

ipac

**Site Level Field Appraisal for
Integrated Protected Area Co-Management**

KAPTAI NATIONAL PARK



**Chittagong Hill Tracts Cluster
Integrated Protected Area Co-management Project
Rangamati, April – 2009**



Site-Level Field Appraisal for Integrated Protected
Area Co-Management

KAPTAI NATIONAL PARK

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April 2009



With partners: CIPD, CODEC, RDRS and WorldFish Centre



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1. INTRODUCTION

1.1 Project Background

Forests are essential for humans and others living beings on the earth to remain survived. Forests are depleting throughout the world at an alarming rate. Out of the total land mass in a country, at least 25% forest coverage is essential to ensure better and healthy environment. However, very limited countries over the world have such amount of forests. In Bangladesh, 17.08 % lands are forests (Forest Department, 2009); but, forest coverage is only about 9%. Therefore, it can easily be assessed that we are far away to ensure healthy environment for people. Natural forests in many countries comprise the bulk of its forest areas rather than plantations. According to Forest Department (2009), there are about 4.54 % hill forests, 4.07 % natural mangrove forests, 0.88 % mangrove plantations, 0.81 % is plain land Sal forests, 4.95 % Unclassed State Forests (USF) and 1.83 % village forests available in the country out of total land areas in the country.

Like many other countries throughout the world, our natural forests are under constant pressure and have already been significantly degraded and fragmented. However, tropical natural forests are thought be the major biodiversity reservoir in the world. According to some of the estimates, forest cover in the country has fallen by more than 50% since independence. This situation is threatening the value of these forests as habitat for biodiversity and for provision of vital environmental services. If this trend continues, it will soon result in a serious ecological catastrophe and will lead to the declination of forest productivity and services. This will in turn create irreversible pressure to the livelihood of thousands resource dependent people living in and around the forest areas and in some of the forests, this is quite evident now. Therefore, it is urgent to reduce or reverse the ever-increasing pressure on forest resources and harmful effect on forest biodiversity with the introduction of an effective sustainable resources management system. To reduce the pressure on biodiversity and resources, there must have provisions for the creation of alternative livelihood opportunities and support to the resource dependent people living in and around the forest areas.

Conservation of biological diversity in these days became a global issue rather than national. A developing country like Bangladesh with limited potential to fund particularly for conservation and management ratified many national, regional and international

conventions, treaties, protocols etc. related to biodiversity conservation. That actually proves that, Bangladesh has a strong commitment to conserve its existing biodiversity and this actually led the policy makers to designate and establish 19 protected areas in the country so far including National Parks, Wildlife Sanctuaries and Game Reserves with significant biodiversity resources under the provision of Wildlife Preservation Act, 1973. Nevertheless, no provable change became evident after such declaration in the context of management and conservation of natural resources. Therefore, degradation of forest resources and its biodiversity continues to decline and Forestry Department with its traditional management system failed to safeguard.

USAID/Bangladesh seeks to continue its support to the environment sector through a new, five-year project, entitled “Integrated Protected Area Co-management (IPAC).” According to IPAC (2008), this Task Order is procured under the Prosperity, Livelihoods and Conserving Ecosystems (PLACE) IQC, and is USAID’s main vehicle for achieving results under the IPAC Project. The duration of the task order is from June 2008 to June 4, 2013. The Contractor will provide technical advisory and assistance services to a range of stakeholders, including the Government of Bangladesh (GOB) and relevant ministries and technical agencies to promote and institutionalize an integrated protected area (PA) co-management system for sustainable natural resources management and biodiversity conservation that results in responsible, equitable economic growth and good environmental governance. The definition and core of co-management is the full participation of local stakeholders, such as communities and government towards sustainable management of natural resources. IPAC is a continuation of two ongoing USAID co-management activities: the Management of Aquatic Ecosystems through Community Husbandry (MACH) project and the NSP. Moreover, IPAC has included some new sites like Kaptai National Park (KNP), Pablakhali Wildlife Sanctuary (PWS) and Kaptai Lake in the Chittagong Hill Tracts (CHT) that were not included in MACH and NSP. IPAC Project will embark upon a *strategic goal* of scaling-up natural resource co-management at the policy and operational levels by achieving recognition, acceptance and integration of this approach by the GOB into its management tactics. IPAC will achieve its goals through three major components:

- development of a coherent integrated protected areas co-management strategy
- building stakeholder and institutional capacity, and
- site-specific implementation

The purpose of this Task Order is therefore, to:

- Provide high quality technical advisory services to GOB environment, forestry and fisheries agencies to support the further development of the natural resources sector and the conservation of biological diversity;
- Develop a protected area strategy that applies to all ecologically and economically significant areas, including those outside of freshwater and forest ecosystems;
- Build technical capacity within national and local level institutions for protected areas co-management;
- Expand the geographic area of Bangladesh under co-management to ensure the long-term success of the co-management model;
- Address within IPAC a series of short-, medium-, and long-term climate change mitigation and adaptation issues.

1.2 Information needs of IPAC and logical basis for conducting PRA/RRA

Proper planning is essential before going into interventions and simultaneously baseline information on different aspects is very much necessary to plan interventions effectively. In true sense, information is necessary at all the phases of the project e.g. before, during and after the implementation of project activities. Such phases include designing and planning project interventions, setting priorities and implementation strategies, performance monitoring and evaluation, action/applied research, scale up further etc. No doubt, collection of information continues throughout the project life, however, bulk of information collected at the initial stage of the project for better understanding of the situation, effective designing, smooth and hassle free operation of interventions and finally reaping very good project outputs. Therefore, in IPAC, implementers decide to go for collection of basic and baseline information at the initial stage of the project interventions. This is very much logical and effective particularly for Chittagong Hill Tracts (CHT) Cluster, as in the recent past immense lack of interventions in the natural resource management (NRM) arena is quite evident. In the Kaptai National Park (KNP) efforts from the project were in place to collect relevant information by using appropriate methodologies including rapid and participatory approaches. Therefore, it was one of the prime responsibilities of the CHT team to carefully scrutinize the information needs and determine its relevance to the project objectives and activities. IPAC project in the KNP is particularly concerned with the establishment and demonstration of an effective co-management model of forest resources without bypassing the potential impacts on the adjoining inland fisheries resources. IPAC will also develop set of prescriptions for technical management of different resources. Therefore, it is necessary to include all the

relevant stakeholders in the collection and generation of information and they are likely to be involved with the project and management of local resources.

In the Kaptai National Park, IPAC's main portfolio is to establish a co- management hallmark with a view to conserve and manage its resources and to trigger encouragement to practice it to many potential areas as well. Therefore, it is necessary to focus on these two terms e.g. co-management and resource management. Resource management includes resources and its status, trend and causes for resource degradation, resource exploitation, threats to local resources and biodiversity. However, co-management involves stakeholders and their activities, socio-economics, behavior, community power structure, their needs and expectations, conflict, challenges etc. Therefore, some common areas are present as well between these two terms

Initial scoping exercise and Nishorgo Support Project (NSP) documents helped to construct the list of specific information needs that will be collected / generated through subsequent appraisals. At the initial stage of the project, it was thought that a rapid appraisal would be very appropriate in terms of cost effectiveness, usefulness, reliability, and overcoming time constraints.

Rapid Rural Appraisal (RRA)/Participatory Rural Appraisal (PRA) are two most widely used packages of tools/methods to collect qualitative information about local people, their life, environment, their resources, activities and living conditions in a short time. Moreover, this is rather quick and very much effective as well. Such an approach is very much effective to utilize the knowledge of local people living in and outside of the Kaptai NP in designing and setting implementation strategies and also to monitor and evaluate project performances and impact. It is also considered as a process for involving local people in the project planning and /or implementation and monitoring. In fact, RRA/PRA is thus considered as an integral part in the bottom-up planning process in many development or resource conservation projects.

RRA was carried out as an initial activity in the field with primary focus on resource status and stakeholder assessment. It also equally intended for generating information that will help to get a sense of range of key issues and challenges that need to be addressed and be better informed on the context (social, economic, ecological) in which the project

is likely to intervene. Built upon the outcome of the RRA, subsequently PRA was planned to collect in depth information on the identified issues and to ensure greater participation of local people in information collection.

1.3 Purpose of the Report

From January to February 2009, a large volume of information collected during RRA/PRA exercises in the field level. Several personal communications were been made to search secondary data from different institutions as well. This report is actually the synthesized form of all the pertinent findings that been collected through mentioned interventions. Moreover, this report also details the ways that information been collected (e.g. methodology and tools used) and highlight the issues in forest management and biodiversity conservation and identify the challenges for the IPAC. Finally necessary suggestions and guidance for the project and the relevant department been provided to step ahead. Moreover, this report also enclosed some recommendations for better management of the Kaptai National Park.

1.4 Outline of the Report

This report covers six chapters

Chapter 1 of this report covers a general introduction, which includes the information on background of the project, information needs of IPAC and logical basis for conducting PRA/RRA, the purpose of the report etc.

Chapter 2 covers a brief description of the site along with a site map of Kaptai NP.

Chapter 3 spells out the total study methodology including methods used for study, approach to implement fieldwork for RRA and PRA, study team formation, study period setting, settings objectives of the study etc. This chapter also includes setting RRA and PRA issues and questions, selection of RRA and PRA spots, choice of RRA and PRA methods and tools and the limitation of the study.

Chapter 4 describes the outcomes of RRA and PRA exercises, which contain major findings and analyses. The findings are mainly presented as situational analysis of the forest resources, stakeholder analysis, resource and resource extraction, trend analysis,

socioeconomic situation of the surrounding area, seasonal trends in resource extraction, etc. In short, this chapter reflects the status of the forest dynamics with social dynamics.

Chapter 5 presents issues and challenges for IPAC, an extended section based on PRA/RRA outcomes, identifying present issues of concern and challenges for IPAC. The final

Chapter 6 embodies a set of suggestions and recommendations regarding the implementation of the project. At last, a number of necessary references of all documents consulted and photographs are appended as annexure with the report.

2. DESCRIPTION OF THE PROJECT SITE

2.1 Basic Information

The Kaptai National Park (KNP) is a part of the Sitapahar Reserved Forest (actually whole Sitapahar Reserved Forest declared as KNP) and located in Kaptai Upazila under Rangamati hill district. KNP is unique for its monumental oldest plantations in the Indian Sub-continent. Burma-Teak has very good fame in the world considering its unique texture and color. In the year 1871, first teak plantation was established here after importing seeds from neighboring Burma (presently Myanmar) (CHT District Gazette, 1971). However, mass scale raising of teak plantation started in the Sita Pahar area since 1873 (Forest Department, 2001). This national park is situated on the gateway of Chittagong Hill Tracts from Chittagong district and 57 Km away from Chittagong City. This forest area is declared as 'Sitapahar Reserved Forest' in 1883 and finally in 1945 (gazette in 1946). Later, in the year 1999, Government of Bangladesh with the given power under section 23(3) of Bangladesh Wildlife (Preservation) (Amendment) Act 1974 (17 no. act of 1974) declared the Sitapahar Reserved Forest as 'Kaptai National Park' and determined its boundary. Kaptai NP covers an area of 13,498.00 acres e.g. 5464.78 hectare and it is within the jurisdiction of Kaptai and Karnaphuli Forest Range under Chittagong Hill Tracts South Forest Division and divided into five forest blocks e.g. Kaptai Block, Kaptai Mukh Block, Kaptai Khal East Block, Kaptai Khal West Block and Sitapahar Block. Actually, the park includes entire area of Karnafuly range and Kaptai range. There are 50 Compartments, 25 in Kaptai range and 25 in Karnafuly range. Fifty compartments of Kaptai Range comprise 2540.08 hectare and other fifty compartments of Karnaphuli Range comprise 2924.7 heactare. Famous Sitapahar Natural Forest is a part of this national park. KNP also includes a small portion of unproductive area. Chittagong - Kaptai highway passes through the Kaptai NP and is about 1 km away from Kaptai Upazila head quarter.

Boundary of the National Park lies in the north from Kamilachari and Ziptoli mouza, along the east towards Rampahar top and other side of Raikheong Khal mukh along Karnaphuli River up to Bhaibonchara along Raikheong Khal. In the South from Bhaibonchara Mukh source up to Kaptai Khal in the south-west corner. In the East, from the source of Harinchara and Kalmichara right side of Kaptai Khal to along the hilltops upto Jamaichara source along the chara. In the west from Jamaichara source along the

Sitapahar top and left side of the Karnaphuli river up to right side of Karnaphuli river along Rampahar top.

GPS coordinates of the boundaries of Kaptai National Park are in the North Kaptai Range and Bangladesh Navy's main gate adjoining area $22^{\circ}30'1.3''$ N and $92^{\circ}10'11.9''$ E. In the South Chakua Camp boundary of Karnaphuli Range $22^{\circ}27'18.2''$ N and $92^{\circ}12'40.4''$ E. In the East adjoining boundary of Harinchara Mukh and Bhajjatoli Mouza of Karnaphuli Range $22^{\circ}29'53.5''$ N and $92^{\circ}17'0''$ E. In the West on the entrance point of the metalled road towards 1873's plantation under Rampahar Beat of Kaptai Range $22^{\circ}30'1.3''$ N and $92^{\circ}10'25.5''$ E.

This is one of the oldest formation belongs to upper miocene and lower miocene epoch of tertiary period. Apart from this rock of pliocene epoch of tertiary period is also found. Mostly sandstones with small amount of intercalated shale's represent the later. Sandstones are light grey and fine grained.

The soils in the valley bottoms on level ground are clays or clayey loams and are very fertile. The soil on the hills is sand or sandy loam. The soils are impregnated with iron and have a reddish or yellowish tinge. Humus is noticed throughout the forest. However, its degree of accumulation varies from place to place depending on the topography. Usually there are more deposits on the flat lands and less on the undulating hills. Amount of Silt in Kaptai Soil is about 65% and Clay is about 28%. Soil is lot more acidic with a PH 5.9. Cation Exchange Capacity (CEC) and Base Saturation Percentage (BSP) are 16.3% and 50% respectively. C/N Ratio is 4.1. Amount of nutrients (ppm) in the soil is about 250 for Pottassium (K) and trace amount for P_2O_5 (SRDI, 1998).

The climate is typically sub-tropical with a long dry season extending from November to May, punctuated by largely unpredictable periods of rainstorm from June to September. The southwestern monsoons provide the majority of the average annual rainfall of about 2889 cm (Source: Meteorological Department, 1981). Temperatures vary considerably over the year. Monthly mean maximum/ minimums are lowest during December-January (approximately 25° C/ 12° C) and highest between March and May when they rise to approximately 34° C/ 24° C. The humidity overall is very high throughout the year.

In March, the wind starts to prevail from south to west and continue up to May. However, it prevails South to East from June to September and north to west from October to February. The cyclones are of frequent occurrence and periodically cause severe damage and occur mainly during May to October.

Lofty trees of dense evergreen forest characterized by large number of species occur in the sanctuary. The most important species are Civit, Garjan, Uriam, Kanak, Goda, Black Siris, White Siris, Chapalish, Champa, Chatian, Jarul, Dhakijam, Dharmara, Shimul, Pitraj, Shonalu, Bhadi, Banderhola, Tali, Bohera, Amloki, Horitoki, Toon etc. Cane brakes and secondary bamboo brakes are also prominent in wildlife sanctuary. The main bamboo spp. are Muli bans (*Melocanna baccifera*), Mitinga(*Bambusa tulda*), DuluBans(*Neohooazeua dulloa*). *Calamus tenuis*, *C. latifolius*, *Daemonorops jenkinsianus* are the common species of cane.

This sanctuary is the largest protected area in the hilly areas of Bangladesh, which is the habitat of the biggest terrestrial mammal – the Asian elephant. Other available wild animals are - *Hoolock gibbon*, Sambar Deer, Barking Deer, Bison, Wild Dog, Sun Bear, *Rhesus macaque*, Langur, Wild Boar, Rock Python, Grey Lizard, Brass tailed Porcupine, Indian Pangolin, Squirrel, Rose ringed parakeet, Red vented bulbul, Hill myna, Red jungle fowl, Greater Racket-tailed Drongo (*Dicrurus paradiseus*), White-breasted Kingfisher, Yellow bird, Koel, Red-turtle Dove, Jungle Myna, Grey-headed Myna, Baya (*Ploceus philippinus*) and Pond Heron etc.

Once upon a time, the entire area was covered by dense evergreen forests. However, flooding of Kaptai Lake because of dam construction together with gradual deforestation, political unrest in the hills, jhum cultivation, illicit felling and encroachments cause severe biodiversity loss in most of the hill forests including Kaptai National Park. Even some of the species are now locally extinct. In some areas, sporadically the forest floor is opened up and mineral soil is exposed causing large-scale soil erosion.

KNP is also a vital natural forest area for biodiversity conservation. The conservation of flora is of utmost importance in the national park in consideration to watershed management to ensure permanent and all season supply of water in Kaptai lake as well as

the Karnaphuli river in down stream. The stream flow of Karnaphuli River in turn is of immense importance to ensure water supply for the dwellers of fast growing Chittagong city. The life of Chittagong seaport is fully dependent on the stream flow of Karnaphuli River. It may also be mentioned here that diminished stream flow in the Karnaphuli River would cause the salinity intrusion in various upazillas of Chittagong Districts mainly Anwara, Hathazari, Boalkhali, Patiya, Rangunia and Raozan causing destruction of crop in these areas.

One can enjoy splendid scenario of nature in the park on both banks of the Karnaphuli River while cruising by boat in the river. Visitors from all over the country rush in the Park throughout the year for its easy communication.

Kaptai town itself is situated within the national Park. Kaptai Hydro electric Project, Lumber processing complex of BFIDC, Kaptai army region head quarter naval base is also situated within the area of National Park. This Protected area is connected with Chittagong by metalled road and most of the area of the park can be reached by metalled road.

Whole Chittagong Hill Tracts (CHT) including Kaptai NP area lies in the humid tropical forest zone – where species-rich, three-storied closed-canopied tropical lowland rainforests of high biodiversity values are supposed to dominate – unless disturbed by external influences. Tropical Moist Evergreen Forests have virtually disappeared from the region. Especially in lower valleys, *Swintonia* spp., *Dipterocarpus* spp., *Hopea* spp., *Sterculia* spp., *Tetramelis* spp. and *Artocarpus* spp. were represented in the canopy storey of such forests. The middle stories were dominated species of the Meliaceae and Leguminosae families. Only small pockets of this forest formation still survive (ADB, 2001).

Higher valley and lower hill slopes tended to be covered in Semi-Evergreen Forests (Tropical Mixed Forests). This forest ecosystem has a more open canopy with a large numbers of deciduous trees, with a well-developed understorey of smaller trees and shrubs, epiphytes and climbers. A clumped distribution of a giant dipterocarp species (*Dipterocarpus turbinetas* or *garjan*) is characteristic for this forest type. Other canopy species include *Swintonia* or *civit*, *Sterculia*, *Salmaal* and *Tetrameles*. Its second storey

is well developed and includes species of *Amoora*, *Mesua*, *Cedrella*, *Bombax*. Lower stories contained a variety (ADB, 2001).

Where a forest canopy has been “opened” (due to timber extraction or *jhum* plots), secondary species – including bamboos, vines and ferns – invade. Fire disturbances can produce similar effect – to the point where bamboo stands develop as a stable fire sub-climax ecosystem – completely replacing the primary forest species. On drier, exposed hill slopes with shallow soil, sub-climax formations of low open forest may also arise (ADB, 2001).

Much of the original forest cover of the CHT has been logged and converted to *jhum* plots or to low shrub/grass vegetation – such as *Eupatorium odoratum*, *Saccharum spontaneum*, *Imperata cylindrica*, *Arundinaceae spp.*, *Mikania* vines and bamboo thickets. The grass/shrub pioneer vegetation rapidly invades abandoned or fallow *jhum* plots – and is therefore considered weed species. Logging has been active in the Chittagong Hills area since around 1900. Unsustainable *jhum* practises developed rapidly between 1960 and the mid-seventies due to politically motivated settlement of the area and due to massive loss of arable land for the construction of a hyrdo-power reservoir - Kaptai Lake (ADB, 2001)

Map of Kaptai NP



Figure 1. Map of the KNP showing Blocks & Compartments.

2.2 Forest Management & Administration for Kaptai NP

In 1875, modern forest management practice started in the Kaptai NP areas with the declaration of Sitapahar Reaserved Forest. Before that, in 1862 a Forest tax station initiated at Kaptai Mukh along the bank of the river Karnaphuli for the collection of revenues on the forest products. That time, Government had permitted timber extraction from the Sitapahar reserved forest with the payment of revenues and there was no local market of timbers and timbers were generally exported to London and Calcutta and other Indian towns. In 1860, Chittagong Hill District formed after the separation from Chittagong district and in 1909, Chittagong Hill Tracts Forest Division formed with Sitapahar, Kachalong and Raikheong Reserved Forests after separation from Chittagong Forest Division.

In 1871, Mr. H. Dhar, an ACF collected teak seeds from Burma (now Myanmar) and bring it to Kaptai areas and identified Rampahar areas of Sitapahar Reserved Forest as suitable plantation site for teak. Later on, in 1972 – '73, Forest Department raised teak plantation over 8 acres. Teak plantation in the CHT was confined to Sitapahar Reserved Forest only until 1919. For teak plantation, clear felling followed by artificial regeneration through Taungya system practiced. Indigenous people were particularly interested for Taungya system culture.

From 1922 – '23 onwards, scientific management system started with the introduced of working/management planning in the Kaptai NP areas and Forest Department became entitled to total control of forest management. So far, five working plans been implemented. Those are:

- Cowan's Working Plan 1922-23 to 1942-43
- R. Banarjee's Working Scheme 1942-43 to 1952-53
- Zahir Uddin's Working Plan 1952-53 to 1972-73.
- Mahbub Uddin Chaudhury's Working Plan 1969-70 to 1988-89.

After completion of Mahbub Uddin Chaudhury's Working Plan, no further working plan developed for Chittagong Hill Tracts South Forest Division and implemented. After that, Government imposed ban on tree felling or logging moratorium from reserved forests for several years and this is continuing.

