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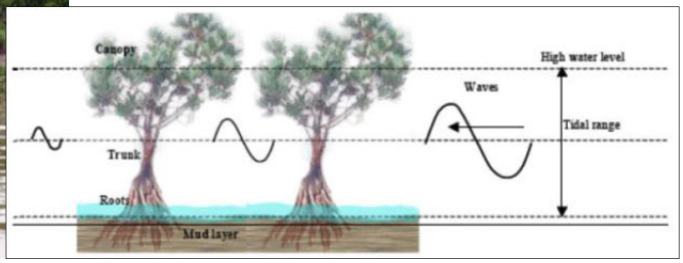
Management of Natural Resources in the Coastal Zone of Soc Trang Province



Fact sheet

Mangrove Management

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Mangroves are plant communities established in coastal and estuarine areas influenced by the tide in tropical and subtropical zones. They provide important ecosystem services and goods:

- sequestration of carbon dioxide
- protection from strong winds and waves
- soil stabilisation and erosion protection
- flood mitigation
- habitat and food: 75% of all tropical commercial fish species pass part of their lives in the mangroves (nursery grounds, shelter, food)
- nutrient retention and water quality improvement
- protection of associated marine ecosystems
- firewood, medicines, fibres, dyes, food, charcoal, construction materials

In Soc Trang Province, economic interests in shrimp farming and the unsustainable use of natural resources in the coastal zone threaten the protection function of the mangrove forest belt. The coastal zone will also be affected by the impacts of climate change (see fact sheet Climate Change).

An initial investment of 1.1 Million USD for mangrove rehabilitation in northern Vietnam saved 7.3 Million USD annually for dyke maintenance (Source: Evaluation report of the Danish and Japanese red cross funded disaster preparedness/mangrove forestation programme 2005)

A well managed mangrove belt protects the coast from erosion, and the impact of strong winds and waves. It saves significant costs for dyke maintenance and mitigates the conflict between economic development and sustainable management of natural resources (see fact sheet co-management).

A 50-metre wide belt of the mangrove species Avicennia is sufficient to reduce 1-metre high waves to less than 0.3 metres. To reduce the total wave energy of the 1-metre wave, a 150-metre wide mangrove belt is needed (see diagram in heading - source: Hydrobiologia 285, 1994)

As part of the integrated management of the coastal zone the project will plant and manage mangroves with emphasis on resilience to climate change. This can be achieved by:

- Applying risk spreading strategies to address uncertainties (i.e. protect representative species and habitats)
- Protecting mangrove areas that have shown persistence over time
- Establishing buffer zones to allow for mangrove migration in response to sea-level rise
- Restoring degraded areas
- Effective management/protection from human threats
- Developing alternative livelihoods for mangrove dependent communities
- Monitoring the response of mangroves to climate change

The importance of mangroves for fisheries has been highlighted by a recent study which puts the value of 1 hectare of mangrove forest at 37,500 USD "The price for food from the sea will be much higher without mangroves ... the value of 1 ha of mangroves will increase to 600,000 USD within the next 30 years." (source: Scripps Institute of Oceanography 2008)

Applying risk spreading strategies to address uncertainties requires to test different ways of mangrove planting which mimic nature, or in other words imitate the successful regeneration of nature. The project is testing new approaches to mangrove planting without having the scientific proof of their successfulness following the precautionary principle. The aims is to create diverse coastal forests both in terms of species composition as well as horizontal and vertical structure, and thus increasing resilience to the negative impacts of climate change.

Based on past experience from mangrove rehabilitation in Soc Trang Province, experience from Vietnam and international best practices, and in collaboration with the Southern Sub-institute of Forest Inventory and Planning in Ho Chi Minh City, the project has developed a mangrove management tool box comprising 3 manuals: Nursery, Planting and Management (tending, protection) and Monitoring. The tool box provides a comprehensive overview of planting techniques with emphasis on the importance of selecting the appropriate species for specific sites as well as the right planting time and technique.

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