



Traditional Knowledge based Sustainable Mangrove Conservation: A Case Study Using Local High School Students in Mausuni island of Indian Sundarbans

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Mangroves are vital coastal ecosystems that protect shorelines, support biodiversity, store carbon, and sustain the livelihoods of coastal communities through essential ecosystem services. Mousuni Island, one of the ten most vulnerable sea-facing islands of the southern Sundarbans, India, faces severe threats such as erosion, tidal flooding, sea-level rise, and saltwater intrusion, worsened by limited environmental awareness and declining Traditional Ecological Knowledge (TEK) among younger generations. To address these concerns, a mangrove eco-literacy programme was designed and executed. A mixed method including quantitative analysis through survey questionnaire (30 MCQs) and a qualitative analysis through Focused Group Discussions (FDG) and scientific talk were carried out involving fifty high school students (21 girls and 29 boys) of Classes VIII to X from Bagdanga, Baliara, and Kusumtala schools participated in activities under five sections (Section A: Basics of Mangroves and Mangrove Ecosystem; Section B: Indian Sundarbans and Mausuni Island; Section C: Mangrove Biodiversity; Climate Change, Environmental Threats & Climate action; Livelihood, Community Awareness & Conservation). The findings indicate that students possess basic awareness of mangrove ecosystems and biodiversity but show weaker conceptual understanding of climate change and conservation-related themes. Higher classes generally demonstrated better environmental literacy, suggesting the importance of age-appropriate environmental education interventions. Gender differences were relatively moderate, though boys showed slightly higher average scores overall. The programme also engaged local fisher communities in awareness-raising campaigns to conserve the endangered horseshoe crab, *Carcinoscorpius rotundicauda*. Future initiatives include a transboundary comparative study among chapters of the Global Educators Initiative for Sustainable Transformation (GEIST).

Keywords: Sundarbans, Mangrove-eco-literacy, High-school-students, Climate-resilience, Blue-carbon, SDGs.