

Part One: Overview of the Study

1.1 Background

Study tour is one of the major parts of gaining practical knowledge in modern education system. In fact in the field of Environmental science this kind of tour is desired one. Being a student of Environmental studies, we should have some practical field work with the theoretical knowledge. Otherwise the knowledge gap between the fact and theory will never be meet up. To fulfill this condition or objectives we took the opportunity of acquiring knowledge about existing environmental condition, forest and wildlife management by visiting different ecologically important areas in the south of Bangladesh.

The study tour was conducted at *Khgrachari* ecotourism area, *Rangamati* ecotourism area, *Bandarban* ecotourism area, *Cox's Bazar* Sea beach (The longest sea beach in the world) and *Cox's Bazar-Himchari* water fall. Khgrachari, Rangamati and Bandarban are together termed **Chittagong Hill Tracts**. The Cox's Bazar is nicer than any other recreational place of our country.

The **Chittagong Hill Tracts** comprise an area of 13,295 km² in south-eastern Bangladesh, and borders India and Myanmar (Burma). They formed a single district of Bangladesh until 1984, when they were divided into three separate districts, Khagrachari, Rangamati, and Bandarban. Topographically, the Chittagong Hill Tracts are the only very hilly area in Bangladesh. Together with Ladakh, Bhutan, and Sri Lanka, they constitute one of the few remaining abodes of Buddhism in South Asia.

Bangladesh's fledgling but troubled tourism industry is slowly luring foreign and domestic travellers, industry officials say. One of the most popular destinations this winter was this beach resort town of Cox's Bazar on the Bay of Bengal, which drew sun-worshippers from as far away as Europe and Southeast Asia.

A **coastline** or **seashore** is the area where land meets the sea or ocean. A precise line that can be called a coastline cannot be determined due to the dynamic nature of tides. The term "**coastal zone**" can be used instead, which is a spatial zone where interaction of the sea and land processes occurs. Both the terms coast and coastal are often used to describe a geographic location or region; for example, New Zealand's West Coast, or the East and West Coasts of the United States.

The coast and its adjacent areas on and off shore is an important part of a local ecosystem as the mixture of fresh water and salt water in estuaries provides many nutrients for marine life. Salt marshes and beaches also support a diversity of plants, animals, and insects crucial to the food chain. The high level of biodiversity creates a high level of biological activity, which has attracted human activity for thousands of years.

Environmental resource management is “a purposeful activity with the goal to maintain and improve the state of an environmental resource affected by human activities”. It is not, as the phrase suggests, the management of the *environment* as such, but rather the management of the interaction and impact of human societies on the environment. Environmental resources management aims to ensure that ecosystem services are protected and maintained for equitable use by future human generations, and also, maintain ecosystem integrity as an end in itself by taking into consideration ethical, economic, and scientific (ecological) variables. Environmental resource management tries to identify the factors that have a stake in the conflicts that may rise between meeting the needs and protecting the resources.

1.2 Participants

The study tour was being conducted by the students of ESRM department of 3rd year 1st semester and supervised by our respectable teachers of our department. On site class was conducted by the official persons of different official and unofficial department personnel like as Forestry Department. The interview session was participated by the students, local people and officers of respectable departments.

1.3 Objectives of our Field Level Study

The tentative objectives are–

To get the idea regarding

- ❖ The region's uniqueness, characteristics
- ❖ Legal Status and management system
- ❖ Forest resource evaluation
- ❖ People and its culture

Other than

Fieldtrip to CHT and Cox's Bazar...

- ❖ Know the detail characteristics of different Aspects
- ❖ Know about the Biodiversity and its value
- ❖ To get a check list of available flora and fauna
- ❖ To find out the cause behind the degradation
- ❖ To get the possible strategy for conserving the forest resources
- ❖ To find out the present condition of sea beach.

Part Two: Study area

2.1 Location

The study area was Chittagong Hill Tracts – Khagrachari, Rangamati and Bandarban area, Cox's Bazar Sea beach and Cox's Bazar- Himchari waterfalls.

Location of Chittagong Hill Tracts: Chittagong Hill Tracts (CHT) the only extensive hill area in Bangladesh lies in southeastern part of the country ($21^{\circ}25'N$ to $23^{\circ}45'N$ latitude and $91^{\circ}54'E$ to $92^{\circ}50'E$ longitude) bordering Myanmar on the southeast, the Indian state of Tripura on the north, Mizoram on the east and Chittagong district on the west. The area of the Chittagong Hill Tracts is about 13,184 sq km, which is approximately one-tenth of the total area of Bangladesh.

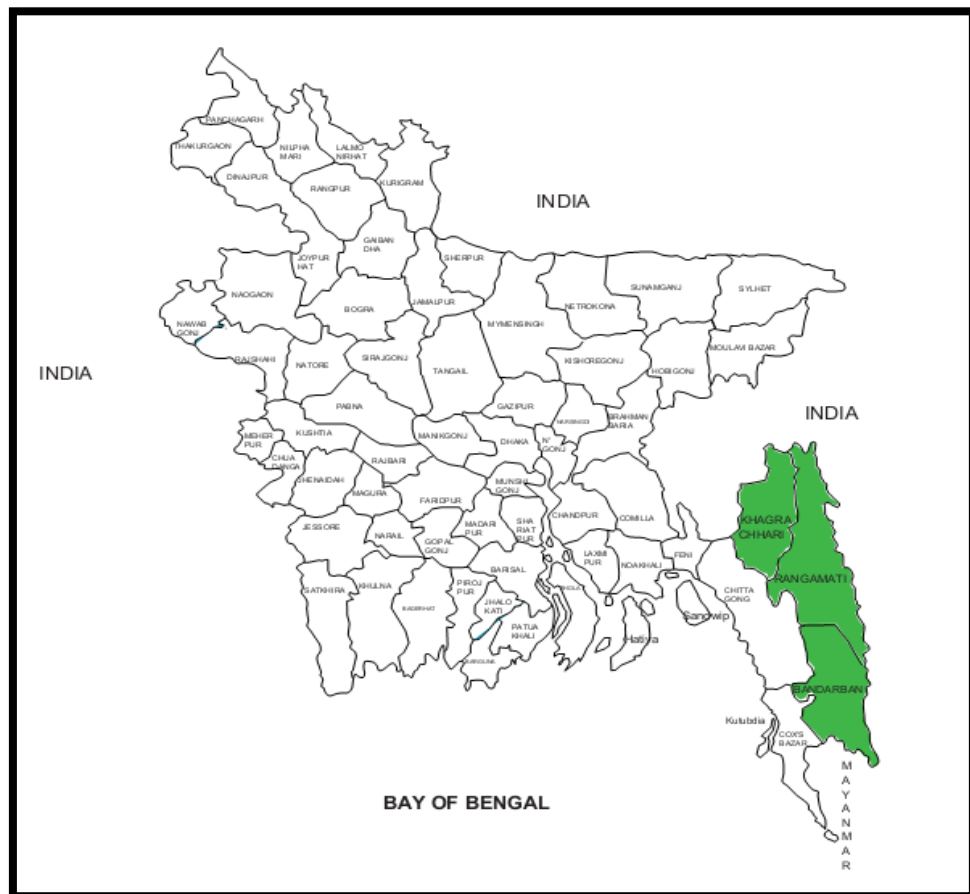


Figure 1: The green part of the map is showing Chittagong Hill Tracts.

Location of Cox's Bazar Sea beach: Cox's Bazar & Teknaf Sea beach is formed by 10465 ha area of West & South coast of Teknaf Island. The Western part is covered by the Bay of Bengal and the South-east part is covered by the Naf river which has separated from Myanmar.

Chapter 03: Study Methodology

Methodology is very important to study anything properly. So in the study of CHT and Cox's Bazar to get the present situation and to find out the natural resources and the management process we applied different methods to collect data –

- Interview
- FGD
- Eye Sight visitation
- Secondary data

Interview

In methodological point of view, interview is formal meeting at which subject is asked question to see if they are suitable for a particular. We applied this method in the study tour of Madhupursal forest. We took an interview of different Management personnel.

FGD

FGD which means focus group discussion. In this tour the FGD was arranged with the key people involve in management and conservation of that area.

Eye Sight Visitation

We visited the whole forest and at last we also observed different hill from the tower. We were really pleased to watch its multilevel trees composition.

