

Towards the Management of Forest in a Sustainable Way : Views from the Chittagong Forest Areas

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Abstract : The present paper seeks to identify the process and nature of forest depletion in south Chittagong forest areas. The paper explores the fact that encroachment, forest resource extraction, conversions of land use pattern and community involvement in forest depletion are some of the contributing factors of dwindling the forest areas. The paper also aims to contribute to involve the stakeholders, especially the local community in management of forest in a sustainable way.

Introduction

From the dawn of civilization man has started extracting forest resources to meet their needs of food, shelter and remedial measures. This endeavour has been in action till now. Continuous deforestation has been inflicting flood, natural disaster greenhouse effects creating manifold imbalance in the environment. The threat to environment and the Earth has brought the global community unite on one platform in the aim of protecting the 'Green-belt' of the world. The Rio-Declaration of 1992 is one of the outcomes of such efforts. Bangladesh also takes part in forest protection and plantation programs. In 1980 Bangladesh Forest Department took up a social forestry program with the assistance of the Asian Development Bank (Imam,

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1999). Much emphasis was given on the afforestation program in the 3rd Five Year Plan of Bangladesh Government (1985-90). A draft of National Forestry Master Plan was formulated in 1994 (Huq, 1994). The Ministry of Environment and Forestry planned for setting up the National Conservation Strategy during 1989-91 and its constitution was passed in 1991. The activities of National Conservation Strategy were not activated until 1995 when NORAD came up with the financial assistance.

The first phase of the National Conservation Strategy Implementation Project-1 continued from March 1996 to October 1997 (Bari, 1999 : 65). Research of the project were mainly based on the fauna and flora of the forest are surveyed excepting only the study conducted by the Bangladesh Center for Advance Studies (1997), which added a new dimension to work with inclusion of socio-economic aspects.

The second phase of the NCSIP-1 started in January 2001. The present paper is based on the study carried out by NCSIP in south Chittagong hill forest areas. Although Chunati, Himchari and Teknaf were included in the study areas but the emphasis was given on the Teknaf. The present paper tries to investigate the role of the local people in forest resources extraction and to find out ways to involve them in the protection and management of forests.

Objective

The objective of this paper is to identify the process and nature of forest depletion in south Chittagong forest areas. The paper seeks to explore the ways in which forest depletion could be prevented and forest resources could be managed in a sustainable way.

Methods and Techniques of Data Collection

The information was largely collected through PRA. PRAs were

facilitated by using various tools such as mapping, wealth ranking, vector scoring, time trend analysis and Focus Group Discussion based on a well-defined checklist. Information was also collect through pie diagram, bar diagram, seasonal chart drawn by the respondents. Formal interviews were also carried out with the forest Department personnel, Forest guards, Banjaigirders and person in charge of the Noyapara Rohingya Camp, Teknaf. Secondary data were obtained from the BCAS (1997).

The Sample and the PRA Sessions

Four unions were selected as sample areas, such as : Chunati (Chittagong), Himchari (Cox's Bazar), Teknaf (Cox's Bazar) and Hnilla (COx's Bazar). The sample villages were Chunati (Chunati), Ferdousnagar, Bhanamora (Him chair), Pulerdaile (Hnilla) and Naitongpara (Teknaf).

The PRA sessions were facilitated with 20-25 respondents consisting farmers, traders, land owners, school teachers, representative people, wage labourers, members of NGOs, present and ex-UP chairmen, religious leaders, local politicians and women in each of the sample areas. Hence the total sample size was 125. Both purposive and random sampling procedures were adopted to select the respondents.

The Process of Forest Depletion

The continued pressures of landlessness and unemployment as well as lack of understanding of conservation issues encourage people to take part in forest depletion. The process of forest depletion could be identified as (i) encroachment (ii) extraction of forest resources (iii) conversion of land use pattern and (iv) community involvement in forest depletion.

