

Mangrove Reforestation in Kuala Teriang Arca, Langkawi

Abdul Najib Abdullah

District Engineer

Department of Irrigation and Drainage

District of Langkawi, Kedah

Importance of Mangroves

Fisheries

Mangrove forests are home to a large variety of fish, crab, shrimp, and mollusk species. These fisheries form an essential source of food for thousands of coastal communities around the world. The forests also serve as nurseries for many fish species, including coral reef fish. A study on the Mesoamerican reef, for example, showed that there are as many as 25 times more fish of some species on reefs close to mangrove areas than in areas where mangroves have been cut down. This makes mangrove forests vitally important to coral reef and commercial fisheries as well

Timber and plant products

Mangrove wood is resistant to rot and insects, making it extremely valuable. Many coastal and indigenous communities rely on this wood for construction material as well as for fuel (charcoal). These communities also collect medicinal plants from mangrove ecosystems and use mangrove leaves as animal fodder. Recently, the forests have also been commercially harvested for pulp, wood chip, and charcoal production.

Tourism

Given the diversity of life inhabiting mangrove systems, and their proximity in many cases to other tourist attractions such as coral reefs and sandy beaches, it is perhaps surprising that only a few countries have started to tap into the tourism potential of their mangrove forests. These places offer snorkeling expeditions in and around mangroves to witness a marvelous variety of baby fish, jellyfish, and urchins against a magical background of interwoven roots delving deep into the sandy substrate. Great potential exists elsewhere for revenue generation in this manner, which values the mangroves intact and as they stand.

Coastal protection

The dense root systems of mangrove forests trap sediments flowing down rivers and off the land. This helps stabilize the coastline and prevents erosion from waves and storms. In areas where mangroves have been cleared, coastal damage from hurricanes and typhoons is much more severe. By filtering out sediments, the forests also protect coral reefs and sea grass meadows from being smothered in sediment.

December 2004 Tsunami





Aftermath of the December 2004 Tsunami: Kuala Teriang, Kedah State, Malaysia

Mangrove Reforestation

The government of Malaysia has set a task force to carry out mangrove replanting. YB Prime Minister's call in March 2005 to restore degraded areas so that people lives and their livelihoods are not adversely affected when faced with natural disasters such as tsunami and typhoons. This project will also promote public awareness on the importance of mangrove ecosystems through direct community participation. The replanting site will be used as a demonstration site on community participatory project for mangrove conservation.

Activities

November 2006: 12,000 seedlings have been planted in Kuala Teriang area.

December 2006: official launching by the Chief Minister of Kedah.

A total of 14,000 seedlings have been planted, using two species of mangroves, i.e. *Rhizophora apiculata* (bakau minyak) and *Rhizophora mucronata* (bakau kurap).





Problems

- Strong waves have uprooted the seedlings
- Logs and debris from Sungai Melaka swept and uprooted the seedlings
- Vandalism by kids swimming around the reforestation area
- Pollution due to effluents from a nearby stream, suspected to be toxic to the mangroves as about 2,000 plants have died

Solutions

To reduce wave height and wave energy from uprooting the seedlings, 4 units of 50meter length geotubes have been installed. Each geotube has 3m diameter.



Conclusion

Mangrove replanting in Kuala Teriang is considered to be successful because out of 14,000 seedlings planted about 10,000 survived (70% survived).



Recommendations

Prior to deforestation, a study on the local environment is important, specifically on:

- Wave action and direction
- Climate
- Long shore sediment transport
- Soil particle characteristic
- Any source of pollution
- Floating logs and debris, etc.

