Nishorgo Support Project

Secondary Data Collection for Pilot Protected Area: Chunati Wildlife Sanctuary

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Secondary Data Collection for Pilot Protected Area: Chunati Wildlife Sanctuary

Prepared for:
International Resources Group (IRG)

Prepared by:

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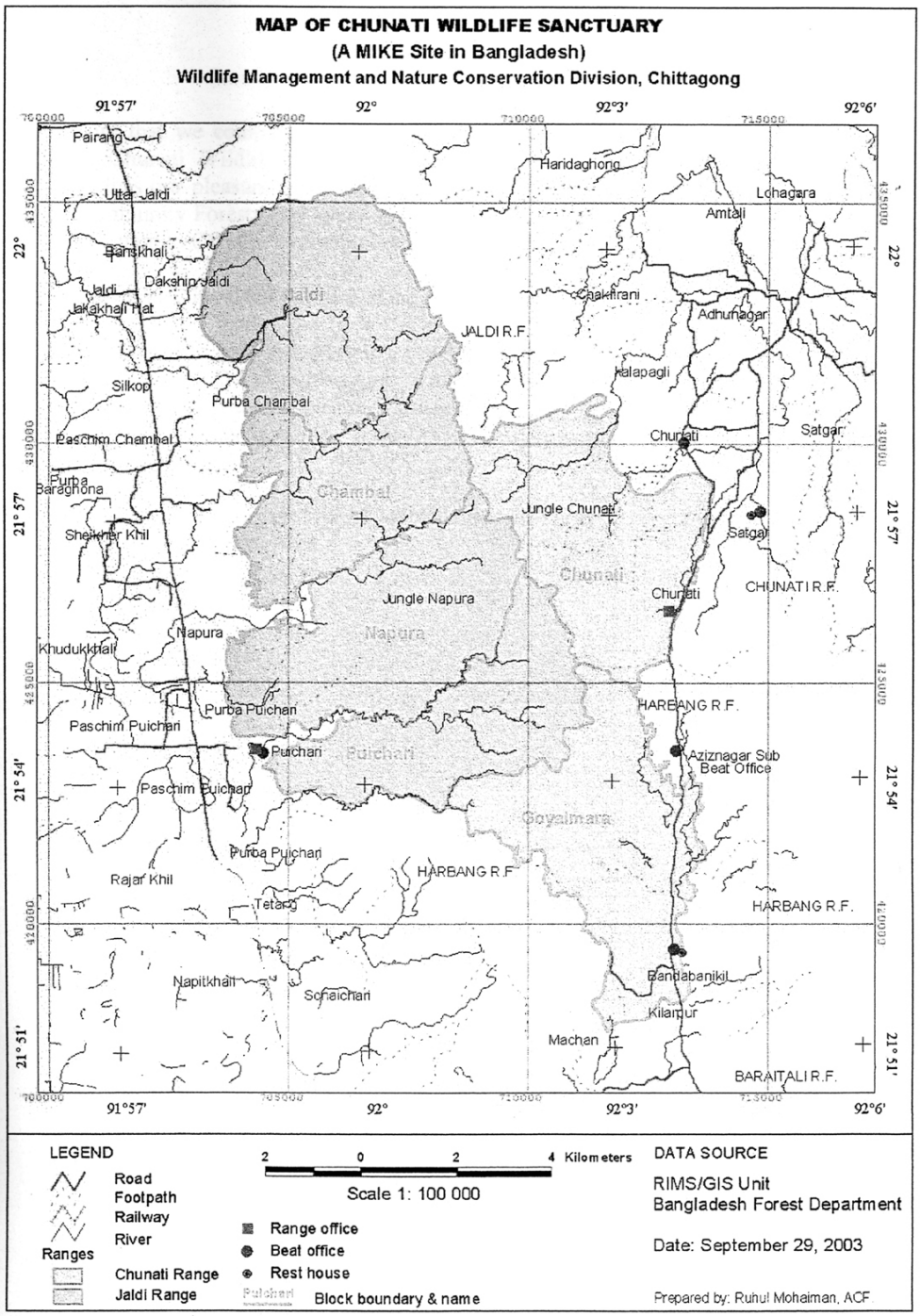
With partners: CODEC, NACOM & RDRS


MAP OF CHUNATI WILDLIFE SANCTUARY
(A MIKE Site in Bangladesh)
Wildlife Management and Nature Conservation Division, Chittagong
91°57'
92°
92°3'
92°6'
22°
21°57'
21°54'
21°51'
Pairang
Haridaghona
Uttar Jaldi
Lohagara
Amtali
Banskhali
Dakshin Jaldi
Jaldi
Jaldi
Jalakhali Hat
Chakirani
Adhunagar
JALDI R.F.
Halapagli
Silkop
Purba Chambal
Paschim Chambal
Chunati
Satgar
Purba Baraghona
Chambal
Jungle Chunati
Sheikhar Khil
Satgar
Chunati
Chunati
CHUNATI R.F.
Jungle Napura
Napura
Napura
Khudukhali
Purba Puichari
HARBANG R.F.
Paschim Puichari
Puichari
Puichari
Aziznagar Sub Beat Office
Paschim Puichari
Goyalmara
Purba Puichari
Rajar Khil
HARBANG R.F.
Tetang
HARBANG R.F.
Napitkhali
Sonaichari
Bandabanikil
Kilampur
Machan
BARAITALI R.F.
LEGEND
Road
Footpath
Railway
River
Ranges
Chunati Range
Jaldi Range
2 0 2 4 Kilometers
Scale 1: 100 000
Range office
Beat office
Rest house
Puichari
Block boundary & name
DATA SOURCE
RIMS/GIS Unit
Bangladesh Forest Department
Date: September 29, 2003
Prepared by: Ruhul Mohaiman, ACF

Preface

It is our pleasure that we completed the task assigned to us by IRG to make a report on basic information on Chunati Wildlife Sanctuary. The task was completed on the basis mostly on secondary data. It is our pleasure to tell that this task is completed due to the fact that Mr. Abdul Bari, Social, Community Forest and Plantation Management Specialist gave us his valuable time to assist us as Consultant to CODEC to complete the task. We are grateful to Mr. Bari.