Secondary Data

Secondary data is influenced by the primary data. This kind of data represents the condition of previous state is that specific study of any researcher. A primary data which was collected from the visit has been included here.

Part Four: Chittagong Hill Tracts

The Chittagong Hill Tracts (CHT) consists of three districts Rangamati, Khagrachari and Bandarban. These districts are located in the south-east of the country, near the Myanmar and Indian border and make up 10 per cent of the total land area of the country but only 1 per cent of the country's population. The estimated population in the CHT is 1.3 million, of which 90 per cent lives in the rural areas. Home to at least 11 different indigenous ethnic groups, this is a unique part of the country, both in terms of landscape and its people. Over the last 30 years, Bengali settlers from other parts of Bangladesh have been allocated land in the CHT districts and now represent approximately 50 per cent of the CHT population.

4.1. Demography

According to the census of 1991, the population was 974,447, of which 501,114 were tribal peoples and the rest were from different communities. The tribal peoples, collectively known as the Jumma, include the Chakma, Marma, Tripura, Tanchungya, Chak, Pankho, Mru, Murung, Bawm, Lushai, Khyang, Gurkha, Assamese, Santal, and Khumi.

The population of the three districts (*zilas*) totalled 1,587,000 in the provisional returns of the census of 2011. About 50% of the population are tribal peoples and mainly followers of Theravada Buddhism; 48% of the inhabitants are Bengali Muslims; the remainder are Hindus, Christians, or animists. At the time of the partition of India, in August, 1947, non-Muslims constituted 98.5% of the population of the Chittagong Hill Tracts: Buddhists were 85%; Hindus (mainly of the Tripuri tribe), 10%; and animists, 3% of the population.

4.2. History

The early history of the Chittagong Hill Tracts, parts of the Chin national territory, forms a record of constantly recurring raids on the part of the eastern hill tribes, and of the operations undertaken to repress them. The earliest mention of these raids is found in a letter from the Chief of Chittagong to Warren Hastings, the Governor-General, dated April, 1777, complaining of the violence and aggressions of a mountaineer, the leader of a band of Kukis or Lushais; and these raids continued without any long intermission down to 1891, when the Lushai Hills were annexed to British territory. The recorded population increased from 69,607 in 1872 to 101,597 in 1881, to 107,286 in 1891, and to 124,762 in 1901. The Census

of 1872 was, however, very imperfect, and the actual growth of population has probably not exceeded what might be expected in a sparsely inhabited but fairly healthy tract.

When the 1901 census was taken there were no towns, and 211 of the villages had populations of less than 500 apiece; only one exceeded 2,000. The population density, excluding the area of uninhabited forest (1,385 square miles), was 33 persons per square mile. There was a little immigration from Chittagong, and a few persons had emigrated to Tripura. The proportion of females to every 100 males was only 90 in the district-born, and 83 in the total population. Buddhists numbered 83,000, Hindus 36,000, and Muslims 5,000.

The Chittagong Hill Tracts, combining three hilly districts of Bangladesh, were once known as KorposMohol, the name used until 1860. In 1860 it was annexed by the British and was made an administrative district of Bengal. As of today, it is a semi-autonomous region within Bangladesh comprising the districts, namely, Chengmi (Khagrachari District), Gongkabor (Rangamati District), and Arvumi (Bandarban District).

The last Viceroy, Lord Mountbatten, who considered the grant of independence to India as his act of crowning glory, was ambitious to achieve this "superhuman" task in record time. He said that before accepting the post of Viceroy he had told King George VI, who was his cousin: "I am prepared to accept the job only on one condition. India must be granted independence by July, 1948 and I will not stay there a day longer". Mountbatten came to India in March, 1947 and this left him just about sixteen months to complete such a gigantic task. In reality, he achieved it in five months, on 15 August, 1947 for which he was given so much credit.

Originally, the award of the Boundary Commission was to be made public on 13 August. But Mountbatten was reluctant to make this public. According to Philip Ziegler, the author of Mountbatten's official biography, the case of the Chittagong Hill Tracts was uppermost in Mountbatten's mind. "He (Mountbatten) foresaw an Independence Day marred by rancour, Nehru boycotting the ceremonies, India born in an atmosphere not of euphoria but of angry resentment. So Mountbatten decided to announce the award only on 16 August when the celebrations were over. As Zeigler writes, "India's indignation at the award of the Chittagong Hill Tracts to Pakistan may have been a factor in making up Mountbatten's mind to keep the reports to himself till after independence".

Mountbatten was himself surprised by the ferocity of Sardar Patel's reaction to the issue. In his memoirs he wrote: "The one man I had regarded as a real statesman with both his feet firmly on the ground, and a man of honour whose word was his bond, had turned out to be as hysterical as the rest. Candidly I was amazed that such a terrific crisis should have blown up over so small a matter. However, I have been long enough in India to realise that major crises are by no means confined to big matters." Leonard Mosley in his book *The Last Days of the British Raj* puts it "This is a matter for Mountbatten's conscience.

During the 1970s and 80s, there were attempts by the Government to resettle the area with Bengali people. These attempts were resisted by the tribals, who, with the latent support of neighbouring India, formed a guerilla force called Shanti Bahini. As a result of the tribal resistance movement, successive governments turned the Hill Tracts into a militarised zone. Professor Bernard Nietschmann wrote a letter about Shanti Bahini and the Chittagong Hill Tracts people to the editor of the New York Times by published on October 25, 1986 at the Center for World Indigenous Studies website.

Bengali settlers and soldiers have been accused of human rights violations against the tribal minorities, including the massacre of civilians, extrajudicial killings, torture, and, more recently, the imprisonment of non-violent activists. Members of the Shanti Bahini and other rebel groups have committed similar violations, including the massacre of unarmed Bengali settlers.

Following years of unrest, an agreement was formed between the Government of Bangladesh and the tribal leaders which granted a limited level of autonomy to the elected council of the three hill districts.

4.3 FeaturesnoigeR eht fo

4.3.1 Climate

The weather of this region is characterized by tropical monsoon climate with mean annual rainfall nearly 2540 mm in the north and east and 2540 mm to 3810 mm in the south and west. The dry and cool season is from November to March; pre-monsoon season is April-May which is very hot and sunny and the monsoon season is from June to October, which is warm, cloudy and wet.

