

2 Background to the Chittagong Hill Tracts

2.1 Location and Topography

The three hill districts of the Chittagong Hill Tracts lie between 21°25' and 23°45' north and 91°45' and 92°50' east, and cover an area of about 13100 sq.km. Reserved Forests cover about 3220 sq.km. and the water surface of the Kaptai Lake about 780 sq.km. The remainder consists of Unclassed State Forest (USF), settlements, and other uses. The topography is hilly and undulating and, in some areas, very steep. There are nine valleys with elevations ranging from 300 to 1100 masl. The region constitutes about 10 per cent of the total area of Bangladesh (Khisa 1991). A comprehensive land survey showed that approximately five per cent of the total land area is suitable for agriculture and over 80 per cent is physically and economically suitable for the establishment of forest plantations (Forestral 1966).

2.2 Demographic Features

Eleven tribal communities inhabit the Chittagong Hill Tracts: the Chakma, Murma, Tripura, Tanchangya, Khyang, Chak, Murong, Pankhu, Bom, Khumi, and Uchai tribes. Each tribe has its own distinct culture and traditional lifestyle. Although some live in the valleys, most seem to prefer the hilltops (Khisa 1995a; FMP 1993). There are also many people in the area who have migrated from the plains (non-tribals).

In 1951, the population of this region was only 288,000. By 1961 it had grown to 383,000

and by 1981 to 731,000. At the time of the 1991 census, the population was 968,000. The present population (1998) is estimated to be 1.28 million. In other words the population has doubled in the past 20 years.

2.3 Climate

The average annual rainfall in the Chittagong Hill Tracts is 2,032 to 3,810 millimetres per year, 80 per cent of which occurs during the months of May to September. Occasional rainfall, cyclones, and storms often occur in April and October. November to March are dry months. Torrential downpours sometimes cause massive landslides. The northern part of the area receives less rainfall than the southern part (Khisa 1995a).

The mean monthly maximum temperature ranges between 25°C and 34°C, and the mean minimum between 12°C and 25°C. The mean monthly relative humidity is about 65 per cent in the dry season and about 90 per cent in the rainy season (Khisa 1995a).

2.4 Land Use

Jhum cultivation (shifting cultivation) is the prevalent form of land use practised on the steep to very steep slopes. With the increase in population, the *jhum* cycle has been reduced from a 10-15 year rotation to a 2-3 year rotation. Intensive monocrops of tubers and turmeric without proper soil conservation measures have seriously degraded the soil. Illiteracy, superstitious beliefs and practices, and

poor health and sanitation coupled with poor nutrition have seriously exacerbated the poor living conditions of the local people (Ghafur et al. 1987). The farming practices in this region are leading to a decline in productivity and causing serious environmental degradation, thereby jeopardising the sustainability of the area (Khisra 1995a)

2.5 History of Forest Management in the Hill Areas

Until 1870, the land area and natural resources of the Chittagong Hill Tracts were enough to meet the domestic requirements of the tribal population. By 1875, an alarming decrease had been noted in the forests. At this stage some of these forests were declared reserved forests by the government, leaving the rest as USF. The Forest Department adopted a policy of clear felling followed by artificial regeneration to convert the less valuable tree cover of the reserved forest areas to more valuable forests by raising valuable species such as *Tectona grandis*, *Dipterocarpus* spp, *Gmelina arborea*, and *Swietenia macrophylla*. Forestry plantation activities were first started in this region in 1871, when teak (*Tectona grandis*) was introduced from Burma (now Myanmar). Since then, *Tectona grandis* has become the major plantation species. Along with *Tectona grandis* and *Swietenia macrophylla*, some indigenous species like *Gmelina arborea*, *Dipterocarpus*, *Artocarpus chaplasha*, and *Legerstroemia flosreginae* have been planted in various mixes. Initially various planting methods, such as planting in lines or strips, planting in blocks at six by six spacing, and *taungya* (a sort of shifting cultivation incorporating planting of tree seedlings), were used to establish forestry plantations. The *taungya* system could not cope with the enhanced felling under mechanised logging, nor could it regenerate the area. In recent years a combination of natural regeneration and artificial planting has been prescribed (FMP 1993).

