



COASTAL VEGETATION RESTORATION FOR CLIMATE CHANGE INDUCED DISASTER MITIGATION

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NICHE PROFILE BASED ECORESTORATION OF COASTAL ECOSYSTEMS

Ecorestoration of ecosystems requires careful scientific inputs of plant species composition specific to regional and local niches in relation to the bioclimate. Otherwise planting of tree species of unsuitable niches can lead to degradation or manipulation of ecosystem characteristics (Bachan, 2020).

This can ultimately result in collapse of ecosystem diversity and definitely lead to depletion of biodiversity. Planting of *Racosperma auriculiforme* (*Acacia auriculiformis*) in the low-lying forest and *Acacia mearnsii* in the high elevation forest of the Kerala part of Western Ghats resulted in serious impact on forest ecosystems.

The pilot ecorestoration process was implemented with the participation of local community in the region incorporating MNREGA scheme and finished restoration of one coastal ecosystem i.e. stream draining directly to the sea.



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This has been announced as a model program by Mr. Saji Cherian, Honorable Minister of Fisheries, Government of Kerala appreciating the effort of involving local Panchayath and women incorporating MNREGA. The local community demanded planting niche profiled tree composition in the coastal belt as a vegetation belt along the coast near to the sea wall as a barrier against coastal erosion as envisaged in the detailed project report (DPR). This has been started with the involvement of the local community through the MNREGA scheme and continuing.





The species selected based on the methodology are the *Calophyllum inophyllum*, *Thespesia populnea*, *Morinda citrifolia*, *Bambusa bambos*, *Thaliparuthi teliaciuos*, *Pandanus kaida* etc.

All the three species showed good growth throughout the year even though planted in the coastal sandy beaches. This is attributed to continuous care, watering and protection by the women engaged in the restoration process through the MGNREGA. Maximum growth was observed from July up to November and there was no significant change in the summer months.

A comparison of growth of *Calophyllum inophyllum* with the vegetation barrier around the sapling inferred a height of 30 cm or above. Whereas the average height of saplings without the barrier was 18 cm. The study indicated there the role of barrier was crucial in the protection, decrease in causality and helped in increase in height of the saplings. Among these the *Calophyllum inophyllum* and *Thespesia populnea* were suggested best suitable for the sandy beaches, were it grown on littoral sandy areas, and dunes and are deep rooted so that resistive any kind of coastal erosion.

