


Abstract


Political Ecology of Brackishwater Aquaculture in Purba Medinipur Coastal Plain, India

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Exponential growth of export-oriented coastal brackishwater aquaculture (CBA) has become a research concern in academic and policy discussions on account of its diverse social and environmental consequences. Political ecology provides a multi-dimensional perspective of this global activity and explores the resultant dynamic interactions between man and environmental processes associated with it. In India, CBA expanded across multiple states causing massive alternation of coastal landscape and impacting the regional coastal ecology. Besides, it has triggered a number of environmental as well as social problems: CBA proliferation in the coastal C.D. Blocks of Purba Medinipur district of West Bengal has largely impacted the environmental, socio-economic, and political landscapes; which need to be investigated following a comprehensive as well as nuanced approach like political ecology. In this backdrop, the present research primarily focussed on the identification of the spatio-temporal patterns of growth of CBA in the study region, its effects on the coastal environment, and its subsequent impacts on the socio-political environment. Furthermore, the research also sought to formulate a number of implementable guidelines towards sustainable management of the coastal agro-ecosystems. For this purpose, remote sensing based satellite image analysis, water and soil samples collection and analysis, and schedule based questionnaire survey and FGDs were conducted. Data derived from various sources were statistically analysed and various maps were generated for better understanding of the scenarios. The results indicated that the area under CBA was continuously growing throughout the entire region in the last three decades at the cost of erstwhile croplands, waterbodies, and vegetation patches including coastal mangroves. However, a reversal of this trend could be noticed since 2021, wherein the land under CBA has reduced substantially and a notable portion of the aquaculture farms became abandoned. Besides, the unscientific farm management practice alarmingly impaired regional soil and water quality. In general, introduction of commercial shrimp farming has largely affected traditional livelihoods and altered the existing social and economic structure in a way that has triggered numerous social problems and distress among the local coastal community. The recent plunge of Indian shrimp market and the resultant abandonment of huge amount of shrimp farms has worsened the situation. In this context, a number of realistic guidelines were formulated for policy-level interventions towards the sustainable management of the coastal agroecosystems.

Keywords: Abandoned shrimp-farm, Coastal ecology, Environmental degradation, Landscape modification, Shrimp aquaculture, Socio-economic vulnerability


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