

7. *Avicennia marina* and *Rhizophora apiculata* are the most common mangrove plants found in most of the coastal states which can be grown in varying salinities.



*Avicennia marina*

*Rhizophora apiculata*

8. The fruiting season of *Avicennia marina* is from October to November. The ideal season for planting the seedlings is July to November



Seed of *Avicennia marina* (Left) and *Rhizophora apiculata* (Right)

9. Mangrove saplings could be easily grown in the nurseries with the locally available seeds/wildlings. Necessary help for raising saplings could be secured from the local forest department or organizations like M.S.Swaminathan Research Foundation, Coastal community Development Agency.



10. Develop mangrove plantations near the existing shrimp farms and near by mangrove areas through planting of mangrove saplings



11. Plant mangroves where ever they can be grown on the river and sea side of shrimp ponds in the inter-tidal zone.



12. Planting of mangroves in drain canals and effluent treatment ponds could improve the water quality by absorbing nutrients and other organic pollutants.



13. The mangrove plantations along the bunds help in stabilization of banks and prevent soil erosion during floods and reduce sedimentation of ponds during flood



14. Protect the newly planted mangroves with fencing to prevent grazing by animals.

15. Encourage near by farmers to plant mangroves along their bunds



## SHRIMP HEALTH MANAGEMENT

REDUCING SHRIMP DISEASE RISKS THROUGH ADOPTION OF BETTER MANAGEMENT PRACTICES



### 10. Mangrove plantation and conservation



MPEDA-NACA Team

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## BACKGROUND

As a part of the technical collaboration between MPEDA and NACA on shrimp disease control in India, village demonstration programmes were conducted between 2002 to 2005. These demonstration programmes involved organizing small scale farmers into self-help groups known as "Aquaclubs" for adoption of "Better Management Practices (BMPs)" towards capacity building among the farmers



Coastal mangrove ecosystems are the natural nursing grounds for hundreds of aquatic species including economically important fish and shellfish. Mangroves play an important role in controlling erosion caused by flooding and storm surges. They also act as a barrier during cyclones and protect the coastline. Thus it is necessary to conserve the existing mangroves and plant mangroves where ever they can be grown near the shrimp ponds. Mangroves will also help in reducing the impact of sea level rise anticipated due to global warming and will protect the adjacent farming lands.



## IMPORTANT STEPS

- 1) Do not clear mangroves for shrimp pond construction. Do not construct any new shrimp ponds in the mangrove areas where soil is generally acidic and unfit for shrimp farming.



Picture Courtesy : CERP, Machilipatnam

2. Acidic conditions in Mangrove areas (and poor water quality in general) may indirectly cause production failures by increasing physiological stresses and suppressing the immune system of shrimp.



3. Conserve the existing mangroves; deforestation not only affect the mangrove ecosystem but also it reflects negatively on shrimp farming both in India and globally.



4. Presence of mangroves near shrimp ponds cause no harm, rather they are beneficial in many ways. Mangrove trees are the best buffers against winds and waves.



5. Mangrove trees (root, leaf and stem extracts of *Rhizophora*) have many medicinal properties. They are found to inhibit human pathogenic organisms.



6. Mangroves provide a good environment for the reproduction and growth of other commercially important fishery resources, therefore providing livelihoods for local communities.