2.3 Tourism Facilities

Kaptai NP is regarded as one of the major tourist spots in the CHTs. There are two forest rest houses e.g. Kaptai Mukh Forest Rest House and Banophul Forest Rest House inside the NP. There is picnic spot inside the Kaptai NP; people can enter after paying a little revenue to FD. There are some sitting arrangements in different places of the, some trails are here. Two elevated watchtowers are present in the park

3. METHODOLOGY

The methodology followed in the study was a two-step rapid appraisal strategy. In the appraisal process, the team conducted RRA first, followed by PRA. RRA was carried out as an initial activity in the field with a primary focus on generating information that would help to get a sense of the range of stakeholders, key issues and challenges that need to be addressed and provide information on the context (social, economic, ecological) in which the project will operate. Built upon the outcome of the RRA, a subsequent PRA exercise done that actually collected the in-depth information on the identified issues. In the information collection process, study was designed to ensure greater participation of local people in information sharing.

The overall purpose of the RRA and PRA was to analyze the present situation of the Kaptai NP comprehensively with a view to understand the followings -

- who destroys and how the forest is destroyed
- what are the underlying driving forces for the degradation of forest
- cause and effects of the behavior of local people
- opportunities for improvement in forest management

3.1 Developing the RRA and PRA: Issues and Methods

After recruitment of all the major project staffs and completion of Project Inaugural Ceremony and Inception Workshop in the CHT Cluster, all the technical project staffs sat together in a discussion meeting in the IPAC Cluster Office, K K Roy Road at Rangamati on 4 January 2009. The purpose of this meeting was to discuss about the necessity to collect baseline information and set out the priority issues and methodologies to collect such information at the beginning of the project. In the discussion, experiences of Nishorgo Support Project (NSP) came into action by the two NSP experienced staffs in the team. They had shared their view particularly based on the activities done in NSP sites. Other staffs present in the session share their views and finally reach a consensus to conduct the field activities under NSP adopted methodologies. They have also mentioned that there are some of the status reports prepared on NSP sites are now available in the Nishorgo website. Therefore, those reports will act as guidance for the team to design the study, set methodology, use tools, develop questionnaire and conduct the RRA/PRA

sessions in the field and finally reporting. The team then drafted a simple questionnaire and finalized it after subsequent revisions in several sessions.

To minimize time constraints, more or less same spots with the same community been targeted for both RRA and PRA activities. RRA sessions were unstructured and semi-structured household interviews, KI interviews and focus group discussions based. The issues and activities covered in the RRA are shown in Table 1. In the PRA sessions, tools like Venn diagramming, resource mapping, seasonal analysis, trend analysis, livelihood analysis etc., were used in addition to interviews, focus groups and more informal discussions.

Table 1: Selected RRA Issues for Kaptai NP, Specific Activities and Tools used

Sl.	RRA Issues	Specific Activities	Tools Used	Participants
1	Stakeholder Assessment	Identification of settlements, resource users, local institutions and agencies and organization, community organizations etc and their roles and activities	HHs Interview, KI FGD Sketch mapping	Local HHs; school teacher, doctor, community people (villagers, elites etc) community people Headman, Karbari, Local Govt. Rep.
2	Stakeholder Demographic Profile	Settlement wise no. of HHs/population HH occupation, education, forest use, land holding	Secondary Info HH Interview, KI, FGD Trend Analysis	Upazilla Statistics Office / Local union parishad, HHs heads/members community people School/College teachers & Headman, Karbari, Local Govt. Rep.
3	Stakeholder Economic Activities/ Livelihood Strategies and Human Capital Development	HH primary and secondary income sources of HH Richness/poverty Unemployment and its seasonal trend Credit and AIG opportunities Skill and skill development opportunities Seasonal workload of male and female	HH Int. KI FGD Seasonal Calendar	HHs heads/members Headman, Karbari, Local Govt. Rep. Teacher, retired officers, old people, Local elite, Community people, Forest villagers
4	Gender Issues	General impression on living standard, education and health status etc. Participation in decision making (household and PA management) Women mobility in the area Access to IGA and credit etc	HH Interview FGD KI, Direct observation	HHs heads Community people Local elites RRA team members
5	Behaviour of Local People	Initial response of the local people and FD staff towards the project - Sources of conflict and conflict resolution	FGD Discussion HH interview	Local community FD staff HHs heads
6	Local Level Awareness	Awareness and perceptions about resource degradation and conservation - Willingness for resource conservation Awareness about the existence of nearby park/game reserve and reserved forest Knowledge about forest and wildlife	HH interview FGD	HHs heads Local community

Sl.	RRA Issues	Specific Activities	Tools Used	Participants
		preservation acts		
7	Resources/Resource Status	Trend in changes in major resource bases Endangered/extinct plant and animals Causes for the decline in different resources	Trend analysis, HH interview FGD KI	Local people/FD staff Local HHs heads Community, FD staff Headman, Karbari, Local Govt. Rep., Local educated old
8	Resource Exploitation	Major forest resources collected, including NTFPs: Reasons and extent of exploitation of different forest resources Dependency on the forest/forest products Seasonal trend in resource exploitation Future risks Medicinal plant uses and reason for not using these	HH interview FGD, KI, Trend analysis, Seasonal calendar	Local HHs heads Public representatives, Community & FD staff Headman, Karbari, Local Govt. Representatives Community people Local educated old, Local elite and FD staff
9	Resources Regeneration Practices	Plantation status in the locality Problem with natural regeneration in the forest Plant nursery General land use pattern in the buffer zone Major agricultural crop Seasonal pattern in agriculture	Secondary Information, FGD, KI, Seasonal Calendar	Secondary data from FD FD staff Headman, Karbari, Local Govt., FD Officer Community people Local elite, teacher
10	Legal Aspects	Access to the forest by locals Forest villagers and land use agreement Conflict and negotiation with FD staff Land encroachment/recovery Law enforcement mechanisms in the PA Illegal tree felling and forest cases	FGD KI FGD	FD staff and forest villagers Headman, Karbari, Local Govt. Rep. Local elites, FD staff, community people, teacher
11	Power Structure	Local influential and their role, local hierarchy Nature and sources of power and their domain of influence Conflict and conflict resolution Social cohesion and adhesion	HH interview FGD, KI	Local HHs heads Local community and local govt. Headman, Karbari, Local Govt. Representatives
12	Others	Access to areas and settlements NGO activities in the locality Challenges for conservation Local problems Mobility in the area	HH interview FGD, KI	HHs heads Local community and local govt. Headman, Karbari, Local Govt. Rep. & FD Staff Local elites

To allow the team to triangulate the information gathered, more than one tool been used for any particular issue. The issues and activities performed in the PRA are summarized in Table 2.

Table 2: PRA Issues, Specific Activities Performed & Tools used in Kaptai NP

Sl.	PRA Issues	Specific Activities	Tools Used	Participants
1	Forest make up Dynamics	-observation on forest physiography and topography and forest make up -land use cover, resource exploitation and regeneration areas, animal distribution	Transect walk KI Resource mapping	PRA Team Local elite, FD staff FD staff and Village headman, forest villagers.

Sl.	PRA Issues	Specific Activities	Tools Used	Participants
		-changes in forest cover, thickness, vegetation, settlements, animals and availability of resources	Secondary data, FGD, KI Trend analysis	Local people and FD staff, forest Villagers
2	Local governance system and community structure and functions	Decision makers--- influential people Local community organizations and institutions and their linkages Local conflict and conflict resolution Social cohesion and adhesion Collective action Local problem, cause and possible Solution	Venn diagram Ven diagram Venn diagram FGD/GD FGD & GD and Ranking	Community People Community As above As above and local elite
3	Livelihood Strategies	Income and expenditure sources, Livestock, Richness and poverty	Wealth ranking HH interview	Women group and local people
4	Gender issue	Family decision making mobility workload Education and access to credit	Decision making chart Mobility map Daily and seasonal work chart HHs Int.; FGD	Women group Women group Women group Women and local educated people
5	Fuel wood Collection	Information on collector Purpose and driving force for collection Dependence on the extraction for their livelihood and its extent Uses and marketing channel of the resource Level of extraction and seasonality Conflict with FD or other people over the extraction Negotiation for carrying out the activity Alternate source for the collection of the resources Needs and expectation of the collector Impact on the forest and future risks for the collector	FGD & seasonal Analysis	Fuel wood collector, Community people, local hotel and tea stall owners
6	Illegal timber Felling	Information collector - key people behind the activity and network Purpose and driving force for collection uses and marketing channels and dependence What encourages them to take up the activity Anybody protect them, if they are in problem Protection by FD or by any other agencies (e.g. Police etc.) conflict and negotiation with FD or other people needs and expectation of the feller impact on the forest and future risks for the illegal feller Seasonality and trend in timber extraction	FGD, GD and KI Seasonal calendar and trend analysis	Illegal timber feller, FD staff and community people, teacher and local elite
7	Collection of trees as building materials	Information on collector; purpose and reasons for collection; uses of the resource and extent of extraction; dependence on the extraction and marketing conflict and negotiation with FD or other people over the extraction alternate source for the collection of the	FGD, Gdand KI	Community people, FD staff , , forest villagers, local public rep. and elite

Sl.	PRA Issues	Specific Activities	Tools Used	Participants
		resources needs and expectation of the collector impact on the forest and future risk for		
8	Bamboo and cane collection	Information on collector purpose and reasons for collection uses of the resource and extent of extraction dependence on the extraction and marketing conflict and negotiation with FD or other people over the extraction alternate source for the resources needs and expectation of the collector impact on the forest and future risk for the seasonal changes and trend in abundance	FGD, GD Seasonal calendar and trend analysis	Bamboo and cane collector, community, people and FD staff Bamboo collector and local people
9	Information on Forest villagers	Distribution of forest villager's settlements Registered and actual number of forest villagers compliances to FD agreement Present economic activities Resources exploitation and dependence on forest resources land encroachment by the forest villagers or by their dependant relationship and conflict with FD internal governance system needs and expectation	FGD Secondary data	Forest villagers and FD staff FDs villagers register
10	Jhum Cultivation	Amount and distribution of jhum cultivation in and around the Kaptai NP, major activity in jhum crop field, seasonality, variety of crops cultures atc. Impact on the forest resources particularly due to burning Conflict with FD	FGD	Betel leaf cultivator FD staff; Local Community
11	Land Encroachment	Historical perspective and trend information on encroaches and reason for encroachment and what drives to undertake the activity Legalization of process Conflicts and negotiation process Uses and transformation of encroached land Local mechanisms/system or traditional practice for land encroachment	Secondary data and trend analysis FGD and KI	FDs encroacher Register; Encroacher Group and FD staff, local elite and community people

Each PRA tool was used to collect information about more than one issue, as shown below:

Venn diagramming: local power structure, local community organizations, local institutions and agencies, local conflict and conflict resolution, family decision making, mobility of women & men, local NGO/CBOs

Seasonal calendar: fuel wood, bamboo and timber collection, unemployment, workload, accessibility to forest, transportation problem, brickfield/sawmill operation, forest patrol,

agricultural activities, collection of building materials, hunting, vegetable collection, damages by elephant, sand collection, sungrass extraction.

Trend analysis: forest cover, forest thickness, tall trees, herbs and shrubs, forest use, unemployment, local solvency, land encroachment, settlement/population solvency/income, livelihood expenditure, literacy, unemployment, use of forest for income, use of forest for HH needs, transportation and mobility, homestead plantation, food scarcity, credit and IGA, occupation, damages by elephant, wildlife, hunting, illegal tree felling, fuel wood collection, bamboo and cane collection, fruit bearing trees in the wild, livestock, turtles and tortoises, agricultural activities, medicinal plants.

Ranking and scoring: local problem ranking, wealth ranking, and livelihood analysis

Transect walk: Soil, vegetation, land use, elevation, crops, wildlife, human activities etc

Forest resource mapping: Forestland use cover, resource zones, resource exploitation zones, animal distribution and settlements.

3.2 Fieldwork Preparation

3.2.1. Selection of RRA and PRA Sites

Based on the information provided by local FD staffs responsible for the management of Kaptai NP, RRA/PRA team decides on the representative villages as sample locations for the purpose of information collection. These locations were then termed as RRA and PRA spots. Selection of those representative villages was based on a number of selection criteria. The selection criteria were based on the availability and distribution of major resources, degree of dependence on resources, diversity in people, ethnic groups, distance from the park, presence of conflicts/challenges, presence of any other issues that may affect project planning etc.

While the number of sites visited during the RRA was limited, the team focused on gaining an overview of issues covering the whole of the National Park area. However, because of the size of the National Park, it became clear there would have to be a trade off between the size of the study area and the depth and quality of the information collected. Therefore, it was decided that the PRA would focus on only issues and stakeholders relating to the management of forest within the Kaptai NP area. A list of the selected RRA and PRA spots for Kaptai NP is given in Tables 3

Table 3: List of Selected RRA / PRA Spots and Schedule for Visits

Date	Name of Spots (Village) Visited		Remarks
	Village	Location	
07/01/2009	Bangchari	Inside KNP	
12/01/2009	Chakuapara	Outside KNP	
13/01/2009	Chimorom Headmanpara	Outside KNP	
18/01/2009	Moidongpara	Outside KNP	
19/01/2009	Shilchari	Outside KNP	
19/01/2009	Shilchari Marmapara	Outside KNP	
20/01/2009	Debachari	Outside KNP	
25/01/2009	Kalabunia	Outside KNP	
26/01/2009	Zibtoli	Inside KNP	
26/01/2009	Kamilachari	Outside KNP	
04/02/2009	Bhaiboncharapara	Outside KNP	
04/02/2009	Harincharapara	Outside KNP	
08/02/2009	Arachari	Outside KNP	
09/02/2009	Sitapara	Outside KNP	
10/02/2009	Wagga Tea Estate	Outside KNP	

3.2.2 Formation of RRA and PRA Field Teams

The same team who developed the questionnaire others employed to carry out RRA/PRA activities in the field level under the leadership of Site Coordinator, Kaptai NP. The full team moved in the field in a body and after reaching to a specific site, the team always been divided into two groups to carry out two different set of activities. One group was responsible to carry out household survey and other group to carry out / conduct focus group discussions and KI interview. Participants in the RRA/PRA team is given in the Table 4.

The RRA and PRA field exercises were conducted between 6 January to 10 February 2009. The detailed time schedule for the field activities are provided in Tables 3.

Table 4: RRA/PRA Team for Kaptai National Park

Name	Designation & Workstation	Organization
Gazi Sazzad Hossain	Site Coordinator (SC), KNP, Kaptai	CIPD
Nikhilesh Chakma	Site Coordinator (SC), PWS, Rangamati	CIPD
Partha Dewan	Communication, Outreach & Governance Facilitator (COGF), Rangamati	CIPD
Pulak Chakma	Enterprise Support Facilitator (ESF), Rangamati	CIPD
Subinoy Khisa	Site Facilitator (SF), PWS, Baghaichari	CIPD
Sunayan Chakma	Site Facilitator (SF), PWS, Baghaichari	CIPD
Mostofa Omar Sharif	PMA Research Associate, Rangamati	WorldFish Center

3.3 Field Implementation Strategies

3.3.1. Organization of the RRA and PRA field work

RRA and PRA exercises involved series of sequential steps to follow. The teams always put ample efforts to adhere those steps that shown in the flow chart (Fig 1).

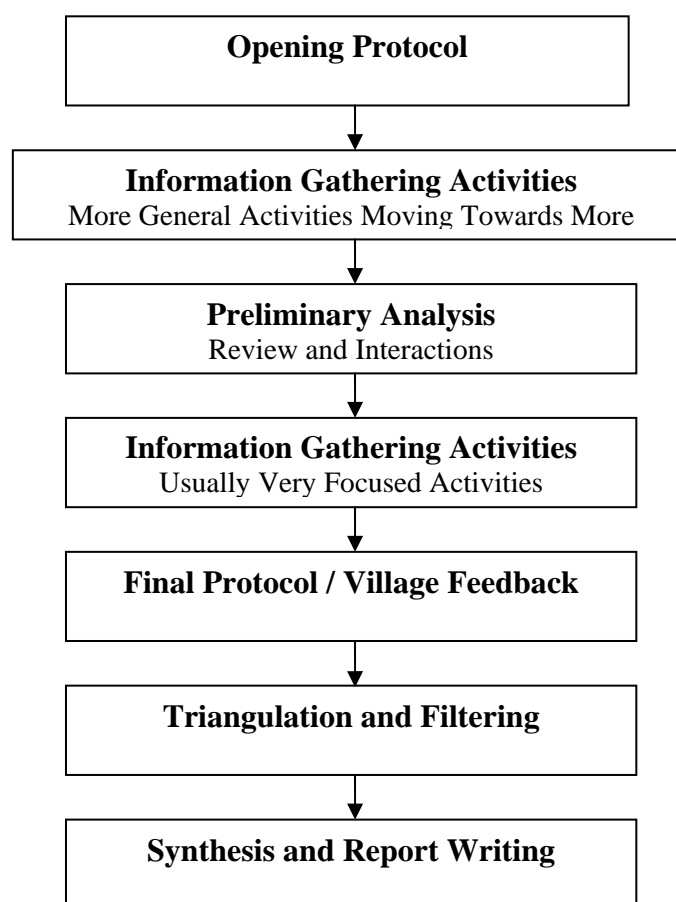


Figure 2: Flow of RRA/PRA Field Activities (3-4 days)

During RRA and PRA exercises in the field, a total of 12 HHs interviews, 9 key informant interviews, and 10 Focus group discussions were conducted. The other RRA tools were applied during above mentioned interviews and discussions. This is summarized in Table-5.

Table 5: Summary of Performed Activities in Kaptai NP during PRA RRA

Appraisal	Village/ Settlement Covered	FGD	KI	HH Interview	Trend Analysis	Resource & Social Mapping	Seasonal Calendar	Ven Diagramming
RRA & PRA	12	10	9	12	30	3	30	30

Further details on the implementation of the fieldwork methods used provided below:

3.3.2 Household (HH) interview

HH interviews were conducted with randomly selected interviewees, typically visiting one household at each stop.

Both male and female respondents were considered. HH interviews typically last for about 1 hr – 1:15 hr. The interviews were conducted with both closed and open structured questionnaires. A Checklist of issues was used, though not necessarily addressed all questions in each interview and often deviated from basic questions to pursue interesting, unexpected or new information, relevant to the project and situation.

3.3.3 Key informant (KI) interview

Key informants are traditional leaders e.g. Headman, Karbari and public representative e.g. UP chairman, member etc. who have extensive knowledge on the local environment, situation and events. The purpose of this interview was to utilize them in collecting Information from them relevant to the project needs.

- KI interview was conducted by both prior appointment and spot visit. A local guide helped in making appointment with the KI. The interview was taken by paying visit to Key informant HH or by inviting him to the team base
- A typical KI interview lasted for about 1.5-2 hrs.
- As with HH interview, a similar checklist of questions was used for the purpose of
- KI interview.

3.3.4 Focus Group Discussion

- The purpose of the planned FGD was to collect information on the locality and local situation based on the consensus of the local people.
- Interviews were conducted at places, preferably at local tea stalls, road junctions and other local community places, where local people gathered spontaneously.
- Mapping, seasonality, ranking and scoring exercises etc. were done in such FGD.
- Typically a FGD lasted for about 2-3 hrs
- At least one FGD was held each day
- This was based on structured and unstructured interview and a checklist of issues was used as a basis for questions

3.3.5 Other PRA tools

Various other PRA tools like Resource mapping, Venn diagramming, seasonal calendaring, trend analysis, ranking, scoring etc. were used as part of RRA activities. Most often, these exercises were performed during focus group and key informant interviews. Participants in these sessions were either invited by local leaders or local people instantly gathered at places.

3.3.6. Direct Observation

This is another way to collect information from the field level through direct observation the RRA/PRA participants. The participants in the team met with number of local people, discussed many things on different matters. Moreover, they had observed the resources, people's behavior and their activities, etc. These observations and informal discussions helped the team to triangulate collected information and generate new questions for interview or discussions.

3.3.7 Secondary Information Collection

During the field visit by the team, some demographic data were collected from Statistics office of Kaptai upazilla and some collected from relevant Union Parishad offices. There are some other secondary data presented in the report actually collected from the local Forest Department office at Kaptai, some from Divisional Forest Office in Rangamati and some after discussion with the experienced staffs working in the Kaptai National Park and adjoining areas. Some of the presented information actually collected from other different organizations particularly UNDP-CHTDF including NGOs.

3.4 Limitations of the Fieldwork

Large areas of the Kaptai National Park are remote to access. Only way to reach these areas is by boat followed by a long walk Therefore, it was always difficult for the RRA/PRA team to reach there and to organize a large-scale participants gathering to meeting the needs for PRA. In traditional PRA approach, participants work together to complete large-scale matrices on the ground and the information is analyzed and owned by the participants themselves. However, that was quiet impossible for most parts of the KNP at the initial stage of the project with a limited number of staffs and limited support. Therefore, the team recorded information in note form and by completing matrices themselves either during the group discussion or afterwards. Therefore, this work does

not match the usual requirements of a PRA. The difficulty of access and the time required to travel to the actual sites, meant that time actually collecting data was often limited to 3 or 4 hours a day.

When the field level activity started for RRA and PRA sessions, there was no approved Technical Project Proposal (TPP) for Chittagong Hill Tracts (CHT) Cluster. Therefore, full-fledged assistance from different departments particularly from Forest Department (FD) could not be ensured. The team had assistance from FD in respect to field level work planning process rather informally. FD officials could not spare their staffs who are believed to having much better experience regarding the field conditions, conflicts of local people with the FD, National Park boundary tracing, information sharing, attitudes of local people towards FD activities, finding out potential persons who have great influence on forest resources either positively or negatively etc. When team moved to different other govt. departments particularly for secondary data collection, they have shown their inability to assist before government's approval of the project.