Encroachment

A large part of hill forest areas is encroached by the landless farmers, flood/cyclone victims and chain migrants. One category of encroachers are those who have lost their houses and/or land as a result of the construction of Marine Drive Road. This road is under construction along the western coastline, from Cox's Bazar to Teknaf. The road passed through a populated village, (having 100 households) named Ferdousnagar near Himchari. The most villagers had to be evacuated. According to villagers the Army Corps of Engineers (who are carrying out construction) told them to construct their houses in the hills, and they were forced to take shelter there. We found 35 families were living atop the hill, and were deforesting the adjoining areas. Chain migration is taking place in the hill very rapidly in the hills. The chairman of Hnilla Union Parishad, Teknaf informed us that at least 50 cases are being filed every month on the issue of taking possession right over hill/forest. Majority of the encroachers consist of landless farmers from nearby villages and thanas, but some also come here from other parts of the country as wage labourers, and are tempted to settle in the Teknaf area. A good number of refugees from Myanmar is also settled in a village-Naitong Para, which is known as Rohingya para. Besides, about 2600 hectares of forest land is used for establishment of refugee camp for Rohingyas.

Extraction of Forest Resource

People living in and around the forest areas extract different types of forest resources for different purposes, such as:

Bamboo and thatch: Bamboo and thatch are collected and used for constructing dwelling huts. These are also used for making scaffolds of betel leaves.

Food plants : Some plants, like, yams, arums, young bamboo shoots are used as food.

Fodder plants : People collect fodder for their livestock and also graze the cattle inside the forest.

Medicinal Plants : The bark, leave, roots, flowers of different kinds of trees are treated as the ingredients of Ayurvedic and Unai medicine, which are extracted by the traditional healers.

Timber : The largest amount of the forest resource being extracted is timber, which is used for making furniture, cabinet, doors and windows of the houses etc. Some timbers are used as posts or poles for used under water.

Fuel wood : People use fuel wood for cooking purpose. Along with collecting the branches of trees, people also cut down big trees to collect fire wood for their own use, to sell it in the market and to meet the demand of two adjacent brickfields.

Conversion of Land Use Pattern

It has been noted that the encroacher farmers gradually expanded their agricultural fields into adjacent forest land (khan and khan, 1991). As a result the forest plants are being replaced by the agricultural products, like: paddy, betel leaf etc. One of the reasons of conversion of forest land into agricultural land is lack of arable land in the plain land areas in South Chittagong, especially at Teknaf. There are 21517 acres of land, which has brought under cultivation representing 45% of the total effective land area. At Teknaf, there is only 13% of cultivable land representing 2993 acres, which are used as permanent crop area. The agricultural land use pattern is apparent from the following Table:

Table-1 : Agricultural Land Use Pattern

Land use Pattern	Land in acres
Effective Area	47372.57
Cultivable Area	21517 (45%)
Permanent crop Area	2993 (13%)
Irrigated Area	3562 (16%)

(Source : BBS, 1998, data obtained from BBS, Teknaf)

By the early 1990s 10% of the reserve land has converted to agricultural land (Choudhury, 1993; Rosary, 1997) by the people who shifted their dwelling to the forest areas. Moreover, a vast area of forest have been acquired for the construction of roads and development of infrastructures.

Community involvement in Forest Depletion

The people from different sectors of the community play different roles in forest depletion. The main ones discussed below are the poor villagers, timber traders/smugglers, banjaigirders (Forest Villagers), local political elites and Forest Department Staff.

The Poor Section of the Village

The poorest of the locality extract forest resources for their survival. Basically, Teknaf is one of the most poverty stricken areas of Bangladesh. Insufficient arable land as compared to its population and paucity of irrigation facilities yield lesser crops and lesser work. Earlier the forest was a source of income. However in 1983 a ban was imposed on extraction of timber from all natural forests in Bangladesh until the year 2003, resulting in greatly reduced earnings, in the face of ever increasing population pressures. As a result, the forest failed to continue to provide them with necessary income. The women remain out of

work force, mainly because of strict religious reasons, but also because of a lack of opportunities. Finding no other source of income a large group of people earn their livelihood by extracting fuelwood and selling them to the markets several miles away in order to procure their basic needs. They also work for the timber smugglers as day labourers. Beside their own consumption, erecting houses, some of them have started constructing their houses in the forest, on hilltops. Nevertheless the poor extract forest resources to meet up their basic necessities.