The reserved forests under the management of the Forest Department were subjected to clear felling followed by artificial regeneration. These were protected through legal instruments

such as the Forest Act and other prevailing laws of the country. The tree resource increased in such areas, but the USF degenerated very badly as a result of unscientific land use such as shifting cultivation (*jhum* cultivation) on steep slopes, and became mostly grassland and/or scrubby forest. By the mid-1960s, barely seven per cent of the USF land could be classified as forest (Forestal 1960). Prolonged and intensive *jhum* cultivation by the tribal communities seriously degraded the sites and induced heavy soil erosion. The unabated soil erosion caused siltation of riverbeds affecting the navigability of rivers such as the Karnafully, Kachalong, Maini, Chengi, Sangu, and Matamuhuri (FMP 1993).

The reserved forests in the Chittagong Hill Tracts were quite rich in forest resources with a high potential for forest management for multiple use. Over the last two decades, however, the poor peace and order situation in the area (insurgency) has caused serious depletion of the reserve forests. Illegal logging and *jhum* cultivation within the forest areas were the main causes of damage. Only recently has the long-standing ethnic problem received the necessary political attention from the government, and a peace agreement has now been reached to end insurgency in the area. It is expected that the situation will now improve and that this will encourage the professionals concerned to introduce proper land use and forest management. It is now realised that traditional forest management without the participation of the local communities cannot be fruitful. Thus participatory forestry is gaining momentum in these hill areas.

There is a tremendous potential for forestry and watershed development using the participatory approach. The Forest Department has, in principle, accepted the idea of participatory forestry under an integrated ecotype management of natural resources. The creation of the '*Jhum* Control Division' in the early 1960s and its approach of controlling this practice by settling the *jhum* cultivators in permanent locations were the first positive steps. In the 1980s, a series of projects were implemented through people's participation in various fields

including forestry, agriculture, horticulture, poultry, and pig raising. Initially peoples' participation was poor, mostly because of the poor law and order situation. The situation is expected to improve after signing of the recent peace accord. Implementation of the *jhum* programme, establishment of forest plantations, and management of the watersheds are now, for the first time, being considered as an integrated programme (Satter 1991).

The Forest Department of the Government of Bangladesh (GOB) has accepted the principle of peoples' participation in forest management. Most of the present GOB projects on forestry are being formulated in line with the policies and strategies enunciated in the 20-year Forestry Master Plan (FMP 1993). The two major objectives of the Master Plan are to increase tree cover and to ameliorate environmental problems. The Master Plan has also proposed carrying out plantation programmes on USF land to produce timber and other industrial wood. The Forest Policy 1994 has also emphasised peoples' participation in forestry activity.

2.6 Traditional and Indigenous Forest Management

Bangladesh has only a few efficient indigenous management practices for hilly terrain.

2.6.1 Terrace Cropping

Terrace cropping is being practised in some places with considerable success as a technique for soil conservation. Bench terraces of widths varying from two to three feet are cut across the slope and pineapple and other fruit trees are grown. Banana and *Gmelina arborea* are grown side by side. This has the double advantage of reducing soil erosion and yielding cash benefit to the growers. The harvesting sequence is also good for retaining vegetation cover throughout the year. The Chakma and *Marma* tribes often employ this technique. The other tribal communities in the hills use another type of terrace in which the benches are wider with a gentle outward slope. These are mostly used for fodder cultivation and the terrace

edges are planted with legumes such as *Tephrosia candida* and *Cassia siamea*. This practice, as well as checking soil erosion, produces fodder for cattle and biomass for mulching. Terrace cultivation is common in the Banderban district.

2.6.2 Banana Plantations for Soil Conservation

Patches of banana plantations are, sometimes found in the Chittagong Hill Tracts. Tribal communities adopt this practice in the belief that the trees are very stable and can withstand all sorts of natural hazards including earthquakes. They even take shelter in the banana plantations during earthquakes. The implications for watershed management, as well as financial gain, are very important. The big leaves of the banana dissipate large monsoon raindrops and reduce soil erosion.

