

Status of Coastal Plantation in Chittagong Coastal Forest Division

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Abstract: The study was conducted to highlight the status and beneficial role of coastal plantation in Chittagong Coastal Forest Division. Mangrove, non-mangrove and strip plantation were raised in 70 beats under 12 ranges in the Division. Among all the Ranges, mangroves were dominant and cover an area of 46367.94 ha plantations. Coastal plantations damages during natural calamities but mostly damages by manmade activities which makes coastal areas more vulnerable to natural disasters. Mangroves and coastal forests play an important role to reduce the damages and protect human lives by acting as protective shield during extreme natural events. Coastal plantation provides benefits in terms of disaster mitigation, protection of lives and resources, living standard and resource development and preservation of environment.

Key words: Chittagong Coastal Forest Division, Coastal Plantation, Mangrove, non-mangrove and strip plantation, Ranges, Beneficial role of coastal plantation.

I. Introduction

The term coast is used to indicate the zone of contact between land and the sea (Bhuiyan and Anam, 2006). It is an intermediate zone that extends land ward from the shore. A coast may be a gently sloping plain; it may terminate abruptly in a stiff cliff or it may be characterized by other types of topography (Bandyopadhyay, 1997). Bangladesh is a developing country of low deltaic plain located between 20°34' to 26°38' North latitude and 88°01' to 92°41' East longitude (Rashid, 1991). The whole coast runs parallel to the Bay of Bengal, forming 710 km long coastline from mouth of the Teknaf River in the southeast to the mouth of the Raimangal River in the west (CZPo, 2005). The coastal zone covers 47,201 km² land area, which is 32% of total landmass of the country (Islam, 2004).

The coastal afforestation program was started in 1965-66 and the Government of Bangladesh has a unique afforestation program on the newly forming lands of the Bay of Bengal. The government has decided that all new accretions in the Bay will be afforested to ensure their stabilizations and to ensure further accretions (Rachid, 1977).

Now the coastal plantations established in the coastal areas are administered by four Coastal Afforestation Divisions namely, from east to west, Chittagong, Noakhali, Barisal and Patuakhali and subdividing into 28 forest Ranges and 198 beats (Drigo *et al.*, 1987). Till 2010, an area of 170,000 ha coastal area has been planted, although there are plantation failures over a considerable area (Aziz, 2010).

During the last four decades, the Forest Department has successfully implemented massive plantation programmes and has established some 172,000 ha of mangrove plantation scattered over coastal areas and off-shore islands of the country (Hossain *et al.*, 2008). In addition to these, the other mangrove plant were also tried to raise in borrow pits. Species planted in borrow pits showed reasonably good success (Choudhury, 1982). Species tried were Keora (*Sonneratia apetala*), Baen (*Avicennia officinalis*), Kankra (*Bruguiera gymnorhiza*), Golpata (*Nypa fruticans*) and Gewa (*Excoecaria agallocha*) (Choudhury, 1982). Newly accreted lands grow and colonize first, trap sediments and bind deposited sediments more effectively (Siddiqi, 2001). The first colonizer comes naturally is Urigrass (Karim, 1994), then after some years mangrove bushes appears. Depending on the soil condition then appear Keora, Baen, Kankra etc. on the land, and finally a dynamic mangrove ecosystem is established (Choudhuri and Choudhury, 1994).

The present coastal afforestation works involved correct assessment of the locality factor, site quality and the selection of species for different site classes and ultimately to plant up the areas with the suitable species (Choudhury, 1982).

Chittagong Coastal Forest Division plays an important role in forest management of Bangladesh. Area of the Chittagong Coastal Forest Division is 86314.02 hectares which lies in Chittagong and Cox's Bazar administrative districts. (Source: DFO office, Chittagong Division).

Every year various natural disasters makes life very difficult which includes flood, cyclone, storm surge, tornado, earthquake, sea-level rise, coastal erosion and landslides and causes serious damages and massive loss to life and properties (Al-Hossaini *et al.*, 2005). Shoreline forests are recognized as a buffer against the actions of wind, waves and water under tidal influence as a protection measure (Lyche, 1991). Therefore, the present study

was undertaken for assessing the status and importance of Coastal Afforestation with their beneficial role under the Chittagong Coastal Forest Division.