Mr. Utpal Dutta was also involved full time along with Mr. Bari.

Our gratitude and thanks to Mr. M.A. Motaleb, Conservator of Forests, Chittagong Circle, Mr. Md. Safiul Alam Chowdhury, D.F.O. Chittagong South Division, Mr. Tapan Kumar Dey, D.F.O Wildlife and Nature Conservation Division, Chittagong, Mr. Rafiquzzaman, Asstt. Conservator of Forest Chittagong South Forest Division for their wholehearted cooperation to our Consultant Mr. Abdul Bari.

We sincerely believe that this report will be valuable documents for future implementation of any sorts of projects in Chunati Forest Area.

All the best wishes.

Khursid Alam Ph.D.
Executive Director
CODEC
October 2003

Acronyms

ACF -	Assistant Conservator of Forests
ADB -	Asian Development Bank
BBS -	Bangladesh Bureau of Statistics (of the Ministry of Planning)
BCAS -	Bangladesh Center for Advanced Studies
BNH -	Bangladesh National Herbarium
BWDB -	Bangladesh Water Development Board
CF -	Conservation of Forests
cft -	cubit feet (volume of timber)
cm -	centimetre
CITES -	Convention of International Trade in Endangered Species of Fauna and Flora.
dbh -	diameter at breast height (=measurement for size of trees)
DC -	Deputy Commissioner
DFO -	Divisional Forest Officer
FD -	Forest Department
FAO -	Food and Agriculture Organization (of the United Nations)
FRMP -	Forest Resources Management Project (World Bank funded)
FSP -	Forestry Sector Project (ADB funded)
GoB -	Government of Bangladesh
GR -	Game Reserve
ha -	hectares (1 ha=about2.5 acres)
INGO -	International Non-Government Organization.
IUCN -	International Union for the Conservation of Nature and Natural Resources- the World Conservation Union.
MLSS -	menial Forest Department laborers.
mm -	millimetres
MoEF -	Ministry of Environment and Forest
MP -	Management Plan
NCS -	National Conservation Strategy
NCSIP-I-	National Conservation Strategy Implementation Project-1
NGO -	Non-Government Organization
NORAD -	Norwegian Agency for Development Cooperation
NP -	National Park
PA -	Protected Area
PAS-	Protected Area System
PRA -	Participatory Rural Appraisal (= social survey technique)
SPARSSO-	Bangladesh Space Research and Remote Sensing Organization.
spp -	species
TA -	Technical Assistance
TK -	Taka (Bangladesh currency; 1 US$= about TK 54 in February 2001)
WB -	World Bank
WS -	Wildlife Sanctuary
WWF-	World Wide Fund for Nature
MARC-	Multidisciplinary Action Research Centre, A Project Supported by IUCN/NORAD

Table of Contents

Preface iii
Acronyms iv
Table of Contents v
Annexure vi
1. History of the PA 1
1.1 Location 1
1.2 History of Establishment 1
2. Geology & Topography 2
2.1 Physiography: 2
2.2 Rock and soil: 2
2.3 Topography and landform: 2
2.4 Water and River system: 2
2.5 Physiographic processes (Erosion and Siltation): 2
2.6 Total Area: 2
3. Management history and status 3
4. Detail demographic and socio-economic profile, including health and sanitation, settlements and migration, livelihood strategies 4
a) Demography: 4
b) Ethnicity: 4
c) Education: 4
d) Number of educational institutions: 4
e) Infrastructure: 5
f) Nature of Dwelling House: 6
g) Toilet facilities: 6
h) Source of drinking water: 6
i) Ownership of land: 6
j) Economic activities: 6
Settlements and Migrations: 6
5. Dependence on Forest and Forest Produce 7
6. Qualitative and Quantitative information on plants and animals 7
7. Special survey and studies on biology, population dynamics, forest dynamics 7
8. Resources exploitation and regeneration practices 8
9. Information on Plantations 8
Exotic issues: 9
10. Harvesting, Poaching 9
11. Conservation and management and other development initiatives taken – objective-approach, strategies, activities 10
Approach, Activities and Strategies of the above project: 13
12. Copies of Rosarios Reports two volumes made and submitted. 14
13. Agriculture and horticulture practices 14
14. Forest Produce 14

Annexure

1. Gazette Notification
2. List of Flora in the Chunati Wildlife Sanctuary: Rosario Report;
3. List of fauna in the Chunati Wildlife Sanctuary: Rosario Report;
4. List of species threatened & endangered in the Chunati Wildlife Sanctuary: Rosario Report;
5. List of protected animals found in the Chunati Wildlife Sanctuary: Rosario Report;
6. List of game species found in the Chunati Wildlife Sanctuary: Rosario Report;
7. List of plant and animal species Wildlife Sanctuary included in cities I, II, III: Rosario Report;
8. Climatic data of the Chunati Wildlife Sanctuary: BWDB
9. Staffing and organizational structure of the Chunati Wildlife Sanctuar.
10. Maps of Chunati Wildlife Sanctuary (Administrative and Cover Maps)

1. History of the PA

1.1 Location

The Chunati Wildlife Sanctuary is located at 21° 40^{1} North latitude and 92° 07^{1} East longitude, about 70 Km south of Chittagong Port City on the west side of Chittagong- Cox's Bazar highway. It is originally a part of Chittagong Forest Division. On splitting of Chittagong Division into two Forest Divisions viz. Chittagong (North) and Chittagong (South) Forest divisions, Chunati area fell under the jurisdiction of Chittagong South Forest Division.