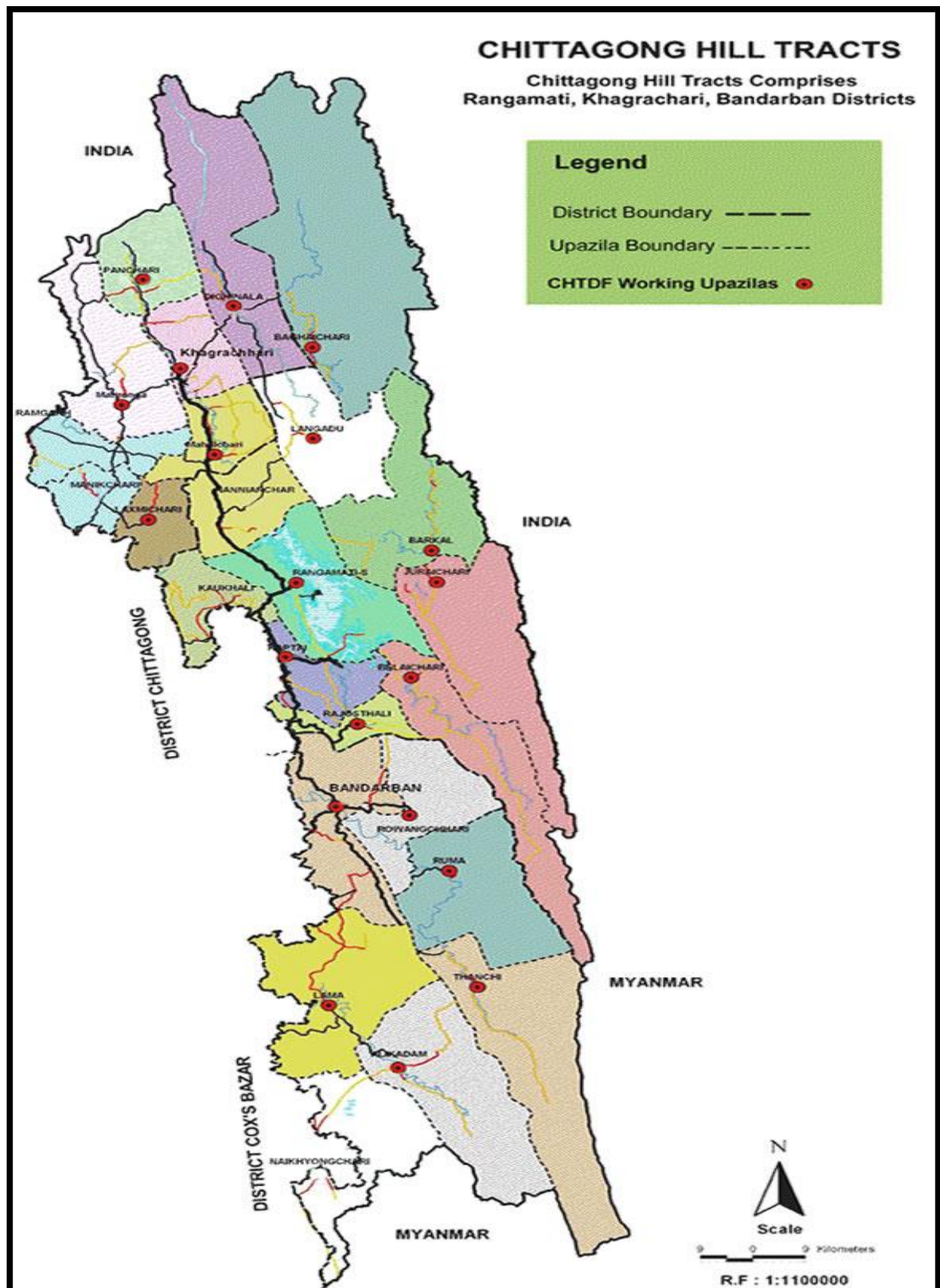


Figure 2: A map of Chittagong Hill Tracts.

4.3.2 Physiography

According to the physiography of Bangladesh the CHT falls under the Northern and Eastern Hill unit and the High Hill or Mountain Ranges sub-unit. This sub-unit covers most of CHT, some small parts of southern Habiganj and the south and eastern borders of Maulvi Bazar. At present, all the mountain ranges of the Chittagong Hill Tracts are almost hogback ridges. They rise steeply, thus looking far more impressive than their height would imply. Most of the ranges have scarps in the west, with cliffs and waterfalls.

The region is characterised by a huge network of trellis and dendritic drainage consisting of some major rivers draining into the Bay of Bengal. The major rivers are karnafuli, sangu, matamuhuri and feni. Within the hill tracts, the Karnafuli has several important tributaries, of which Chengi, kasalong and Rainkhiang are the main ones.

Generally the hill ranges and the river valleys are longitudinally aligned. Four ranges, with an average elevation of over three hundred metres, strike in a north-south direction in the northern part of the hill tract districts. These are Phoromain range (Phoromain, 463m), Dolajeri range (Langtrai, 429m), Bhuachhari (Changpai, 611m) and Barkal range (Thangnang, 735m). South of the Karnafuli River within the Chittagong Hill Tracts, there are seven main mountain ranges within Bangladesh. These are: Muranja range (Basitaung, 664m), Wayla range (most of this range is in Myanmar), Chimbook range (Tindu, 898m), Batimain range (Batitaung, 526m), Politai range (Keokradang, 884m; RamiuTaung 921m, Saichal-Mowdok range (Bilaisari, 669m) and Saichal range. Saichal range contains the highest peaks of Bangladesh. These are Waibung (808m), Rang Tlang (958m), MowdokTlang (905m), and MowdokMual (1,003m) which is on the border with Myanmar.

Some of these hill ranges also contain important geological structures to form excellent structural traps for natural gas accumulation. The structures are: Semutang anticline (average elevation is 80m except in some areas where it reaches over 160m), Sitapahar anticline (245 to 330m in the south to middle of the structure and 330 to 410m in the northern part), Matamuhuri anticline (average elevation ranges from 245 to 330m in the northern part, but in the southern part it increases from 410 to 570m and the maximum elevation is 710m in the south) and Bandarban anticline (maximum elevation varies between 650 and 800m, with three peaks of around 935m, 960m and 965m located from north to south). There are two natural lakes (Rainkhiangkinelake and bagakine lake) and one artificial lake (kaptai lake).

The Kaptai Lake covers an area of about 767 sq km in dry season and about 1,036 sq km in the monsoon.

4.3.3 Ethnic, Culture, Population and Festivals

The Chittagong Hill Tracts is the most diversified region in Bangladesh in respect of ethnicity and culture. CHT is the habitat of several ethnic groups. All of them have their own language and culture. The Chakmas are the largest ethnic group in respect of population. The Chakmas belong to Mongoloid race. They have their own language and script. The second largest community in respect of population is Marma. The Marmas are found mainly in Bandarban District. The other ethnic groups are Tripura, Tanchangya, Chak, Murong, Khumi, Boam, Lushai, Pankho and Khyang.

All the groups have distinct culture and heritage. The songs and dances of the ethnic groups are very popular in Bangladesh. The traditional dresses and the women ornaments are very gorgeous and colorful. These traditional dresses are mostly made of hand weaving materials. Usually, the women wear silver ornaments.

Most of the ethnic groups follow Buddhism. Some are the followers of Hinduism and Christianity.

The main occupation of the people of Chittagong Hill Tracts is agriculture. The Jhum cultivation is the traditional system of cultivation in Chittagong hill Tracts.

The biggest festival for the Chittagong Hill Tracts is called Boi-Sa-Bi. The Tripura call this festival Boishuk, the Marma call this festival Sangrai and the Chakma call this festival Bizu. Through this festival People of the Chittagong Hill Tracts observe the Year Ending (31st of Chaitra of Bengali year) and they welcome the New Year (1st Boishakh of Bengali year).

4.3.4 Natural Resources

Adequate information about resources of the Chittagong Hill Tracts is not available as geological surveys have never been completed. Limestone has been found in two places in Hill Tracts but on account of its inferior description its manufacture into lime has proven unprofitable. The existence of Gas has been reported from various places but no survey or feasibility has been done yet.

But still Chittagong Hill Tracts is enriched with some natural resources like forestry, water, bio-diversity etc. Trees of the forests of Chittagong Hill Tracts are Shegun, Gamari, Chapalish, Garjan, Arjun etc. The Chittagong Hill Tracts is the main source of Bamboo for the country. The forests of CHT are habitat for many species of animals, reptiles and amphibians.

Fishes of Kaptai Lake are famous for its taste. The region is criss-crossed by several rivers such as the Karnafuli, the Sangu, the Matamuhuri, the Feni etc.

4.3.5 Land Management System

The Permanent Settlement System of 1973 was never in vogue in the Chittagong Hill Tracts region. The Land Management System in Chittagong Hill Tracts is not as similar as the Land Management System of the rest of the country. Since time immemorial, the CHT land management system was administered in a different way from the plains of Bangladesh. In Mughal period, the Chittagong Hill Tracts region was known as KarpasMahal. Thus, before 1860, the internal administration of the Chitagong Hill Tracts was in the hands of two Hill Chiefs, assisted by a number of subordinate village officials who were known as Headman and Karbari. These Chiefs were independent of each other.

During the whole period of the Mughals and East India Company's rule the Chittagong Hill Tracts region had never been under their direct control. Sepoy Mutiny was over in 1858. Then in 1860, the Chittagong Hill Tracts region came under direct control of the British rule. The Chittagong Hill Tracts (present Rangamati, Khagrachri and Bandarban Hill Districts) was constituted into a separate district by Act XXII of 1860. The new district was placed under the control of an officer with the designation of Superintendent of the Hill Tracts. Captain Magrath was appointed as the First Superintendent of CHT in 1860. Following the spirit of Indian Council Act, 1861 the Govenment of India Act, 1870 (for the administration of backward tracts) and Scheduled District Act of 1874, a few rules were prescribed for the guidance for the administration of civil and criminal justice, the collection of revenue and protection of land right and traditional lifestyle of the tribes of the Chittagong Hill tracts. In 1884, under the Territorial Circles of the CHT, the land of CHT was divided in four circles theChakma Revenue Circle, the Bomang Revenue Circle, Mong Revenue Circle and KhasMahal. But very soon, experience proved the KhasMahal to be a complete failure as an administrative unit and they were abandoned.