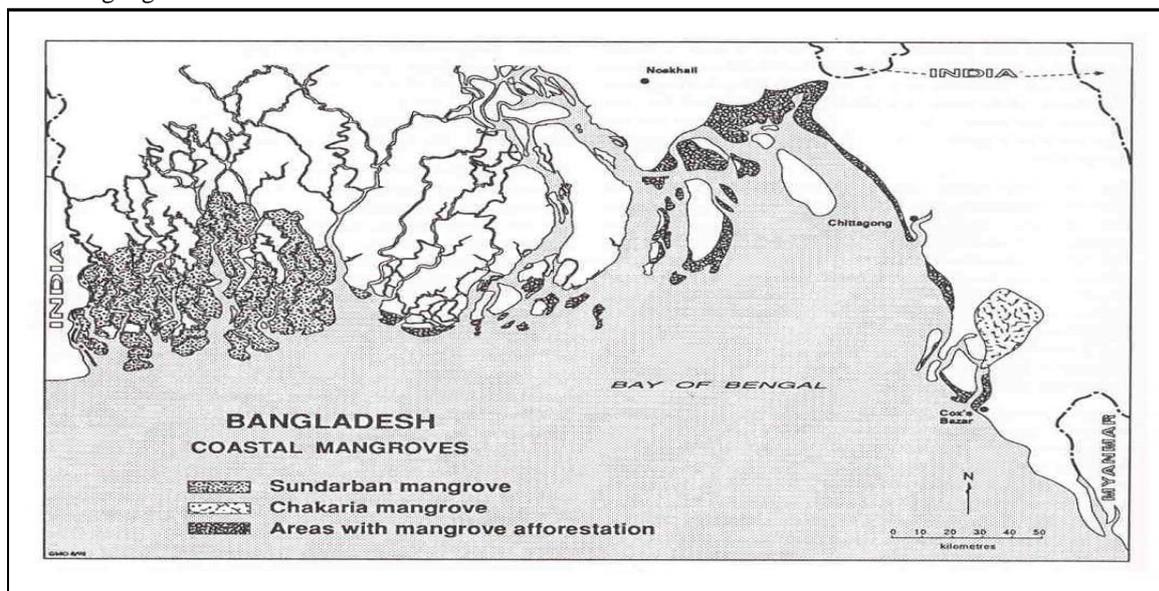


Figure 1: Map of Bangladesh coast showing the location of coastal forests

Projects/ schemes for coastal plantation

Table1: Projects/ schemes for coastal forests executed by the Forest Department, Bangladesh. (Source-Islam, 2007)

| | |
|-----|---|
| 1. | Afforestation in the coastal belt and offshore islands (1960-61 to 1964-65). |
| 2. | Afforestation in the coastal belt and offshore islands (1965-66 to 1969-70). |
| 3. | Afforestation project in the coastal regions of Chittagong, Noakhali, Barisal and |
| 4. | Patuakhali (1974-75 to 1979-80). |
| 5. | Mangrove Afforestation project (1980-81 to 1984-85). |
| 6. | Second Forestry project (1985-86 to 1991-92). |
| 7. | Forest Resources Management project (1992-93 to 2001-2002). |
| 8. | Extended Forest Resources Management project (2002-03 to 2003-04). |
| 9. | Coastal Green Belt project (1995-96 to 2001-02). |
| 10. | Coastal Char Land Afforestation project (2005-06 to 2009-10). |
| 11. | Management Support project for Sundarbans Reserve Forest (2005-06 to 2009-10). |

II. Materials and methods

Several ranges and beats were selected randomly for the study and visited several times to have an overall idea of the plantation. The study carried out by collecting information from range officers and local people about types and quantity of plantation. The information and relevant literature, which were required for conducting this study, were collected from different books, journals, published paper, previous paper, news paper, articles, scientific magazines and most importantly from Chittagong coastal forest division.

III. Result and discussion

Table-2:Name of Ranges under the Chittagong Coastal Forest Division

| Sl no. | Name of Ranges |
|--------|----------------|
| 1. | Gorokghata |
| 2. | Sondwip |
| 3. | Kutubdia |
| 4. | Sitakundu |
| 5. | Chanua |
| 6. | Banskhali |
| 7. | Sadar |
| 8. | Miraswarai |
| 9. | Teknaf |
| 10. | Urichor |

| | |
|-----|-------------|
| 11. | Moheshkhali |
| 12. | Charandwip |



Figure2: Chittagong coastal region (Source: Chittagong Coastal Forest Division)

Range wise Coastal Plantation:

There are 12 Forest Ranges under the Chittagong Coastal Forest Division. Different types of plantations were raised in these ranges according to their site suitability. Mangrove plantations are the dominant in all the ranges. Large areas of mangrove plantation were raised in Urichor Range. Among all the ranges, large areas of non mangrove plantation were raised in Moheshkhali and lowest in Charandwip. In case of strip plantation, highest plantation was in Sadar range (Table: 3)

Table 3: Coastal plantation under Chittagong Coastal Forest Division.

| Sl No. | Range | Mangrove (ha) | % | Non mangrove (km) | % | Strip plantation (km) | % |
|--------|-------------|---------------|-----|-------------------|-----|-----------------------|-----|
| 1. | Gorokghata | 8129.9 | 18 | 232.66 | 6 | 25 | 2 |
| 2. | Sowndwip | 2891.06 | 6 | 132.26 | 3 | 116 | 10 |
| 3. | Kutubdia | 867.98 | 2 | 93.26 | 2 | 28 | 2 |
| 4. | Sitakundu | 3014.24 | 7 | 183.09 | 5 | 153.5 | 13 |
| 5. | Chonua | 1303.84 | 3 | 45.96 | 1 | 64 | 5 |
| 6. | Bashkhali | 3345.64 | 7 | 143.49 | 4 | 158.2 | 14 |
| 7. | Sadar | 4373.98 | 9 | 236.43 | 6 | 267.25 | 23 |
| 8. | Miroswarai | 6481.02 | 14 | 134 | 3 | 173 | 15 |
| 9. | Teknaf | 2179.04 | 5 | 115 | 3 | 85 | 7 |
| 10. | Urichor | 12125.41 | 26 | 90 | 2 | - | 0 |
| 11. | Moheshkhali | 534.54 | 1 | 2667.3 | 65 | 9 | 1 |
| 12. | Charandwip | 1121.29 | 2 | - | 0 | 93 | 8 |
| | Total | 46367.94 | 100 | 4073.43 | 100 | 1171.95 | 100 |

Source: Chittagong Coastal Forest Division

Transfer of degraded forest land

Chittagong Coastal Forest Division has contributed 22,176.28 acres for practicing participatory forestry by transferring coastal forest lands to the district administration (Table:4)

| District | Notified land (acre) |
|------------|----------------------|
| Chittagong | 9,834.47 |
| Cox'sbazar | 12,341.81 |
| Total | 22,176.28 |

Nature and Area of Reserve Forests under Chittagong Coastal Forest Division

Total area of the hill and Mangrove forest were 86314.02 ha, area under plantation were 42500.62 ha and area under encroachment were 9464.09 ha and natural forest/barren land were 34349.30 ha (Table: 5) and (Fig: 3)

Table 5: Nature and Area of Reserve Forests

| Nature | Status | Total area (ha) | Area under plantation (ha) | Area under encroachment (ha) | Natural forest/Barren (ha) |
|-----------------|--|-----------------|----------------------------|------------------------------|----------------------------|
| Hill Forest | Reserved Forest | 7400.25 | 2559.91 | 1370.37 | 3469.96 |
| Mangrove Forest | Notified under section 4 and 6 of Forest Act of 1927 | 78913.77 | 39940.71 | 8093.72 | 30879.34 |
| | Total | 86314.02 | 42500.62 | 9464.09 | 34349.30 |