Arranging Focus Group Discussion and ensure participation of mass people is always tough. To ensure better participation of local people in such gatherings, it is necessary to schedule and disseminate the information to the respective persons earlier. A community mobilizer or any ranked/designated staff at can arrange such a discussion meeting well before the actual program very easily. Due to uncertainty of the project continuation in the CHTs, authority could not recruit community mobilizer for the project locations. That actually affects the mass participation of the local people in the focus group discussion. In some cases, the targeted key informant was not present on the site during the team's visit to the area, as the team could not reach him before. Unlike other parts of the country, most of the parts of the CHTs particularly in and neighboring sites of the Kaptai NP is out of mobile phone network. This actually affected the message sending process to the individuals and resource users groups.

Until then, there was no office facility available at Kaptai. Discussions were going on with the Forest Department at higher level to spare the Project Director's Office of recently completed Kaptai National Park Project for setting office facilities of IPAC Kaptai National Park Site Office. Moreover, there was no supply of data gathering (e.g. GPS, Camera etc,) and recording (computer in particular) devices until the end of the field activities. Afterwards, the team has received computers during the phase of reporting.

4. OUTCOMES

4.1 Status and Trend in the Forest and Forest Resources

Natural forests in the Chittagong Hill Tracts (CHT) had shrunk quite badly. Clear felling and subsequent long and short rotational plantation practices have altered a portion of the natural forest. Still a big portion of natural forests is present in the Ram Pahar and Sita Pahar area under Kaptai NP. According to FD officials responsible for Kaptai NP, about 10 – 15% of the park area is still under natural forest cover. However, in some of the oldest long-rotation plantations, the vegetation cover has taken on the structure of a secondary natural forest with the re-growth of creepers and naturally occurring trees and undergrowth species. There is about 30% area of the Kaptai NP under scattered tree coverage. Total area of plantations in Karnaphuli Range is much higher than that of Kaptai Range. There is no recent inventory on Kaptai NP.

Major tree species in the Kaptai NP are Garjan (*Dipterocarpus turninatus*), Champaful (*Mechelia champaca*), Boilam (*Anisoptera scaphula*), Gutguria (*Fortium serratum*), Bohera (*Terminalia belerica*), Civit (*Swintonia floribunda*), Chakua (*Albizia chinensis*), Narikeli (*Pterygota alata*), Chapalish (*Artocarpus chaplasha*), Pitraj (*Aphanamixis polystachya*), Nageshwar (*Mesua nagesarium*), Dharmara (*Stereospermum personatum*), Banspata (*Podocarpus neriifolia*), Chalta (*Dillenia indica*), Udal (*Sterculia villosa*), Kanak (*Schima wallichii*), Chickrassi (*Chickrassia tabularis*) etc. There are many types of bamboo such as *Jai bansh*, *Muli bansh* and various cane like *Jali bet*, *Golla bet*, *Kerak bet*. Besides these, there are many types of climbers and vines, herbs and shrubs present in this national park.

Major wildlife are Elephant (*Elephas maximus*), Indian Muntjac (*Muntiacus muntjak*), Para Harin (*Cervus porcinus*), Barosinga (*Cervus duvauceli*), Rabbit (*Lepus nigricolis*), Langur (*Presbytes entellus*), Hoolock Gibbons (*Hylobates hoolock*), Wild Cat (*Felis chaus*), Wild Boar (*Sus scrofa*), Porcupine (*Hystrix indica*), Otter (*Lutra lutra*), Wild Goat (*Capricornis sumatracnsis*), Samber Deer (*Cervus unicolor*), Monkey (*Macaca sp.*), Mongoose (*Herpestes sp.*)

Cane species available in the Kaptai NP are Jali Bet (*Calamus guruba*), Korak Bet (*Calamus viminalis*), Budum Bet (*Calamus latifolius*), Golok Bet (*Daemonorops jenkinsiana*)

There are several orchid species available in the Kaptai NP, however, most commonly found species are Jibonti (*Dendrobium pierardi*), Rasna (*Venda roxburghii*), Kettleya (*Kettleya spp.*)

Almost all the bamboo species particularly available in the CHTs are found in the Kaptai NP. They are Muli (*Melocanna baccifera*), Ora (*Dendrocalamus longispathus*), Pekua (*Dendrocalamus hamiltonii*), Dulu (*Neohouzeaua dullooa*), Mitinga (*Bambusa tulda*), Betua (*Bambusa poymorpha*), Lata Bansh (*Melocalamus compactiflorus*), Bariwala (*Bambusa vulgaris*), Kalisheri (*Oxytenanthera auriculata*), Kali Bansh (*Oxytenanthera nigrociliata*)

The new plantations are very poor in its wildlife. The monkeys are more or less regularly seen in the periphery of the National Park.

Table 6: Status and Trend in Changes of Forest Resources in Kaptai National Park

Issue	Pre-1971	15 Years Ago	Present	Cause of Changes	Future Risk
Forest Cover	00000	0000	0000	Clear felling in the past, Illicit felling, land encroachment	Medium
Forest Thickness	00000	000	00	Legal felling in the past, illegal tree felling, burning and weeding practice for plantation, fuel wood collection etc.	High
Tall Trees	00000	000	00	Legal feeling in the past, selective illegal felling	High
Herbs and Shrubs	00000	0000	000	burning and wedding, new plantations, plantation practices, fuel wood collection	Medium
Wildlife	00000	000	0	Loss of habitat, food scarcity, lack of safety, hunting in the past, disturbances by visitors	High
Hunting	000	000	0	Prohibition, and unavailability of game animals and birds	Less
Illegal Tree Felling	00	00000	0	Local poverty and unemployment, excessive forest cases, greed of some FD local staff for extra income	High
Fuel wood Collection	00	000	00000	Local poverty, HH needs and little alternate source for fuel wood, increased population	High
Land Encroachment	-	0	00	Increased population, migration from other areas	Less
Bamboo	00000	0000	000	No permit now although permits were given previously, less bamboo stock	High
Cane	00000	000	00	Plantation by FD	Moderate
Fruit Bearing Trees in the Wild	00000	0000	0	Felling, natural death, fuel wood collection, absence of fruit trees in new plantations	Moderate

Issue	Pre-1971	15 Years Ago	Present	Cause of Changes	Future Risk
Livestock	00	0000	0	Less grazing area, lack of fodder	Moderate
Jhum Cultivation	00000	0000	00	Production from Jhum falls, people interested in some other business	Moderate
Agricultural Activities	-	-	00000	Cultivation of various agricultural species, new variety cultivation	Moderate
Sungrass	00000	000	00	Over exploitation, land reclaimed for plantation, plantation practice, over exploitation	Moderate
Medicinal Plants	00000	000	00	Land clearing in the way of plantation, fuelwood collection, grazing	Moderate
Vegetable	00000	000	00	land clearing in the way of plantation; grazing	Moderate
Fodder	00000	000	00	-do-	Moderate
Honey	00000	000	00	Clear felling of trees, decrease in fruit trees and monoculture with exotic species	Moderate

Changes in forest make up, forest resources and activities related to resource regeneration and exploitation is shown in the Table 6. A little change in forest cover, compared to pre-liberation period has occurred; the forest cover has decreased by only about 20%. However, forest thickness and abundance of tall trees have decreased by about 60%. The abundance of herbs and shrubs has decreased about 40% and sun grass has decreased by about 80% due to clearing and claiming of land for plantations. Except birds, the abundance of major wildlife has also decreased by about 80%. The abundance of medicinal plants has also decreased by 60%. The abundance of bamboo and cane has decreased by 40% and 60% respectively due to excessive harvesting. Particularly, this year flowering followed by dying of bamboo occurred in most of the bamboo groves in and around the Kaptai NP. Naturally, new seedlings come out from flowers and take at least 3-4 years to harvest mature bamboo once again. Therefore, crisis for bamboo is prevalent in the upcoming days.

There was limited illegal felling of timbers in the Sita Pahar Reserved Forest in the past. However, after 90s wide spread tree felling occurred and gradually tends to increase up to 2003. Then the trend slowed down after 2003 and now it became very limited.

4.2 Settlements in and around Kaptai NP and its level of stakes with the NP

The team has identified around 21 villages whose inhabitants have varied degree of stakes with Kaptai NP. Name of those villages with total household number, community type,

location and level of stake with the KNP is presented in Table 8. In Kaptai NP, only 2 villages (inhabited by Marma community) are located inside e.g. Kalabunia (under Karnaphuli Range, known as Kaptai Mukh forest village as well) and Bangchari (under Kaptai Range), 9 villages (Chakuapara, Arachari Mukhpara, Sitapara, Debachari, Bhaiboncharapara, Ujanchari, Shilchari, Moidonpara, Kamilachari) are just on the periphery of the forest and others are within one to four km away. Information on these villages's household number, location and level of stakes with KNP is summarized in Table 7. There are approximately 1500 households with 9000 population living in these villages that are either partly or fully dependent on the park's resources. The study team has found that out the 31 identified villages, 8 (Bangchari, Chakuapara, Sitapara, Arachari Mukhpara, Shilchari, Kalabunia, Moidongpara and Kamilachari) have major stakes as more people from these villages extract various resources from the forest. Nine villages (Debachari, Chitmorom Headmanpara, Chitmorom Boropara, Chitmorom Muslimpara, Bhaiboncharapara, Doluchari, Zibtoli, Puttachari and Kamilachari) have medium level of stakes, while 4 (Arachari Headmanpara, Haricharapara, Shilchari Marmapara and Wagga Tea Estate) have minor stakes and the rest have rather negligible stakes with the Kaptai NP.

Table 7: Information on Villages Having Stakes with Kaptai National Park

Sl.	Name of Village	HH Nos.	Community Type	Location	Level of Stake
01	Bangchari	91	Marma and Tanchayanga	Inside	Major
02	Debachari	53	Chakma and Tanchayanga	Outskirt	Medium
03	Chitmorom Headmanpara	52	Marma, Bangali	Outside	Medium
04	Chitmorom Boropara	84	Marma, Bangali	Outside	Medium
05	Chitmorom Muslimpara	126	Marma, Bangali	Outside	Medium
06	Chakuapara	31	Marma	Outskirt	Major
07	Sitapara	51	Marma, Tanchayanga	Outskirt	Major
08	Arachari Mukhpara	17	Chakma, Tanchangya, Marma	Outskirt	Major
09	Arachari Headmanpara	32	Chakma, Tanchangya, Marma	Outside	Minor
10	Bhaiboncharapara	41	Chakma	Outskirt	Medium
11	Harincharapara	55	Chakma, Tanchangya, Marma	Outside	Minor
12	Shilchari	271	Marma, Bangali	Outskirt	Major
13	Shilchari Marmapara	48	Marma	Outside	Minor
14	Doluchari	110	Marma	Outside	Medium
15	Wagga Tea Estate (Idris Farm)	06	Bangali	Outside	Minor
16	Zibtoli	56	Chakma	Outside	Medium
17	Kalabunia	16	Marma	Inside	Major
18	Moidongpara	48	Marma	Outskirt	Major
19	Puttachari	15	Marma	Outside	Medium
20	Ujanchari	28	Marma	Outskirt	Major
21	Kamilachari	170	Chakma	Outskirt	Medium

Table 2: Information on Villages Having Stakes with Kaptai National Park

Sl.	Name of Village	HH Nos.	Community Type	Location	Level of Stake
01	Bangchari	91	Marma and Tanchayanga	Inside	Major
02	Debachari	53	Chakma and Tanchayanga	Outskirt	Medium
03	Chitmorom Headmanpara	52	Marma, Bangali	Outside	Medium
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05	Chitmorom Muslimpara	126	Marma, Bangali	Outside	Medium
06	Chakuapara	31	Marma	Outskirt	Major
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08	Arachari Mukhpara	17	Chakma, Tanchangya, Marma	Outskirt	Major
09	Arachari Headmanpara	32	Chakma, Tanchangya, Marma	Outside	Minor
10	Bhaiboncharapara	41	Chakma	Outskirt	Medium
11	Harincharapara	55	Chakma, Tanchangya, Marma	Outside	Minor
12	Shilchari	271	Marma, Bangali	Outskirt	Major
13	Shilchari Marmapara	48	Marma	Outside	Minor
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15	Wagga Tea Estate (Idris Farm)	06	Bangali	Outside	Minor
16	Zibtoli	56	Chakma	Outside	Medium
17	Kalabunia	16	Marma	Inside	Major
18	Moidongpara	48	Marma	Outskirt	Major
19	Puttachari	15	Marma	Outside	Medium
20	Ujanchari	28	Marma	Outskirt	Major
21	Kamilachari	170	Chakma	Outskirt	Medium

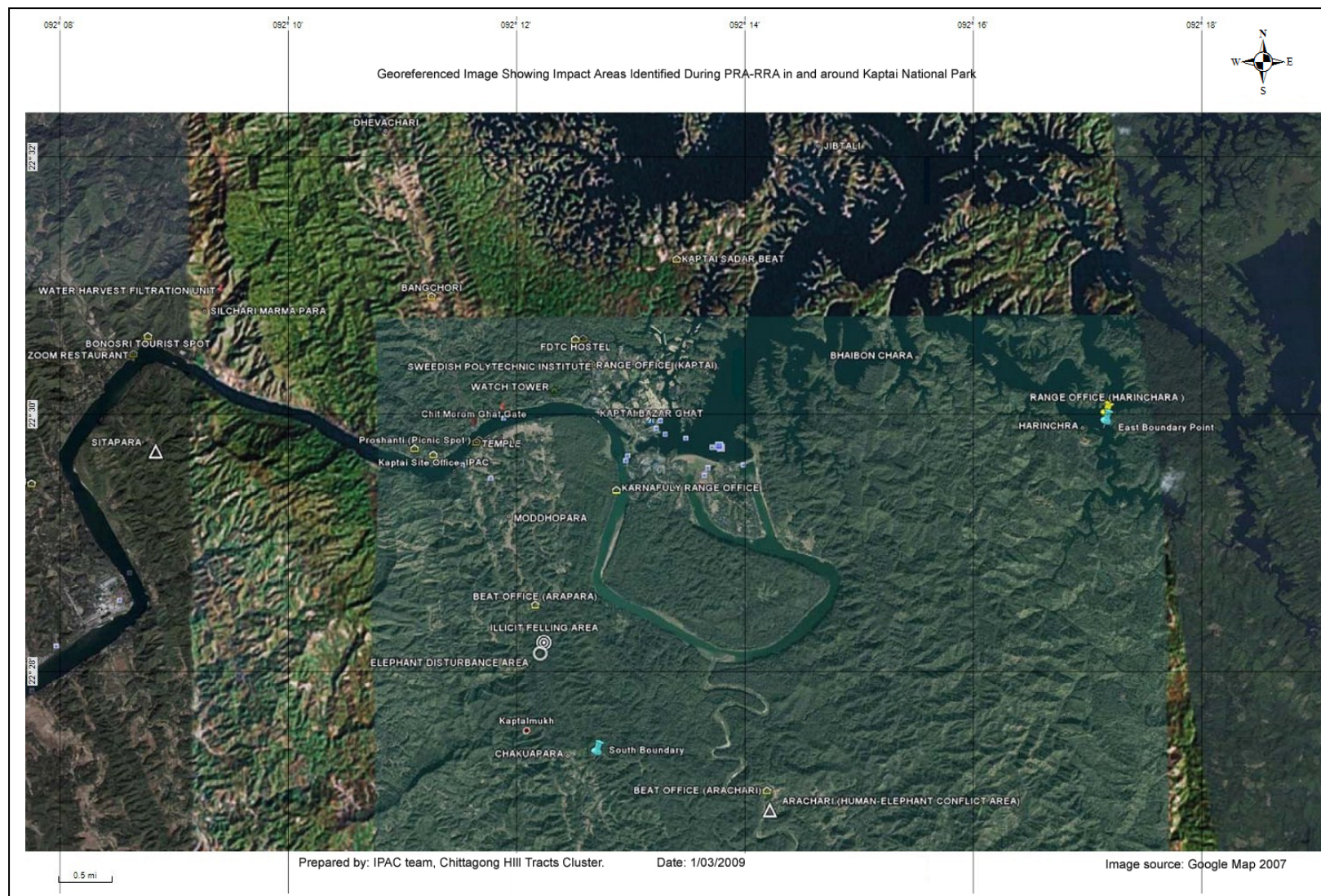


Figure 3: Map of Kaptai National Park including the Impact Area, RRA/PRA Sites

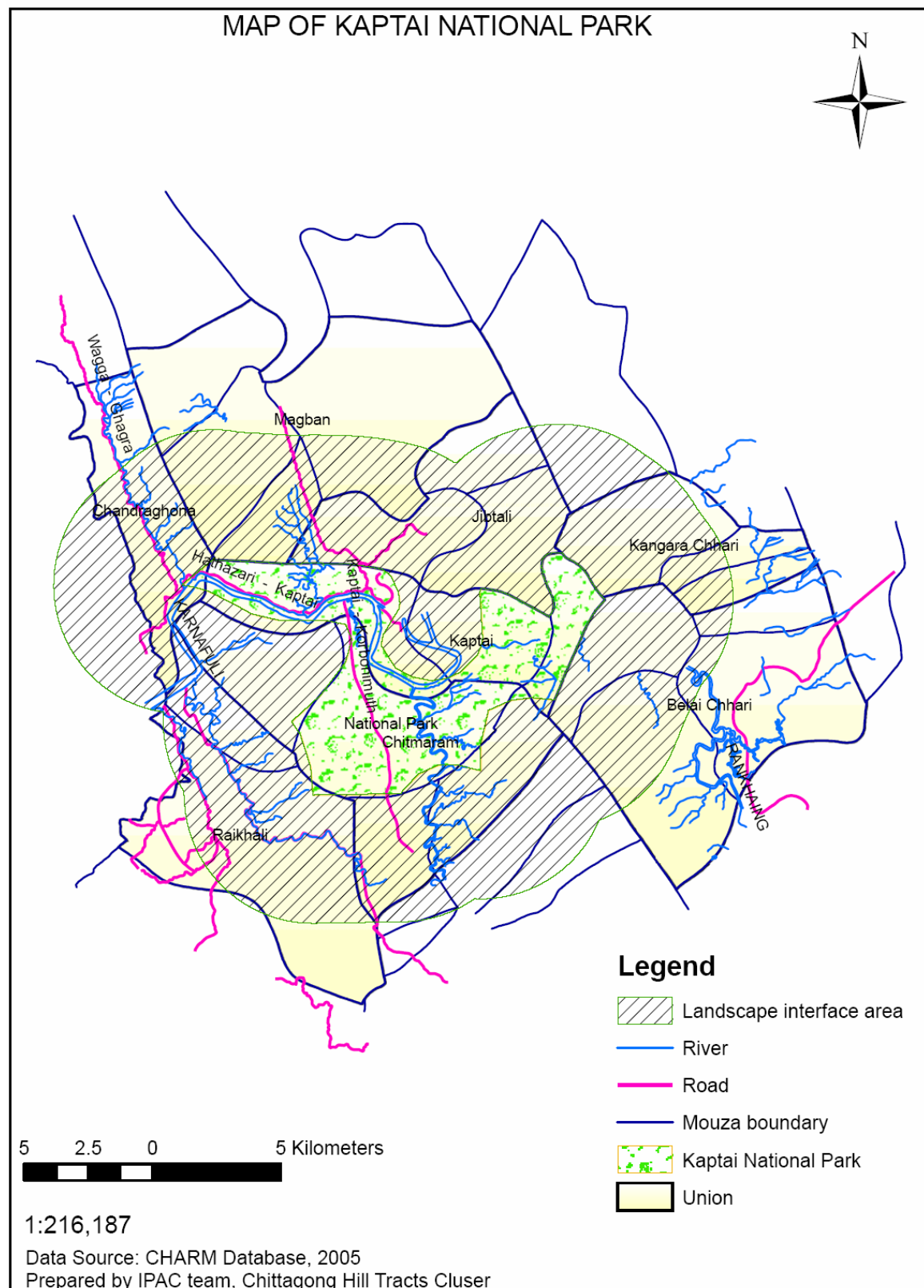


Figure 4: Map of Kaptai National park including the Landscape Interface Area

There are one tea estates near to the NP namely Wagga Tea Estate. This is situated at the bank of the Karnaphuly River under Ujanchari village near to Rampahar Beat and adjacent to Sita Pahar under Chitmaram Union. There are 10 landless and extreme poor families living in the garden who are mainly laborer in the garden. These people are originally native to India; their ancestors came during British Era and started to work in the garden, and are still following the footsteps of their ancestors. They are not aware and even do not bother education, rights and uplifting living status. Usually they work there for 6 hours (from 8:00 AM to 2:00 PM) and receive wage of Tk. 28 and half K.G. rice per day, yearly bonus vary from Tk. 50 to Tk. 200. Sometime they have to work for extra hours (up to 4:00 PM) when average plucking of leaf is high and receive wage Tk. 20 for these extra hours. These people are completely dependent on earnings from daily labor in the tea garden.

This community does not enter into the Kaptai NP because of special restrictive directives from the owner of the tea garden not to enter to collect anything. They are allowed to collect fuel wood in the tea garden area. If surplus remains after household consumption, they sell a bit to the local market.

4.3 Stakeholder Assessment

Like most other protected areas in the country, three categories of stakeholders identified in the Kaptai NP. Stakeholders are:

- *Primary stakeholder*- involved with direct extraction of resources from Kaptai NP or their activities directly affect the park
- *Secondary stakeholders* – indirectly linked with the Kaptai NP, involved with trading or exert influences on the park

Institutional stakeholder- involved with developmental activities and administration of the adjoining areas of the Kaptai NP

4.3.1 Primary stakeholders

Primary stakeholders are those who are directly involved in resource extraction and forest conversion activities in the Kaptai NP. Information of the stakeholder's type, category, description, activities, dependency, relative level of stakes with KNP and influence are presented in Table 8. Study team has identified 23 stakeholder groups (excluded institutional stakeholder) of the Kaptai NP and of them 18 are primary stakeholders, the

rest are secondary stakeholders. Among the identified stakeholders, four groups (fuel wood collector, illicit timber feller, bamboo collectors and building materials collectors) have major stakes with the Kaptai NP as they have major use of forest. While nine have medium stakes (Jhum cultivator, cane collector, broom stick collector, land encroacher, timber trader, sawmill owners, furniture shop owners, fuel wood trader and brickfield owner) and the rest have minor stakes with the forest.