1.2 History of Establishment

Chunati Wildlife Sanctuary was established through a Notification published in the official Gazette. Originally a part of the Chittagong Forest Division and managed through ages as Reserve Forest as Chunati and Jaldi Forest Range, the Sanctuary was formally established through Gazette Notification No. XII/For-I/84/174 dated 18th March 1986 in accordance with Article 23 of the Bangladesh Wildlife (Preservation) (Amendment) Act of 1974. As per provision of the Act, all wildlife (Plants and animals) species found in the Sanctuary shall be protected and preserved. As such no commercial forest operation is allowed inside the Sanctuary.

On creation of Wildlife Management and Nature Conservation Division, Chittagong under the Management Planning Wing of FD, during the latest reorganization of the Forest Department vide Govt. Gazette Notification No. Pa Ba Ma/ Sha-2/ Ban(Pro: Sha:)-22/98(6)/296 dated June 24, 2001, the Chunati Wildlife Sanctuary fell under this newly created Division. There is a full time D.F.O. now, a Senior Forest Officer in charge of the Sanctuary to exclusively look after conservation areas. The conservation areas are expected to be better managed now. The territorial DFOs and staff get very little time to devote in these activities.

A new regular Wildlife Circle has also been created in the reorganization of the Forest Department in 2001 and Chunati Wild Life Sanctuary is under this Circle. Tropical hill forests previously covered virtually all of eastern Bangladesh from Sylhet area in the North to Teknaf in the south. It may be mentioned here that Bangladesh occupies an extremely important and interesting geographical position, where the flora and fauna of the Indian Sub-Continent and the Sino- Malayan flora and fauna of South East Asia meet. The number of different species in the country is high, and this is particularly true of the primate fauna, which consists of eight different species. The Sanctuary falls within the Banshkhali and Lohagara Thanas (Formerly Satkania Thana) of Chittagong District.

Encompassing Tropocal Evergreen and Semi Evergreen Forest Bio geographic Zone (T E S E F B Z), Chunati is in the Garjan belt from Chittagong to Cox's Bazar and originally there was rich Garjan Forest with natural associates of garjan in the area. Illicit felling, poaching over– exploitation, encroachment for cultivation and habitation in this over populated country; increased needs, greed of traders and some local elites, ill equipped small number of forest staff all acted together and today the once rich Chunati forests, a natural habitat of

many wild animals including elephants, others animals and birds etc. have become degraded and discontinuous patches.

The forest has been degraded so much that the remaining natural forest habitat found in the Sanctuary is generally very poor in quality for the folivorous and frugivorous arboreal and hoofed animals. Gathering of forest products by people residing inside and around the sanctuary and more so clearing of areas for cultivation have been adversely affecting the quality of wildlife habitats.

2. Geology & Topography

2.1 Physiography:

Geology and other Physiographic features:

The sanctuary area has four main geological formations namely, Pleistocene, Pliocene, Mio-Pliocene and Miocene (Balmforth and Howladar, 1988).

2.2 Rock and soil:

According to the reconnaissance Soil Survey carried out between 1971-73 by the Directorate of Soil Survey, the soils on the alluvial plains and valleys in Chunati Wildlife Sanctuary are mainly Silt loam to silt clay loam, moderately to strongly structured and neutral to medium acid subsoil. Locally, sandy loams on ridges and silty clay in basins occupy small areas having strongly acid reaction.

2.3 Topography and landform:

The sanctuary area is generally hilly to mountainous with shallow to deep gullies and gentle to steep slopes. The average elevation is 30 to 90 M.

2.4 Water and River system:

The area is traversed by numerous creeks, which are clear with gravely, and stony beds. They provide a good drainage to the area and clean water to wild animals and the people, as well for irrigation. They also serve as habitat to a good number of amphibians.

2.5 Physiographic processes (Erosion and Siltation):

The bank of the rivers and creeks and the cultivated tracts are severely eroded in the area specially during the rainy season. Mainly sheet erosion and rill erosion are prevalent.

2.6 Total Area:

Total area of the Wildlife Sanctuary as per Govt. Gazette Notification is: 7763.94 hectare. An area statement Range wise is as below:

Area of Chunati Wildlife Sanctuary
Chittagong South Division

Range	Beat	Block	Wildlife Sanctuary
Chunati	Chunati	Chunati	811.33
	Satgarh	Satgarh	347.77
	Harbang	Goyalmara	1451.42
Jaldi	Puichari	Puichari	1354.65
	Napora	Napora	1609.32
	Jaldi	Jaldi	1148.58

	Chambal	Chambal	1040.89
Total			7763.96

Encroached Area : Approx. 800.0 hectare
Recovered Area : Approx. 1000.0 hectare
Rehabilitation Area : Approx. 500.0 hectare

Forest cover:
1) Brush : 890.90 hectare
2) Garjan Forest : 83.80 hectare
3) Small crown high forest : 12.90 hectare
4) Open : 11.20 hectare
5) Plantation : 1458.70 hectare
6) Scattered area : 2761.30 hectare
7) Water : 8.90 hectare

