



## **Community and Institutional Adaptation to Riverbank Erosion along the Jamuna River, Bangladesh**

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The paper examines adaptation to the river erosion hazard in Bangladesh through its most exacting river, the braided Jamuna. The Jamuna River has destroyed and continues to threaten significant areas of settlements, farmed land and infrastructure. Local communities experience a social disintegration and pauperisation which lasts for generations. Although advanced for several decades, the public engineering effort to mitigate the erosion is piecemeal and has had limited success to date.

The research takes an interdisciplinary approach to the hazard, in both content and method. Using Remote Sensing data to distinguish regions of dormant, explosive, minimal and constant erosion, the physical morphology of the river is linked to the community adaptation through the creation of PPGIS mapping depicting historical institutional displacement. This spatial information is linked to the qualitative investigation focusing on the expression of values in adaptation by examining social structures and investigating technological development. Drawing on Bourdieu's ideas of fields, capital and habitus, interview data is gathered from: displacees; local elites; the engineering-science community; and the political-administrative structure. The analysis is conducted along four themes; the spatial history of community displacement; social values; institutional operation; and learning in practice.

Findings show the marked persistence of displaced local institutions. Dormant erosion zones host the most displaced institutions, acting as refuges once the risk is lowered through engineering or serendipity. The non-material values deeply impacted by the hazard underpin the strong local aspiration for engineering intervention. However, political discontinuity, associated institutional instability and spatial biasing of construction hinders the success of erosion mitigation and the development of appropriate national technological expertise. The small national economic resource base, shortsighted negotiations with international lenders and reduced public confidence in water sector engineering are also confounding factors. Evidence suggests that social and technological progress occurs when values, institutional results and political commitment align.