Table 8: Stakeholders of KNP (Based on Resource Extraction & Direct Activities)

Sl.	Stakeholder Name	Stakeholder Type	Stakeholder Description	Stakeholder Activities	Dependency	Level of Stake	Remarks
1	Fuel wood Collector	Primary	Local poor people, Forest villagers	Collect dead, dry trees, small non-commercial trees, and young timber trees. Cut, chop, bundle & carry away	Meet household needs; many families depend for livelihood; sell for added income	Major	
2	Illicit timber Feller	Primary	Adult male from adjacent villages particularly organized laborers from Rangunia (Kodala, Mariamnagar, Raikhali, Boalkhali) & Chakaria	Selective felling of valued timber trees particularly teak	Many households entirely dependent on this activity they are funded by illegal timber traders	Major	Mainly organized gangs. Some influential people are also behind it; local people allow to use their house as pri. store of illegal timber
3	Bamboo collector	Primary	Local poor people, Forest villagers	Cut naturally occurring bamboo legally by paying revenue to FD for selling and illegally for day to day use	Sell for added income, meet household needs; Use for mat and basket making	Major	Present stock of bamboo is declining; this year it is very limited due to flowering followed by natural dying
4	House Building Materials Collector	Primary	Local poor and middle class, forest villagers people from adjacent areas	Collect small trees, timber, vines and other plant materials	Meet household needs; Some sell for added income	Major	
5	Jhum	Direct /	Indigenous	Grow crops	Major,	Medium	Practiced

Sl.	Stakeholder Name	Stakeholder Type	Stakeholder Description	Stakeholder Activities	Dependency	Level of Stake	Remarks
	cultivator	Primary	People, Forest villagers, people from neighboring areas	through jhum cultivation; clear land through slash & burn process	sometimes only income source		over 60 ha. in Kamilachari & Bangchhari; possibility in Kalmichara
6	Broom Stick Collector	Primary	Local poor people, Forest villagers	Cut naturally occurring broom stick	Sell to the market to earn livelihood expenses	Medium	Present Stick is declining; seasonal activity
7	Cane Collector	Primary	Local poor people, Forest villagers	Cut naturally Occurring cane	Sell for added income, manufacture small items like mora, tray, cradle, basket etc.	Medium	Very limited stock; declining very rapidly
8	Morichalata (Peper) Collector	Primary	Local poor people, Forest villagers	Collect morichalata & sell to traders	Not dependent	Minor	No market in CHTs; used in the southern districts
9	Vegetable Collector	Primary	Forest villagers Some poor people from adjacent villages	Collect dheki shak, kalar mocha & thor kachu, kachur lati, wild tubers, dumur, bacchhari (bamboo shoot) etc.	Forest villagers partly dependent	Minor	Fuelwood collector sometimes collect vegetable Tribal people collect bamboo shoot
10	Sungrass Collector	Primary	Local poor people, Forest villagers	Collect sungrass as house building material	Not dependent	Minor	Very limited stock
11	Land encroacher	Direct /primary	Mostly the migrant indigenous People	Encroached land, convert to jhum culture, homestead, agriculture land etc.	Become established	Medium	About 36.80 acre land been encroached
12	Agriculture farmer	Direct/ primary	Local people, encroacher Forest villager	Cultivate land around the NP particularly bottom of hills	Not dependent	Negligible	
13	Visitors	Direct	People form different parts of the country,	Walking across the forest, litter	Not dependent	Minor	Unplanned tourism

Sl.	Stakeholder Name	Stakeholder Type	Stakeholder Description	Stakeholder Activities	Dependency	Level of Stake	Remarks
			including scientists	throwing, causing disturbances to wildlife			
14	Bark collector	Primary	Some local people	Extract bark from certain trees particu. modonmochon for selling to the industries	Not dependent	Negligible	Highly sticky bonding particles inside; use it in mosquito repellent coil
15	Fodder Collector	Primary	Poor people living in and outside KNP	Collect grass, fallen leaves, young plant shoots as Livestock feed	Not dependent	Negligible	Impact on regeneartion
16	Honey Collector	Primary	Trained honey hunters from adjacent villages	When comb encountered Collect honey	Not dependent	negligible	honey is nearly unavailable
17	Hunter/trapper	Primary	Some local people; Forest villagers	Kill/trap jungle fowl, pigs, deer, birds, snakes, mongoose for household consumption	Not dependent	Minor presently	No. of hunting animals became very less and declining still
18	Fruit collector	Primary	Local poor people and forest Villagers	Collect fruits of amloki, haritaki, plum, bohera, latkan, deuwa, banana wild mango	Not dependent	Minor	Different resource collectors collect fruits during their visit to KNP
19	Timber trader	Secondary	Influential people from locality and from outside of the area, usually rich	Buy timber legally from FD and from illegal fellers and transport to Ctg. & Dhk.	Not dependent	Medium	Allegedly helps and funds& illegal fellers
20	Sawmill Owner	Secondary	Influential	Usually saw timber of local people or from clear felling auctioneer	Not dependent	Medium	Help the illegal feller
21	Fuel wood trader	Secondary	Local poor people, sometimes influential	Usually purchase fuel wood from local collectors	Not dependent	Medium	Supply to restaurant, tea stall & brickfield

Sl.	Stakeholder Name	Stakeholder Type	Stakeholder Description	Stakeholder Activities	Dependency	Level of Stake	Remarks
22	Brickfield Owner	Secondary	Influential people from outside Settlements	Use fuel wood to burn bricks.	Not dependent	Medium	Purchase from fuel wood traders
23	Furniture shop Owner	Secondary	Businessmen from the locality and outside of the locality	Use illegal timber with legal timber	Not dependent	Medium	Encourages illegal timber feller to carry out the activity

Primary stakeholders including illicit timber fellers are mostly poor and they live in the forest villages and in the adjacent villages of the forest within the landscape interface area as well. However, it is alleged that illicit timber fellers are largely funded by the timber traders and furniture shop owners and most of them are inhabitants of Kodala, Mariamnagar, Raikhali, Boalkhali of Rangunia upazilla far away (over 20 KM) from Kaptai NP. Even they come from distant Chakaria upazilla under Cox's Bazar district. Local people provide them shelter, leave their house to store stolen timber primarily, and are paid by the fellers due to their service provision. In a way, local people are assisting illicit felling of timber from the Kaptai NP. Illicit fellers even carry firearms with them and go to confrontation with the FD staffs more or less regularly. Women and children are mainly involved with fuel wood, bamboo, fruit and vegetable collection and jhum farming. Sometimes old and unemployed adults also collect fuel wood. Usually poor adult male go inside the reserved forests particularly Kaptai NP to fell timber trees illegally. Usually, the rich and middle class people are not involved with direct extraction of forest resources. However, they often buy forest resources or finished products from the primary stakeholders, including fuel wood, bamboo and other resources.

Different villages have different levels of stake with Kaptai NP based on resource extraction. Almost all HHs of the inside villages (Forest villages) are involved with resource extraction, mainly for meeting their HH needs. Other than these two villages, most resource extractor come from Dhebachari, Sitapara, Shilkhali, Moidongpara, Chitmorom, Doluchari, Ujanchari, Futtachari and some other adjoining villages.

4.3.2. Secondary Stakeholders

Secondary stakeholders are not directly involved with forest resource extraction from the Kaptai NP however are linked with its purchasing, process, trading and utilization. The study team has identified five secondary stakeholder groups active in and around Kaptai

NP. Information relating to those stakeholders groups along with their activities discussed here under:

4.3.2.1 Timber traders

There are numbers of timber traders in and around Kaptai NP. About 7-10 persons in Kaptai Notun Bazar, 5-7 persons at Boroichori Bazar and 5-7 persons at Lichubagan are involved with timber trading. They may often be regarded as legal timber traders as they have legal license for timber trading and are enlisted with the Forest Department. Therefore, they used to bid in the FD auctions in different forest areas particularly Kaptai NP areas. Generally, they purchase stolen, recovered or confiscated forest products through open auction or sealed tender from the Forest Department. However, people neighboring the Kaptai NP believe that majority of them have linkages with illegal timber feller/syndicates. As alleged, they usually buy the illegal timber at a very cheap rate and sell it to the local market along with the timber produced in the homestead. Legal timber that are bought at a rather higher rate through auctions and transport those to other places, particularly Chittagong and Dhaka. Local people believe that timber traders have strong linkage with police, sawmill owners, furniture shop owners and sometimes with FD. Fig. 5 shows that the various linkages they have with different institutions and persons.

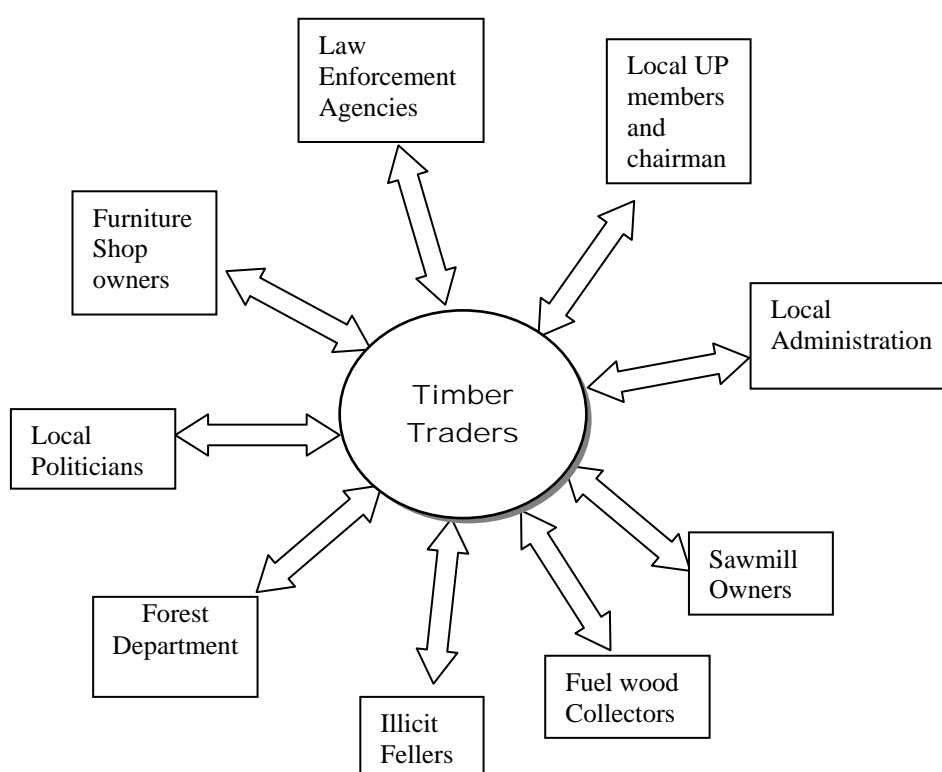


Figure 5: Link of Timber Traders with Different Stakeholders

4.3.2.2 Sawmill owners

There are two sawmills located in the industrial area of Kaptai near Kaptai Notun Bazar. Sawmills are Munshi Mia's saw mill and Zakir Hossain's saw mill. These two saw mills create lot of problem to the forests in this area. Due to increased pressure of the Forest Department officials, these two sawmills most often remained closed. However, sawmill owners are influential in the locality. These sawmills usually receive legally felled timbers for sawing into planks and sometimes timbers that are produced in the homesteads of local people. It is alleged that they size illegal timbers as well in the name of legal timbers mainly felled from reserved forests and in a way, they encourage illegal felling of trees from nearby forests, including Kaptai NP. Sometimes they may have internal linkages with timber traders and illegal fellers. However, recently FD is putting lot of efforts to seize or confiscate illegal timbers/planks/lumbers from these two sawmills alleged involvement with illegal timber business.

4.3.2.3 Furniture Shop Owners

Furniture shop owners have good links with sawmills and sometimes with illegal feller as well. According to local people, the shops, in addition to legal timber, also use smuggled timber from the forest. There are about 15 furniture shops in and around Kaptai area mainly located in Notun Bazar, Jetty Ghat, Boroichari Bazar etc. areas. They usually collect sawn timber from sawmills, sometimes buy round timber directly from the illegal fellers or timber traders and get it sawn in sawmills. Majority of the traders are from outside of the project area particularly from Chittaong and Comilla.

4.3.2.4. Fuel wood trader

People neighboring Kaptai NP collect fuel wood primarily for their household cooking secondarily selling the surplus amount to the traders. Some other collectors collect to sell for subsistence earning to their families. However, generally small fuel-wood traders do not enter the Kaptai NP for collection of fuel wood rather purchase fuel wood from the individual collectors and transport it preferably by van or small type rental vehicle to the sell point like Kaptai Bazar, Boroichori, Chandraghona, Lichubagan and some other local markets. It can go as far as Rangunia, Rajsthali, Raikhali, Raozan and even Chittagong. Some of those fuel wood traders sell directly to the restaurants and tea stalls for cooking. These fuel wood traders supply fuel wood to the brickfields in Rangunia and Raozan areas to use for brick burning. A small stack/pile of fuel wood of 8-10 Kg. is sold in the local market for Tk. 15-20.

4.3.2.5 Brickfield owners

There is no brickfield in and around Kaptai NP. The nearest brickfields are located in Rangunia Upazilla under Chittagong district and about 15 - 20 K.M. away from KNP

boundary. Still those brickfields have strong detrimental effect on the KNP particularly for the supply of fuel for brick burning. There is a provision to use coal only in the brick kilns although no use of coal has been seen during team's visit to those brickfields. They have just stored coals but not using it. Brickfield owners are using fuel wood in stead and the majority of supply of these fuel woods is coming from forests particularly from KNP.

4.3.3. Institutional / Organizational Stakeholders

There are some institutions and organizations, which have stakes with the Kaptai NP. List of the identified major institutional / organizational stakeholders along with their activities regarding Kaptai NP are mentioned hereunder:

4.3.3.1 Forest Department (FD)

Forest Department is the key institutional stakeholders in the Kaptai NP and has the overall responsibility for management, conservation and development of the NP through planting, harvesting, patrolling and guarding the forest resources. Presently, FD has deployed 136 staffs of different status and designation at different Ranges, Beats, Stations and Check Stations for the management and administration of Kaptai NP. Among them, one Assistant Conservator of Forests (ACF) is posted at Kaptai with the overall responsibility of Kaptai NP management and administration. Besides, 1 Forest Ranger (FR), 3 Deputy Ranger (DR), 8 Foresters, 25 Forest Guards (FG), 8 Boatman (BM), 15 Gardeners and 5 secretarial staffs are posted within the territory of Kaptai Range. However, 1 Forest Ranger (FR), 3 Deputy Ranger (DR), 9 Forester, 38 Forest Guards & Boatman, 15 Gardener and 4 secretarial staffs are posted within the territory of Karnaphuly Range. Overall, FD plays a positive role in the protection of the Kaptai NP. Local people have alleged that a few FD local staffs at the NP are involved indirectly with illegal felling activities. In addition, local people also reported that FD staff takes money (e.g. 10-20 taka for each entry) from fuel wood and bamboo collectors to allow them to enter into the NP. However, the local FD staff denied such allegation. Local people think that illegal felling in the Kaptai NP reduced considerably in these days and corruption of FD staffs also reduced largely. However, still this is present with limited magnitude. Forest Department staffs do regular patrolling in groups at the strategic location of the Kaptai NP and often became successful to confiscate stolen good and sometimes arrest illicit fellers. However, number of FD staffs to protect this vast forest area is very limited. Therefore, they often become unable to guard all the pockets within the Kaptai NP and chase the illicit fellers.

4.3.3.2 NGOs and Banks

There are several NGOs and Banks operating their activities in and adjoining areas of Kaptai NP. Major NGOs that operate in the locality are Grameen Bank, IDF, BRAC,

ASA, CARITAS, Green Hill, Hilley Hilli and UNDP through Community Empowerment Project (CEP). Besides, Bangladesh Krishi Bank and BRDB's Rural Livelihood Project (Palli Jibikayan Prokalpa) also operate here. The major activities of the NGOs are concentrated on health, education and alternate income generation. Most of them have credit programs exclusively for the women. However, Bangladesh Krishi Bank provide credit to the male members only as the bank needs land tenure documents and in the CHTs, all the lands tenure documents belong to the male members of households. Bangladesh Krishi Bank and Palli Jibikayan Prokalpa of BRDB and several NGOs provide micro credit to the local people (Table 9) for improving the livelihood of local people. There is no NGO available in the locality to deal with the forest related matters i.e. conservation, management resource management, wildlife protection and environment related issues.

Table 9: List of NGOs / Banks in the Kaptai Area and Their Activities

Name of NGOs / Banks	Location	Activities
BRAC	Kaptai	Micro-credit, Education & Health, Social Development
Green Hill	Kaptai	Micro-credit, Water Supply
Grameen Bank	Kaptai	Micro-credit
ASA	Kaptai	Micro-credit
Proshika	Kaptai	Micro-credit
CARITAS	Kaptai	Micro-credit, Health and Education
UNDP – CHTDF	Rangamati	Community Empowerment Project
Bangladesh Krishi Bank	Kaptai	Agricultural Loans
BRDB	Kaptai	Palli Jibikayan Project (RLP)

NGOs operating in this area provide micro-credit to their members on several income generating activities (IGAs) particularly small trade, poultry rearing, vegetable culture, cottage industries. These IGA programs concentrate mostly on small business, poultry, livestock, Jhum cultivation etc. NGO's provide micro-credit mostly to the female members. Overall, NGO activities are not sufficient to support the livelihoods of the surrounding people of Kaptai NP. Local people reported that NGOs do not offer skill development training to their members rather provide micro-credit for skilled activities to generate alternative income. It is evident that NGOs working in the locality have very limited coordination among themselves. More IGA initiatives are essential for upgrading the livelihood of the local people better. Local people, particularly the indigenous people (Marma, Tanchangya, Chakma, Pankhoya etc.), have some skills like bamboo basket and mat making, weaving, etc. Marma and Chakma community are also interested to rear pig as an alternative income generating activity

4.3.3.3 Army, Police and BDR

There are some camps of Army, Police and BDR forces around the Kaptai NP areas. These forces also do some kind of checking of forest products during transportation.

There is a army camp adjacent to Arachari village outside of Kaptai NP. Army personnel help in protecting illegal forest products movement from this area regularly. Near Boroichori, there is a BDR camp cum inspection / checkpoint. BDR often confiscate illegal forest products particularly timber in this checkpoint. They also put a notice board in front of their camp for the vehicle drivers regarding legal products carrying specification. When a vehicle carrying with forest products come to the checkpoint, responsible BDR personnel carry out regular checking of the products and examine valid papers. Any anomaly found with the products and papers beyond specification, they confiscate and hand over the products to the Forest Department and Forest Department then filed cases against the owners of the products.

4.3.4 Dependency of the Stakeholders on the Forest Resources

Local people are heavily dependent on the Kaptai NP for the supply of different forest products particularly on fuel wood for their household needs. Many local households also get some bamboo and other house building materials from the forest.

Table 10: Uses of Various Resources by Stakeholders in and around KNP

SI	Name of Resources	Users	Causes	Extent	Resource dependency	Risk
01	Timber	Saw mill owner	Business Purpose	Medium	30%	Matured & Tall trees removed
		Furniture shops	Business Purpose	Medium	40%	
		Timber trader	Business Purpose	Medium	30%	
		Local People	Household use as furniture and building materials	High	25%	
02	Fuel Wood	Local household	Domestic use, selling for livelihood	High	90%	Mainly collect dead and decayed wood, however sometimes collect young timber and non-commercial timber trees
		Local tea stall/ restaurant owners	burning in tea stalls	Medium	30%	
		Local Brickfields Owners	burning in brickfields	Less	80%	
		Outside household users	Domestic use	Medium	5%	
		Outside tea stall/ restaurant owners	burning in tea stalls	very less	2%	
		outside brickfield owners	burning in brickfields	Nil	0%	
03	Bamboo	Local users	As poles, fencing, ceiling, basket, fuel and others	Medium	30%	Stock declining
		outside users	-do-	Less	70%	
04	Cane	Local Users	Basket Binder/ Others	Less	5%	Nearly depleted
05	Broom Stick	Local Users	Sweepings for cleaning	Less	25%	
		Outside Users	Sweepings for cleaning	Less	50%	
06	Medicinal Plants	Local People, a few Saman (local Badya)	As Medicine	Less	25%	
07	Fruits	Local People	Food	Less	10%	very limited
08	Vegetables	Local People	Food	Less	5%	
09	Wild Pig	Indigenous Community	As meat	Very Less	5%	
10	Honey	Local people	Food, medicine	Less	5%	

SI	Name of Resources	Users	Causes	Extent	Resource dependency	Risk
11	Bark	Outside people	Mosquito repellent coil	Less	2%	
12	Moricha Lata	Outside people	Medicinal value, tasty pepper	Less	3%	

Dependence of different stakeholder groups on different resources for their household needs and supporting their livelihoods is shown in Table10. Almost, all households of the two forest villages inside the NP are dependent on the fuel wood, bamboo and house building material, vegetables etc. supplies from the forest for their household needs. They collect these for own purposes however sometimes they sell it for added income as well. Many poor people from the neighboring villages are largely dependent on selling of fuel wood and many of them sell it for added income.

