

Coastal forest rehabilitation and management in Myanmar

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The pre-tsunami status of coastal trees and forest resources and the forest-related impact of the tsunami

Myanmar is endowed with a rich diversity of habitat types arising largely from its unusual ecological diversity. More than 50 percent of the total land area is still covered with natural forests.

The country's population reached 52 million in 2003 and its growth rate is 1.84 percent. Myanmar forests are socially and economically significant to the country. Over 70 percent of the country's total population is rural and dependent on the resources.

Myanmar has more than 2 000 kilometres of coastline along the Bay of Bengal. Generally, it comprises the Rakhine, Ayeyarwady Delta and Tanintharyi regions, where mangroves are common. Due to expansion of agricultural land and excessive cutting for fuelwood, the 85 533 hectares of mangroves at the beginning of the 1990s had decreased by approximately 50 percent in 2002. Mangrove forests of the Ayeyarwady Delta are now being rehabilitated and conserved; the UNDP/FAO project under the Human Development Initiative Programme (HDI) has been implemented since the mid-1990s to conserve mangrove ecosystems through the promotion of socio-economic benefits for local communities in an environmentally friendly manner.

Despite manifold conservation efforts by the Forest Department, gradual conversion of mangroves into areas for agriculture, aquaculture and household dwellings has been taking place in the coastal area, particularly in the Ayeyarwady Delta.

Data on the extent of mangroves and other tree vegetation is very limited due to financial constraints. Table 1 provides some general information on mangroves in Myanmar.

Table 1. The status of mangroves in Myanmar

| Region | Year | Mangroves (ha) | Remark |
|-------------|------|----------------|-------------------|
| Ayeyarwady | 1923 | 271 749.08 | Working Plan Data |
| Rakhine | 1996 | 157 992.40 | JAFTA |
| Tanintharyi | 2000 | 262 063.50 | FAO |
| Ayeyarwady | 2003 | 90 386.00 | JICA |

There are hundreds of archipelagos located off Rakhine and Tanintharyi coasts with mangroves and terrestrial vegetation. When the tsunami hit these areas in December there would have been damage to trees on the islands. However, due to poor accessibility, financial and other resources no monitoring and case studies were conducted on the extent of damage as well as impact of the tsunami. According to information from local authorities there was only slight damage to forests but loss of life and property occurred along the coastline.

Implementation of coastal forest rehabilitation: Issues that have emerged and lessons learned

The Forest Department in collaboration with other government agencies has been carrying out an environmental awareness programme so that people understand the protective value that forest trees had at the time of the disaster. Before the tsunami in 2004 the Forest Department established mangrove plantations in the Ayeyarwady Delta. Besides, many villagers have been establishing community forestry plantations of mangrove tree species as well. Protected areas comprising extensive

mangrove forest are being proposed in areas closed to urban centres in Rakhine State and Tanintharyi Division. In order to encourage natural regeneration and improvement of stands, improved felling techniques for rehabilitation needs are being carried out in degraded mangrove forests. Efficient cooking stoves are distributed to villagers to save fuelwood consumption. Other alternative fuels such as rice husks and coconut shells are encouraged in Ayeyarwady Delta. Vocational training courses, such as vegetative propagation, are conducted to introduce income-generating activities to villagers.

Policies, legislation and institutional factors affecting management of coastal forest and the trees

Myanmar Forest Policy

The 1995 Myanmar Forest Policy formalizes the commitment and intent of the government to ensure the sustainable development of forest resources for social, environmental and economic purposes. The policy paves the way for prudent use and enhanced benefits from the forest while maintaining ecosystem integrity and environmental balance. Six imperatives identified in the policy are:

- (1) Protection of soil, water, wildlife, biodiversity and the entire environment.
- (2) Sustainability of forest resources to ensure perpetual supply of both tangible and intangible benefits accrued from the forests for the present and future generations.
- (3) Basic needs of the people for fuel, shelter, food and recreation.
- (4) Efficiency to harness, in a socio-environmentally friendly manner, the full economic potential of forest resources.
- (5) Participation of the people in the conservation and utilization of forests.
- (6) Public awareness about the vital role of forests for the well-being and socio-economic development of the nation.

Forest legislation

Forest law

The old Forest Act of 1902 was replaced with the Forest Law enacted in 1992. The 1992 Forest Law comprises 58 sections and 13 chapters, highlighting forest reservation and protection, management of forest land, establishment of forest plantation, extraction and removal of forest products, establishment of wood-based industry and administrative action apropos offences and penalties. The new law encourages people's participation in forest management and private sector involvement in development of the forestry sector.

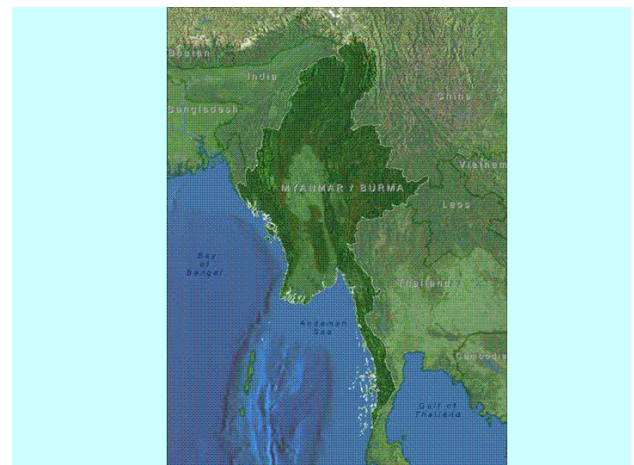
Protection of Wildlife and Protected Areas Law

The 1994 Protection of Wildlife and Protected Areas Law, replacing the old Wildlife Protection Act (1936), focuses attention on the identification of nature reserves; establishment of zoological and botanical gardens; protection of wildlife and wild plants; permission for hunting; conduct of research studies; permission to establish zoological and botanical gardens; registration; and administrative action with regard to violations.