At present the vegetation of the PA consists largely of highly degraded natural forest with about 44% consisting of secondary scrub vegetation with scattered trees, 14.3% consists of secondary brush, and only 1.5% of the area consisting of natural forest vegetation. This is likely to be close to zero now. Artificial forest plantations cover further 23% while agricultural areas and other encroached areas cover about 17 % (1993 WS Chowdhury) and now about to 30% approximately. These changes are not recent, as much of the agricultural land was already owned prior to gazettal (Farmers have titles to their enclaves). About 25% of the area consists of agricultural land mainly rice paddies that grow in valley bottom throughout the reserve but also an increasing number of betel leaf nurseries. Most of the persons involved; have land titles to prove ownership of these rice-growing areas. The extent of agricultural land has subsequently increased due to gradual encroachment. A recent study on the PA has been conducted by the National Herbarium and the Department of Zoology of the University of Dhaka under the NCS Implementation Project- I of the MOEF.

Replanting was done and is going over there under various project and revenue budget. An area of 2292.07 hectare has been planted up to 2003 (Source: DFO, Chittagong South Division).

3. Management history and status

Since the period in British India when Chunati and Jaldi Forests were declared as Reserve Forest (RF) through Gazette notifications both the flora and fauna i.e. the forest in entirety was managed under reserve forest rules and regulations. Forest Act, 1927 was the legal instrument for many years till the areas were declared Wildlife Sanctuary by Govt. Gazette Notification No. XII/For-I/184/174 dated 18th March 1986. Provisions of Bangladesh Wildlife (Preservation) (Amendment) Act, 1973 (P.O. No. 23 of 1973) is now applicable over Sanctuary area. Two management plans were prepared one by Dr. Emilieo A. Rosario under World Bank aided FRMP Project and another by Mr. Richard Salter under the ADB aided Forestry Sector Project.

4. Detail demographic and socio-economic profile, including health and sanitation, settlements and migration, livelihood strategies
(Source BBS, 1996)

a) Demography:

Total area of Chunati Wildlife Sanctuary	: 7,763.94 hectare
Number of mouza	: 7
Number of villages	: 15
Total population	: 21,428 (Statistical Yr. Book '91)[1]
Male	: 11,062
Female	: 10,366
Number of household	: 3,492

b) Ethnicity:

Muslims	: 93.2%
Buddhist	: 2.76%
Hindus	: 3.93%
Other/Tribal	: 0.11%

c) Education:

The average literacy rate for 7 years and over for both male and female is:

Male	: 32%
Female	: 29.8%

d) Number of educational institutions:

Govt. Primary School	: 11
Non Govt. Primary School	: 4
High School	: 1
Community School	: 1
College	: 1
Madrasha	: 5
Girls Madrasha	: 1

[1] According to DFO, Chittagong (South) and CF, Chittagong Circle, about 15,000 people live inside the Sanctuary and the rest live outside in the periphery and many of them use forestland for cultivation.

e) Infrastructure:

School	: 11
College	: 1
Madrasha	: 6
Masjid	: 6
Health Centre	: 1
Fish Project	: 1

f) Nature of Dwelling House:

Straw/ Bamboo	: 71.87%
C.I Sheet/ tiles roofing	: 24.92%
Combination of different materials	: 2.13%
Cement	: 1.08%

g) Toilet facilities:

Sanitary latrine	: 8.33%
Non sanitary latrine	: 62.46%
No toilet facilities (use open fields)	: 29.42%

h) Source of drinking water:

River/Cannel	: 3.58%
Pond	: 5.92%
Well	: 7.19%
Tube well	: 83.31%

i) Ownership of land:

Land owners	: 45.65%
Landless	: 53.34%

j) Economic activities:

Economic activities	Person engaged
Agriculture	2,847
Industry	27
Construction	86
Transport and communication	128
Business	669
Service	1,404
Not working	2,329
Looking for work	516
Daily labours	5,694

Settlements and Migrations:

Encroachers who settle on forestlands are mostly people who have been affected by riverbank erosion or have become landless due to some reason. They usually, come in groups and make huts inside the forests, clear some land and do cultivation there and have a subsistence economy. Situation obtaining over there is hard and many who cannot adjust or cope up with this migrate outside in search of other works or jobs. (Source: DFO, Chittagong (South) Division).

5. Dependence on Forest and Forest Produce

The agricultural labours find work for six months in the farm but every one of them does not find it everyday. These labour and those, who are not involved in agricultural activities for a substantial period do not have any work to do. During the period they engage themselves in cutting firewood and house post poles, trees, bamboos and selling these to the nearest market. For their home consumption they always dependent upon forest produce. (Source: DFO, Chittagong (South) Division)

6. Qualitative and Quantitative information on plants and animals

In the past the area was covered by deep forest of tropical evergreen and semi-evergreen types. The tree species were principally tall Garjan (Dipterocarpus spp.). The associates of Garjan were Raktan (Lophopetum spp.), Jam (Syzium), Urium (Mangiferra spp.) Chapalish (Artocarpus spp.), Simul (Salmalia spp.) Koroi (Albizzia) and a wide variety of species. Besides this various species of trees, Bamboos and grasses were also profuse in the PA. But, due to various causes like unauthorised cutting and indiscriminate illicit felling, the species, are being restricted now, stock is very poor. Approximately 1200 plant species, which includes 45 species of tree and rest of this, are herb and shrubs are present now. According to Zakir Hossain (1991) a total of 178 wild life species found in the PA which included 6 amphibians, 8 reptiles, 137 birds and 27 mammals. A number of reports are found regarding the number of Elephants in the Sanctuary but according to the FD staff the present number is 20 to 30.

