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## **Adverse Effect of Mangrove Deforestation on Coastal Fisheries**

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A mangrove is a shrub or small tree that grows in coastal saline or brackish water. The Mangroves are salt-tolerant trees, also called halophytes, and are adapted to life in harsh coastal conditions. They contain a complex salt filtration system and complex root system to cope with salt water immersion and wave action. Mangroves occur worldwide in the tropics and subtropics, mainly between latitudes 25° N and 25° S.

**Mangrove Deforestation:-** From 2000 to 2012, the global mangrove deforestation rate was between 0.16% and 0.39% annually but as high as 3.58% to 8.08% in Southeast Asia. The most recent and comprehensive global assessment of mangrove distribution was conducted by Hamilton and Casey (2016) and provides a high-resolution global database of mangrove loss at the 1 arcsecond level at annual intervals from 2000 to 2012 with estimates for 2013 and 2014. In the 1980s and 1990s the greatest amount of loss occurred, while in the period of 2000 to 2005 the rate has fallen significantly across all regions. Some projections estimate that worldwide mangrove area will decline by a further 25% by 2025, particularly in developing nations. It is estimated that since 1970, 28% of mangrove lost has been directly displaced by commercial aquaculture.

### **Adverse effect on coastal fisheries**

Many threatened and endangered fish species are native to mangrove forests, which provide critical habitat for diverse marine and terrestrial flora and fauna. Mangrove forests also provide refuge and nursery grounds for juvenile fish, crabs, shrimps, mollusks, and other invertebrates. Mangroves are prime nesting and migratory resting and feeding sites for hundreds of bird species.

Mangrove also protect inland human communities from damage caused by coastal erosion and storms which help in congenial coastal fisheries production. In areas where mangroves have been cleared, coastal damage from hurricanes and typhoons is much more severe.

The dense root systems of mangrove forests trap sediment flowing down rivers and off land. They stabilize the coastline and preventing erosion from waves and storms. By filtering out sediments, the forests also protect coral reefs and seagrass meadows from being smothered in sediment which help to maintain a balanced soil-water quality parameter. It also control population and ecosystem dynamics, including fluxes of energy and nutrients, hydrology, food webs, and biodiversity which is the base of coastal fisheries. Mangroves provide a critical habitat for a variety of terrestrial, estuarine and marine species, and serve as both a source and a sink for nutrients and sediments.

Mangroves provide nursery habitat for many wildlife species, including commercial fish and crustaceans, and thus contribute to sustaining the local abundance of fish and shellfish populations.

Mangroves maintain coastal water quality by abiotic and biotic retention, removal, and cycling of nutrients, pollutants, and particulate matter from land-based sources, filtering these materials from water before they reach seaward coral reef and seagrass habitats. Mangrove root systems slow water flow, facilitating the deposition of sediment. Toxins and nutrients can be bound to sediment particles or within the molecular lattice of clay particles and are removed during sediment deposition. Compared with the expense of constructing a wastewater treatment plant, mangroves are commonly selected as receiving areas of effluent. Increasingly the notion of



specifically constructed mangrove wetlands is being adopted and used for treatment of aquaculture and sewage effluents.

Mangroves are functionally linked to coastal ecosystem. For instance, sediments and nutrients carried by freshwater runoff are first filtered by coastal forests, then by mangrove wetlands, and finally by seagrass beds before reaching deep sea water. As a result of their intricately entangled above-ground root systems, mangrove communities protect shorelines during storm events by absorbing wave energy and reducing the velocity of water passing through the root barrier. In addition, mangroves protect intertidal sediment along coastlines from eroding away in harsh weather year-round.

Mangrove is one of the most important backbone of coastal fisheries as it help to maintain coastal soil and water quality parameter, save coastal area from natural disaster, breeding ground of many estuary fishes, nursery ground of many migratory fishes, help to decrease pollution , living ground of many fisherman, habitat of many endangered and ornamental fishes. So it's our duty to conserve mangrove forest inspite of highly increasing mangrove deforestation in recent year.

