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Valuing the Role of Mangroves in Storm Damage Reduction in Coastal Areas of Odisha

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Abstract

Mangroves help in building coastal resilience as effective natural safeguards against cyclones. The state of Odisha is the most cyclone prone region in the east coast of India and was endowed with nearly 500 km2 of mangroves until 1940s, which has now been reduced, through destruction, to 227 km2. This chapter attempts to value the storm protection provided by these remaining mangroves during the 1999 super cyclone and examines whether it is economically efficient to conserve these mangroves. During this storm, the storm protection value of mangroves was estimated to be USD 68,586 per km width and USD 4335 per ha of mangroves to all households living in the impact zone of the forest. To examine the question of conservation, these onetime values were annualized and the annual storm protection value of a mangrove hectare was found to be more than two times higher than the land price of cleared forests and more than twenty times higher than the annual return from alternative land uses, justifying mangrove conservation as a socially and financially viable policy and an economically efficient decision to build resilience.

***Keywords*:** Mangrove conservation, Mangrove valuation, Averted damage, Storm protection value of mangroves, VSL, India.

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