In 1900, the British Government enacted the Chittagong Hill Tracts Regulations, 1900 which can also be considered as the backbone of land management system of CHT. According to the regulation, the district was finally divided into four circles- the Chakma Circle, the Bomang Circle, the Mong Circle and Government Forest Reserve. The Land Management system of CHT is mainly regulated under the Chittagong Hill Tracts Regulation, 1900. From section 34 to 50 of the Regulation describes the land management system of the CHT. However, many amendments have been brought to the rule 34 during the course of the last part of the twentieth century. According to the Regulation, the Capitation Tax is a unique levy on the Jumia tenants which has no parallel in other parts of the country.

Afterwards, with the creation of three local government councils in three Hill Districts under the Local Government Council Act, 1989 the Councils were involved with the land management system. Then after the signing of the CHT Accord, the three Hill District Councils have been delegated a great extent of power in the land management system. Under section 64 of the Hill District Council Act, 1989 the Hill District councils have been vested with the power of giving prior approval in case of any sort of lease, purchase, sale, transfer or acquisition of the land in the region. Moreover, according to the section 65 of the same act, the councils are vested with the power of collection of land development taxes. A unique type of tax is found in CHT called Capitation Tax (Jhum Tax).

In addition to above mentioned laws and regulations, there are some other exceptional land laws which are only applicable in CHT like the Bazar Fund Rules, 1937 for administering the hat-bazars and other lands and establishments within the Bazar Fund area, Chittagong Hill Tracts (Land Acquisition) Regulations, 1958 for the land acquisition system in CHT etc.

4.3.6 Indigenous People in CHT

There are eleven ethnic multi-lingual minorities in the Chittagong Hill Tracts (CHT) region of Bangladesh. They are: Bawn/Bawm, Chak, Chakma, Khyang, Khumi, Lushei/Lushai, Marma (Maghs), Mrus/Mro (Moorangs), Pangkhua/Pankhua, Tangchangya, and Tipperas(Tipras).

Sl. No.	Districts & Upazilas	Ethnicities											
		Bawm	Chak	Chakmas	Khyang	Khumi	Lushai	Mamas	Mro	Pangkha	Tanchangya	Tripuras	Bangalee
1	BANDARBAN	1	2	3	4	5	6	7	8	9	10	11	12
1.1	Alikadam	-	-	✓	-	-	-	✓	✓	-	✓	✓	✓
1.2	Bandarban Sadar	✓	✓	✓	✓	-	✓	✓	✓	-	✓	✓	✓
1.3	Lama	-	-	✓	✓	-	-	✓	✓	-	✓	✓	✓
1.4	Naikhongchhari	-	✓	✓	-	-	-	✓	✓	-	✓	-	✓
1.5	Rowangchhari	✓	-	✓	✓	✓	-	✓	✓	-	✓	✓	✓
1.6	Ruma	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
1.7	Thanchi	✓	-	✓	-	✓	-	✓	✓	-	✓	✓	✓
2	KHAGRACHHARI	1	2	3	4	5	6	7	8	9	10	11	12
2.1	Dighinala	-	-	✓	-	-	-	✓	-	-	-	✓	✓
2.2	Khagrachhari Sadar	-	-	✓	-	-	-	✓	-	-	-	✓	✓
2.3	Lakshmichhari	-	-	✓	-	-	-	✓	-	-	-	✓	✓
2.4	Mahalechhari	-	-	✓	-	-	-	✓	-	-	-	✓	✓
2.5	Manikchhari	-	-	✓	-	-	-	✓	-	-	-	✓	✓
2.6	Matiranga	-	-	✓	-	-	-	✓	-	-	-	✓	✓
2.7	Panchhari	-	-	✓	-	-	-	✓	-	-	-	✓	✓
2.8	Ramgarh	-	-	✓	-	-	-	✓	-	-	-	✓	✓
3	RANGAMATI	1	2	3	4	5	6	7	8	9	10	11	12
3.1	Baghaichhari	-	-	✓	-	-	✓	✓	-	✓	-	✓	✓
3.2	Barkal	-	-	✓	-	-	-	✓	-	✓	-	✓	✓
3.3	Belaichhari	✓	-	✓	✓	-	-	✓	-	✓	✓	✓	✓
3.4	Juraichhari	-	-	✓	-	-	-	✓	-	✓	✓	✓	✓
3.5	Kaptai	-	-	✓	✓	-	-	✓	-	✓	✓	✓	✓
3.6	Kawakhali	-	-	✓	-	-	-	✓	-	-	✓	✓	✓
3.7	Langadu	-	-	✓	-	-	-	✓	-	✓	-	-	✓
3.8	Naniarchar	-	-	✓	-	-	-	✓	-	-	-	✓	✓
3.9	Rajasthali	-	-	✓	✓	-	-	✓	-	✓	✓	✓	✓
3.10	Rangamati Sadar	-	✓	✓	-	✓	✓	✓	-	✓	✓	✓	✓

Table 01: Who lives where in CHT: by Upazilas and by Ethnicities

Anthropologists divide all these ethnic peoples into three groups based on their languages, customs, religious beliefs and patterns of social organization. The Bawm, Pangkhua, Lushai, Khumi, Mro and Khyang belong to the Kuki-Chin or Kuki group. The Tripura and Riang belong to the Tripura group and the Chakma, Marma, Tangchangya and Chak belong to the Arakanese group.

4.4. Socio-Economic Baseline Condition

CHT is one of the most disadvantaged and vulnerable regions in the country in terms of almost all major development indicators, such as income; employment; poverty; health; Water Environment and Sanitation; education; women employment; access to infrastructure and national building institutions; peace; inter community confidence etc.

4.4.1 Salient Condition

The average household size of CHT is 5.2 (national average being 4.8). The same among the Bangalees is 5.4, and among IPs (indigenous peoples) is 5.1. About 58% of the

population belongs to below the age bracket of 24 years, and 5% belong to that of 60 years and above. The mean age of CHT population is 23 years with a little variation across the communities. The sex ratios of both the indigenous peoples and the Bangalees are estimated to be 104.4 (number of male per 100 female; national 106). A 72% of CHT population (age 15+years) is currently married and 5% widowed.

Only 7.8 % of all CHT people completed primary education and 2.4% completed secondary education. The average years of schooling for CHT population are only 2.8. The household dependency ratio in CHT is 82.1 (Indigenous peoples and Bangalees 76 and 91 respectively).

Farming/cultivation (through ploughing) is the occupation of 18% of the total population in CHT. Jum cultivation is the occupation of 14% indigenous population. About 3% and 3.5% population respectively are involved in business and salaried jobs. More than 9% of the population is day labourers (farm/non-farm). About 25% of household members are students and more than 20% household members are old age people. About 9% of the households are female-headed (7% among indigenous peoples and 12% among the Bangalees).

A 62% of the Bangalee populations are living in rural CHT for less than 30 years (Around two-thirds of the current Bangalee population in CHT are transmigrated people). Around 31% of households had to ever change their usual place of residence in their life-time, and the average frequency of such displacements is 1.7. Around 38% of indigenous peoples had to change the same for almost 2 times and 20% were displaced more than once. The Chakmas are the worst affected; and 72% of their households were displaced at least once in the last 30 years.

Land ownership of a household in context of CHT is to be understood along with **three major types of ownership**: (i) individual registered ownership, (ii) traditional ownership (recorded and/or not recorded with headman) under usufruct rights, and (iii) usufruct rights to ownership of common property (different from that in plain land). For example, if a IP household uses part of para common property as homestead or as cultivated land, all members from his/her community/para traditionally honor his/her usufruct right of ownership on that part of common property.

Conservative estimation considering only registered ownership category reveals that only one-third population of the CHT enjoy land ownership with a significant variation between the indigenous (30%) and the Bangalee household (42%). Land ownership scenario becomes less gloomy when in addition to registered ownership the traditional customary (recorded) ownership has been taken into consideration. Estimation shows that half of the total CHT households which is 20% higher than registered ownership. Using the most liberal methodology of land ownership which considers all the three types of ownership – it is evident that almost all the CHT households (93%) have land irrespective of ethnic identity. It implies that most CHT population – irrespective of indigenous and Bangalee – enjoy some kind of land ownership.

