interceptor and the Diversion Channel is the water level at the outfalls. The Interceptor is proposed along the Karatoya-Atrai, a heavy free-meandered river. The Interceptor need continuous embankments through from the Atrai to the B.-Jamuna.The Diversion channel is less feasible; since the river bed of the Atrai is lower than that of the Ganges.

Moreover, the Polder Project for flood protection is progressing in the lower Atrai Basin. However, each polder is too broad to protect the whole area. In order to protect their houses, people often cut

embankment for draining inundation water not only from inside of the polder to river , but also from outside of the polder into the protected area.

Apart from these major projects, the author suggest smaller but appropiate projects for this area. In the southern part, the Polder Project is to be improved with smaller units of polders, considering geomorphological satting and local land-use conditions. A comprehensive project which contains both structural and non-structural methods for flood control and rural development programmes as interfluve district will support the development of this area.