2.6.3 Gully Control by Bamboo

Use of bamboo culms is probably the oldest indigenous method widely practised in the hills of the Chittagong area for plugging gullies, as well as for erosion control in narrow valleys with arable lands along stream banks. Tribal communities protect naturally occurring bamboo on these sites and also plant bamboo in vulnerable spots. *Bambusa tulda* and *Bambusa vulgaris* are the two major bamboo species used for such purposes. The bamboo culms have a vigorous regeneration potential and can be established easily. The fibrous root system of the bamboo is an excellent soil binder. Both tribal and non-tribal people use this technique to control soil erosion.

2.6.4 Gully Control by Planting

Parts of hill areas are characterised by narrow valleys with sloping sides lying between the steep ridges of two hills. These narrow valleys are highly vulnerable to erosion from water runoff. Tribal groups usually plant such narrow valleys with *Tectona grandis*, *Dipterocarpus*, *Artocarpus chaplasha*, *Bamboo spp*, *Gmelina arborea*, and *Albizia procera*. They build their homes on the hilltops. The vegetative cover

reduces erosion in two ways: the bamboo cover at the bottom of the ridges prevents rill erosion and the multi-storied plantations on the slopes reduce the velocity of the runoff. The slopes are also less disturbed under such practices. These practices are more prevalent among the Tipra tribe in the Khagrachari and Bandarban districts. These gully control practices are found widely throughout the hills of Bangladesh and they not only control the gullies but also demonstrate proper utilisation of the hill slopes.

2.6.5 Silvi-Horticultural Practices

The gentle undulating lands in Khagrachari district provide a good opportunity for a particular type of homestead forestry or silvi-horticultural practice. These areas are mostly occupied by non-tribals, build their dwellings on the high land, and plant fruit and multi-purpose trees on the slopes and in vacant spaces around their dwellings as densely as possible. Guava, banana, mulberry, mango, and jackfruit are planted on the gentle slopes. Pineapple is grown as an understory crop. The high flat areas are planted with *Tectona grandis*, *Dipterocarpus*, *Gmelina*, and bamboo. The lower flat valleys are used for some paddy and vegetable cultivation as far as the constraints of water scarcity and very low soil moisture permit. In this area, the vegetative cover on slopes maintained through annual or perennial crops is noteworthy. This practice provides the farmers with cash income throughout the year and helps in soil and water conservation.

2.6.6 Bamboo Forest Management System

The people from the hills used to meet all their basic needs for food, shelter, clothing, and medicines from the forests or through their traditional agricultural production. Bamboo occupies an important role in their livelihoods, culture, and religion. It is used widely in the construction of huts, for household and agricultural implements, as food, for worship, for watershed management, and for a host of other activities. It is amazing that a single species can effectively meet such a wide variety of needs. The tribal communities put every effort

into conserving and managing bamboo resources.

Usually bamboo culms grow naturally as pure stands or as an understory of tropical evergreen species. *Melocana baccifera*, *Bambusa balcooa*, *Bambusa polymorpha*, *Bambusa tulda*, and *Bambusa nutan* grow in abundance. Bamboo growth is related to high soil moisture, and bamboo is used for gully plugging and soil erosion control. In fact, the silvicultural practices adopted by the Forest Department for the management of bamboo forest have much in common with the indigenous system.

2.6.7 Community Forest Management Practices

Tribal communities in the Chittagong Hill Tracts try to maintain a self-sustained livelihood based on the natural resources around them. A typical tribal village or community raises a variety of useful trees and plants around their homesteads. Generally the land around a village is maintained as a community forest with fruit and other multipurpose trees. This parcel of land is never subjected to the traditional *jhum* cultivation. The tribal village communities usually extract only the mature trees with the consent of their village head. This system of extraction is quite close to the scientific forestry practice of selection felling. This practice causes the least possible deterioration to the site and the soil.

2.7 Role of Forests in the Lifestyle of the Mountain People

Ethnobotany is the knowledge of interaction and the use of plant resources by ethnic communities. Ethnic groups in the Chittagong Hill Tracts have subsisted on shifting cultivation (*jhum*), fishing, hunting, and harvesting of forest products for centuries. Even now, they are dependent on forest resources for their basic needs. Forests are their primary source of food, shelter, medicine, and other products and services in their daily life (Ahmed and Stoll 1996). Forests are also places where they worship. The lifestyle of the ethnic people and their socioeconomic activities are centred

around the hills and the natural resources. This way of life has existed in harmony with the environment for centuries (SRDI 1986), but it is now threatened by the massive over-exploitation of resources resulting from the increased population and the effects of competitive land use.

