

DESIGNING CLIMATE RESILIENT DEVELOPMENT PATHWAYS TOWARDS THE SUSTAINABILITY OF COASTAL AGRICULTURAL SYSTEMS

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Abstract

Developing climate resilient pathways have become an optimal strategy to achieve sustainable development. The goal of the study is to design climate resilient development pathways (that are, development trajectories that combine adaptation and mitigation to realise the goal of sustainable development) to catalyse the sustainability of coastal agricultural systems (CAS). Author developed resilient pathways by using four sequential steps (i) identifying climatic and non-climatic risks of CAS; (ii) determining synergies and trade-offs between adaptation, mitigation and agricultural development; (iii) developing strategies for effective institutional management; and (iv) designing development trajectories that combine productivity, adaptation and mitigation of CAS. Key research instruments included key informant interviews (KIIs), household surveys, focus group discussions (FGD) and participatory workshops in four upazilas of two districts, using structured questionnaires. The results showed that soil salinization, impeded drainage, and coastal flooding were extremely high risks to CAS. Researcher determined synergies and tradeoffs by exploring farmers' activities and practices. To arrange the complicated information linked to CAS, the DPSIR (Drivers, Pressures, States, Impacts and Responses) tool was used. To design pathways, two workshops were organised in two districts. On-farm water harvesting and agroforestry were identified as synergies and converting farming land to shrimp ponds and degrading coastal wetlands as tradeoffs that occur frequently. For developing effective institutional mechanisms four mechanisms were found most important which are; improving organisational learning, engaging key stakeholders, increasing organisational accountability, and enhancing coordination. Conserving and improving coastal natural resources, scaling up climate resilient water management, adoption of diversified farming practices was found to be the best practices for climate resilient development pathways of the CAS in Bangladesh. Major policy implications towards the implementation of climate resilient development pathways were outlined.

Keywords: synergy, tradeoffs, climate resilient development, adaptation, mitigation, coastal zone