About 22% indigenous households have lost their lands. The Chakmas are mostly affected by land dispossession (41%), followed by Tanchangya (22%). Majority of dispossession incidents took place during the life time of fathers of the current owners and 6% lost their lands during his/her own ownership period. On average, a CHT household has lost about 90 decimals of land during ownership of three generations (the current owner, father and grand father of the owner). An average indigenous peoples' household has reportedly lost 115 decimals, and the same for Bangalee household is 58 decimals

Almost all households possess own houses in rural CHT. The Bangalees are in a better position in terms of owning assets like furniture and tubewells as compared to their indigenous people's counterparts. In terms of agricultural appliances, most indigenous household possess the same while substantially lesser proportion of the Bangalee households owns such appliances. Some indigenous communities possess more livestock, poultry and trees as compared to the Bangalees. The total valuation of assets owned by an average Bangalee household at current prices (of January 2008) is around Tk. 62,000, while the same for an indigenous household is around Tk. 43,000.

On average, 52% of the total household members in CHT (2.75 persons per household (household size being 5.2)) being either employed or employable. The pattern for the same across the communities is similar. Almost all the employed or employable persons are over 15 years (98%) and more than 90% are full-time employed. Across the communities, two-thirds of the employed persons are self-employed. A 94% of the employed IPs and 72% of the Bangalees are income-earners. A 47% of the IPs and 30%

Bangalee income-earners are females. The income-earners, on average, have employment for 9.36 months per year.

The cultivation technologies practiced in CHT for crop culture are plough and jum depending upon the suitability of the land. Nearly two-thirds of rural households are farming households. One-third (34%) households are involved in field cropping only, about one-fifth (19%) are involved in jum only, and a small proportion (9%) does both field and jum agriculture. Plough and jum cultivation have been found in more than half of all indigenous peoples' households while most of the Bangalee households depend on plough agriculture.

The annual household net income of an average rural household is around Tk. 66,000 (Bangladesh rural being Tk. 84,000). The household annual net income of the Bangalees is around Tk. 71,000 and the same for indigenous peoples around Tk. 62,000. Agriculture-related activities are the prime sources of household income across the communities (ranging between 49% and 72% of the net income).

The household annual expenditure in rural CHT is lower than that of rural Bangladesh (Tk. 62,000 vs. 73,000). The same for an average Bangalee household in CHT is Tk. 68,728, and that for an indigenous people's household is Tk. 57,035. The share of food expenditure is extremely high across the communities (around 90%). The annual household expenditure on health and education for an average household are extremely low with Tk. 605 and Tk. 398 respectively.

About 54% of all CHT households have some access to credit. The average amount of credit received by a household during 2004-2007 is Tk. 4,597. An average indigenous household has received Tk. 5,283 as credit, while an average Bangalee household has received Tk. 12,674. Bangalee households were found more advanced in taking credit from formal sectors like banks and NGOs.

Food habit of the CHT people is almost similar to that of the plain land people except that they consume a very few items like nappi (a special type of fish paste), bamboo shoots, and dry vegetables. The items consumed by the indigenous peoples and the Bangalees are mostly similar, except for some special dishes which are found to be consumed by indigenous peoples' households only. The average physical quantity of food intake per person in CHT is about 781 gm per day. The

per capita food intake of Bangalee households is 800 gm, and the same among the indigenous peoples is 765 gm. Over 50% food intake comes from cereals (rice) followed by vegetables (30%). The female members of households, on average, get 17% lesser amount of food as compared to their male counterpart.

‘Food Poverty’ is widespread in CHT. Most indigenous peoples in CHT are not secured in relation to availability of food during most time in a year; Ashar (June-July) and Sravan (July-Aug) being the worse months. However, for the Bangalees the food security status is little better as compared to the indigenous peoples. Since CHT is a food deficit region of the country, the whole issue of improving food security status deserves special attention.

About 82% of children of 5-16 years are enrolled in primary or secondary schools with the enrollment among the Bangalees being marginally higher than that among the indigenous peoples. Three-fifths of children go to government primary schools irrespective of their distances from the residences. The average travel time for going to a nearby school, irrespective of communities, is around half an hour. The dropout scenario among the students is highly unacceptable, 65% children discontinue their education before completion of primary schooling and 19% after completion of the same. Financial problem is the main reason for school dropouts.

Peoples’ knowledge about health problems, health facilities and health service providers is crucial. Awareness situation was found to be deplorable in terms of the following issues: how to prepare ORS, ANC checkup, PNC checkup, and delivery by medically trained provider, place to go for child vaccination, ARI treatment of child and place to go for treatment of TB/leprosy. Among the diseases of poverty, the average number of incidences per household of measles and ARI is reportedly 1.4 incidences per year each, and that for diarrhea 2 incidences per year. Average incidence of malaria per household per year is 2.7. Malaria incidence has been reported at a higher frequency among the Bangalees. Maternal mortality reported during last five years is 0.5 on average, and incidences of neonatal mortality are 2 per household.

The major source(s) of drinking and cooking water in CHT are not safe. Most tubewells have not been tested for arsenic contamination. People have to travel long distances to fetch drinking water and spend substantial amount of time for the same. The distance and traveling time varies by season (dry and wet). A widespread practice of

gender discrimination in collection of water has been found; it is the female members who suffer most due to water scarcity and inadequate hygiene situation. The use of latrine by all household members is not practiced in most of the households having hygienic latrine. The practice of healthy personal hygiene, including hand washing at critical times and disposal of household waste, is below the optimum level.

Overall 43% households (50% indigenous and 34% Bangalee) listen to radio, and 60% households with 54% indigenous and 68% Bangalee watch TV. Of those not owning radio, 16% go to neighbor's houses and 13% to Hat/Bazar and relatives'/ friends' homes. Of those not owning TV, 29% go to neighbor's homes, 15% to Hat/bazar, and 13% to relative's/ friend's homes.

Overall participation in local level organization is low. Only 20% of households have claimed about having participation (membership) in CBO activities by any of their (household's) members. Only 10% of households with 13% for Bangalees and 9% for IPs (9%) received any type of skill development training in last one year from one or more sources. Only 3% of the households of both the IPs and the Bangalees are involved in multi-community organizations.

4.5. Brief Description of Three CHT Districts

4.5.1 Rangamati

Rangamati is a district in South-eastern Bangladesh. It is a part of the Chittagong Hill Tracts and the town of Rangamati serves as the headquarters of the district. Area-wise, Rangamati is the largest district of the country.

Geography

Rangamati is located in the Chittagong Division. The total area of the district is 6116.13 sq km. It is bounded by the Tripura state of India on the north, Bandarban District on the south, Mizoram State of India and Chin State of Myanmar on the east, and Khagrachari and Chittagong Districts on the west.

It's a combination of Hill- Lake-Plain land The area of the district is 6116.13 sq. km of which 1291.5 sq. km is riverine and 4824.63 sq.km.is under forest vegetation and the lake area is about 650 sq. km.

Demography

The total population is 5,08,182 according to 2005 census of which tribal 52% and non-tribal 48%. The number of males is 2,87,060 and the females are 2,38,043 (Census 2001). The density of population is 83 per square kilometer (Census 2001). The number of household is 1,03,974 having the household size 4.8 (Census 2001). The total population is divided into Bangalees and eleven tribes (ethnic minorities): Chakma, Marma, Tanchangya, Tripura, Pankua, Lushi, Khiang, Murang, Rakhain, Chak, Bowm, Khumi.

Tribal population : (as per census of 2005): Chakma-1,86,395, Marma-44,727, Tanchanga-18,607, Tripura-6,697, Pankho- 2,118, Bowm-1,053, khyang- 791, Lusai- 217, Chak- 177, Rakhain-70, Khumi-50, Gurkha-03, Etc-174

As per 1991 census, the religious break up of the population of the district were: Buddhist 53.83%, Muslim 39.28%, Hindu 5.62% and Christian 1.12%. Religious institutions Pagoda 1230, Mosque 1059, Temple 65, Church 16. Genderwise, male constituted 53.59% and female constituted 46.41% of the population.

Historical Significance

- Rangamati was a contesting ground for the kings of Tripura and Arakan. This region came under the Mughal Empire after the Muslim invasion in 1566.
- In 1737 Sher Mosta Khan, a tribal leader, took refuge with the Mughals. After this the Chakma settlement began along with various other settlements of varying ethnicity.
- From 1760 to 1761, this land was leased to the East India Company.

Rangamati Town

Rangamati Town is mainly divided into 13 areas. Namely Vedvedi, Collegegate, Rajbari, New market, Banarupa, Kathaltoli, Fishery Ghath, Reserve Bazar, Launch Ghath, Pathor Ghata, Tabalchori, Mazher Basti, Asam Basti.

