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ABSTRACT VOLUME

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Sustenance of embankment with climate change A case study of Mousuni island, Indian Sundarbans

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Embankments are mainly constructed along the coastal areas to prevent further coastal erosion triggered by climatic calamities. The increasing trend of earth's temperature by an average of 0.087°C since 1880 resulted in climate induced changes such as breaching of embankment and saline water intrusion mainly in the coastal islands. Located in the southern part of Ganges delta facing the Bay of Bengal, Mousuni Island of the Indian Sundarbans has also faced the vulnerability of climate change. It is a home of 3578 people (Census, 2011). Along the western bank of the island about 3.82sqkm land was reduced by coastal erosion (1979 -2011; Das,2022). The objective of the study is to assess the sustenance of embankments to combat the effect of climate change. To fulfil the objective, the methodology of both quantitative and qualitative approaches was undertaken. Quantitative methods like measuring various parts of the embankments and observation of embankment design (Aila embankment, earthen embankment, and wooden log embankment) were undertaken. A beach profile was done to observe the effects of coastal erosion on the beach with the help of dumpy level. Qualitative study in the form of interview was undertaken on residents (N=10). Incoming saline water as a result of embankment breaching disrupted the agricultural system. While the north western part of Mousuni has permanent concrete embankment (Aila embankment from Kusumtala to Baliara bazar), the southern part has Earthen embankment covered with geo jute. To cope up with climatic extremities, site specific mechanisms should be implemented.