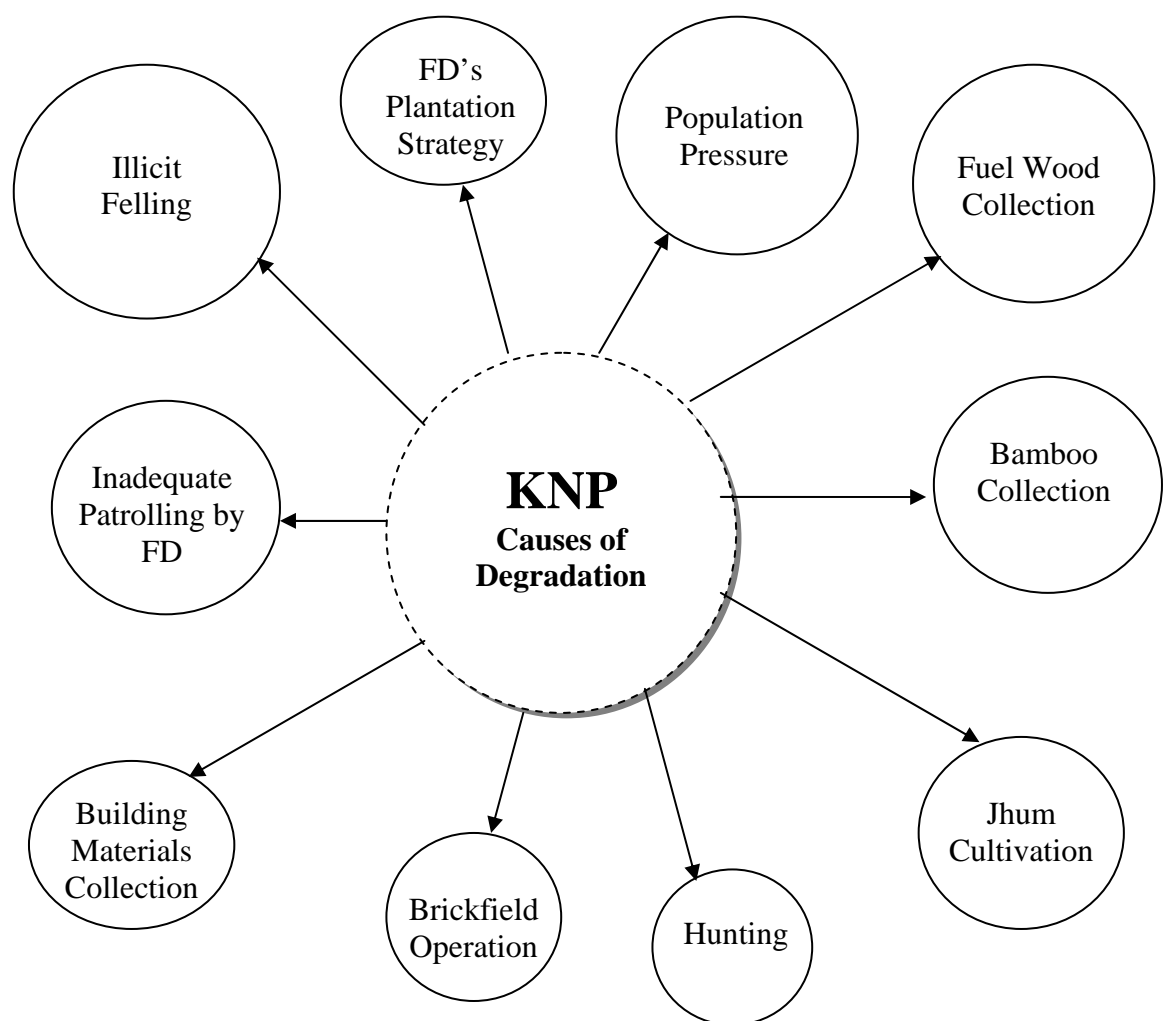


Figure 6: Causes of Forest Resources Destruction with scale in the Kaptai NP

4.4. Causes for the Decline in Forest Resources

4.4.1 General cause

Discussions with different cross-sections of people in and around the Kaptai NP area led to the development of a Venn diagram that highlights the major causes for forest degradation and loss of biodiversity, and this is shown in Fig. 6.

The major causes of forest declination in order of magnitude are as follows: illegal timber felling, population pressure (in-migrant settlements, and locally displaced indigenous people of Chittagong Hill Tracts), fuel wood collection, bamboo collection, Jhum Cultivation, inadequate patrolling by FD, FD's plantation strategies, collection of house building materials, hunting, brickfield operation etc.

Pair wise ranking (Table 11) exercises illustrate that currently illegal timber felling, population pressure and fuel wood collection are the prime causes to decline of forest biodiversity in the Kaptai NP. Presently, hunting contributes negligibly as the activity is very limited. Absence of FD's plantation strategies in the target area vicariously played a significant role in forest degradation.

Table 11: Pair wise ranking for identifying main causes for forest destruction

	Illegal timber felling	Population Pressure	Fuelwood Collection	Bamboo Collection	Jhum Cultivation	FD's Plantation Strategy	Inadequate Patrolling by FD	Brickfield operation	Hunting
Illegal timber felling	-	Illegal timber felling	Illegal timber felling	Illegal timber felling	Illegal timber felling	Illegal timber felling	Illegal timber felling	Illegal timber felling	Illegal timber felling
Population Pressure	Illegal timber felling	-	Population Pressure	Population Pressure	Population Pressure	Population Pressure	Population Pressure	Population Pressure	Population Pressure
Fuelwood Collection	Illegal timber felling	Population Pressure	-	Fuelwood Collection	Fuelwood Collection	Fuelwood Collection	Fuelwood Collection	Fuelwood Collection	Fuelwood Collection
Bamboo Collection	Illegal timber felling	Population Pressure	Fuelwood Collection	-	Bamboo Collection	Bamboo Collection	Bamboo Collection	Bamboo Collection	Bamboo Collection
Jhum Cultivation	Illegal timber felling	Population Pressure	Fuelwood Collection	Bamboo Collection	-	Jhum Cultivation	Jhum Cultivation	Jhum Cultivation	Jhum Cultivation
FD's Plantation Strategy	Illegal timber felling	Population Pressure	Fuelwood Collection	Bamboo Collection	Jhum Cultivation	-	FD's Plantation Strategy	FD's Plantation Strategy	FD's Plantation Strategy
Inadequate Patrolling by FD	Illegal timber felling	Population Pressure	Fuelwood Collection	Bamboo Collection	Jhum Cultivation	FD's Plantation Strategy	-	Inadequate Patrolling by FD	Inadequate Patrolling by FD
Brickfield operation	Illegal timber felling	Population Pressure	Fuelwood Collection	Bamboo Collection	Jhum Cultivation	FD's Plantation Strategy	Inadequate Patrolling by FD	-	Brickfield operation
Hunting	Illegal timber felling	Population Pressure	Fuelwood Collection	Bamboo Collection	Jhum Cultivation	FD's Plantation Strategy	Inadequate Patrolling by FD	Brickfield operation	-
Score	16	14	12	10	8	6	4	2	0
Rank	1	2	3	4	5	6	7	8	9

Cause and effect ranking was done in order to investigate the underlying factors responsible for forest degradation activities by the local people and the outcomes are shown in Table 12 and Table 13. The exercises revealed that local poverty and unemployment are the main driving factors for the extraction of forest resources, followed by additional income needs and squeezed income opportunities. Lacks of some local resources are also driving the people for increased timber felling (Table 12). Brickfield operations though not responsible for the decline of KNP, it is leading to huge amount of fuel wood collection around surrounding areas of KNP (landscape area).

Table 12: Cause and Effect – Ranking (underlying facts for forest degradation)

Identified Problems	Name of Resource	Timber to sell	Fuel wood collection	Bamboo sell	Building Materials Collection	Land encroachment and Jhum Cultivation
Poverty		000	000	00	00	000
Unemployment		0000	0000	0		
Additional income needed		000	00	00	0	0
No resource for house building		0		0000	0000	000
Income opportunities squeezed			000			
HHs consumption		0	00000	000	00	0000
Marketing opportunities dev		00	000	0	0	
Emerged as new income generation activity		000	00	000	00	
Brick Field		00	00			
Jhum cultivation		0	00	00		0000
Forest cases		000	00	00	00	Not explored

Several factors contributing to the illicit felling of timber trees from the Kaptai NP and surrounding areas are FD's poor forest patrol, easy negotiation with local FD staff, poor strength of local FD and emergence of increased local influential groups. Fuel wood collection is being enhanced by the limited fuel wood plantation in the homestead, development of transportation system and marketing opportunities. FD (Table 13) has always linkage to encroachment followed by jhum cultivation as the customary rights of the indigenous people of CHT and lack of control over forest. Deforestation is also caused by over extraction and illegal logging combined with a slow afforestation rate. Unplanned settlement, encroachment and inadequate forest management are part of the problem; apart from this, there is a wide lack of information on forest status and forest management. The regulations in CHT [such as the Chittagong Hill Tracts Forest Transit

Rules (1973)] necessitate farmers to have written permission from the FD officials for cutting farm-trees and transporting to the market centers. Because of the bureaucratic meandering and bribe-seeking attitude of officials, getting permission is very difficult, predominantly for small farmers and it compels them to sell timber in the black market at a very low price. Therefore, selling of timber actually contributes little to eradicate poverty from the lives of local people.

Table 13: Cause and effect (FD's management practice and local situation)

Practice/management practice	Timber to sell	Fuelwood collection	Bamboo collection	Jhuming & Land encroachment	Building Materials Collection
Poor forest patrol	000	0	00		0
Easy negotiation	000	0		0	
Lack of control over forest by FD	000	0	0	0000	0
Transportation development	00	0	0	000	0
Traditional practice	0	000	0	000	00
Increased role of influential groups	00000			00000	

4.4.2 Exploitation of Forest Resources

Table 14 presents summarized information on resource, collector, and their purpose, extent of exploitation, impact, future risk and destination of products from the Kaptai NP. It has been identified that there are about 14 different types of resources extracted/collected from the forest. Two types of resources (fuel wood, bamboo) are extracted on a large scale; however, three on a moderate scale, four on a minor scale and rest five are in very negligible scale. The main purposes for resource extraction include meeting HH needs, selling for added income/and or to support and supplement livelihood. Timber felling, fuel wood and bamboo collection, collections of house building materials, hunting etc. all are posing threats to the forest and its biodiversity.

Table 14: Information on Resource Extraction from Kaptai National Park

Sl	Name of Resources	Resource Collector	Purpose	Extent	Impact	Risk	Destination
1	Timber	Poor people from adjacent villages, unemployed people	For selling	Medium	Reduce large tree & forest thickness selectively, loss of habitat for gibbon and others	High	Local timber trader, saw mill, furniture shop, urban areas
2	Fuel wood	Local poor people, forest villagers, mainly women and children	For HH consumption Selling and HH comp , selling	Large	Loss of habitat, loss of forest biodiversity,	High	Local HHs, local markets, brickfield, transported to urban areas
3	Bamboo	Forest villagers, some local poor people from adjacent villages	Meet HH needs Selling for added Income	Large	Wild stock already heavily depleted, further extract aggravate the situation	Moderate	Local HHs Local and nearby Areas
4	Building Materials	Forest villagers Local people	Meet HH needs; selling for added Income	Medium	Reduce abundance of small trees, loss of habitat, loss of wildlife	Moderate	Local HHs Local markets
5	Cane	Local people	HH Use	Minor	Little collected as they are not much available	Moderate	Natural cane & from plantations
6	Broom Stick	Local People	HH Use and Sell	Medium	Seasonally collected mainly to sell	Moderate	Throughout the country
7	Fruits	Local people, children and women	Own consumption, few for sale in the locality	Minor	Hamper forest regeneration to a little extent	Minor	
8	Wildlife	Forest villagers Local people	consumption	Minor	Stock heavily depleted	High	Local HHs
9	Vegetables	Local people, mainly forest villagers	Collect number of species of vegetable	Minor	No apparent impact	Negligible	
10	Sungrass	Local people	Collect as house building materials	Presently little	Reduce forest biodiversity	Negligible	Removed in the process of plantations
11	Medicinal Plants	Few local people, forest villagers	Occasionally collect some selective species	Little	Negligible	Negligible	
12	Moricha Lata	Local People	For selling	Negligible	None	Negligible	Southern Districts
13	Tree Bark	Few local people	For selling to mosquito repellent mat industries	Negligible	Negligible	Negligible	Dhaka & Chittagong
14	Honey	Local people	Own consumption	Negligible	None	Negligible	-----

4.4.3 Seasonal changes in resource extraction

Trend in forest resource exploitation in different months is shown in Table 15. The exploitation of resources varies depending on the seasons. Timbers are felled throughout the year, especially in the dry months. In the rainy season, collection continues in a limited scale rather. However, this season is particularly helpful for illegal timber transportation, as that time there will be ample water in the Kaptai Lake to transport the timber rather easily through floating devices. Fuel wood collection continues throughout the year more or less in a similar rate except the rainy season. That is due to that easy accessibility and mobility in the dry seasons inside the forest and less accessibility, mobility and less drying and storing facilities during rainy season. Bamboo extraction mainly takes place in drier months however collection continues throughout the year that corresponds to local needs for house building. Broom stick, honey, fruits etc. collected in particular seasons and that not available throughout the year in the forests. Medicinal plants, vegetables and some other forest resources are extracted to some extent mainly during rainy season.

Table 15: Seasonal Calendar of Resources Exploitation in Kaptai NP

Name of Resources	Boisak	Joistha	Ashar	Srabon	Vadro	Ashwin	Kartik	Aghran	Poush	Magh	Falgun	Choitra
Timber	000	000	0	0	00	00	000	000	000	000	000	000
Fuelwood	000	000	0	0	00	00	000	000	000	000	000	000
Broomstick	-	-	-	-	-	-	-	-	000	000	-	-
Bamboo	0	0	0	0	0	00	00	00	00	00	00	00
House building Materials	0	0	-	-	0	0	0	0	00	00	00	00
Medicinal plants	0	0	0	0	0	0	0	0	0	0	0	0
Leafy vegetables	00	0	0	0	0	0	0	0	0	0	0	00
Jungle Fruits	-	-	-	000	000	-	-	-	-	-	-	-
Moricha Lata	0	0			0	0	0	0	0	0	0	0
Bark - Modonmochon	0	0			0	0	0	0	0	0	0	0
Honey	00	0										

4.4.4 Exploitation of Major Resources from KNP

4.4.4.1. Fuel wood collection

Fuel wood collection is a major and visible activity in Kaptai NP. It continues throughout the year, however, most of the extraction occurs during the dry months. Most of the villagers, especially from inside villages and villages that are adjacent to the NP are 90% dependant on the forest for their fuel wood requirements to meet their household

consumption (Table 11). A large number of families undertake fuel wood collection to supplement their HH income. Both men and women collect fuel wood, however sometimes children also go for collection of fuel wood.

According to local people, almost all the households neighboring Kaptai NP collect fuel wood for their daily consumption. Usually, a person collects a 20-40 kg fuel wood each day. They carry it either as their shoulder or head loads. Most often they do not pay any amount to FD however some of the respondents claimed that they need to pay a small amount for entering the forest for collecting fuel wood. FD does not restrict access to the forest for collecting fuel wood. However, the PRA team did notice during their exercise in the field that the collectors are allowed to collect dead branches of trees. However, in practice, sometimes they cut some soft trees, chop and bundle it. Sometimes they leave the cut trees to get a dead appearance. They also cut the young trees of valued timber trees. They also cut the small bushy trees.

Besides the local HH use, local tea stalls/ restaurants use fuel wood for burning in their kitchen, some of the local brickfields also use fuel wood for brick burning. Other local people buy fuel wood from the local market sold by collectors. The fuel wood collected for commercial purpose mainly purchased by the fuel wood traders locally and transports it to Boroichori, Lichubaga, Raikhali, Boalia, Rangunia, Kodala, Moriamnagar where it is sold to local consumers and brickfields.

4.4.4.2 Illicit Timber Felling

Illicit timber felling is also a major activity in Kaptai though it has lessened largely in recent days and is still regarded as the major cause of forest destruction. Although, timber felling is illegal in Kaptai NP, the activity is going on in a shorter scale. Many people from surrounding villages of Kaptai NP are indirectly involved with illicit felling of timber from the forest. The illicit fellers come in groups mostly from Kodala, Moriamnagar, Raikhali, Boalia etc. villages of Rangunia upazilla and some even come from Chakaria upazilla of Cox's Bazar district. The timber traders outside Kaptai NP area mostly fund them to supply forest timbers particularly teak as teak furniture has high demand throughout the country. They take shelter in the houses or any other hideouts with the assistance of local people. Most often, illicitly felled timbers are stored to local people's house and the fellers pay local people due to their service. FD officials regularly patrol the vulnerable areas and they often chase the fellers. Sometimes, fellers resist them even with their illegal firearms.

Illicit fellers mainly cut the medium sized valued timber trees, like teak, gamar, civit etc. The activity is carried out at night and intensively during the rainy season when the

access to the forest is very difficult and forest patrol is restricted. Usually, they select suitable trees during daytime. Sometimes, the fellers come across the forest patrol. Illegal tree fellers from the locality cannot break their affiliation with illegal felling of trees once forest case is filed against them. They need to meet the expenses to fight the case and thus try to collect the same from timber selling.

4.4.4.3 Bamboo Collection

Bamboo has many uses in the locality, e.g. as house building materials, as material for fencing, as roof ceiling, basket and mat making and as fuel. About ten species of bamboo available in the park and are collected by the local people. Earlier, bamboo was abundant in the forest. Now, their stocks are seriously depleted, primarily due to extensive extraction. This year in most the bamboo clumps, flowering occurred and natural dying of bamboo is in progress. New bamboo is growing from seeds naturally and that will take around 3-4 years to have large supply of mature bamboo again. FD has planted several commercially important bamboo species previously in the Kaptai NP. Forest villagers and local people collect bamboos from the wild, mainly for meeting their HH needs and sell for added income as well. It is reported by local people that some people undertook this as a commercial activity. According to local people, about 10-15% of the local households are completely or partially dependent on bamboo collection for their livelihood. Forest Department applies *Dakhila* system and collectors pay revenue to be entitled to collect bamboo legally. However, most of the neighboring people collect bamboo without paying revenues to FD for household uses and as building materials. Bamboo is carried as shoulder and head load. Some traders from distant villages also come to the locality for purchasing bamboo. They prepare bamboo mats, many fishing traps and baskets and sell those to outside markets.

4.5. Collection of other Resources

Besides major forest products, Local people also collect some other Minor Forest Products (MFPs) from the park, mainly for household consumption and some of the products sell for added income as well. The collectors are mainly from the forest villages and local poor people and children from the adjacent villages. Information on such resources is given below.

4.5.1 Broomstick

Dependent people particularly women in and around the Kaptai NP collect broomstick (*Thysanolaena maxima*) in the winter season. This is popularly known as *Phul Jharoo* and used as sweep. Broomsticks become mature in the winter. Collection starts in winter and sometimes continues in some parts of the summer months as well. This is totally a

seasonal activity for the collectors, not continues year round. This is often collected for added income to the family. Broomstick has a very good market and demand throughout the country. Broomstick produced in the Kaptai NP largely transported to the other districts of the country. A medium sized broomstick is sold at Tk. 10 in and around Kaptai NP, however, cost of the same in other districts is about Tk. 25.

4.5.2 Vegetables

People including Forest villagers' and neighboring to the National Park almost everyday collect some vegetables from the forest. Besides, the fuel wood collectors collect some vegetables during the time of collection of fuelwood. The vegetables exploited are bamboo shoots (bacchari), bonkachu (bandhugi), wild tubers, kalar mocha & thor, wild banana, dumus (*Ficus*), leafy vegetables eg. thankuni, dheki shak, kochu, kochur shak, kochur loti, etc. from the Kaptai NP.

4.5.3 Fruits:

Different resource collectors collect fruits during their visit to KNP as a supporting activity. Fruits are collected for household consumption not to sell for added income. They collect fruits of amlaki, haritaki, plum, bohera, latkan, deuwa, banana, wild mango etc.

4.5.4 Maricha Lota

Moricha Lota popularly known as *Chui Jhal* (Chui Pepper) is favorite throughout the country especially in Southern districts. It enhances the taste of some foods like Halim, Chotpati. It has some medicinal values as well. Very few people collect moricha lota from Kaptai NP and sell it to the traders coming from Khulna and other districts at approximate Tk. 10-20 per KG and the traders transport it to other parts of the country. However, that is sold at Tk. 100 per KG in the southern districts.

4.5.5 Tree Bark

Some people from Kaptai NP collect bark of a tree locally known as *modonmochon*. The bark of *modonmochon* tree contains sticky substances and act as binding particles. This is a raw material for mosquito repellent mat industries as a particle-binding agent. There is no use of *modonmochon* bark in the locality rather than selling it to the industries for added income.

4.5.6 Cane

Four species of canes are available in the Kaptai NP. Of them, Korak, Budhum and Golok are largely used for making basket, cradle, mirror hood, mora, small furnitures etc. However, canes are seldom available in these days as the stock of cane in the Kaptai NP is declining day by day and this is under severe threat.

4.5.7 Sungrass

Sungrass (*Imperata cylindrical*) is very limited in these days. People mainly collect sungrass as building materials for roofing their houses. This is not sold for added income.

4.5.8 Wildlife

Hunting is now a days, is very limited in Kaptai NP as there is a serious decline in the resource and due to increased awareness. The local people hunt for jungle fowl. Some people still look for barking deer and that seldom available. Indigenous people sometimes also hunt for wild boar / pig that they consume not sell for added income.

4.5.9 Honey

Honey is seldom available in the wild. Still some trained honey hunters look for honey in the Kaptai NP especially in the flowing months. Honey is mostly hunted in the month of *Boishak* and *Joistha*.

4.6 Other Causes for Forest Degradation

4.6.1 Land Encroachment

Out of 13,498 acres of land in the Kaptai NP, only about 36.40 acres of land is under encroachment now. In Kaptai Sadar Beat amount of encroached land is 8.72 acre, in Suknachari Beat 8.56 acre, in Bangchari Beat 18.30 acre and in Rampahar Beat only 1.22 acre. This is not a big in amount obviously however possess possible threat to the NP.

4.6.2 Jhum cultivation

Jhum cultivation or traditional slash and burn agriculture is done by the most of the indigenous community in and around Kaptai National Park particularly by Chakma. That is also called 'shifting cultivation'. Crops grown on cleared hill slope fields include upland rice, lemon, papaya, turmeric, ginger and recently introduced pineapple. In the past, when population density was still low, most crops grown were subsistence food

crops that were grown on a freshly cleared and burned hill slope for 2 or 3 years, where after the field was left fallow for 10 to 15 years. At present, the fallow period has been reduced to 5 to 6 years. This, and the introduction of cash crops, has increased the need for chemical fertilisers if reasonable yields are to be maintained.

