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“Reconcile land system changes  
with planetary health”

## Will the tide turn? examining social inclusivity and equity in scaling dynamics of an indigenous-based eco-engineering approach to flood and sediment management in coastal Bangladesh

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### Abstract

While there is growing attention to ‘scaling’ social innovations to drive progress towards the SDGs, top-down prescriptions of ‘one-size-fits-all’ approaches often fail to reflect complex local realities and risk negative socio-environmental outcomes. It remains unclear how market- and numbers-driven scaling efforts within dominant, techno-centric regimes align with bottom-up, community-developed innovations rooted in indigenous knowledge, where understandings of impact may differ significantly.

In the highly dynamic tropical deltaic region of southwest Bangladesh, increasing water logging has been linked to large-scale, engineering-driven and top-down construction of flood risk infrastructures in the 1960s. Exacerbated by climate change, water logging has become a recurring, prolonged and increasingly severe disaster that adversely affects the lives and livelihoods of those living on low-lying floodplains, particularly highly marginalised communities including small-holders, landless, and women. Rooted in indigenous knowledge of living with a ‘living delta’, Tidal River Management (TRM) has been proposed as an eco-engineering sediment management approach to restore deltaic land-water systems, alleviate water logging, and improve food and water security. However, formal adoption has often overlooked key social dimensions, particularly community participation and equitable compensation.

Drawing on literature review and qualitative fieldwork, including multi-level stakeholder analysis, this study takes the case of TRM as a potentially new paradigm in deltaic flood risk management towards more nature-based, adaptive, and participatory approaches to examine differentiated social inclusion and equity aspects in dominant scaling approaches. This not only deepens understanding of the approach’s potential relevance for delta management in Bangladesh and beyond, but also contributes to broader discussions on socially inclusive scaling of community-driven, indigenous-based practices.

Fieldwork is ongoing, with data collection through mid-June, followed by analysis and writing through September.

**Keywords:** Deltaic, flood management, indigenous, nature-based, scaling, social inclusion