

Ecological Restoration and Livelihood: Contribution of Planted Mangroves as Nursery and Habitat for Artisanal and Commercial Fishery

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Abstract

Restoration of degraded and depleted mangrove habitats and planting of mangroves over coastal mudflats is happening at many places, but there are few studies that evaluate the flow of ecosystem services from these regenerated ecosystems. The state of Gujarat in Western India has planted thousands of hectares of mangroves over the coastal mudflats and, today, the state's mangrove cover is nearly double that in the 1930s. However, these mangroves have limiting features: for example, these are mostly single-species, *Avicenna marina*, and are sparse, and lack freshwater supply. Mangroves provide multiple ecosystem services including nursery and habitat services for fish fry that enhances fish growth. This study evaluates the regenerated forests' contribution to the fishery sector of Gujarat, both inshore, and offshore, using the difference-in-differences technique, and panel regression estimates. Commercial catch data from secondary sources and primary survey diary on the daily catch of artisanal fishermen are used in the analysis. The results show that the planted mangroves have significantly increased the catch of mangrove-dependent fish in both sectors, and that young planted strands contribute nearly one-fourth of the contribution of natural strands. Despite the limiting features, the contribution of the planted mangroves' nursery ground and habitat service to the fishery sector of Gujarat state is valued at INR36.04 billion (USD0.57 billion) annually.