For a number of reasons, previous resettlement attempts, with the objective to replace non-sustainable shifting cultivation by permanent cropping systems, have not been successful. First, some indigenous communities still prefer food crops from *jhum* field. Second, horticulture and agro-forestry attempts failed because of insufficient farm returns, poor marketing opportunities, lack of quality grading, farmers' preference for food crops, lack of soil conservation measures and high costs for herbicides (Roundup, Grammoxone) to suppress invading weeds, especially sungrass (*Imperata cylindrica*) and trailing and climbing weeds (*Mucuna*, *Dioscorea*). Most importantly also, *insufficient consultations* were held with the farming communities involved, whereas the *lack of land title* eroded farmers' incentives to actively support these schemes.

There are around 60 hectares of *jhum* cultivation plots within the territory of Kaptai National Park. Around 50 hectares of *jhum* plot near to Bangchhari forest village and another 10 hectares at Kamilachari area. Both the sites are within the territory of Kaptai Range. There is no *jhum* practice in Karnaphuly Range however there is a possibility to *jhum* cultivation at Kalmichara.

4.6.3 FD's Plantation practice

The park has been converted a plantations in the past. The earlier plantations included long rotational plants. At present plantation is being done with short rotational trees, often monoculture. The plantation practice includes clearing of undergrowth by burning and subsequent weeding to facilitate plant growth. This practice contributes most to the degradation in local biodiversity.

4.7 Local Community and Power Structure and Local Governance

4.7.1 Local decision makers and influential people

A total of 48 influential persons (including personnel of traditional administrative system of CHT as well as formal national administrative system) have been identified so far in the locality and many of them have control over the local people, their activities and often, even over local administration through the regional and national political leaders.

Table 16 provides the name and address of the influential persons, while Fig. 7 shows the social dimension of power structure of the area.

Table 16: List of Powerful and Influential persons for Kaptai National Park

Sl.	Name of Villages	Name of most influential Persons	Designation
01	Bangchari	Chuiching Marma Mong Pru Maiyadhon Tanchangya	Headman (Forest) Local Elite Local Elite
02	Debachari	Vabatosh Dewan Bhagyadhan Chakma Ranatosh Dewan Turulakka Tanchangya Babul Tanchangya Peti kumar tanchangya	Headman, Kamilachari Karbari, Debachari Head Teacher, Govt. school Karbari, Dighalchhari Elite, Dighalchhari Elite, Dighalchhari
03	Chitmorom Headmanpara	Chain thoyala Marma	Headman
04	Chitmorom Boropara	Labre chai Marma	Karbari
05	Chitmorom Muslimpara	Md. Fazal Rahman	Karbari
06	Chakuapara	Mongcha sing Marma Suepru sin Marma Polao Marma Pulo ching Marma	Member, Chitmorom Karbari, Karbari Local Elite
	Chakua Rehabilitation	Uthai pru Marma	Member, Chitmorom UP
07	Sitapara	Sue Pru Cha Marma	Karbari
08	Arachari Mukhpara	Mahendralal Chakma Montu Member	Karbari Ex-UP Member
09	Arachari Headmanpara	Kholamohon Tanchangya Bijali Mohon Tanchangya Jagadish Tanchjangya	Headman Karbari Member
	Juracharipara	Chikandhan	Karbari
	Badyapara	Duntiong	Karbari
10	Bhaiboncharapara	Bishuram Chakma Sijoy Bikash Chakma	Karbari Member, Kaptai UP,
11	Harincharapara	Thoaiong Marma Lakshidhon Marma Supriya Marma	Headman Karbari Member, Ward- 2, Kaptai
12	Shilchhari Belabopara	Omeching Marma	Local Elite
13	Shilchhari Marmapara	Paimong Marma Aunglasing Marma Siddique Ahmed Chala Pru Marma Thai Pru Marma Moagshi Pru Marma	Karbari Chairman, Wagga UP Member, Wagga UP local, age: 60-65 yrs. local, age: 60 yrs local, age: 65 yrs
14	Doluchari	Data not available	
15	Wagga Tea Estate (Idris Farm)	Khurshid Alam Chaithoi Marma Babul Das Kayohla Marma	Owner, Tea Estate Manager (Tila Babu) Community Leader Karbari, Uzanchari
16	Zibtoli	Data not available	Headman Former Headman
17	Kalabunia	Kyazohla Marma Thoai cha pru Marma Aungshi Marma Chiku Marma Ushasing Marma	Headman Headman (incharge) Former Headman Local Elite, Shopkeeper Local Elite
18	Moidongpara	Fochao Marma	Karbari
19	Puttachari	Data not available	
20	Ujanchari	Data not available	
21	Kamilachari	Bhaiggadhan Chakma	Karbari

Besides, several outsiders also have influence on the local people and their activities and are involved with illegal harvesting of trees. These outsiders are mostly timber traders who invest money to organized gangs of illicit fellers to fell trees from the Kaptai NP. Members of those organized gangs then involve local people in storing stolen timber primary in their custody and often provide their shelter on payment basis. Information on the domain of their power is expected to be investigated with the progress of work at the site level. However, the sociogram of Power structure (Fig. 7) of Kaptai NP has shown below.

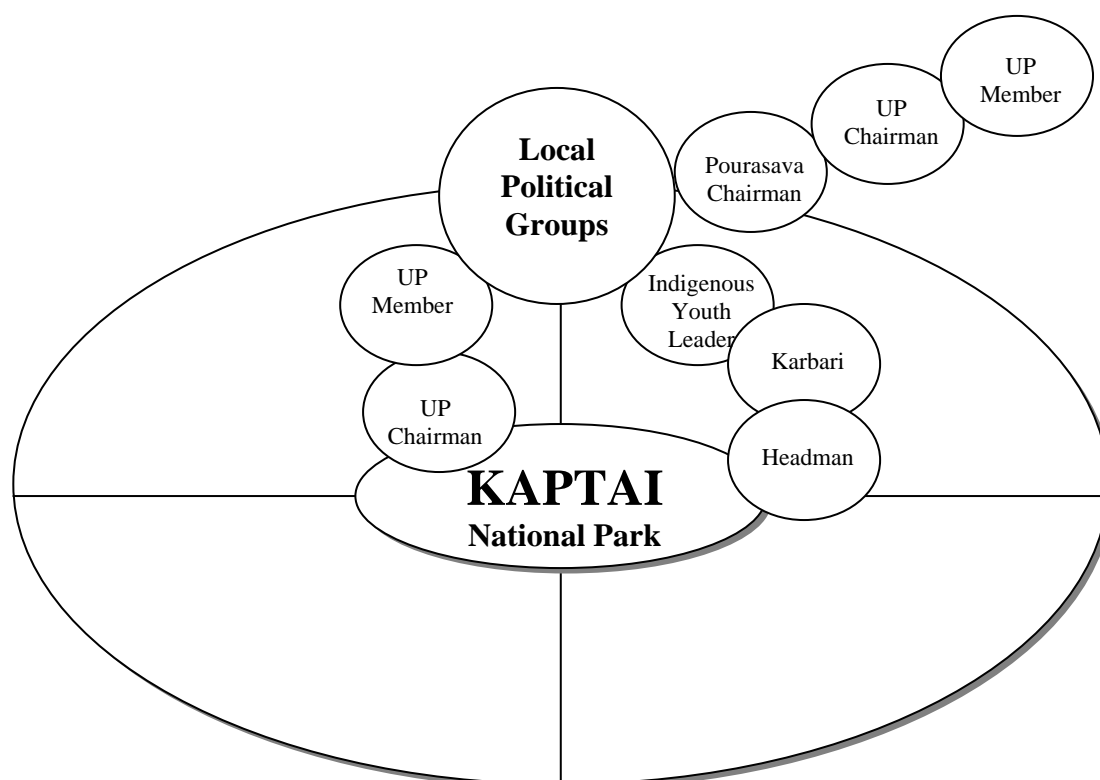


Figure 7: Venn diagram showing Power Structure in and around Kaptai NP

4.7.2 Local governance:

As part of the administrative and governance systems prevalent in Chittagong Hill Tracts, the landscape area of Kaptai NP falls under the jurisdiction of Traditional Administrative System of CHT, and formal National Administrative System. The formal administrative legal system works through the chief executive of a sub-district, district commissioner and the district council. The two administrations often work independently and the decision-making process is therefore ambiguous and affects the administrative processes at the lower level.

The indigenous administrative system is three tiered:

- *Village level:* the basic administrative unit is a village with a karbari as its leader (head), appointed from among the villages, by the raja directly or on the

recommendation of the mauza headman. The karbari is responsible for all matter relating to that village;

- *Mouza level:* A number of villages are clustered together to form a territorial unit of jurisdiction called mouza, of which there are more than 350 in the entire CHT. Each mouza has a headman/woman, who is responsible for collection of revenue, preservation of peace, allocation of agricultural lands including the jums, conservation of the nautral resources of the mouza, administration of customary law etc.
- *Territorial level:* At the highest level, it is the Raja who has authority over his / her territory.

The british introduced the present system of dyarchy in the Hill Tracts. Parallel to the three chiefs (each for Rangamati, Bandarban, and Khagrachari), there is a state-operated administrative structure with the deputy commissioner as the chief executive (Fig. 8). The gradual expanding role of the state apparatus has been at the expense of the indigeous system. The power and authority of the Rajas and their headman and karbaris gradually weakened with each successive administration. And, at present, although they retain certain judicial and revenue powers (including land adminstration), and in matters relating to personal law, their authority has been progressively more undermined by the concentration of more and more power in the hand of government officials.

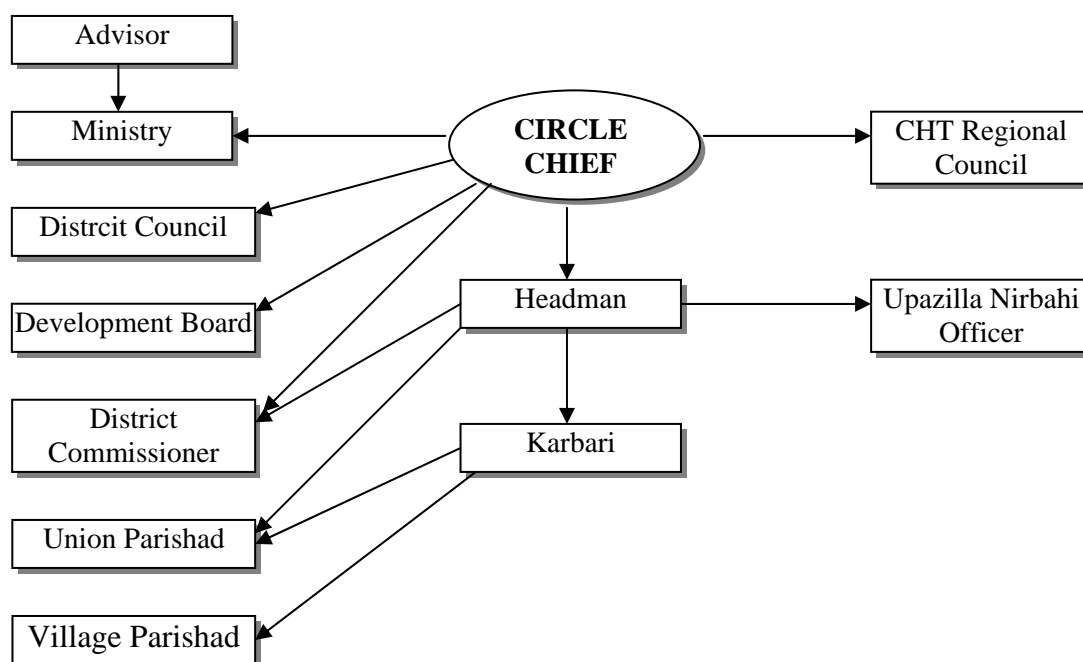


Figure 8: Prevalent Administrative system of Chittagong Hill Tracts

Currently, local Union Parishad is the lower level local government entity and look after local welfare and development. The local public representatives are consulted whenever there is a local issue.

Police administration at Upazila level is the local law-enforcing agency and is involved with maintaining local law and order situation. They are the authority to make arrests of warranted person by forest cases. BDR also plays supportive role in forest protection and several BDR set-ups are there in and around Kaptai NP. Both parties claim that they help in forest protection. The indigenous people have their own traditional way of governance and administrative system of their community as mentioned earlier. They are very organized community having respect to their community leaders.

4.7.3 Local conflict, conflict resolution, social adhesion and cohesion

4.7.3.1 Sources of conflict

Fig. 9 illustrates the relative causes for conflicts in the area. The main sources of conflict among local people are centered on land disputes, over both legal and illegally occupied, and for money lending, family matter, kid's matter etc. It was found some different dimensions of conflict into different communities. Between the in-migrant settlers and indigenous people, in most of the cases conflict arises in the case of deciding the boundary and ownership of land, which is in fact the scenario of the whole of CHTs. Government, Land Commission, and Regional Council along with public representatives are in the process of resolving this land dispute.

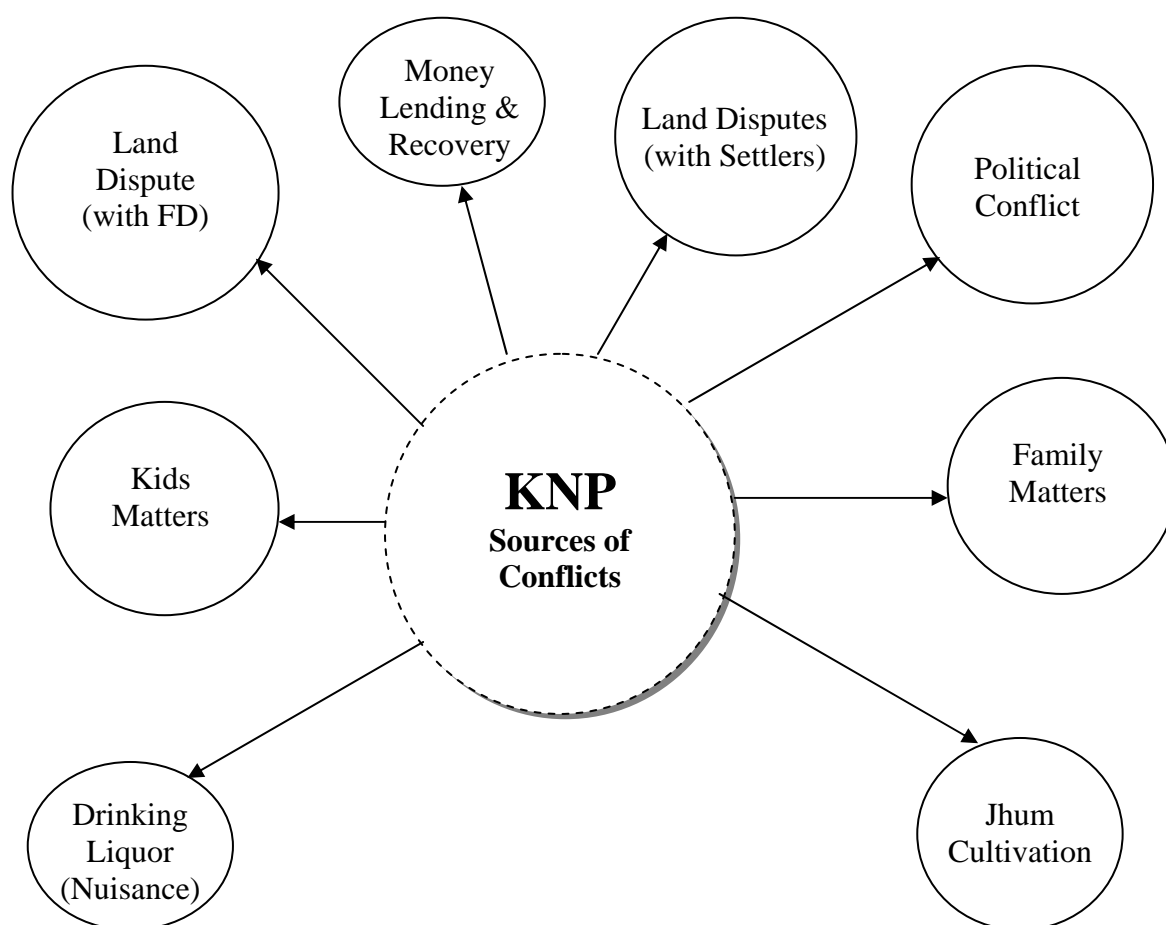


Figure 9: Sources of Conflicts in and around the Kaptai NP

4.7.3.2 Conflict resolution

The internal matter including conflicts of each village community are decided by its members, inducting a council of elders under the leadership of the *karbaris*. Most matters are resolved by consensus; if there are any dispute, the *Karbari* has the decisive voice. Any matters which can not be resolved satisfactorily, or involve members of other villages, are placed before the relevant mauza headman for decision. If required, matters are taken to the Raja, and can be filed as a court case if necessary. However, conflicts with higher degree are often resolved by arbitration by local elites & public representatives (MP, UP chairman, members). If the local efforts are not fruitful it may lead to filing cases with Thana-police and even to courts, but this happens hardly in case of local indigenous people.

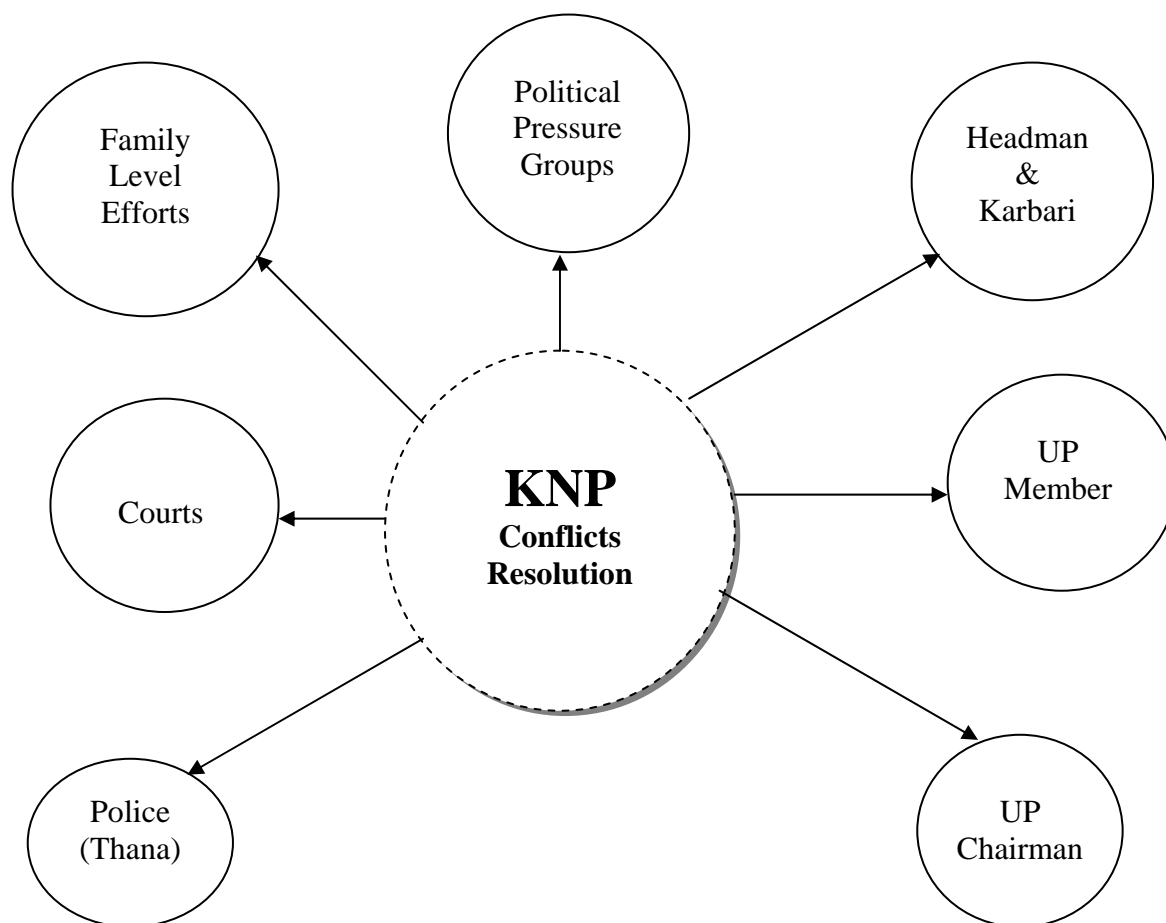


Figure 10: Conflicts Resolution Process in and around the Kaptai NP

4.7.3.3 Conflict resolution mechanism

The local level conflicts are resolved in several ways. Fig. 10 shows the ways of resolving conflict in the area. If the conflicts arise due to forestland disputes then people often go to the nearby forest office. However in the cases of family level conflicts, usually the family head and old member tried to resolve the conflict. As mentioned earlier, in the community

level, conflict usually resolved primarily by the village head locally called Headman as mentioned earlier in *Governance* section.

4.7.3.4 Conflict with FD

The conflict with local people dependant on jhuming in Kaptai NP area as well as living around Kaptai NP is very severe due to existing land dispute and practice of customary rights issue prevalent in Chittagong hill tracts. There is a huge conflict with local FD with local people, particularly with tree feller from various villages. Fig. 11 shows the relative sources of conflict with FD and local people. The other causes of conflict arising with FD are forest and land encroachment, forest cases by local FD staff, prevention in resource exploitation. While FD sees jhuming and the settlements in and around Kaptai NP as land encroachment, the indigenous people take it as part of ‘Practice of their customary rights’.