The Timber Traders and Timber Smugglers

With a limited quota the timber traders extract unlimited quantity of timber. Beside, the timber smugglers utilise wage labourers for illegal felling and smuggling timber from the forest. Along with scattered, incidental felling, this activity is also done in a large scale and organized way. According to the PRA respondents these traders/smugglers bribe the personnel of the Forest Department for this purpose. When these gangs are challenged by the forest guards they resist it by using weapons, and often employ armed hoodlums to ensure their protection. In order to carry on such illegal felling, the traders/smugglers make payments to labourers employed, armed terrorists, personnel of the forest department and sometimes local influential persons in the area. The PRA respondents strongly opined that without the help of forest department, it is impossible to smuggle timbers from the forest. A proverb is common there 'Rakshake Bhakkak' (i.e., the protector himself is the grabber.)

Banjaigirdar (Forest Villagers)

There are 20-50 banjaigirdar (informal forest guards) in each village. Each banjaigirdar has been provided with about 2-5 acres of land, in return for which they are to take care of part of forest, adjacent to his house. These jaigirders are caught in a

web. On the one hand, they cannot not prevent their poor relatives, neighbours from extracting forest resources due to kinship obligation and on humanitarian ground. On the other hand, they can not resist the armed terrorist (thugs) employed by the traders/smugglers because of their self insecurity. These jaigirders sometimes claim a toll from the illegal fellers and sometimes they act as go between for bribes between the illegal fellers and the Forest Department staff. Officially, the system of banjaigirder has been abolished, but at a local level it has not yet been dismantled.

Local Leaders and Chairman of Union Parishad

Local leaders, with affinities to various political parties, and the UP Chairman cannot resist these traders, smugglers, labourers and poor people for felling down of the trees, for in doing so, they would lose their votes and may be replaced after the next elections.

Forest Department

According to the PRA respondents the personnel of the Forest Department are responsible for the illegal felling of the trees. In their views without their involvement it is impossible to dispatch huge quantities of timber out the forest zone. On the contrary, the staff of the Forest Department have pointed out the constraints to safeguard the forest resources and plantation, which include: as per volume of work, i.e, guarding the total area, as directed, number of staff is not enough. As a result, they need to make surveillance area every night which is not only difficult but also impossible. For example, the Beat Officer together with the guards needs to cover an area of 5000 ha. every night for surveillance. As a result, they cannot discharge their duties as per schedule. Their statement claims authenticity if we have a

look at the list of Forest staff responsible for safeguarding the forest at Head Quarter Beat Office. The list indicates that there is one Range officer, one Beat Officer, one Probationary Beat Officer, two guards, two gardeners and two speed boat drivers at a Beat office.

Moreover, the Beat Officers are not provided with 4-WD vehicles. Motorbike is allocated only to the Beat Officers for patrolling the forest areas while the cost of required fuel and lubricants of the bikes is to be borne by them. The area to be looked after at a Head Quarter Beat Office is 10000 ha. every night. The Forest Guards are provided with arms, which are not sophisticated enough to combat the miscreants because the latter are usually armed with more advanced weapons. Moreover, when the illegal fellers are captured by the forest guards/staff, the accused are to be taken to the police/court for prosecution at their own cost. In such cases the travel cost, court fee etc. are to be borne by the FD staff.

In terms of plantation, the amount of money given to the Forest Department is too little to manage the programs successfully. According to the view of some of the Beat Officers the Government allocates Tk. 8000 for the planting and maintenance of 1.0 ha. of seedling which is far below the present minimal requirement of Tk. 15000 per ha.

However, beside these stakeholders there are some sectors/organizations, which could be regarded as stakeholders since these are closely involved with the activities, related to the forests/plantation programmes. These sectors are: Ministry of Establishment, Ministry of Land, Ministry of Environment and Forestry, Bangladesh Forest Research Institute, Bangladesh Water Development Board, World Bank, Different NGOs etc. Their involvement and roles are apparent from the following Table :

