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## Agro-ecological Approaches in Climate Resilient Agriculture: Local Farming Models in Coastal Bangladesh

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### Abstract

The dynamics at the farm level particularly among the smallholder agriculturists influence the implementation of Climate Resilient Agriculture (CRA) strategies in highly fragmented agricultural landscapes in South Asia countries. Challenges for CRA are further exacerbated in the coastal areas due to geographic, agricultural, socioeconomic, institutional and governance linked reasons as well as pre-dispositions. However, the availability of evidenced knowledge on CRA practices at the holding level reflecting on the key areas such as technology adoption, institutional and governance measures, socio-economics are vital in scaling up CRA practices to adapt to climate change at the landscape level. In the current paper, we analyse and assess the CRA practices in coastal Bangladesh through the window of the Farms of the Future framework. The study specifically focuses on CRA practices, institution and governance, socio-economic and gender aspects influencing the adaptation actions at farm unit level to landscape level. The case study was carried out using questionnaire surveys, practitioner interviews, key informant interviews, and focus group discussions in the coastal agricultural landscape of Bagerhat District in Bangladesh. We present our results of the analysis with recommendations cross-cutting the integral dimension of CRA such as a) sustainable natural resource management practice, b) adaptation of agricultural technologies, c) adaptation actions for productive social safety nets and d) adaptation actions to improve the institution and governance to manage climate risks. The results indicate that agroecological aspects have been potentially influencing the prospects for CRA in the study localities. However, we also noted the need for collaborative and social networking in community learning and technology adoption, closing the gaps in the availability of locally/regionally appropriate technologies, policy arrangements, institutional strengthening, and governance arrangements coupled with enhanced space for equity. We conclude by presenting a framework of suggestions across the critical domains of CRA to scale it up at the landscape level. We also hold that these findings have elements that can find relevance in promoting CRA in the coastal areas of Bangladesh, and in similar production landscapes in coastal South Asia.

**Keywords:** Climate Resilient Agriculture, Coastal Bangladesh, Farms of the Future Framework, Food Security