A list of flora and fauna is enclosed as appendix.2,3,4,5,6,7.(Rosario Appendix II.5,III.6,IV.5,V.5,VI.5,VII.5)

7. Special survey and studies on biology, population dynamics, forest dynamics

Systematic surveys of the Sanctuary's flora and fauna were undertaken during 1989-90 (Khan 1990; Husain 1991), and additional surveys were conducted during 1995-96(BCAS 1997). Full copy of Flora Studies by Dr. Khan and Fauna studies by Dr. Hussain are available. BCAS (Bangladesh Center for Advance Studies) conducted a Biological Survey (1997) under the World Bank assisted Forest Resource Management Project (FRMP). BCAS conducted the Biological Survey of 13 Projected area sites (including Chunati W.S.) designated by the F.D. by a Multidisciplinary Team comprising of experts in the disciplines of Botany, Zoology, Fisheries, Plant taxonomy and natural resources habitat. BCAS study also available and submitted.

A study was conducted by National Conservation strategy (NCS). Implementation Project–I of MOEF, GOB during 1997-98 in the forest south of Sangoo River in Chittagong Forest Division and Cox's Bazar Forest Division. Chunati W.S. formed part of this study. Four National Study teams implemented these. The teams were Bangladesh Center for Advance Studies BCAS (Unapproved), other three were approved according to Mr. Monjoorul Hannan khan, Coordinator, these are Flora Survey by Bangladesh National Herbarium, Fauna Survey by the Department of Zoology, Dhaka University and a series of 1: 20,000 land cover/ land use maps prepared by Bangladesh Space Research and Remote Sensing Organization (SPARRSO)

8. Resources exploitation and regeneration practices

Officially, no resource is being exploited from the area since last 17 years due to Governmental ban. But illicit cutting of trees, bamboos, sun grass and other minor forest produces has caused severe damage to the tract. Regeneration activities/ enrichment plantation works were implemented in a limited way under development projects and also out of revenue budget.

9. Information on Plantations

The statistics of the plantations raised over the PA. Under various development projects/revenue budget up to 1999 – 2000 are as follows:

Range	Beat	Block	Wildlife Sanctuary (Hectare)	Plantation up to 1999 to 2000							
				Development (Hectare)		Normal (Hectare)					
				S.R	L.R	S.R	L.R	Bamboo	Cane	Fruit	Total
1	2	3	4	5	6	7	8	9	10	11	12
Chunati	Chunati	Chunati	811.33	80.0	250.0	2.02	-	7.02	15.12	15.12	369.0
	Satgarh	Satgarh	347.77	-	-	-	-	-	-	-	-
	Harbang	Goyal mara	1451.42	260.0	260.0	-	-	5.26	3.24	9.25	537.75
Jaldi	Puichari	Puichari	1354.65	-	310.0	-	-	-	-	-	310.0
	Napora	Napora	1609.32	-	300.0	-	-	-	-	-	300.0
	Jaldi	Jaldi	1148.58	163.0	80.0	-	-	-	-	10.12	253.12
	Chambol	Chambol	1040.89	40.0	200.0	-	-	-	-	-	240.0
Total			7763.96	543.0	1400.0	2.02	-	12.28	18.36	34.49	2010.15

Plantations raised during FY 2000-2001 to 2002-2003

Range	Beat	Block	Plantation up to 2000-01 to 2002-03					
			Normal	Development Project				
			Fodder	F.S.P	Development of Bamboo/Cane/Reed Plantation		Development of agricultural plantation	Total
				Buffer zone plantation	Bamboo	Cane	Agricultural	
1	2	3	4	5	6	7	8	9
Chunati	Chunati	Chunati	5.0	-	5.0	20.0	-	30.0
	Harbang	Gayalmara	25.0	90.0	-	10.0	26.92	151.92
Jaldii	Puichari	Puichari	-	-	-	-	-	-
	Napora	Napora	10.0	-	-	-	-	10.0
	Jaldi	Jaldi	-	50.0	-	-	-	50.0
	Chambol	Chambol	-	40.0	-	-	-	40.0
Total			40.0	180.0	5.0	30.0	26.92	281.92

Source: Office Records of DFO Chittagong (South) Division.

Exotic issues:

The forest management practice in Chittagong Division was clear felling with artificial regeneration with valuable species. Original flora was cut down, burnt and Teak (Tectona grandis), an exotic was introduced extensively all over the forest areas including Chunati and Jaldi Ranges. Teak is a deciduous species, leaves are coriacious and under growth normally does not come under teak plants and use of such species is not wise in such situations because wildlife is not attracted and do not flourish in such situations as their habitat is damaged. No fodder is available; fruits are not suitable for birds. Exotic species like Acacia auriculiformis, Acacia mangium, Eucalyptus cameldulensis, are also not suitable species for wildlife sanctuaries; but these were planted in Chunati forests under Forest Resources management Project (FRMP) funded by IDA (The World Bank), although there was a nature conservation component in FRMP and there was one Environment Wing headed by one DCCF in FD.