The natural climax vegetation of the Chittagong Hill Tracts is a mixed tropical evergreen and deciduous forest with bamboo. Over 100 tree species and numerous species of bushes, shrubs, canes, lianas, and ferns have been identified in the area. At present, however, this climax vegetation only exists in the reserved forests and as scattered remnants in a few locations in the USF.

Jhum cultivation is a very old practice and is the indigenous technique of forest farming. All the ethnic communities practice *jhum* cultivation, which is treated as the nerve centre of the life and culture. The songs, dances, and almost all festivals are centred around the harvest of *jhum* crops such as rice, sesame, and cotton, which are the main sources of food and cash income. Some authors have suggested that the system is essentially based on scientific principles (Nye et al. 1960; Ramakrishnan 1984).

The ethnic communities of the Chittagong Hill Tracts depend largely on wild plants from the surrounding forests for food, construction materials, fuelwood, medicine, and many other products. Since they are well acquainted with the surrounding environment, it is fairly easy for them to procure their daily necessities. For generations, the communities have recognised the uses of plant resources for the treatment of various diseases. For example the bark of *Oroxylon indica* (Khona) is used to treat jaundice.

More than fifty tree species with edible fruit are found in the area, including wild mango (*Mangifera sylvatica*) and 'Kamkui' (*Kbridelia relusa*), and the leaves of many of these trees also provide excellent fodder. Other fruiting plants include 'Bortagula', an indigenous wild litchi, and 'Rogosko', a creeper that bears very

sweet fruit about the size of a lime with a blood red pulp. There are several varieties of wild banana, with lots of seeds inside, which are very sweet when ripe. The inflorescence of wild banana and the white soft core within the leaf sheaths are used as vegetables. Banana core cooked with rice is used in days of food scarcity, and when chopped with bran it makes an excellent fodder for pigs and cattle.

Over a dozen varieties of wild yam are collected around the year and used as vegetables. Numerous varieties of leafy vegetables grow in moist sites, and leaves, stalks, fronds of ferns, and creeper tendrils are all collected as food. The young leaves of different tree species, particularly *Albizia procera* and wild mango, are also used as vegetables as are the young shoots of different bamboo species ('bansshori') and cane ('golak aga'). Nowadays with lower yields from *jhum* cultivation, tribal communities live on yams during winter and on bamboo shoots during the monsoon.

Several varieties of edible fungus like *Lentinus*, *Shizophyllum*, and Jew's Ear grow on decaying wood. Mushrooms like *Lepiota* and *Volvariella* growing on soil or straw are also used as food.

With this sort of lifestyle using the bounty of nature, famine, in its strict sense, is unknown to these communities. The ethnic minorities have lived for centuries in this hilly region without any serious adverse impact to the forests, the environment, or the watersheds. They have made an easy living through sustainable harvesting of forest products, fishing, hunting, and *jhum* cultivation (shifting cultivation). Unfortunately, as a result of the pressure of other, competitive, uses of land, and the increased number of both people and livestock, the availability of wild plant resources is declining sharply (Khisa 1997).

2.8 Status of Community Institutions

2.8.1 Administration and Land Tenure System

The Chittagong Hill Tracts has three administrative districts: Khagrachari, Rangamati, and

Bandarban. A Deputy Commissioner heads each district. The districts are divided into 28 *Thana(s)*, each headed by a *Thana Nirbahi Officer*. The *Thana(s)* are further divided into 110 Union Councils, each headed by an elected chairperson.

The land tenure system differs significantly from that in other parts of Bangladesh. The government owns most of the land, and the Deputy Commissioners control its disposition. Under the Chittagong Hill Tracts' Regulations of 1900 (amended in 1971), the Deputy Commissioners are empowered to regulate land acquisition by any government agency in the interest of the public. The Deputy Commissioners are authorised to allocate up to 100 acres of hill land to an individual or a family. They can also control and regulate any shifting (*jhum*) cultivation within their jurisdiction (ADB 1997).