Education System

Rangamati district has an average literacy rate of 36.5%; male 45.8% and female 24.7%. There are 291 government primary schools, 120 non-government primary schools, 22 junior schools, 6 government high schools, 45 non-government high schools, 2 government

colleges, 13 non-government colleges, 61 madrasas and 7 technical schools located throughout the district.

Industry

- The economy of Rangamati is hugely dependent on agriculture with a total of 41.94% of the population employed there. Other occupational percentages are agricultural labourer 12.06%, wage labourer 4.95%, commerce 8.22%, service 13.04%, fishing 2.02%, industry 4.57%, forestry 3.2% and others 10%. A grand total of 12275 hectares of land is used for cultivation, producing food and non food crops such as rice, potato, corn, mustard seed, cotton and jute among others. Fruits such as mango, jackfruit, banana, pineapple, litchi, black berry are also grown in Rangmati.
- Notable cottage industries of Rangamati are weaving, blacksmithing and wood work. Weaving is particularly famous for their woolen and jute rugs and hand loom cloth.
- Major industries include Chandraghona paper and rayon mill, Plywood Factory, Ghagra Textile and a Satellite Station at Betbunia amongst many others, producing and exporting goods.

Places of Interest

- Kaptai has Bangladesh's only hydro-electric project. The Kaptai Dam on the Karnaphuli River created for this purpose resulted in the Kaptai Lake.
- Tourist spots include the Hanging Bridge over the Kaptai Lake, the remnants of the residence of Raja Harish Chandra Roy, archeological relics and heritage such as the Palace, Mosque and Dighi of Raja Jan Bashk Khan.
- Cruising on the Kaptai Lake is an enjoyable way of observing the landscape as many great picnic spots, natural landmarks and historic monuments are accessible only by motorboats. The Rangamati Parjatan offers such tours to the tourists, taking them to great sights, locations of cultural and historical significance while explaining the diversity that exists in this district.
- There are several waterfalls in the hill tracts adjoining the lake, more prominent during the monsoon because of the increased water levels due to rainfall.

- Scattered throughout the district, are beautiful Buddhist temples and ancient relics of civilizations, all accessible by motor vehicles.
- A stretch of road connects the tourist spots of Rangamati and Kaptai. The road goes deep into the hill tracts and displays the natural beauty and wildlife of the district.

4.5.2 Bandarban

Bandarban (Bengali: বান্দরবান) is a district in South-Eastern Bangladesh, and a part of the Chittagong Division and Chittagong Hill Tracts. Bandarban is regarded as one of the most attractive travel places in Bangladesh. Bandarban (meaning the dam of monkeys), or in Marma or Arakanese language as "Rwa-dawMro" is also known as Arvumi or the Bohmong Circle (of the rest of the three hill districts Rangamati is the Chakma Circle and Khagrachari is the Mong Circle). Bandarban town is the home town of the Bohmong Chief (currently King, or Raja, AungShwePrueChowdhury) who is the head of the Marma population. It also is the administrative headquarter of Bandarban district, which has turned into one of the most exotic tourist attractions in Bangladesh since the insurgency in Chittagong Hill Tracts has ceased more than a decade back.

Geography

One of the three hill districts of Bangladesh and a part of the Chittagong Hill Tracts, Bandarban (4,479 km²) is not only the remotest district of the country, but also is the least populated (population 292,900). The three highest peak of Bangladesh - Tahjindong (1280 meters, also known as bijoy) [The height of Tahjindong is 829.66m +/-3m as per a recent measurement with Garmin GPSMAP60CSX GPS], MowdokMual (1052 m), and Keokradong (1230 m) [The height of Keokradong is 986m +/-3m as per a recent measurement with Garmin GPSMAP60CX GPS], - are located in Bandarban district, as well as Raikhiang Lake, the highest lake in Bangladesh. Chimbuk peak and Boga Lake are two more highly noted features of the district. The newly reported highest peak of Bangladesh - SakaHaphong (3488 ft) is also here in Thanchi upazila.

Tourism

Bandarban lies, by bus, eight hours away from Dhaka, two hours from Chittagong and three hours from Cox's Bazaar. It is also possible to get there by a six hour bus ride from Rangamati.

The Buddha DhatuJadi, the largest Buddhist temple in Bangladesh, located in Balaghata, 4 km from the town. This place attracts many tourists every year. This Theravada Buddhist temple is made completely in the style of South-East Asia and houses the second largest statue of Buddha in Bangladesh. The waterfall named ShoiloPropat at Milanchari is another place tourists like to visit.

The numerous Buddhist temples, known as *kyang* in local tongue, and bhihars in the town include the highly notable the Rajvihar (royal vihar) at Jadipara and the UjaniparaBhihar. Bawm villages around Chimbuk, and Mru villages a little further off, are also lie within a day's journey from the town. Prantik Lake, Jibannagar and Kyachlong Lake are some more places of interest. Boat ride on the river Sangu is one of the main attractions here for tourists.

Economy

Heavily dependent on Jumm farming, which is a slash and burn agricultural technique, Bandarban produces little that is of economic value outside self consumption of the hill people, also known as Jumia. Fruits (banana, pineapple, jackfruit, papaya), masala (ginger, turmeric) and tribal textile are the major exports of the district, with tourism growing fast as a source of revenue. Much of the trade in fruit, like most other commerce in the district, has been taken over by Bengali settlers.

Clothes are mostly made of cotton, wool imported from Myanmar and silk cotton which is a rarity in most of Bangladesh. All cotton is spun and woven by hand. To promote local textile there now is a Bangladesh Small and Cottage Industry Corporation (BSCIC) center in Bandarban together with a wonderful sales centre. BSCIC has also introduced mechanical spinning and weaving here.

Bamboo and tobacco grows in significant quantity, but largely is not considered as economically profitable products. Bamboo is used, along with canes, not just to make the traditional stilt houses, but is the material for most tribal craft, including the bamboo smoking

pipe, a major health hazard. Some bamboo-craft and local-made cigarillos are now exported out of the district.

Two church-based development organization - Christian Commission for Development in Bangladesh (CCDB) and Caritas are the major forces of development in the district. UNICEF is driving the education effort, which is mostly directed at younger children.

Ethnographics

There are more than fifteen ethnic minorities living in the district besides the Bengalis, including: the Bomong, Marma, Mru, Tanchangya, Khyang, Tripura, Lushei, Khumi, Chak, Kuki, Chakma, Rakhine or Arakanese, Riyang, Usui and Pankho. The religious composition of the population, as of 1991, is 47.62% Muslim, 38% Buddhist, 7.27% Christian, 3.52% Hindu and 3.59% others.

Religious institutions is Mosque 2070, Buddhist 900 (256 temples, 644 pagodas), Hindu temple 94 and Church 2.

The Mru, also known as Murong, who are famous for their music and dance. The Mru in major numbers have converted to the youngest religion in Bangladesh – Khrama (or Crama) – a religion that prohibits much of their old ways. They are proposed as the original inhabitants of Bandarban.

The Bawm are another major tribe here. Now converted almost totally to Christianity they have taken full advantage of the church to become the most educated people in the district.

The Marma, also known as Magh, are of Arakanese descendants and Buddhists by religion, and are the second largest ethnic group in the hill districts of Bangladesh.

The Chakma and the Tanchangya are also closely related. The Khumi live in the remotest parts of the district, and the group is thought to include yet unexplored/ unclassified tribes.

These ethnic groups are again divided in hundreds of clans and sects, principally dominated by four religious threads - Buddhism, Christianity, Hinduism and Animism. All these clans and groups are clustered into two major ethnic families - the hill people and the valley people

- though since the Kaptai dam flooded the valley to give birth to Kaptailake, the valley people have started to live on hill tops along the hill people.

Landscape

The three highest peak of Bangladesh - Tahjindong (1280 meters, also known as bijoy), MowdokMual (1052 meters), and Keokradong (883 metres) - are located in Bandarban district, as well as Raikhiang Lake, the highest lake in Bangladesh. Chimbuk peak and Boga Lake are two more highly noted features of the district. Though most Bangladesh sources cite Keokradong as the highest peak in the country, but Tazing Dong (sometimes spelled as Tahjingdong, and also known as Bijoy) lying further east is recognized both by government and expert sources as a taller peak. Measurements taken by English adventurer GingeFullen shows that an officially unnamed peak near the Myanmar border (locally known as MowdokMual) is the highest point in Bangladesh. Recently a team from Nature Adventure Club took part in an expedition in the mowdok range and agreed with the gingeFullens statement. They got the hight of this peak as 3488 feet with gps accuracy of 3 meter. The unnamed summit is known as 'SakaHaphong' to the local Tripura tribes.