10. Harvesting, Poaching

Systematic and legal harvesting of major forest produces is banned by the Government since 1972. Illegal harvesting of firewood, poles, bamboo, canes, and sun grass continues. The main people involved in this illegal removal resulting in further deterioration of the remaining vegetation are the encroachers who live unauthorised inside the reserve forests and neighbouring population. Illegal grazing by their cattle is a major cause of forest deterioration. They use the produces to meet their own needs and the excess they sell in the local markets. Illegal traders despatch the bamboo to the markets at Satkania, Mirersari etc. There are two brickfields and one plywood factory near the project area run on forest produces and illegally harvested produces are consumed to run these.

Poaching: The encroachers, who live whole day and night inside the protected area, tacitly do poaching. They catch or kill barking deer, jungle fowl, various edible birds, and eat the meat. Adjoining influential people also do poaching and kill game animals and birds as reported by the local staff and reliable people. Since there exists about 25% of land area under cultivation in the Sanctuary, while the wild animals like elephants, deer and wild boar damage the paddy fields; some of them are hurt or even killed by the agriculturists. This is an indirect action of damage caused to wildlife population.

Elephants also damage the temporary huts where encroachers live and even kill people and this is reported to the press and a lot of hue and cry is raised in the civil society. People consider elephants as killers and undesirable and some elephants are killed in the process.

D.F.O. Wildlife and Natural Resources, Tapan Kumar Dey reported that poachers killed one elephant last year by trapping digging a deep pit on the elephant trail; they had intention to take away the two tusks but due to his personal timely intervention, the tusks were recovered but the elephant died due to gunshot of those poachers.

11. Conservation and management and other development initiatives taken – objective-approach, strategies, activities

In 1966 at the invitation of the Central Government of Pakistan, the World Wildlife Fund arranged for a group of specialists to make a first reconnaissance of the problems of wildlife conservation in Pakistan and to draft preliminary recommendation in introducing measures to overcome them. These were outlined in a Report, submitted in January 1967.

The investigations made in the course of the first world wildlife Fund expedition were necessarily limited in scope and insufficiently representative of the very varied wildlife habitats embraced by the territories of West and East Pakistan. A second expedition was therefore made between 30 October and December 1967 to areas not previously studied.

The World Wildlife Fund's second International Congress 1970, held in London, for the survival of the human race and its environment urgently requested all Govts. of the world to (1) incorporate ecological and conservationist considerations in economic development plans (2) establish effective trusteeship for men's heritage in the biosphere (3) make efforts to save wild animals from extinction (4) establish wildlife sanctuaries (5) help scientific researchers and provide technical assistance and educational programmes.

It was in pursuance of above world concern for conservation of nature and natural resources that the World Wildlife Fund carried out two expeditions in 1966 and 1967 in the Sundarbans, Sylhet and Chittagong Hill Tracts to study the population status of wildlife and a report was prepared for the scientific preservation of the country's fauna. The World Wildlife Fund in collaboration with International Union for Conservation of Nature (IUCN) sent two International experts in 1970-71 to study tiger conservation in Sundarbans. Their work was discontinued due to war of liberation in Bangladesh.

In fact Conservation efforts began in 1966, prior to independence, when the Government of Pakistan invited the World Wildlife Fund to assess its wildlife resources and recommend measures to arrest their depletion. Two expeditions were mounted (Mountfort and Poore, 1967, 1968) and the survey of the situation confirmed, whereupon the Government was urged to appoint its own Wildlife Enquiry Committee. The committee was established in 1968 by1970 had drafted a report. That part relating to East Pakistan was published as a separate report (Government of East Pakistan, 1971). Considerable progress was made with the establishment of several protected areas (Mountfort, 1969), research undertaken on the Sundarbans tiger population of East Pakistan (Hendrichs 1969). Then, in 1971, came the war of Liberation, which inevitably disrupted subsequent progress. In spite of political instability, however, the Bangladesh Wildlife (preservation) Order was promulgated in 1973 and an ambitious programme of wildlife management developed, followed by the formation of a Wildlife Circle in 1976 and further technical assistance from UNDP/FAO (Oliver, 1979). Economic constrains, however, have subsequently been responsible for the loss of much of this initiative (Blower, 1985)

Bangladesh is one of the first few signatories among the developing nations to sign an agreement, in the International Convention of trade in certain species of wildlife held in Washington in 1973, to protect her wild animals and birds from trading and poaching.

Considering the importance of the conservation of its wildlife, Bangladesh Wildlife (Preservation) Order, 1973 (P.O. No. 23 of 1973) was formulated all over the country for preservation, conservation and management of Wildlife in the country.

The first development initiative taken by the Government of Bangladesh (GOB) was through approving a development project named "Development of Wildlife Management and Game Reserves".

Objective of the project was: To provide for preservation, conservation and management of wildlife in Bangladesh.

Allocation of the project was 20.00 lakh Taka.
Project duration was 1975-76 to 1979-80

(Copy of PP submitted)

In view of the deplorable condition of Wildlife population in Bangladesh further special attention was given to protect and develop tiger, elephant and waterfowls during First Five Year Plan. The Twenty Million Approved scheme of the first plan named " Development of Wildlife Management and Game reserve" comprised of the four self contained projects as follows:

Name of the Project	Total Cost of the Project
1. Tiger Project	6.00
2. Elephant Project	5.00
3. Water Fowl Project	6.721
4. Development of Wildlife	2.279
Total:	20.00

During First Five Year Plan a scheme for Development of Wildlife Management of Bangladesh was drawn at an estimated cost of Tk. 200 lakh. During first three years of First Plan no ADP allocation was made for execution of the project. Only an amount of Tk. 14.00 lakh was released up to 1977-78. So works of the project suffered a lot for fund constraint. The scheme was further revised and incorporated in two-year approach plan to implement some of the most important item of works & up to 1979-80 only an amount of Tk. 30.00 lakh was utilised. Due to limitation of fund the works of the original project could not be taken up as required for scientific management & protection of the Wildlife resources of the country. The targeted physical item of works and achievement made as per revised scheme are tabulated below:

	Target	Achievement
1. Population census of animal in Sundarbans & Sylhet	100%	37%
2. Development of public relations in Sundarbans & Sythet	100%	87%
3. Survey and demarcation of game reserve	--	Partly done
4. Construction of quarters	36 Nos.	34 Nos.
5. Water supply	20 Nos.	10 Nos.
6. Vehicle	20 Nos.	2 Nos.