Table-2 : The Activites and Current Role of Stakeholders

Stakeholders	Current Role	Activities at Teknaf
Ministry of Establishment and Ministry of Land	Involved via District Administration	Issuing permits for legal tree felling through Deputy Commissioner; Allocate khas lands for expansion of forest to relevant Departments and individuals concerned.
Ministry of Environment and Forestry	Implement programmes for the protection and development of forest resources	Protection of wildlife through Game Reserve, plantation
Forest Department	Management and protection of state forests and social forestry activities outside the Government owned forest areas; Improving wood supply to established industries; Establishment of Domestic wood plantation to meet up the requirement of population	Raising plantation; Cutting trees under legal felling and selling through auction;
Bangladesh Forest Industries Development Corporation	Raising and managing Rubber plantation; Development of wood based industries	Not in action
BARC	Coordinating research activities through the agencies involved in the filed of agrod forestry	Not in action

Stakeholders	Current Role	Activities at Teknaf
Bangladesh Forest Research Institute	Conducting Research in Forest products and Forest Management.	Not in action
BCIC	Extraction of fibrous raw material from forest allotted to them.	Not in action
NGOs, Namely BRAC, ASA, PRSHIKA, SWANIRVAR	Engage in Social Forestry, Community Forestry, Homestead Forestry; Motivating and providing support to peoples participation and benefit sharing mechanism.	BRAC has initiated their programmes
World Bank	Participatory Forestry Development	
Bangladesh Water Development Board	Plantation alongside the embankment, rivers etc.	Planting alongside the embankment
Local Villagers		Extracting forest resources as a source of income
Banjaigirders	Look after the forest around and adjacent to their houses.	Fail to protect forest under their jurisdiction due to their insecure position as well as kinship obligation.

Conclusion and Recommendation

The stakeholders mainly belong to two sections: (a) Local villagers who extract forest resources (b) The organizations involved in protecting forest resources. The latter cannot be successful in their endeavours until the local people can be deterred from extracting forest resources. Introduction of severe punishment, motivation and developing awareness-are all theoretical approaches to achieve this, but they cannot be fruitful unless the alternative income generating activities for the livelihood of the local poor can be identified and implemented. The poor do not extract forest resources spontaneously. They bring very little money home through this sort of risky, tedious and labourious work. Under such circumstances the organization involved in forest management can also act as job providing bodies for the local people. The main stakeholders in the management of the Teknaf are the Forest Department and the local communities. Secondary stakeholders are the Local Government, Army Corps of Engineers, Local businessmen and local NGOs. In addition, there are roles for minor stakeholders such as BFRI, BARC, BFIDC, BWDB, LGED and the Ministry of Fisheries and Livestock.

Involvement of Stakeholders in Forest Management

Some of the organizations can take up programmes to meet up villager's basic necessities. The organizations can take up some endeavours in this regard, such as:

Tabel-3 : The Potential Roles of the Stakeholders in Forest Management

Stakeholders	Responsibilities to be carried out
Forest Department	FD should involve local people in plantation programme carried out by the FD on benefit-sharing mechanism. In addition to this long term scheme, the local people should be engaged in maintenance of the seedlings, saplings and trees on monthly salary/daily contractual basis. This will help develop:(i) and occupation for livelihood (ii) protection of trees at local people's own initiative once the participatory forestry based on benefit sharing mechanism is reached to an agreement between the local people concerned and the FD. (iii) alleviate poverty and certainty of income will decrease the rate of extracting forest resource (iv) ensuring protection of the forest trees in association with the growing tender ones.
Bangladesh Forest Research Institute	BFRI can innovate ideas for the feasibility of cultivation of crops in the hill forest areas. They can take up trial programmes for cultivating tea, pineapples, kesaunuts etc. Feasibility of tending hill goats (imported from Afghanistan, Pakistan), apiculture etc. are to be the potential areas of research. Local people can be engaged as labour power.
Bangladesh Agriculture Research Council	BARC can invite proposal and Finance for research project (the areas mentioned above) and provide the opportunity to carry out projects in the hill forest areas. Can initiate hill top irrigation facilities by adopting 'fog trapping' and 'percolation strategy' of irrigation adopted in Chillie and Brazil respectively.
Bangladesh Forest Industry Development Corporation	Beside rubber and timber extraction, BFIDC can extend its activities towards the establishment of microindustries connected with pineapple, honey, kesaunuts processing and provide jobs to the local people.

