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ABSTRACT BOOK
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Climate change adaptations of Mousuni island, Indian Sundarbans

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Abstract
Climate change adaptation is needed for developing sustainable societies and long-term well-being. India's approach to climate change adaptation involves a multi-pronged strategy to build resilience in different sectors as outlined by National Action Plan on Climate Change. Facing the Bay of Bengal, Mousuni Island (21.6624°N and 88.2023°E), Sundarbans is highly vulnerable to sea level rise (4.5 to 5.5 mm/yr), frequent embankment breaching causing flooding and saltwater intrusion, cyclones. Surveys were carried on households, resorts and focused group discussions were carried out among multiple stakeholders including local policy makers to quantify the impact and adaptation strategy against climate change on lives and livelihood. A series of erosion accretion map (1985-2022) has been analysed by using QGIS. About 3.82 sq.km area along the western coast have been eroded due to wave and fluvial action. Another 1.071 sq km area has been accreted due to time velocity asymmetry of the Hooghly estuary. To protect against tidal surges and flooding, a concrete embankment (7.5 Km) was already developed along the mid-Western coast and the rest of 2.2 km earthen embankment is under construction. Four cyclone shelters were already developed. There were 50 camps in which 4 camps had no existence due to coastal erosion in 2023. Smart agricultural (salt tolerant crops, changing cropping patterns), inclusion of aquaculture including crab cultivation), livestock rearing and sustainable tourism are alternative livelihood options. Shifting coastal inhabitants towards the central part of the island, decreasing migration tendencies, increasing primary health facilities including supply of clean drinking water, development of rainwater harvesting, organizing awareness program, restoration of mangrove by women's groups are suggested. Govt agencies, NGOs, academic institutions and locals shall work together to adapt against climate change and those plans shall be regularly monitored for effectiveness and relevance.