Source: DFO Office, Chittagong Division

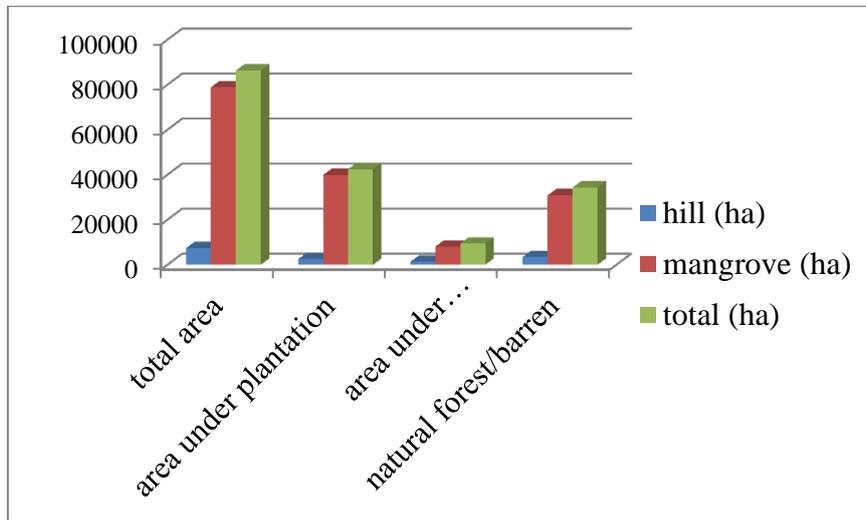
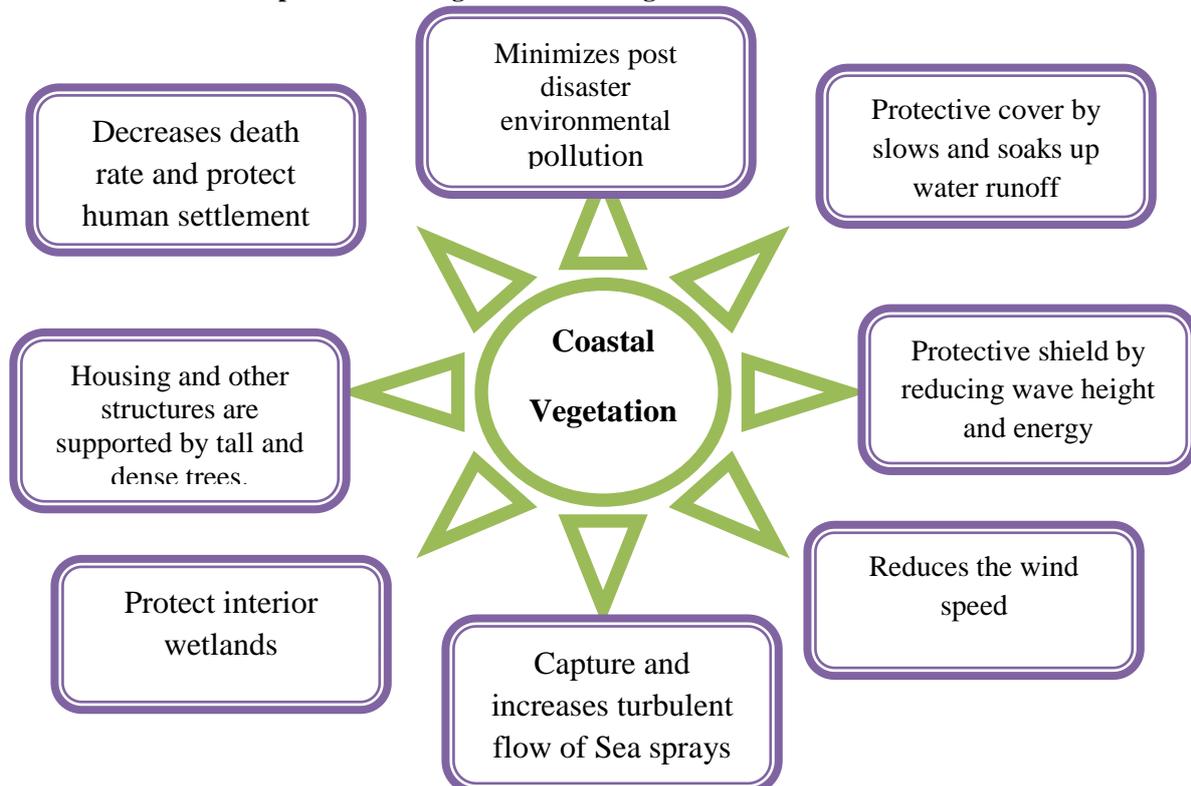


Figure 3: Area of Reserve Forest under Chittagong Coastal Forest Division

Effective role of coastal plantation along the coast during natural disaster



IV. Conclusion

Coastal plantation program under different projects were raised in Chittagong Coastal Forest Division. Among different types of species mangrove species were dominant. Coastal plantation program has come into being primarily to reduce the effects of cyclones and tidal surges by creating a protective belt of coastal forests. Plantation along the shoreline undoubtedly influences the surrounding environment. The important roles played by coastal plantation are: protection of life and property during disasters, conservation and stabilization of newly accreted land, creation of employment opportunities, and development of suitable environment for the biodiversity. So the study highlighted the overall situation of coastal plantation in Chittagong Coastal Forest Division and their necessity to protect the natural environment from natural calamities.

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