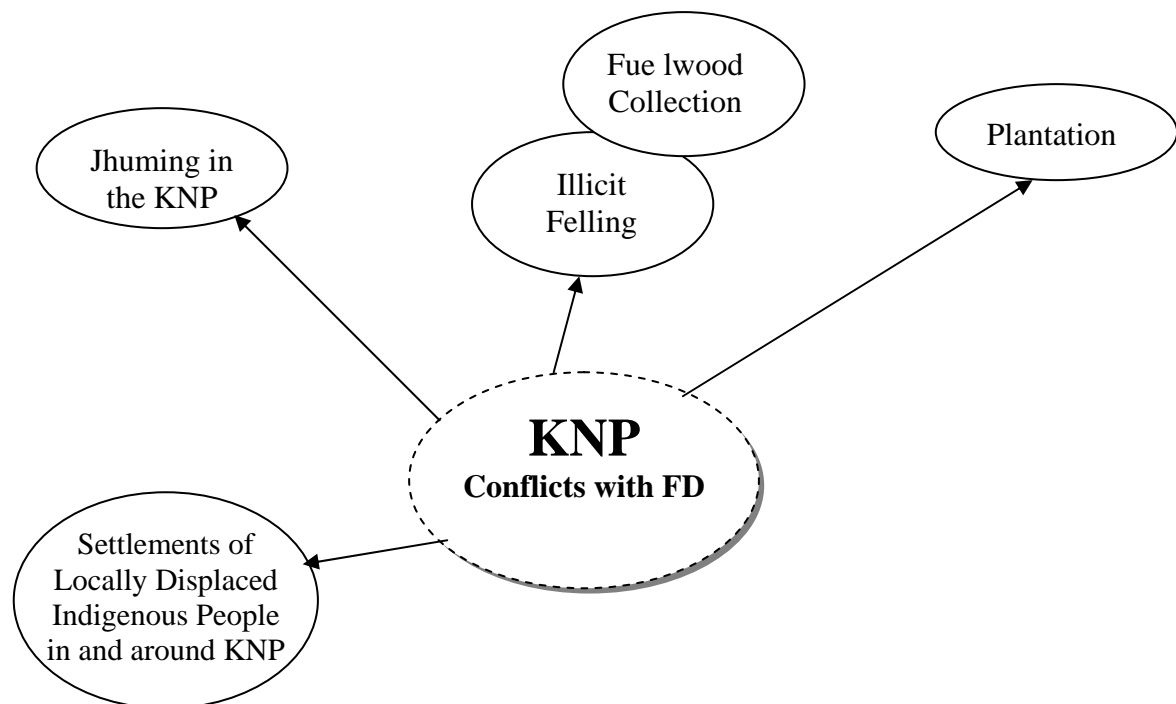


Figure 11: Ven Diagram: Conflicts with FD

4.7.4. Social cohesion and adhesion:

Many social activities in the KNP areas maintain social adhesion and cohesion among the villagers. Some of them are cultural events like Bizu, Sangrai, Boisu; marriage ceremony, religious functions, national programme (e.g. National Victory Day, National Marty's Day, Independence Day etc.), annual sports and prize giving ceremony in the schools, collective action through local community organizations and many other events bring all the villagers together.

4.8 Local Socio-economic Settings and Dynamics

4.8.1 Demographic Profile

4.8.1.1 HHs number

Total number of households in and around the villages surrounding the park is approximately 1500 except missing data of some villages. All these households have different degrees of stakes and dependency with the Kaptai NP. Most of them are indigenous community particularly Marma, Chakma and Tanchangya.

4.8.1.2 Education

In the tribal community around the Kaptai NP, still do not leave their children to school in a large proportion. However, this trend is changing day by day. Now-a-days even 80% children of some villages go to primary school, however, only 5 - 18% goes to High School and only 5% study in the colleges. Among the adult, about 90% are illiterate (above 30 years of old). Information collected during RRA exercises are presented in Table 17.

Table 17: Educational Status of the People Living Adjacent and Inside the Villages*

Sl	Villages	Illiterate	Primary	Secondary	Graduation
	Bangchari	55	40	5	-
	Debachari	60	36	4	-
	Chitmorom Headmanpara	75	20	4	1
	Chakuapara	90	10	-	-
	Sitapara	75	22	3	-
	Arachari Mukhpara	90	9	1	-
	Bhaiboncharapara	90	10	-	-
	Harincharapara	90	7	2	1
	Shilchari Belabopara	20	72	8	-
	Shilchari Marmapara	10	81	9	-
	Wagga Tea Estate (Idris Farm)	90	10	-	-
	Zibtoli	10	68	18	4
	Kalabunia	70	30	-	-

*percentage in comparison to the total population of the village

4.8.2 Livelihood strategies analysis

4.8.2.1 Occupation

Jhum cultivation is still one of the major occupations of the indigenous community living around the Kaptai NP followed by day labor. There is an increasing tendency of the local people on agriculture is quite evident around the NP. Indigenous people in these days are not leaving any suitable agricultural lands idle rather practicing crop cultivation, vegetable cultivation even planting lot of horticultural species. Table 18 shows the changes in occupation of the local people over time.

Table 18: Trend in changes in occupation of people in the KNP

Sl No	Occupation	Before 1971	Before 15 Years	Present
01	Jhum Cultivation	00000	0000	00
02	Agriculture	-	-	00000
03	Day laborer	00000	000	00
04	Fuelwood collector	00	000	00000
05	Service	-	-	00000
06	Timber trader	-	-	-
07	Furniture maker	-	-	00000
08	Business	-	-	00000
09	Illegal logman	00	00000	0

4.8.2.2 Richness-poverty level

Among the indigenous community, there are no rich people. However, about 8 % middle class, 37% poor, 30% very poor and 25% landless in the Sitapara Village and 12% middle class, 56% poor, 17% extreme poor and 21% landless in Debachari village. Table 19 shows village wise percent distribution of different strata of the richness and poverty level.

Table 19: Livelihood Status of the Adjacent and Inside Villagers

Sl No	Villages	Rich	Mid class	Poor	Extreme Poor	Landless
1	Shitapara	-	8%	37%	30%	25%
2	Debachari	-	12%	56%	17%	21%

4.8.2.3 Unemployment

This figure varies among the villages. In average 25% of the local people are unemployed. However, there is a strong seasonal trend in unemployment level. Unemployment is a concern/problem in the area.

4.8.2.4 Credit

Several NGOs and 2 banks provide micro-credit to local people. Bank loans are mainly given for agriculture. NGOs provide credit mainly for IGA. NGO's IGA programs concentrate on small business, fish culture, poultry, livestock rearing etc. NGO credits are mainly focused on women.

4.8.2.5 Income and expenditure profile

Data also collected on the income and expenditure profile of the community people of the area. Data show that the main source of income of the local people is jhum cultivation, followed by fuel wood collection, livestock rearing, day laborer, agriculture, timber poaching, small business, service. On the other hand, the expenditure profile shows that people spend major part of their income for purchasing food, followed by meeting

cultivation expenses, clothing, religious events, marriage of child, health care purposes, but less for educational purpose. Fig. 12 and Fig. 13 represent the income and expenditure profiles of village Sitapara, as an example.

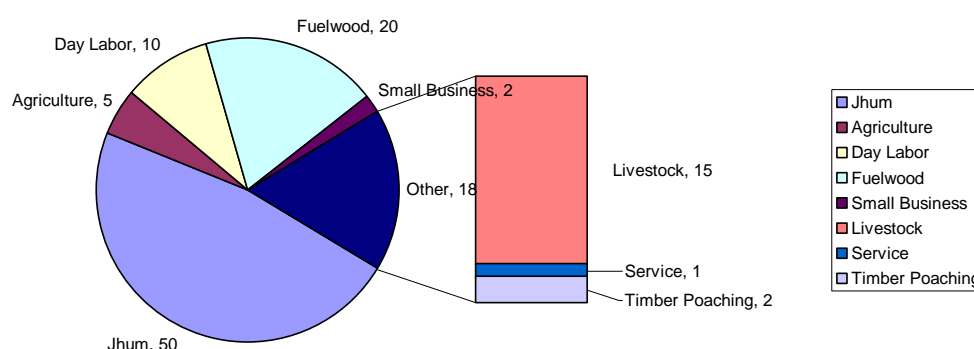


Figure 12: Yearly Income Profile of Village: Sitapara

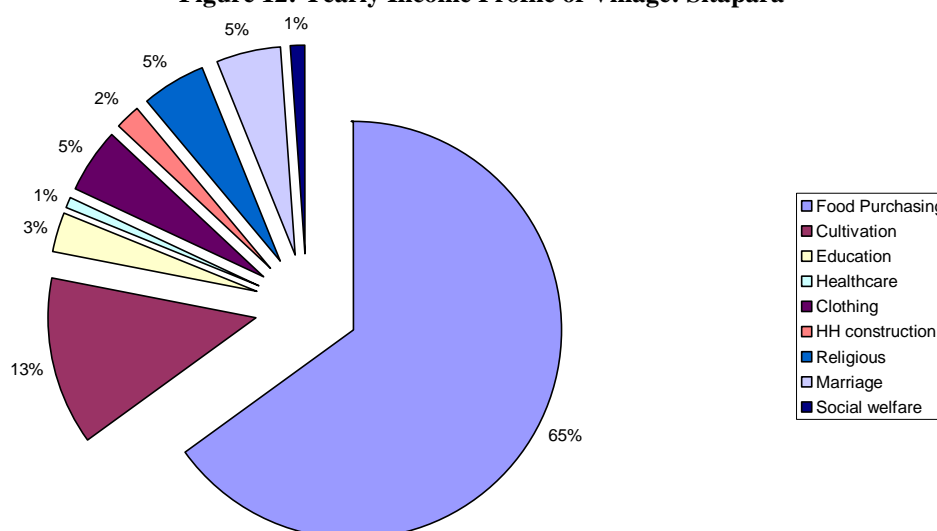


Figure 13: Yearly Expenditure Profile of Village: Sitapara

4.9 Social Dynamics (Trend in changes in socio-economics)

4.9.1 General Dynamics

Changes in some key socio-economic matrices and local activities are presented in Table 20. Compared to 1970 situation, population had increased with corresponding decline in solvency. Although, literacy rate has increased, unemployment rates have also increased. During the time, use of forest for both as HH needs and income generation has increased. Local food scarcity has reduced while an opportunity for alternate income has increased to manifold.

Table 20: Trend in Changes in Socio-economics Matrices for KNP

Issue	Pre-1971	15 years ago	Present	Causes for change
Settlement/Population	0	00	00000	Popln. Growth, migration

Issue	Pre-1971	15 years ago	Present	Causes for change
Solvency	00000	00	0	Limited resources, jhum production fall
Livelihood expenditure	00	0000	00000	Cost increased
Literacy	-	-	00000	Education facilities established
Unemployment	-	000	00000	Popln. Growth, limited resources
Use of forest for income	0	000	00000	Limited opportunity from other sources to earn
Use of forest for HH needs	000	0000	00000	Demand increased
Occupation	0	000	00000	Opportunity became less
Credit & IGA	-	-	-	No lending institutions operating here
Food scarcity	-	00	00000	Popln. Growth, limited land and production potentials
Homestead plantation	-	0	00000	Meeting needs and extra earning by sell
Transportation and mobility	0	0000	00000	Development assistance increased

4.9.2 Seasonal changes in socio-economics of the local people

Information on seasonal fluctuations in some socio-economic parameters and some resource extraction activities is shown in Table 21. Unemployment is higher during Ashar, Shaban, Bhardo, Ashwin and in Falgun. Timber felling is more or less similar throughout the excepting in rainy season. However, fuel wood collection is more during dry seasons rather than rainy season. In summary, except timber felling, most forest resource extraction and related activities take place during dry months. Timber felling is inversely related to forest patrol.

Table 21: Seasonal Changes in Socio-economics of the Local People

Activities	Boishak	Joshtya	Ashar	Shrabon	Vadro	Ashyin	Kartik	Aghran	Poush	Magh	Falgun	Choitra
Unemployment	0	0	00000	0000	00000	00000	0	0	0	0	000	0
Fuelwood collection	00000	00000	000	000	0000	0000	00000	00000	00000	00000	00000	00000
Timber felling	00000	00000	0000	00000	0000	00000	00000	00000	00000	00000	00000	00000
Bamboo collection	00	00	0	0	00000	00000	00000	00	00	00	000	0000
Broom Stick	-	-	-	-	-	-	-	-	00000	00000	00000	-
Building Materials	-	-	-	-	-	-	00000	00000	-	-	-	-
Transportation problem	00	00	00000	00000	0000	0000	00	00	00	00	00	00
Jhum Cultivation	00000	00000	00000	00000	000	000	0000	000	0	0	-	0
Agricultural activities	00	00000	00000	00000	000	000	000	000	0	0	0	0

Activities	Boishak	Joshtya	Ashar	Shrabon	Vadro	Ashyin	Kartik	Aghran	Poush	Magh	Falgun	Choitra
Accessibility to forest	00	00	00000	00000	0000	0000	00	00	00	00	00	00
Brickfield/sawmill operation												
Vegetable collection	000	000	00000	0000	000	000	000	000	000	000	000	000
Hunting	000	000	000	000	000	000	000	000	000	000	000	000
Honey	-	-	-	-	-	-	-	-	-	-	00000	00000
Jungle Fruits	000	000	000	-	-	-	-	-	-	-	00000	00000
Medicinal Plants	000	000	000	000	000	000	000	000	000	000	000	000

4.10 Local Problems

During PRA/RRA activities, causes of the local problems and its possible solutions were also investigated and that is shown in Table 22. The major problems, according to the magnitude, relate to poverty, unemployment, health and sanitation, road communication, education, electricity, drinking water, forest cases, etc.

Table 22: Causes of local problems and possible solutions

Name of Problems	Reason	Solutions
Poverty	Over population, limited land & resources, limited income opportunity, unemployment, lack of capital to initiate small business, lack of alternative income generating activities, lack of skills	Generation of opportunities for new IGA, and provision of interest-free credit, skill development training, more NGO activities; increase income by maximizing utilization of land & other resources
Unemployment	Lack of agricultural land, lack of sufficient work, population pressure, Lack of education, lack of innovation	Provide ideas, capital and training
Education	Absence of sufficient educational institution	Establishment of new and technical schools, awareness, and financial support
Road communication	Roads are yet to be developed	Involving local government or NGOs in road construction
Health care facilities	No hospital/clinic and good doctor near villages, lack of sanitary latrine & tube well	Promoting government and NGO health and sanitation programmes
Drinking water	Lack of deep tube well and deep pond	Need Government and NGO efforts to provide tub well and pond construction.
Electricity	Lack of electricity supply	Electricity should be supplied through REB or PDB.
Forest case	Cases lodged by local FD against illegal resource extraction, sometimes causes are not valid	Illegal use of forest resource should be stopped. FD should not file any case based on falsehood.

4.11. Gender Issue

4.11.1 HH decision-making

Table 23 and Fig. 14 shows the role of different family members in taking HH decisions. In Kaptai NP areas, husband takes the major HH decisions, followed by wife and sons.

Daughters are rarely consulted in decision making. Women of ethnic community have a major role in many HH decisions making.

Table 23: Information on Family Decision Making

Name of Decision	Husband	Wife	Father	Mother	Elder brother	Younger brother	son	daughter
Marriage	-	-	00000	00000	00000	-	-	-
Education	-	-	00000	00000	00000	-	-	-
Sowing crops	0000	00	00	-	0	-	0	-
Land purchase	0000	00	0	-	0	-	0	-
Land selling	0000	00	00	0	0	-	0	-
Tree selling	0000	00	-	-	-	-	-	-
House making	0000	00	-	-	-	-	-	-
Cattle purchase	0000	000	-	-	-	-	-	-
Loan	0000	000	-	-	-	-	-	-
Savings	0000	000	-	-	-	-	-	-
Treatment	00000	00000	-	-	-	-	-	-
General expenditure	0000	000	-	-	-	-	-	-
Resources collection from the forest (Timber, fuelwood)	0000	000	-	-	-	-	-	-

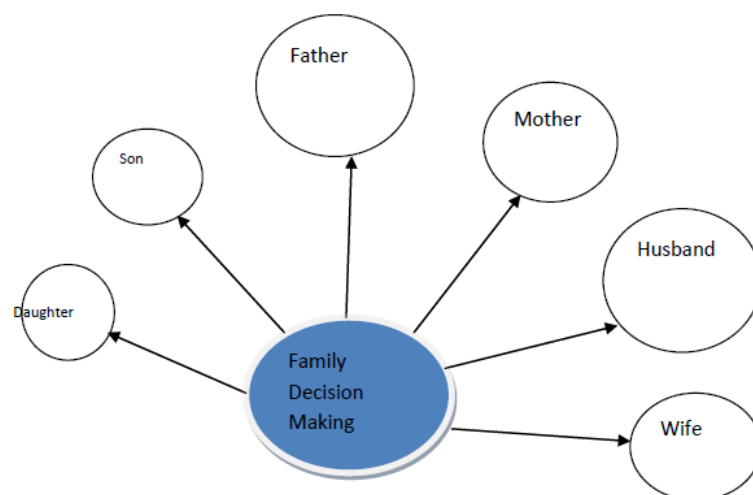


Figure 14: Venn Diagram showing roles of family members in family decision making

4.11.2 Outdoor mobility and access to credit and IGA

Overall, in and around KNP, outdoor mobility of females is considered to be moderate to high depending on the geographic location. Participation to social events by women is comparatively less than males (Table 24). However, now-a-days access to NGO credit and IGA is much higher in case of women. On the other hand, access to bank loan is very

limited for women. Figure 8 and 9 represent the nature of daily activities of male and female in the region.

Table 24: Outdoor Mobility and Access to Credit and IGA

	Outdoor mobility	Participation in social events	Access to credit	Access to AIGA	Education	Employment
Male	Male	0000	0000	0	000	0000
Female	Female	000	000	0000	0000	000

4.11.3 Workload

Workload for male and female in the indigenous communities in and around Kaptai NP is more or less similar. However, Male have rather limited works in Sharaban, Vadro, Ashwin and Kartik. On the other hand, female members in the families have rather limited workload in Vadro, Ashwin, Kartik. Workload depends on differentiated responsibilities in the Jhum field for male and female. Table 25 shows the seasonal work load of male and female in a Khasia inhabited settlement. In general, women in the locality have less work load than the men.

Table 25: Seasonal Workload of Male and Female in Sitapara Villages Near to KNP

	Boishak	Joshtya	Ashar	Shrabon	Vadro	Ashwin	Kartik	Agrahan	Poush	Magh	Falgun	Choitra
Male	00000	00000	00000	00	00	000	000	0000	0000	00000	00000	00000
Female	00000	00000	00000	00000	00	000	000	0000	0000	00000	00000	00000

4.11.4 Daily workload

Fig. 15 and Fig. 16 show the daily work chart of male and female in the indigenous families in Sitapahar Village near to Kaptai respectively.

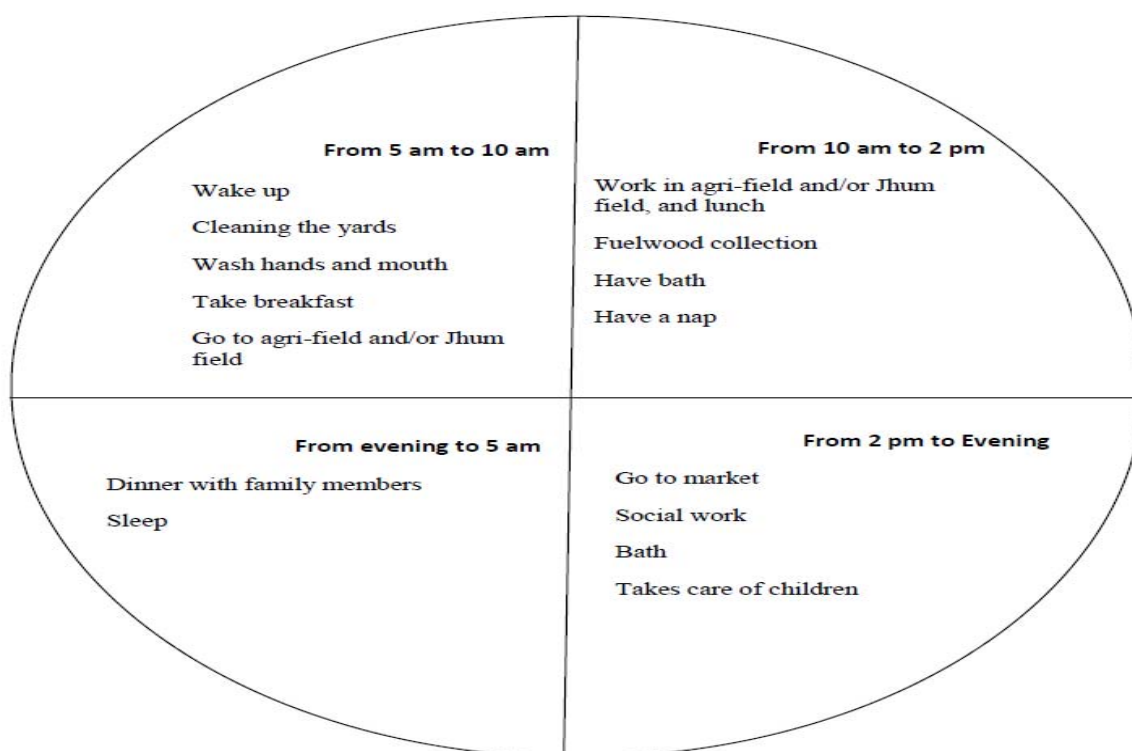


Figure 15: Typical daily activities of male living in and around Kaptai NP

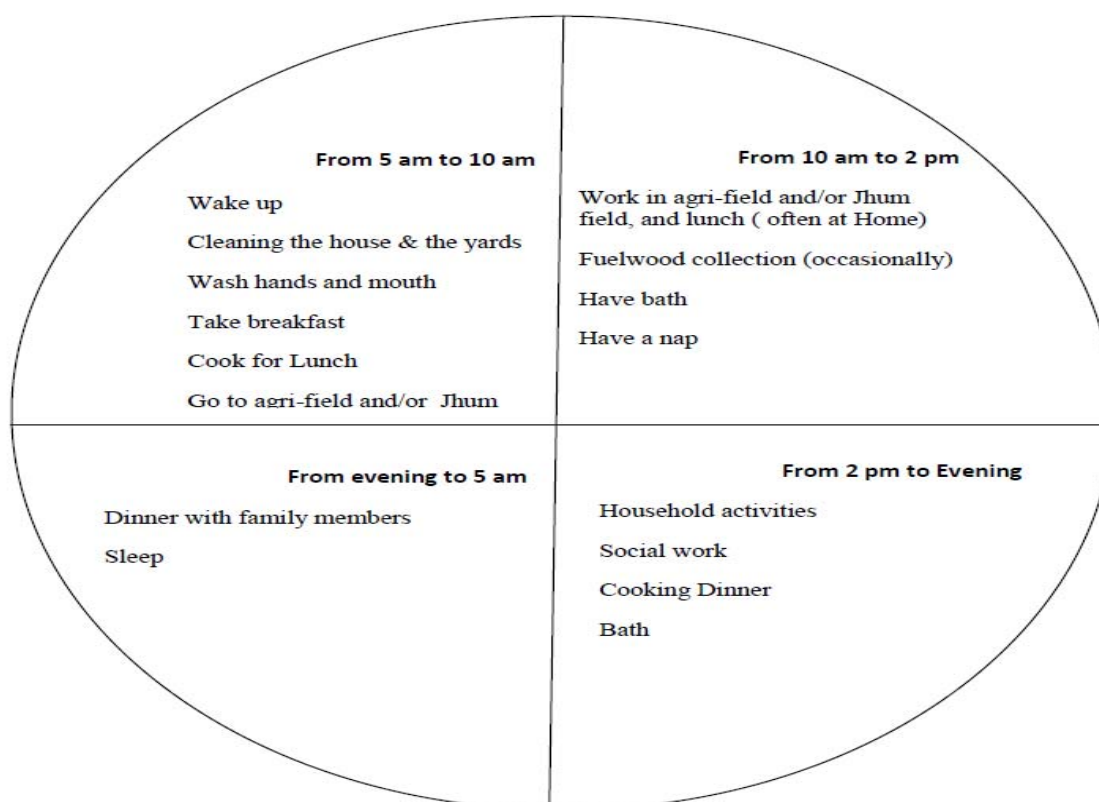


Figure 16: Typical daily activities of female living in and around Kaptai NP

4.11.5 Education

The overall literacy rates of male and female are very close. The number of school going girls are little lower than the boys. However, in case of higher studies girls are far behind the boys. (Table 26). Overall, females are less educated than the male.