The Forest Department is a formal government agency to conserve, protect and manage the forests in Myanmar. However, other units such as the Department of Land Record and Settlement and General Administration Department control land use for certain categories. Land tenure and customary rights have significant impact on forests and trees in Myanmar.

Key needs

Socio-economic issues need to be identified so that their pressure on coastal trees and forests can be reduced. Information relating to resource use and distribution needs to be collected. Coastal resource management to ensure sustainable development will have to be introduced. Activities include land-use planning; legal, administrative and institutional execution; demarcation on the ground; inspection and control of adherence to decisions; solving land tenure issues; settling of water rights; issuing concessions for plant, animal and mineral extraction (e.g. wood and non-wood forest products, fishery resources, hunting, peat); and safeguarding of the rights of different interest groups.



The Pre-Tsunami Status of Coastal Trees and Forest Resources and the Forest Related Impact of Tsunami

- Area 676,577 km²
- From East to West 936 km
- From North to South 2051 km
- Hill regions in the west, east, north and south and a large valley in the central and delta area of mouth of Ayeyarwady River
- Forest cover 52%
- Population 52 millions
- Rural population 70%
- Coastal length 2300 km in Rakhine, Ayeyarwady delta and Tanintharyi
- Mangroves are common in coastal areas
- They are under human pressure
- Some 16000 hectares of mangroves were lost in 2002
- Forest Department has been rehabilitating mangrove forest with the UNDP/ FAO assistance

Situation of Mangrove Forests in Myanmar

| Region | Year | Mangroves (Ha) | Remark |
|-------------|------|----------------|--------------------|
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| Rakhine | 1996 | 157992.40 | JAFTA |
| Tanintharyi | 2000 | 262063.50 | FAO |
| Ayeyarwady | 2003 | 90386.00 | JICA |

The Status of Implementation of Coastal Forest Rehabilitation, Issues that have emerged and Lessons learnt

- Over 800 archipelagoes and mangroves along coast line
- Environmental awareness programme
- Mangrove plantations established every year in Ayeyarwady delta
- Community forest plantations established by villagers
- Regeneration Improvement Fellings to rehabilitate degraded forests
- Distribution of efficient cook stoves
- Income generation activities

Policies Legislation and Institutional Factors Affecting Management of Coastal Forest and The Trees

Myanmar Forest Policy 1995 has the following six imperatives;

- Protection of soil, water, biodiversity and the entire environment
- Sustainability of forest resources to ensure perpetual supply of both tangible and intangible benefits for the present and future generation
- Basic needs of the people for fuel, shelter and recreation
- Efficiency to harness, in the socio-environmentally friendly manner, the full economic potential of the forest resources
- Participation of the people in the conservation and utilization of forests
- Public awareness about the vital role of forests in the well-being and socio-economic development of the Nation

Forest Legislation

Forest Law

The old Forest Act of 1902 was replaced with the Forest Law enacted in 1992. The 1992 Forest Law comprises 58 sections and 13 chapters, highlighting forest reservation and protection, management of forest land, establishment of forest plantation, extraction and removal of forest products, establishment of wood-based industry and administrative action in respect of offences and penalties. The new law encourages people participation in forest management and private sector involvement in forestry sector development.

Protection of Wildlife and Wild Plants and Conservation of Natural Areas Law

The 1994 Protection Wildlife and Protected Areas Law replacing the old Wildlife Protection Act (1936) focuses attention on identification of nature reserves, establishment of zoological and botanical gardens, protecting wildlife and wild plants, permission for hunting, conduct of research studies, permission to establish zoological and botanical gardens, registration, search, arrest and administrative action, offences and penalties.

Forest Department is a legitimate Government Agency to conserve, protect and manage the forests in Myanmar. However, the others such as Department of Land Record and Settlement and General Administration Department control the land use for certain categories. Land tenure and customary rights have significant impact on forests and trees in Myanmar.

Key Needs (Technical advice, capacity building, financial assistance) To Support Short and Long Term Efforts and Coastal Forests Rehabilitation and Management

Socio-economic issues are needed to identify so that the pressure on coastal trees and forests can be reduced. Information relating to resource use and distribution is necessary to be collected. Coastal resource management to ensure sustainable development will have to be introduced. These include land use planning; legal, administrative and institutional execution; demarcation on the ground; inspection and control of adherence to decision; solution of land tenure issue; settling of water rights, issuing of concession of plant, animal and mineral extraction (e.g. wood and non-wood products, fishery resources, hunting, peat); and safeguarding of the rights of different interest groups.

Thank you for your kind attention

Q&A

How many casualties were attributable to the tsunami in Myanmar?

The Ministry of Welfare reported less than 100 fatalities and damage to villages/households was not severe.

What kind of income-generating activities have been developed in forest regeneration projects?

Activities have included poultry farming, livestock breeding, small-scale fish breeding, vegetable gardens, horticulture and vegetative propagation of fruit trees.