2.8.2 The Tribal Administrative System

Each of the three districts comprises a single tribal circle, the Chakma, Mong, and Bomang circles, each headed by a tribal circle chief. The population in all of these circles comprises members from almost all the ethnic groups found in the area. The circle chiefs have specific duties and can even exercise judicial powers in settling disputes according to customary laws, except in crimes against the state and collection of revenue.

Each of the circles is sub-divided into *Mouza(s)*. A *Mouza* is under the control of a Headman and consists of a village headed by a headman or *Karbari*. The headman acts as an arbitrator in local disputes, allocates land for shifting cultivation, and collects revenue. The size of the plot allocated depends on the family size (ADB 1979). The Headman is entitled to a part of the revenue that he collects. After deducting his share, the remainder is handed to the circle chief, who in turn retains his share and passes the rest on to the State.

2.8.3 The Local Government Council

A new administrative set up was introduced under the Local Government Council Act of 1989. One Chairman is appointed in each district, with the status and authority of a Deputy Minister. The Chairman heads a five-member council. The council coordinates the development activities of different government and non-government agencies in the hill districts. Until recently these local government councils were ineffective. After the signing of a peace treaty with the *Parbayta Jana Sanghati Samity*, the government is planning to strengthen the local government councils by bringing them under the banner of a Regional Council for the whole of the Chittagong Hill Tracts. The proposed power and authority of the Council, as stated in the peace treaty, will be more authoritative and will also seek the participation of all tribal communities in the region.

2.8.4 The Chittagong Hill Tracts' Development Board

The Chittagong Hill Tracts' Development Board (CHTDB) was established in January 1976 with the aim of accelerating socioeconomic development in the Chittagong Hill Tracts' area. The Board, assisted by a consultative committee with members who include tribal and non-tribal leaders, is responsible for policy formulation, planning, and coordination of multi-sectoral development programmes. From January 1976 to May 1996, the Board implemented 1,007 schemes worth 494.58 million *taka*¹. The programmes have included various activities for social welfare, education, road construction, agriculture, sports and culture, building construction, and cottage industries.

Under the special five-year plan from 1984-85 to 1990-91, the Chittagong Hill Tracts' Development Board spent a further 2,803.7 million *taka* as a coordinating agency in the

¹ There are 49.65 *taka* to one US dollar.

implementation of programmes with different collaborating departments. These included construction of roads, telecommunications, development of power, health and family planning, education and vocational training, sports and culture, cottage industries, tourism, agriculture, horticulture, forestry, fisheries, and livestock development. During this period, 1,970 tribal families were settled and 7,600 ha of steep slopes were afforested.

The biggest project so far undertaken by the CHTDB was the Asian Development Bank financed Chittagong Hill Tracts' Development Project, a multi-sectoral project with 11 components. The aim of this project was to create the necessary conditions for the long-term socioeconomic development of the area. Two thousand landless and marginal tribal families belonging to the Chakma, Marma, and Tripura communities were settled and provided with essential facilities.

2.8.5 Parbatya Boudha Mission

The *Parbatya Boudha* Mission is a non-profit, socio-religious, cultural, and child welfare organization. Its headquarters were established at Khagrachari in 1983. Since its inception, this non-government organization has been trying to improve the socioeconomic and religious aspects of the hill people, so that

future generations can stand up for themselves as worthy citizens of the country. To achieve its goals, the NGO has set up an orphanage, religious and educational institutions, and social organizations in various places. Its present activities include construction of orphanages, a residential school, a temple, a Pali college, an examination centre, and agricultural training camps. Proposed projects include youth development, a programme for women's development, a printing press, a residential college, a monastery, and a meditation centre.

2.8.6 Religious Leader ('Ban Vantee')

Most of the population in the Chittagong Hill Tracts belongs to the Buddhist *Chakma*, *Marma*, and *Tanchayanga* tribes. Mr. Sreenath Sadhananad Mahasthabir is a highly regarded local religious leader of the Buddhist community. His whole life has been concentrated on following the path of Gautam Buddha. He is known locally as *Ban Vantee* for his deep devotion to Buddhism. His way of life and religious sermons are highly regarded by all Buddhists and even by other tribal communities with different religious beliefs. The messages from Mr. Sreenath Sadhananad Mahasthabir are highly influential in regulating social and cultural life. His present headquarters are at Rajbanabihar, Rangamati.