4.5.3 Khagrachari

Khagrachari (Bengali: খাগড়াছড়ি) is a district in south-eastern Bangladesh. It is a part of the Chittagong Division and the Chittagong Hill Tracts. Its local name is "Chengmi". Khagrachari is also known as PhalangHtaung or the Mong Circle (of the rest of the three hill districts Rangamati is the Chakma Circle and Bandarban is the Bohmong Circle). Khagrachari town is the home town of the Mong Chief who is the head of the Arakanese descendants living in the circle. It also is the administrative headquarter of Khagrachari district.

Geography

Khagrachari is a valley. It has three river namely Chengi, Kasalong and Maini. Chengi is the longest river in Khagrachari. Most of the land of Khagrachariare hilly areas.

Economy

Most of the people lives on Jhum cultivation. NGO in Khagrachari: ParbatyaBouddha Mission(PBM), established in 1983,a non profit organization, is working for the socio-economic, educational and cultural development of the poor people in the Khagrachari Hill District of the Chittagong Hill Tracts (CHT) of Bangladesh.

Religious Composition

Muslim - 53.45%, Buddhist - 48.51%, Hindu - 16.69%, Christian - 0.27% and Others - 0.08%. Religious institutions 2472 mosques, 937 Buddhist (656 pagodas, 281 temples), 170 temples and 4 churches.

Places of Interest

1. Alutilla Tourists spot: Khagrachari – Chittagong Road, 5 Km away from the Parjatan motel. Local Buses, Chadergari, fare- 8/10 tk. Microbus can be rented as well.
2. Alutilla Mysterious Cave: East of the Alutilla Tourists' spot under the mountain 150 meter long flowing natural waterfall. Chittagong Road, 5 Km shout from the motel. Local Buses or Chadergari, fare- 8/10 tk. Microbus can be rented as well.
3. Richhang waterfall: Khagrachari – Chittagong road the area of Hridoy member. 7 km shout from the Porjoton motel. 2 km shout from Alutilla, 1.50 km from east from the main road. Local bus or Chadergari until Hridoy Member area. Rest 1.50 km by foot.
4. Hundred or more years old banyan tree: Hundred or more years old banyan tree which is spreading almost 2 acres. Till Matiranga 10 number region of Khagrachari- Chittagong Road Buses / chadergari. Fare 10/15 tk, and rest 2.5 km by foot or own vehicles.
5. NunchhoriDebota Pond: The Nunchhori Tripura Village is 13 km south from Porjoton motel, 4 km west from Maishkhali Army camp of Khagrachari – Rangamati road. From there almost 1500 feet above, at the peak of the Mountain is the Debotalake. Local bus or chadergari of Khagrachari – Rangamati Route until Maishchori Army camp. Rest of the 4–5 km by foot. If there is private car then it can go until the Tripura Village.

6. Yonged Buddha Bihar: At Khagrachari town, 2 km far from Motel. Accessible by rickshaw.

7. PanichariBrihot Buddha sculpture: ShantipurArannyaKuthir - 25 km south from Khagrachari is peripheral region. The largest Buddha sculpture of Bangladesh is situated here. Khagrachari – Panichari Local bus fare- 35 tk. The road is flat.

8. DighinalaManikkerDighi: One regional town situated 21 km south from Khagrachari. The Jhulonto Bridge, Buddha Bihar, Raja ManikkerDighi, Tribal culture, tradition and ancient standard of living. Khagrachari – Dighinala Bus/ 4 Wheel drive gyp.

9. DighinalaTouduchhori Waterfall: It contains wild Elephants roaming around in groups; the place is cluttered with enormous stones and waterfalls. From Khagrachari – Dighinala road Bus/ Chadergari (gyp), fares 25/40 tk. Rest of the road by foot. The communication here is not urbanized yet.

10. Shajek and Marissa Vally: Endless natural beauty of green Mound. It's hard to describe in words. It's better if a private or rented car is available.

11. New Zealand : Only plain land in Khagrachari. Green paddy trees and Mountains behind this plain land gives a very eye catching natural beauty. As because of this kind of scenery local people call this place New Zealand. Now-a-days it is also a tourists attraction and it's about 10-15 mins far from main town. One may use auto rickshaw for their transportation.

Part Five: Cox's Bazar-Himchari sea beach

5.1 Introduction

Cox's Bazar (Bengali: কক্সবাজার) is a town, a fishing port and district headquarters in Bangladesh. It is known for its wide sandy beach which is the world's longest natural sandy sea beach. It is an unbroken 125 km sandy sea beach with a gentle slope. It is located 150 km south of Chittagong. Cox's Bazar is also known by the name "Panowa", the literal translation of which means "yellow flower". Its other old name was "Palongkee". The modern Cox's Bazar derives its name from Captain Cox (died 1799), an officer serving in British India. In the 18th century, an officer of British East India Company, Captain Hiram Cox was appointed as the Superintendent of Palongkee outpost after Warren Hastings became the Governor of Bengal. Captain Cox was specially mobilised to deal with a century long conflict between Arakan refugees and local Rakhains. The Captain was a compassionate soul and the plight of the people touched his heart. He embarked upon the mammoth task of rehabilitating refugees in the area, and made significant progress. A premature death took Captain Cox in 1799 before he could finish his work. But the work he had done earned him a place in the hearts of the locals and to commemorate his role in rehabilitation work a market was established and named after him as Cox's Bazaar ("Cox's Market"). Although Cox's Bazar is one of the most visited tourist destinations in Bangladesh, it has yet to become a major international tourist destination, due to lack of publicity.

5.2 Importance of Cox's Bazar sea beach

The sea beach and bank of the sea area is the important habitat of large species of plant and animals. There are 800 or more wild animals stay in near the sea beach. In winter season, there are many migratory birds see in this area. These are leads to the 81 species. The scenery of this beach is very charming and it is an attractive place for eco-tourism.

5.3 Geography and climate

Cox's Bazar town with an area of 6.85 km², is located at 21°35'0"N 92°01'0"E and bounded by Bakkhali River on the north and East, Bay of Bengal in the West, and Jhilwanj Union in the south.

The climate of Bangladesh is mostly determined by its location in the tropical monsoon region: high temperature, heavy rainfall, often excessive humidity, and distinct seasonal variations. The reversal of the wind circulation between summer and winter is another important feature of the climate of the country. The climate of Cox's bazar is mostly similar to the rest of the country. It is further characterised by the location in the coastal area. The annual average temperature in Cox's Bazar remains at about a maximum of 34.8 °C and a minimum of 16.1 °C. The average amount of rainfall remains at 4,285 mm.

Climate in Cox's Bazar												
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Avg. high temperature(°F)	80°	83°	87°	90°	91°	87°	86°	86°	87°	87°	85°	80°
Avg. low temperature(°F)	57°	61°	68°	75°	78°	77°	81°	77°	77°	75°	67°	60°
Avg. Precipitation (inches)	0.1"	0.5"	1.5"	4.2"	12.7"	31.1"	35.5"	27.8"	15.3"	7.2"	3.3"	1.0"

5.4 Himchari

Location and area

Located at Himchari under the Cox's Bazaar South Forest Division, about 12 km south from Cox's bazar town. It is accesible by air or road from Dhaka upto Cox's Bazar then by road. The total area of this region is 1729 hectare. Himchari national park is established in 1980.

Existing Facilities

It comprises the reserve forest areas of Bhangamura and Chainda blocks under Cox's bazar Forest Department Evergreen and semi-ever-green tropical forests are found in this area. There are 58 species of trees, 15 species of shrubs, 4 species grasses, 19 climbers and 21 species of herbs altogether 117 plant species are available there. Besides, there are 55 species of mammals, 286 species of aves, 56 species of reptiles and 13 species of amphibians are found in this evergreen forest. Limited number of elephants found here too.

Himchari is a unique place comprising the scenic beauty of green hills and blue waves of huge sea, which is the heaven of tourists. There is a big waterfall in the National Park which is a major attraction to the tourists.

