

## **MANGROVE PLANTATION EXPERIMENTS FOR CONTROLLING COASTAL EROSION AT GAZI BAY, KENYA**

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The existence of zones parallel to the coastline, in most cases monospecific is evident in mangrove ecosystems. In Gazi Bay, there are nine mangroves species with *Rhizophora mucronata* mainly found in the second zone just after *Sonneratia alba* zone. With increased need for mangrove goods and services worldwide, there is a need to develop best possible ways of reforestation. A deforested area previously under *S. alba* was to be replanted in Gazi bay to control coastal erosion. However, due to the difficulties associated with the establishment of the species, *R. mucronata* was chosen as the next possible option.

This experiment was conducted with an objective of testing the growth performance of *Rhizophora* saplings planted in a low inundation class. It involved planting of propagules in bamboo straws of three diameter classes (large, medium and small). Some propagules were planted without bamboo straws between two bamboo embedded lines to serve as control. A spacing of 0.5m by 1m between crops was used in a block (10mx10m) replicated three times. Monitoring was done for: mortality, shoot height increment, diameter at second internode, leaf number and branching.

Preliminary results showed no significant difference in growth performance between different bamboo encasement sizes. There was however a significant difference between the 'encased' plants and direct planting. Survival was higher in the controls than the encased plants (64.5% vs 18.7%). Annual mean increment in shoot height ( $42.08 \pm 9.33$  vs  $34.79 \pm 7.53$ cm), diameter ( $6.13 \pm 0.87$  vs  $5.20 \pm 0.88$ mm), leaf numbers ( $14.82 \pm 7.23$  vs  $7.90 \pm 3.48$ ) and branching ( $2.47 \pm 1.61$  vs  $1.01 \pm 1.25$ ) was also higher in the control than in the encased. The site could therefore possibly be planted with *R. mucronata* propagules not necessarily in encasements and still ensure a relatively high survival of saplings.