Coastal forest rehabilitation and management in Sri Lanka

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COASTAL FOREST REHABILITATION & MANAGEMENT OF SRI LANKA

INTRODUCTION & BACKGROUND:
- Land Area & Location,
- Climatic Zones:
  - The Wet Zone (>2500mm/Year)
  - The Intermediate Zone (1900-2500mm/Year)
  - The Dry Zone (<1900mm/Year)

Ecosystem Types:
- Lowland wet evergreen Forests,
- Sub-montane evergreen Forests,
- Highland evergreen Forests,
- Dry mixed evergreen Forests,
- Moist evergreen Forests,
- Coastal marshes and lagoons,
- Coral reef;
- Rocky and mineral sand shores,
- Sea-grass beds,
- Mangroves.

Grass lands,
Network of rivers,
Fresh water bodies,
Flood plains & Wetlands. (MFE, 1998)

Sri Lanka coastal habitats include:
- Estuaries,
- Lagoons,
- Mangroves,
- Salt marshes,
- Coral reefs and
- Large extents of Beaches.

The Pre-Tsunami status of coastal trees and Forest resources and the forest related impacts of the Tsunami:

1.1 Pre Tsunami status of Mangroves
- Estimated total extent: 9630 ha. (Forest cover survey by FD in 1999)
- 23 species-True Mangroves
- 17 sp. - Mangrove associates
- The main mangrove habitats can be seen along the west, Northeast, and East coasts.
- The largest patch is in Puttalam Lagoon, 2337 ha.

Some True Mangroves – Found in Sri Lanka
- *Bruguiera gymnorrhiza*
- *Lumnitzera racemosa*
- *Sonneratia caseolaris*

Some Mangrove associates found in Sri Lanka
- *Acrostichum aureum*
- *Nypa fruticans*
- *Dolichandrone spathacea*
- *Heritiera littoralis*
### Extent of Mangroves in Sri Lanka:

<table>
<thead>
<tr>
<th>Districts</th>
<th>Extent (ha)</th>
<th>Districts</th>
<th>Extent (ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ampara</td>
<td>299.0</td>
<td>Mannar</td>
<td>1486.2</td>
</tr>
<tr>
<td>Batticaloa</td>
<td>1855.0</td>
<td>Matara</td>
<td>1.4</td>
</tr>
<tr>
<td>Galle</td>
<td>104.0</td>
<td>Mullattewa</td>
<td>405.2</td>
</tr>
<tr>
<td>Gampaha</td>
<td>121.5</td>
<td>Puttalam</td>
<td>2337.5</td>
</tr>
<tr>
<td>Hambantota</td>
<td>492.0</td>
<td>Trincomalee</td>
<td>1761.6</td>
</tr>
<tr>
<td>Jaffna</td>
<td>242.8</td>
<td>TOTAL</td>
<td>9530.2</td>
</tr>
<tr>
<td>Kilinochchi</td>
<td>424.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Use of Mangroves
- Provide nursery grounds for marine organisms.
- Provide many resources for human use.
  - Poles, Roof Thatch, Fuel wood.
  - Fodder for cattle. Ripe fruits, Tannin, Leaves used as food & Raw material for cottage industry.
  - They protect the shore of the lagoons & estuaries from erosion.
  - Reduce pollution by trapping or absorbing pollutants.

### 1.2. Pre - Tsunami status of other coastal trees & forest resources include:

- **Casuarina (Casuarina equisitfolia) Plantations,**
  - These plantations have been established by the Forest Dept. to provide protective green-belt along the coastal line.
  - The total extent of Casuarina plantation area is around 3400 ha.
  - Largest extents are recorded in Trincomalee District (Bandarathilaka, 1992)
- **Srubland forest -occur along the coastal belt.**
- **Protected Areas -Managed by the DWLC.**
- **Other trees in the coastal area include the trees grown in home-gardens and other land along the coastal belt.**

These trees are:
- Coconut (Cocos nucifera)
- Palmrya (Borassus flabellifer)
- Pandanus spp.
- Neem (Azadirachta indica)
- Cashew, Mango (Mangifera indica)
- Teak (Tectona grandis)
- Cassia spp.
- Oleander (Nerium oleander)
- Jak (Arboaria heterophylla)
- Country alms (Tanninsia sattagga) etc.

### 1.3. Average Impact of Tsunami on Forestry and related other vegetation:

<table>
<thead>
<tr>
<th>Type of Vegetation</th>
<th>Impact to Vegetation</th>
<th>Protection to Inner Areas</th>
<th>Degree of Impact to Vegetation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Mangroves</td>
<td>* Severe damage with 90% mortality and uprooting to the frontline vegetation. * Less damage to inner areas. * Most serious damage in Batticaloa and Ampara districts.</td>
<td></td>
<td>High - Moderate</td>
</tr>
<tr>
<td>2. Protected Areas</td>
<td>* Yebo NP (block 1) Completely damaged with many trees up rooted, grassland dried, total 5000 ha. Affected.</td>
<td></td>
<td>High - Moderate</td>
</tr>
<tr>
<td>3. Casuarina</td>
<td>* Body damaged in Batticaloa district. * Little or no damage in many areas.</td>
<td>Favorable impact on sand dune formations and provide a moderate protection.</td>
<td>Moderate</td>
</tr>
</tbody>
</table>

### Coastal Trees and Forest resources damaged by the Tsunami.

- Photos of damaged vegetation in the affected areas.
  - Red Coastline damage to mangroves in Trincomalee.
  - Damage to vegetation in Galle district.
  - Impact on Scrub forest and other vegetation.
2.2. Finland Funded Project for Rehabilitation of Tsunami Affected Countries:

- **Overall objective:** To help restore the livelihoods of the people in the tsunami affected areas and to contribute to their improved and more secure future.
- **Specific objectives:**
  - To address immediate needs of the affected populations by providing forest related employment and tree-derived benefits.
  - To contribute to an improved and safer future for the populations in the tsunami-affected areas through increased coastal protection and erosion control, improved household income, the supply of wood, non-wood forest products, and enhanced environmental services from forest and trees through forest rehabilitation, reforestation and home garden rehabilitation.

2.2.1. Project Interventions and Components include:

- Coastal Re-forestation and Rehabilitation,
- Coastal Plantation Establishment,
- Rehabilitation of damaged Mangrove areas,
- Social forestry Interventions,
  a. Tree planting in Home Gardens
  b. Tree planting in New settlements,
  c. Avenue planting,
  d. Urban planting,

- Home garden development,
  - Selection of Household – Completed (14,530 HH).
  - Seeding production (Coconut & Fruit) in progress (80,420 seedlings).
  - Seeding procurement – Order placed, procurement is in progress (74,585 seedlings).
  - Distribution of seedlings / Planting (18,700) seedlings.

2.2.2. Achievement up to the end of August:

- Planting programme, selection of sites – Completed.
- Seeding production – in progress.
  - 212,350 Forest seedlings
  - 42,350 Mangrove seedlings
- Survey and Demarcation – Completed.
- Planting – 10 ha. of Mangrove Completed.
- 3 km. of Avenue planting Completed.
For coastal protection in Sri Lanka, is there a predominance of hard structures rather than trees/forests?

The Coast Conservation Department (CCD) is responsible for a 300-metre wide coastal strip although in some areas the Forest Department has control. The CCD is paying some attention to tree planting but is more concerned about infrastructure. The Forest Department established a green belt in the 1980s but funding was limited.

What would be needed for the CCD to more fully recognize the value of forests in protecting coasts?

The CCD is now paying more attention to coastal green belts.