

The Morphology and Flash Flood Characteristics of the Transboundary Khowai River: A Catchment Scale Analysis

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Abstract : Flash flood is among the foremost disastrous characteristic hazards which cause hampering within the environment and social orders due to climate change across the world. In Northeastern region of Bangladesh faces severe flash floods regularly, Such, the Khowai river is a flash flood-prone river. But until now, there are no previous studies about the flash flood of this river. Farmlands Building resilience, protection of crops & fish enclosures of wetland in Habiganj Haor areas, regional roads, and business establishments were submerged due to flash floods. The flash floods of the Khowai River are frequent events, which happened in 1988, 1998, 2000, 2007, 2017, and 2019. Therefore, this study tries to analyze Khowai river morphology, Precipitation, Water level, Satellite image, and Catchment characteristics: a catchment scale analysis that helps to comprehend Khowai river flash flood characteristics and factors of influence. From precipitation analysis, the finding outcome disclosed the data about flash flood accurate zones at the Khowai district watershed. The morphological analysis workout from satellite image and find out the consequence of sinuosity and gradient of this river. The sinuosity indicates that the Khowai river is an antecedent and a meandering river and a meandering river can't influence the flash flood of any region, but other factors respond here. It is understood that the Khowai river catchment elevation analysis from DEM is directly influenced. The left Baramura and Right Atharamura anticline of the Khowai basin watershed reflects a major impact on the stratigraphy as an impermeable clay layer and this consequence the water passes downward with the drainage pattern and Tributary. This drainage system, the gradient of tributary and their runoff, and the confluence of water in the pre-monsoon season rise the Khowai river water level which influences flash floods (within six hours of Precipitation).

Keywords : geology, gradient, tributary, drainage, watershed, flash flood

Conference Title : ICRMEA 2023 : International Conference on River Morphology and Engineering Applications

Conference Location : Sydney, Australia

Conference Dates : January 30-31, 2023