7. Motor cycle	2 Nos.	2 Nos.
8. Bi-Cycle	2 Nos.	2 Nos.
9. Speed Boat	4 Nos.	4 Nos.
10. Dinghi Boat	9 Nos.	9 Nos.
11. Duplicating Machine	1 No	1 No
12. Camera	1 No	1 No

(Source: FD Planning Section Records; Copy of the relevant PP of the Development Project is enclosed.)

Then another GoB project was taken up at a total cost of 196.63 lakh taka; the name of the project was "Wildlife Development Project".

Objective of the project: To carry out research and study for management and development of wildlife in the country.

Some staff was recruited and some work was done in the various forest areas of the country. In the year 1973, simultaneously with the promulgation of the "Bangladesh Wildlife (Preservation) order 1973" which is now, after enactment and amendment, known as the Bangladesh Wildlife (Preservation) (Amendment) act 1974, a circle in the name of 'Wildlife Circle' was created in the forest department. The responsibility of the circle was to execute the development activities on wildlife conservation in the country. But the circle was abolished by Enam Committee[2] in 1983 and the organizational set up for wildlife management and conservation was absorbed in other functions of the Department.

The designation of the Conservator of Forests Wildlife Circle was changed to Conservator of Forests Administration and Wildlife.

During the seventies a Board was formed by the Govt. named "Wildlife Advisory Board". The Board had limited authority and fund and almost defunct now. No Board meeting was held after 1986.

A GOB funded development project with an allocation of Tk. 560.74 lakhs was taken up in the year 1993 to be executed during the Fiscal Years 1993-94 to 1994-95 and then revised to cover the period 1995-96 to 1996-97 was approved.

Name of the project was "Development of Wildlife Conservation and Management". Location of the project was all over Bangladesh but mainly in the Wildlife Sanctuaries and Game Reserves.

Chunati Wildlife Sanctuary is included in the project and there were development programmes to be implemented.

The objectives of the project are:

a) Conservation and development of wildlife resources of Bangladesh.
b) Establishment, development and management of wildlife sanctuary in the wetlands.
c) Establishment of breeding centres of crocodile/ Gharial, turtles and tortoises, cards etc. mainly for the purpose of increasing their number in the nature.

[2] Enam Committee: A Committee, which worked for reorganization of services in Bangladesh during the period of President Ershad.

d) Development of the existing wildlife sanctuaries and game reserves.
e) Survey and investigation in biology of threatened and endangered wildlife spices.
f) Creation of the public awareness on the importance of wildlife conservation.

A total of 99 no. of staffs of 13 categories was provided in this project including one conservator of forests to be posted from the Forest Department.

Approach, Activities and Strategies of the above project:

The project was to be implemented by the Conservator of Forest, Wildlife, who will also act as Project Director under the control of the Chief Conservator of Forest. The territorial Divisional Forest Division officers (When established) will be responsible for the field implementation of various project activities. Technical works such as survey, research & investigation on the wildlife and their breeding biology including breeding of wildlife at breeding centres were provided to be carried out by the field officers under the supervision of the Senior Wildlife Research Officers attached to the Wildlife Circle. Assistance for such technical works could be taken from the Universities & also from persons & NGOs having expertise in wildlife survey and breeding.

The project had provision for mainly helping development of an infrastructure for the wildlife sanctuaries and game reserves, which was absent.

Outputs expected on implementation of the project:

a) Preserve fauna and flora vis-a- vis is bio-diversity of the country through protection of the wildlife sanctuaries and game reserve.
b) Develop knowledge and technologies for future sustainable utilization of wildlife.
c) Increase the number of endangered species of wildlife in the nature through ex-situ practices.
d) Set-up an organizational set up in the forest Department for wildlife management.

Under the World Bank assisted “Forest Resources Management Project (FRMP)”; Technical Assistance Component, Dr Emilio A. Rosario, Conservation Management Plan Specialist prepared an elaborate plan “The Conservation Management Plan of the Protected Areas other than Sundarban Forests in Bangladesh (September 1997)”. This plan covers Chunati Wildlife Sanctuary and provides guidelines for the Scientific Management and development of the protected areas as well as the basics for monitoring and evaluating the activities in the areas. The plan has not been acted upon.

Under the ADB aided Forestry Sector Project (FSP), Mr. Richard Salter, the conservation area management expert of FSP prepared a guideline for the works to be undertaken (including ecosystem facilities) and also prepared management plans for the Protected Areas covered under FSP jurisdiction. His plans include one separate management plan for the “Chunati Wildlife Sanctuary”. This plan has also not been acted upon. Copy of the plans are available.

Under FRMP some plantations were raised in the Chunati Wildlife Sanctuary Area, curiously enough some exotics like teak, mahogany, Akashmoni, which are not suitable for conservation areas, have also been planted.

Under ADB- aided Forestry Sector Project (FSP), provision exists for raising plantations of indigenous species in buffer zones and some enrichment planting in the buffer zones with indigenous species are being done with the FSP (on-going) project budget.

