



Regulation of Brahmaputra-Jamuna River around Jamuna Bridge Site, Bangladesh: Geoenvironmental Impacts

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ABSTRACT

This study is conducted to evaluate the ongoing geoenvironmental impacts of Brahmaputra-Jamuna (BJ) River around the Jamuna Bridge (JB) site which was modified prior to the construction of Jamuna Bridge in 1996. Remote sensing and GIS techniques are adopted to evaluate the temporal and spatial geohazards. This study shows that the intensity of channel shifting has been increased due to regulation of river width at Sira-jganj– Bhuiyapur section from 11 km to 4.8 km. Planform analysis shows that the major channel has been stressed to migrate (315 m/year) eastwards. The phenomena of channel changes are predicted to be the consequences of interaction of water flow, sedimentation and channel corridor. The erosion and deposition have complicated variations over time and space due to the abrupt changes of flow and sedimentation around the regulated section. Due to width reduction, the bridge site in the braided system acts as sluice gate which can not accommodate the entire flow to release downstream properly. The helical flow developed with the inter-action of guide bund creates local scours and helps to shift the river bank eastward.

KEYWORDS

Brahmaputra-Jamuna River, Geoenvironment, Geohazard, GIS, Remote Sensing, River Regulation

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