Stakeholders	Responsibilities to be carried out
Bangladesh Water Development Board	BWDB can involve local people in offshore plantation and that being carried out on the embankment on benefit-sharing mechanism. They can employ local people on monthly salary basis to look after and monitoring the saplings planted.
NGOs	The NGOs can motivate people and provide financial assistance to help develop planting fruit trees/timber yielding trees beside ponds and grass for fodder in gopat, along with existing social forestry. Beside forestry they can extend loan facilities in other income generating sectors and can provide facilities in health, education, sanitation etc. sectors. In the poverty alleviation programme part of the management plan, they can play a role as local mediators, by assisting local villagers with the formulation of proposals for the WB-funded SIPP.
International Organizations	Allocate financial assistance and expertise for successful implementation of such activities.
Local Community	Participate in protection and development of forest resource through Local Forest Protection Team (viz next section)
Local Government Engineering Department	LGED can establish cluster villages for providing accommodation to flood victims, migrants and local people to resist encroachment, can provide works in construction.
Ministry of Fisheries and Livestock	Can set up hatcheries, initiate fish culture in local charras.

Involvement of Local Community in Preservation of Forest

In order to ensure local community's involvement in forest management, it is proposed that a two-tier 'Local Forest Protection Team' be established at every union level. The lower tier of the team could be set up in every forest range consisting of representatives from each class of the locality including local elites from each sector (i.e., politician, religious leader, school teacher, influential businessman etc.) and Forest Range Officer. Each member of the team would receive monthly remuneration.

The upper-tier of the team should consist of Union Parishad Chairman, the local Range Officer of the FD, representative nominated by the lower tier of the LFPT, representatives of the Deputy Commissioner's Office, representative of the NGOs, member of the summery court.

The LFPT could set up two or three surveillance teams, consisting with the jobless youths of the locality. These teams are to work in close association with the forest guards, in rotation for patrolling the forest. Members of such teams can be employed on a master roll. The surveillance teams should be armed in order to be able to challenge the terrorist illegal fellers. This team should be remunerated for every operation completed, and perhaps a share of the proceeds obtained out of the sale of recovered timber. The illegal feller thus captured should be tried in summery courts, established by promulgating laws by the Parliament Members. In any case the penalties should be very high (i.e. at least ten years imprisonment, seize of property etc.) The summery court will consist of representatives from the LFPT. Surveillance teams should also be motivated by disincentives, for example, if any trees are illegally felled on a particular day, the members of this surveillance team responsible on that day may lose the income they would otherwise obtain for that particular day, or they should be terminated from their duties. This will develop mutual surveillance between the teams and ensure a

degree of accountability. The FD personnel, local UP chairman, leader of the surveillance team will inspect the forest once a month to observe whether there has been any illegal felling. The concerned team/team members shall have to be prosecuted on the spot.

An incentive mechanism may be introduced by rewarding one team from each Thana/District on the basis of the performance of that team for stopping encroachment, preventing illegal felling of the trees, protecting seedlings etc. The team would be accountable to Samaj/panchayet as well as to the Forest Department.

The LFPT will also contribute to implement participatory forestry, community forestry, homestead forestry involving local people on benefit-sharing mechanism in collaboration with FD, BWDB, NGOs. The team can maintain liaison between the villagers and BFIR, BFIDC etc. In order to stop encroachment the Local Government Engineering Department can establish cluster villages by determining boundaries of areas that are to be serviced by education, health, electricity etc.

The recommendations have been made which may open up opportunities of work for the jobless utilizing the locally available resources. At the same time, it includes the assurance of participation of the local people in existing power structure. This empowerment provides legal approval to convey punishment to an influential illegal feller if the charge has been proven. Similarly, the participatory forestry, based on benefit-sharing mechanism would not only provide them with financial benefit also it will purgrade their position by providing them with shared ownership of the trees. Once the economic and social status is ensured, or the assurance of obtaining such status would inspire them to maintain the saplings/trees. Besides, the people who will be appointed on salary basis to look after the trees and the members of the surveillance teams will be provided with a source

of income. If implemented, the recommendations indicated will help alleviate poverty, safeguard the forest, contribute to sustainable development, and help to decrease class differences in the community.

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