5.5 Marine resources and biodiversity

The Coastal Zone is divided into three types, they are EEZ (200 nautical mile from sea beach, which is our own territory), Territorial Zone (12 nautical mile from sea beach, where catching is not prohibited), Coastal regulation zone (20-100m from Sea beach, where nothing could be built). We have 750km long coastal sea belt, where about 3.5 core people live. There economy is totally depending on this coastal belt. The total area of this coastal belt is 37000sq. km. The total area of EEZ region is 186000sq. km. Marine zone is full of biodiversity. Fish and fisheries sector is one of the major parts of this.

Fisheries are of major socioeconomic importance to all countries bordering the Bay, as the industry provides direct employment to over 2 million fishermen. In this area 185000 people is directly involved in catching shrimp. About 20000 people are trained for catching fish. Everyday they earn 250-300tk.

The main commercial fish species are shrimp, tuna, yellow fin, big eye and skipjack, with shrimp being the major export earner. The fish catch in the Bay of Bengal was 1.9 million tons in 1981 and 2.4 million tons in 1987. However, there are signs that harvest levels may not be sustainable, especially with regard to tuna fishing. Aquaculture operates intensively along the coast, with over 200,000 fish farmers currently involved, and the industry is expected to expand. Most of the countries surrounding the Bay are weak in developing clear policies, appropriate strategies

and the sustainable management of fishery resources. Following, are some of the problems facing the fishing industry in the Bay of Bengal.

- ✓ Increased competition and conflicts between artisan and large-scale fisherman.
- ✓ An alarming increase in cyanide fishing in the coral reefs, caught for the lucrative live-food fish markets in Hong Kong and Singapore.
- ✓ Mangroves and estuaries, which are important fish spawning and nursery grounds, are threatened by pollution, Sedimentation, dam construction (in Bangladesh) and intensive coastal aquaculture.

5.6 Mineral content in beach sand

The sand at Cox's Bazar beach and surrounding areas is rich in heavy-metal mineral content. The heavy minerals of Cox's Bazar beach sands are dominated by hornblende, garnet, epidote, ilmenites (both unaltered and altered) with magnetite, rutile, pyrite and some hydroxides. Cox's Bazar beach alone is believed to have a deposit of 5.119 Mt of minerals @ 0.04% mon, while nearby Enani beach is expected to have another deposit of 0.729 Mt. of minerals @ 0.13% mon. Surrounding islands of Maheshkhali, Kutubdia and Nijhum Deep as well as mainland beach in Teknaf area are also believed to have similar large deposits. The total deposit in these locations is about 20.5 million tons of raw sand, which contains 4.4 million tons of heavy minerals (sp gr > 2.9).

5.7 Environmental problem

Compared to the other enclosed seas, pollution in the Bay of Bengal tends to be localized. This is due to circulation patterns that link the Bay to the Indian Ocean. Even so, the large rivers discharge vast amounts of pollutants into the Bay, including pesticides and industrial waste. Approximately 1,800 tones of pesticides enter the Bay of Bengal annually, with high concentrations recorded along the coast, particularly near cities and ports. Oil pollution, offshore oil and gas exploration, and seabed mining are among the sea-based sources of pollution.

There is heavy oil-tanker traffic between Japan and the Middle East, with the main shipping route passing through the Arabian Sea and south of Sri Lanka, before entering the Straits of Malacca via a passage below the Nicobar Islands. For this reason, tanker accidents that could result in major oil spills are a constant concern.

Protection Measure

The countries of the Bay of Bengal need to address a range of trans-boundary problems in the areas of fisheries, oil-spill planning, legal and institutional reviews and pollution-control measures. They need to implement regional agreements and harmonize their legislation. The sheer number of government departments that would need to be consulted and involved makes this a complex endeavor. On the whole, the region lacks enforcement capabilities and sound resource management practices, but areas of cooperation already exist that could be expanded to cover the whole Bay region. A multitude of international, regional and sub-

regional institutions operate in the Bay of Bengal, many of which have similar mandates that currently result in overlap and duplication. An important proponent for change is the Bay of Bengal Program (BOBP), a regional fisheries project executed by FAO, which became operational in 1979. It promotes sound and systematic fisheries management practices to all the fishermen (including artisanal fisherman) of all Bay of Bengal countries except Myanmar.

5.8 Coastal Management

Five general coastal management strategies

There are five generic strategies for coastal defense:

- Do nothing, no protection, leading to eventual abandonment
- Managed retreat or realignment, which plans for retreat and adopts engineering solutions that recognize natural processes of adjustment, and identifying a new line of defense where to construct new defenses
- Hold the line, shoreline protection, whereby seawalls are constructed around the coastlines
- Move seawards, by constructing new defenses seaward the original ones
- Limited intervention, accommodation, by which adjustments are made to be able to cope with inundation, raising coastal land and buildings vertically

The decision to choose a strategy is site-specific, depending on pattern of relative sea-level change, geomorphological setting, sediment availability and erosion, as well a series of social, economic and political factors

The 'do nothing' option, involving no protection, is a cheap and expedient way to let the coast take care of itself. It involves the abandonment of coastal facilities when they are subject to coastal erosion, and either gradually landward retreat or evacuation and resettlement elsewhere. This option is very environmental friendly and the only pollution produced is from the resettlement process. However it does mean losing a lot of land to the sea and people will lose their houses and their homes.

5.9 Economy and Development

As one of the most beautiful and famous tourist spots in Bangladesh, the major source of economy in Cox's Bazar is tourism. Millions of foreigners and Bangladeshi natives visit this coastal city every year. As a result, a large number of hotels, guest houses and motels have been built in the city and coastal region. Many people are involved in hospitality and customer service orientated businesses. A number of people are also involved in fishing and collecting seafood and sea products for their livelihood. Various kinds of Oyster, Snail, Pearl and their ornaments are very popular with tourists in seaside and city stores. A number of people are also involved in the transportation business for tourists. Cox's Bazar is also one of the few major spots for aquaculture in Bangladesh. Along with Khulna, it is considered a major source of revenue from foreign exchanges. Beside a mix of small-scale agriculture, marine and inland fishing and salt production are other industrial sources from this region that play important roles in the national economy.

5.10 Tourist attractions near the town

The beach is the main attraction of the town. Larger hotels provide exclusive beachside area with accessories for the hotel guests. Visitors in other hotels visit the *Laboni beach* which is the area of the beach closest to the town. Other than the beach there are several places of interest near the town which can easily be visited from town center.

- **Aggmeda Khyang:** a large Buddhist monastery, and a place revered by around 400,000 Buddhist people of Cox's Bazar; and the Chittagong Hill Tracts. The main sanctuary is posted on a series of round timber columns. It has a prayer chamber and an assembly hall along with a repository of large and small bronze Buddha images and a number of old manuscripts.
- **Ramu:** about 10 km from Cox's Bazar,^[13] is a village with a sizeable Buddhist population. The village is famous for its handicrafts and homemade cigars. There are monasteries, khyangs and pagodas containing images of Buddha in gold, bronze and other metals inlaid with precious stones. One of the most interesting of these temples is on the bank of the Baghkhali river. It houses not only interesting relics and Burmes handicrafts but also a large bronze statue of Buddha measuring thirteen feet high and rests on a six feet high pedestal. The wood carving of this khyang is very delicate and

refined. The village has a charm of its own. Weavers ply their trade in open workshops and craftsmen make handmade cigars in their pagoda like houses.

- **Dulhazra Safari Park:** This safari park is an extension of an animal sanctuary located along the Chittagong-Cox's Bazar road about 50 km from Cox's Bazar town. The sanctuary itself protects a large number of wild elephants which are native to the area. In the safari park there are domesticated elephants which are available for a ride. Other animal attractions include lions, Bengal tigers, Crocodiles, Bears, Chitals and lots of different types of birds and monkeys. which is wonder full project to attract the tourist.

Chapter Six: Conclusion

Field study is very important part of education. By visiting Chittagong Hill Tracts & Cox's Bazar sea beach, I acquire huge experience of these areas. To protect natural beauty, ecological balance & biodiversity Government should be taken some positive steps. The Government is not sincere about this. The Government has taken a project for the development of DSF, but there is no implementation of any activities about the project. I hope the Government will be aware about the project. Finally I think we should develop & conserve our forest area for the survival of ourselves as well as the environment.

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