Table 26: Comparison of Educational Status of Male and Female in Sitapara

	Overall Literacy (Based on adult)	Educational Level (Based on students)				
		Primary	Secondary	Colleges	Above	Informal
Male	00000	00000	00000	00000	-	-
Female	0000	00000	000	000	-	-

4.12 Local Level awareness and Behavior Local level awareness:

4.12.1. Local level Awareness:

The insight of the local community concerning resource degradation and its impact on their livelihoods is quite good even though they lack a total understanding of the ecosystem. They foster a positive attitude towards conservation. This insight of conservation is rooted to their traditional community-managed Village Common Forests (VCFs) or mouza-ban occurring in smaller watersheds of CHTs, and they (VCFs) contain headwaters of streams, natural springs and other aquifers, and represent large repositories of biodiversity. However, very few of them know well about the rules, regulation and activities those are permissible in reserve forest and/or protected areas.

As revealed from HHs interview, 100% people think that the forest resources should be conserved so that they can sustainably procure resources in future. Most local people are against the protection of elephant though they are in favor of plantation to be tailored in CHT perspective. In FGD and GD, the local community expressed a willingness to be involved in the process of forest conservation. Very interestingly, field level forest personnel (such as forester and beat officer) have no clear idea about differences in between the management of present National Park and previous Reserved Forests.

It revealed from HH interview that 90% of people of the area support the Govt. plans to preserve the forest biodiversity and to improve the socio-economic condition of the people provided it does not hamper their customary land rights and respect the rights of indigenous people. Most of the inhabitants reported that they have temporary settlements for Jhuming purpose but no permanent settlements inside the NP. They believe that if the forest is preserved than their livelihood status would be improved. Local people know little about some of the rules of Forest Act, but most of them not aware of the legal

framework of the Kaptai NP. As revealed so far, from FGD and HH interview that majority people know that the forest is a reserve but only 40% of them have heard a little about the NP but not aware about the restrictions. However, the study revealed that 60% of the respondents know nothing, 4% have heard about the rules & regulations, and negligible portions know about some restrictions in the Kaptai NP. Compared to males, females are less aware of this issue though they are very much linked with natural resource utilization process.

4.12.2 Behavioural Aspect:

So far the PRA/RRA was carried out, initial response of local people towards the project is positive but still they believe that co-operation and necessary advices from the Regional Council of Chittagong Hill Tract will encourage them to comfortably participate in the co-management approach of the project. However, a number of local leaders, and people appeared to be fostering negative attitude towards the project, with an assumption that they might be dislocated from their current settlements in the course of advancement of project activities.

However, 90% of interviewed HHs of the area supports the Govt. plan to implement such a project towards preserving the forest biodiversity by developing co-management. By observing the current scenario of forest, local people are able to realize that forest should be conserved and should have more plantations. However, they demand that these initiatives should be in harmony with their traditional norms, customs and indigenous rights. However, in most of the cases lower level FD staff is not aware about the project. They have a curiosity to know about this project, FD's role, implementation strategies, provision of infrastructural development and plantation program under the project and many other issues.

The indigenous communities are well behaved and cooperative but their total active participation seems to be happening only if the regional political powers act in favor of the project. People assume that if the project really can provide alternative income to the people then the project may see the light of success. However, some of the villagers predicted that a small amount of earning through alternative income might not attract the illegal poacher as they earn a lot of money by cutting timbers in comparison to the alternative income. Some people expressed their concern that if the program negatively affects the livelihood of local people they will not cooperate and may oppose the program.

5. PRESENT THREATS, ISSUES AND CHALLENGES FOR IPAC:

5.1 Priority Threats to the National Park:

- a. Continued unsustainable large scale and commercially targeted harvesting of most forest resources, including timber, fuel wood and bamboo, which have led to loss and decline in many forest natural resources. Extraction is being carried out by timber traders and organized illegal loggers by involving local communities as ‘wage-earners’.
- b. Repeated burning and shortened fallow period of Jhuming (Shifting cultivation) in the NP area is preventing regeneration of the few remnant natural forest. Jhuming is reported to be practiced at least half of the Kaptai NP
- c. Illegal and extensive use of fuel wood rather than coal in the nearest brickfields
- d. Hunting of wildlife, especially wild boar and barking deer resulting in the depletion of wildlife
- e. Widespread habitat destruction is leading to a loss of forest dwelling wildlife species.
- f. Encroachment of forestland and its subsequent conversion to settlement leads to habitat loss resulting in the decline in forest biodiversity
- g. Lack of understanding of conservation issues and values, wildlife protection and management of protected areas by FD personnel who are the stewards of the Reserve, has lead to inappropriate management practices
- h. FD’s plantation strategies and practice include clearing and burning of forest, plantation only valued timber tree, exotic tree and monoculture probably caused most harm by removing the indigenous species, wilderness, and alien environment for the wildlife resulting in the serious depletion in forest biodiversity
- i. Increasing development of road network inside around the NP, resulting in increased access to and removal of forest resources
- j. In-migrant settlers from the plain as well as indigenous people locally displaced from their original location due to the built-up of Kaptai dam in late 60s, and during the period of insurgency are concentrated around the NP ,and their activities has a detrimental impact on the forest and still remains as an important threat
- k. Operation of brickfield around the KNP has a great indirect role in forest degradation as they use huge quantity of fuel wood

5.2 Issues of Concern

5.2.1 Reduced Forest regeneration

Forest regeneration is severely impacted in the Kaptai NP, primarily due to large-scale monoculture of teak. Teak leaf is much known for its allelopathy (definition - suppression of growth of a plant species by another due to the release of chemicals produced from a nearby plant of the same or another species) character. There are several other reasons e.g. intentional fire on the forest floors by jhum farmers to make lands suitable to practice slash and burn agriculture, fuel wood collection, cattle grazing etc. This poses a threat to attaining wilderness resulting in the loss of forest biodiversity. In order to bring back wilderness forest regeneration aspect should be given a priority.

5.2.2 Jhuming and encroachment for expansion of settlements in the forest

Jhuming, illegal commercial scale logging, and conversion of forests into settlements have been identified as potential causes for degradation to Kaptai NP. The process is continuing and remains as an important threat to forest and its biodiversity. Future success of NP management will depend largely on the stopping and recovery of the encroached land.

5.2.3 Over- and unsustainable resource exploitation

Commercially targeted over exploitation of various resources of the forest, including timber, bamboo, fuel wood, wildlife etc. in the past mainly contributed to the depletion in the resources and the fauna they supported. These remain as threats equally to the sustainable management of the NP.

5.2.4 Local dependence on the forest resources

Traditionally, almost all inside HHs and many HHs of the adjacent villages are depend directly or indirectly for their needs of fuel wood, building materials and some other forest products of the forest. Apparently, it seems that there is little alternative for these resources. Besides, many poor HHs are entirely or partially dependent on the forest for their livelihood. Thus, this issue remains as a concern for the project

5.2.5 Deteriorating local law and order situation

The law and order situation in the region as whole has deteriorated greatly and this has an influence on the people living in and around the NP. Therefore, some people particularly

those who are bit powerful show disregard to law and the local FD staff has lose control in many areas of the NP. Similarly, the other law enforcing agencies, except BDR, can do little in this regard. This is a particular concern to be considered.

5.2.6 Poor forest management by FD & lack of specific NP management action plan

It is quite evident from the field discussions and interviews that the Forest Department is not capable enough to manage the National Park properly. This is primarily due to lack of adequate and skilled work force for NP management and lack of logistics and incentives. Besides, Forest Department staffs particularly lower level staffs posted in the remote areas miss their family member greatly as there are no standard facilities regarding housing, schooling for kids, medical and many other basics inside the NP. Therefore, most often they need to maintain two families at a time, one in nearby developed areas with mentioned facilities and other inside the NP areas. This often becomes very costly and they do not get any special package from the government to minimize such costs. Local people have identified local FD staff as a major cause for illegal use of the NP and this is mostly due to meet the extra expenses incurred by them while posted in the remote areas. Most importantly, there is no specific management action plans for the NP and therefore these are important issues for consideration.

5.2.7 Local poverty and unemployment

Local poverty and unemployment have been identified as the driving forces for the illegal forest use by the local people. Unless the problem is reduced it is unlikely to achieve success in the implementation of the project and therefore draws particular attention for addressing the issue.

5.2.8 Poor law enforcement for forest protection

Forest patrol is inadequate to check illegal tree felling. Often, the fellers are organized armed gangs. The help from the other local law enforcing agencies is not adequate, rather the activities of local police is not conducive to forest protection and encourage the illegal tree feller.

5.2.9 Association of local influential people in illegal felling

Many local people those who are influential help in illegal tree felling in the way of negotiating with FD or other law enforcing agencies to ensure safe transit of illegally

felled logs, and sometimes they impose their influence to cover up the offences. The project should take into account this issue while plan for the management of the forest.

5.2.10. Brickfield operations

Though huge quantity of fuel wood to meet the demand of brickfields still comes from the Sitapahar Reserved Forest area of KNP, in near future, this increasing demand of fuel wood (which is currently reported to be 40000 maund per year/brickfield) will pose threat KNP, and thus, will contribute to the depletion of forest resource and existing biodiversity. The operation of fuel wood operated brickfield is the violation of the forest laws. This issue needs to be addressed in the project.

5.2.11 Lack of awareness among local people about biodiversity conservation

There is serious lack in understanding about benefit of biodiversity conservation and need for sustainable management among the local people. It seems that enhancement local level awareness could help in successful implementation of the project.

5.2.12 Extensiveness and inaccessibility of the project site

The Kaptai NP is extensive in its area coverage, and it is often inaccessible due to not only the geographic remoteness and terrain but also geo-political situation even after the peace treaty. Apart from co-operation of Regional Council and regional political parties is a prerequisite for successful implementation of the co-management approach of this project.

5.3 Challenges for the Project

There are certain issues that could be challenging for the project in the course of implementation. This section prioritizes a number of such issues that should be given due consideration while planning and implementing the project. The following major challenges are identified:

- Strategically branding IPAC to the grass-root indigenous communities as well as to the political leaders of CHT in such a way that ‘trust’ is built in them about the project, and they become ensured that the project activities will not go against the Peace Accord.

- Diversification of production methods of indigenous people from their traditional Jhuming (Shifting Cultivation), and reducing their dependence on forest for livelihood
- Stopping of commercial scale collection of fuel wood, bamboo and other building materials
- Reversing FD's plantation strategies and practices towards biodiversity conservation
- Preventing illegal tree felling
- Bringing changes in morale of the local FD staff
- Reduction in local poverty and unemployment
- Ensuring participation of local influential people
- Curbing dependence of local people on the resources of KNP
- Establishing co-management system over the entire NP
- Recovery of encroached lands and stop further encroachment

5.4 Opportunities

- Local people are very much positive about the project and they are ready to participate in the co-management process if CHT Regional Council provides green signal regarding assistance
- A good number of people visit the park and picnic spot. Some of the infrastructures and facilities been arranged under the recently completed project. Still some facilities need to be developed and that will definitely attract more eco-tourists in the KNP. Once ecotourism is established in the park, local people will have provisions for added earning for different enterprises relating to eco-tourism.
- The whole Sitapahar Reserved Forest is declared as Kaptai NP. However, in the periphery or buffer area of the KNP is still lot more denuded. Therefore, plantation in these areas under social forestry practiced modality will create income opportunity for the poor indigenous people in and around Kaptai NP and that may reduce the dependency on the park's resources.
- Project will have provisions to support alternative livelihood opportunities for the resource dependent communities living in and around Kaptai NP.
- In the denuded areas within the park plantation with indigenous and eco-friendly plant species is necessary to restore and rehabilitate wildlife habitat. Besides, natural regeneration may be assisted to bring back the wilderness in the park.

6. SUGGESTIONS AND RECOMMENDATIONS

6.1 Administrative

During RRA/PRA exercise, local people identified poor forest management as one of the major causes for forest degradation in Kaptai NP. Therefore, it is urgent to strengthen the local FD in the Park with adequate and skilled work force and capacitate them in dealing with co-management effectively. FD may strongly consider the followings:

- adequate staffing, particularly for forest patrol under a skilled PA manager
- capacity building of FD staffs on sustainable forest resources management and biodiversity conservation
- provide appropriate logistics i.e. vehicle, modern arms & ammunitions for local FD
- provide incentives to local FD staff to make the job lucrative i.e. extra allowances
- improving the morale of local FD staff and make them dedicated to conservation
- strong monitoring and supervision of activities by high powered team regularly

6.2 Scientific and Technical Management of the park

Now, there is no management plan in action in the Kaptai NP. Moreover, previous management plans had been developed with primary focus in production forestry. Therefore, habitat restoration and biodiversity conservation do not have optimum priority in management of the Reserved Forest. After declaration of the National Park, an appropriate, site specific and technically sound management plan is necessary to develop and implement with prior consultation of the key stakeholders particularly local people. The action plan, among others, should have the following provisions:

- re-introduction and rehabilitation of endangered plants and animal species
- wildlife habitat restoration and rehabilitation
- protection and sustainable use of forest resources and biodiversity
- plantations with plus tree propagules of indigenous species rather than exotic
- plantations that reached into maturity may be felled with the retention of seed trees at a suitable interval and plantation with native species.
- re-establishment of habitat continuity between the fragmented habitats of the primates
- plantation scheme with food trees suitable for non-human primates
- ensure sustainable use of some resources like vegetables, honey, medicinal plants and other non-timber forest products

- establishment of a buffer sustainable resource use zone around the PA with provision for fuel wood plots, woodlots and other plantations required for house building purposes
- providing resource substitution
- promotion of fuel efficient stoves in the locality o promotion of homestead plantations

6.3 Project activities targeted to local stakeholders

- identify poor resource users and provide support to AIGAs with provision of leaving unsustainable use of forest resources.
- bring the influential people, local elites, public representatives, community leaders on board with the concept of forest protection
- raising awareness to make the people understand how they could be benefited from project interventions
- As there are many allegations about the local police helping the illegal resource users, (illegal tree fellers in particular), strong dialogue should be initiated with them involving the higher authority
- forest cases should be reviewed and if merit is not there then withdrawn
- ecotourism with proper planning needs to be promoted in and around Kaptai NP
- recover encroached land and stop further encroachment.
- effort to negotiate with local development partners/agencies to extend their social welfare services to the area
- project should initiate dialogues with secondary stakeholders
- A long-term biodiversity monitoring scheme should be planned with provision for database development.
- prioritize the issues of biodiversity conservation in forest management rather than revenue earning.

Annexure & Photo Gallery



Fig. : A Forest Villager is on the way to local market to sell broom stick collected from KNP



Fig. : RRA/PRA team holding a FGD in the Bangchhari Forest Village of Kaptai NP



Fig. : Forest path towards Bangchari Village inside Kaptai NP



Fig. : Forest path towards Bangchari Village inside Kaptai NP



Fig. : Staking & loading of collected fuel wood on the bank of river Karnaphuly to transport



Fig. : RRA/PRA team holding a KI Interview in the Village headman. Outside the KNP



Fig. : Small Piles of fuel wood for household consumption



Fig. : Indigenous women weaving her cloths in the village near to KNP



Fig. : Indigenous people selling ginger produced in Jhum near to KNP



Fig. : RRA/PRA team holding HH survey in the village near to KNP



Fig. : RRA/PRA team discussing with the female wood collectors

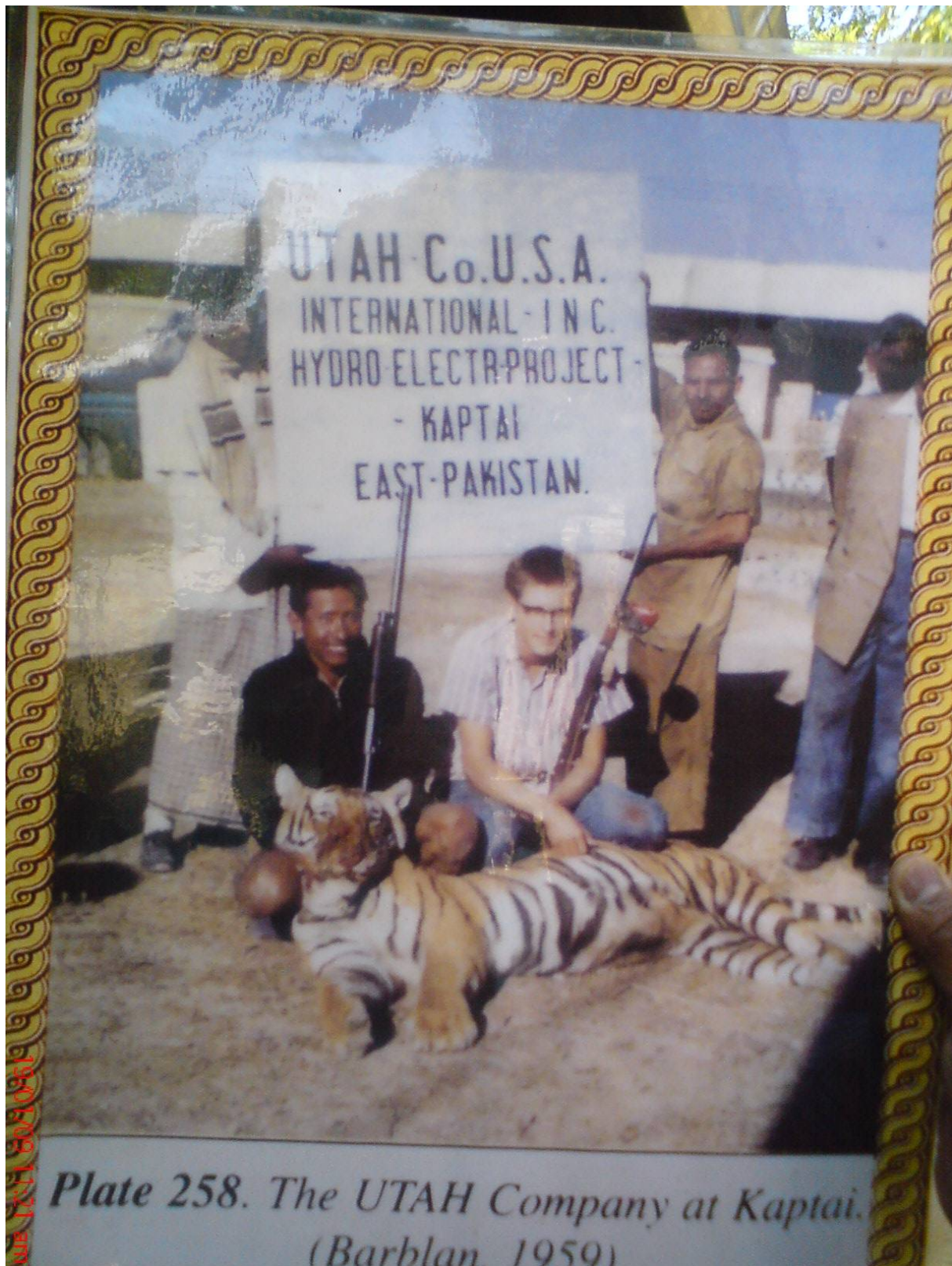


Plate 258. The UTAH Company at Kaptai.
(Barblan, 1959)

Fig. : Proof of presence of Bengal Tiger once upon a time in the Kaptai NP (after hunting a tiger by the members of UTAH Company – Hydro-Electric Project construction contractor in 1959)



Fig. : Stacked piles of fuel woods to transport to outside of KNP



Fig. : RRA/PRA team's movement inside the remote areas of KNP



Fig. : Indigenous woman making crafts with bamboo from KNP