

Sustainability of Coastal Areas in Climate Change: Bengal Delta

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Purpose: The changing coastal areas of Asia in the context of rapid population and economic growth and climate change has created problems. There are many megacities located in and around the coastal area. The unsustainable pattern has damaged the ecosystem with construction, pollution, erosion, sedimentation, changing of biodiversity and natural disaster. Isolated action has limited success and a holistic regional planning is required. A case study of Bengal delta of Bay of Bengal with complex biodiversity area includes world heritage sites and has many lessons.

Scope: Bengal delta, both in eastern India and Bangladesh is largest in the world. It includes Sunderban facing the bay of Bengal. It is rich in terrestrial, aquatic and avian faunal species and it has wildlife sanctuaries. The Unesco has declared it as one of the biospheres and a work heritage site. But there is unsustainable pattern of development, climate change and natural disaster have made the problems complex. A study will benefit many other coastal areas.

Methods: The Unesco's programme outlines three functions (a) conservation function preserving flora, fauna, landscape etc. (b) development function for sustainable development of social, cultural, economic and ecological aspects (c) support to logistic function – education, training and capacity building. There are large number of people. The planning and development is a holistic process achieving an equilibrium balance with the density of population and the carrying capacity of the ecosystem.

Results: Some specific programmes have been taken like restoration of mangrove forests which protect from storm and cyclone and flooding and help in aquatic production. Introduction of coastal zone regulation amended in 2010 of Govt. of India. Eco restoration including afforestation programmes wetland conservation and project tiger and biosphere, climate change protection etc.

Conclusion: The Bengal delta specially the Sunderbans is an ecosystem and its planning will be different for integrated coastal zone management. Ecosystem, spatial, development and social parameters are to be integrated with several impacts like vulnerability, natural disasters, climate change sea level rise etc.

Recommendation: A regional coastal environmental plan based on analysis of interrelation amongst physical, spatial development and environmental ecological process and human activities and social economic objectives is necessary.

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