12. Copies of Rosarios Reports two volumes made and submitted.

13. Agriculture and horticulture practices

It is reported by the Forest Staff (2003) that about 25% of the land area of the sanctuary is under paddy cultivation. Some of the people have legal documents and others are practicing agriculture (mostly growing paddy) inside the R.F. illegally. The fertile lowlands are used for growing paddy. High plains are used for growing betel leaf (Pan), vegetables like yard bean, melon etc. Most of the people who use the land for agriculture do not reside inside the R. F. So, agricultural activity is conducted both by the encroachers who live illegally inside the reserve and also people who reside outside and use forestland for the purpose.

Horticultural practices include raising fruit trees like Guava, Papaya, Safeda, and Lemon around homesteads and fringes of forests where they find a suitable land. Mango, Jackfruit, Jalpai, (Olive) are also planted for fruits and for timber on maturity (Ref: CF, Chittagong Circle - Personal Communication).

14. Forest Produce

Timber (though limited), small sized construction timber, house posts and poles, fencing stakes are collected illegally from the sanctuary area.
Gathering of firewood, grasses, (and grazing of cattle inside the forests), sun grass, and bamboo is rampant over the P.A. Coppice shoots, tree seedlings, saplings and poles hardly get a chance to grow to size.

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17. STAFFING & ORGANIZATIONAL STRUCTURE OF THE CHUNATI WILDLIFE SANCTURY

Conservator of Forests Wildlife Circle, Dhaka (Newly created)
Mr. Samsur Rahman, C.F.

D.F.O.

Wildlife and Nature Conservation, Chittagong.
Mr. Tapan Kumar Dey, D.C.F.

A.C.F.

Sanctuary In Charge (Not posted)

Staff In Position.

Forest Ranger-1
Deputy Ranger-2
Forest Guard-1
Plantation Mali-4
Boatman-2

Total-10
Sanctioned but not filled up

Administrative & Visitor Service Section
1-Forester
1-Extension Specialist
1-Radio Operator
1-Driver- Mechanic
2-Laborer
3- MLSS
Forest & Wildlife Management Section
Forester
Research Assistants
    6-Forest Guards
    2-Laborers

Source: D.F.O. Wildlife and Nature Conservation Division, Chittagong. (Personal Communication)

ANNEX-1

Appendix 1.5
Government of the People's Republic of Bangladesh.

Ministry of Agriculture

Section-XII.

NOTIFICATION

Dated, the 18th March 1986.

No. XII/ For- 1/84/174. In exercise of the power conferred under article 23 (1) of Bangladesh Wildife (Preservation) (Amendment Act, 1973 (P.O. No. 23 of 1973), the Government is pleased to declare the following are of Reserved Forests under the Chittagong Forest Division to be "Wildlife Sanctuary" with effect from the date of issue of this notification:-

Name of the game sanctuary	Compartment	Legal status of proposed sanctuary	Area		Total area
Chunati Wildlife Sanctuary, Chittagong	1. Chunati (portion on West of Chittagong Cox's Bazar Road)	Reserved Forests	2004	acres	
	2. Satgarh (Portion of the West of Chittagong Cox's Bazar Road.)	-do-	859.0	"	
	3. Goyalmara	-do-	3585.0	"	19,177.0
	4. Puichari	-do-	3346.0	"	Acres.
	5. Napura	-do-	3975.0	"	
	6. Jaldi	-do-	2837.0	"	
	7. Chambal	-do-	2571.0	"	

BY ORDER OF THE PRESIDENT

Sd/- S.A. Mahmood
Secretary .
Daka, the 18th march, 1986.

No. XII/For-1/84/174
Copy forwarded for information and necessary action to:-
1. Secretary, Ministry of L.A & L.R.Daka.
2. Commissioner, Chittagong Division.
3. Chief Conservator of Forests, Bana Bhaban, Mohakhali, Daka.
4. Conservator of Forests, Western Circle, Chittagong.
5. Deputy Commissioner, Chittagong.
6. Supdt. Of B.G. Press, Tejgaon, Daka. He is requested to kindly to publish the notification in the next issue of the Bangladesh Gazette and supply 50 copies to this Ministry for official use.

(A.K.M. Serajul Islam)
Section Officer

ANNEX-2
Source: Rosario's Plan
APPENDIX II.5

LIST OF FLORA IN THE CHUNATI WILDLIFE SANCTUARY

FAMILY NAME	SCIENTIFIC NAME	ENGLISH /COMMON NAME
Anacardiaceae	Lannea Coromandelica	Bhadi/Jiubhadi
Bignoniaceae	Stereospermum chelonioides	
Burseraceae	Bursera serrata	
	Garuga pinnata	
Combretaceae	Anogeissus lanceolata	
	Terminalia belirica	Bahera
Dilleniaceae	Dillenia pentagyna	Hargaza
Elaeocarpaceae	Elaeocarpus robusus	
Euphorbiaceae	Macaranga denticulata	
	Phyllanthus reticulatus	
	Trewia polycarpa	
Fagaceae	Quercus spicata	
Guttiferae	Garcinia cowa	
Leguminosae	Derris trifoliata	
Meliaceae	Aphanamixis polystachya	Pirraj
Moraceae	Artocarpus chaplasha	Cham/Chapalish
	Ficus hispida	
	Ficus religiosa	
	Streblus asper	
Myrsinaceae	Maesa ramentacea	
Myrtaceae	Syzygium cumini	
	Syzygium fruticosum	Banjam, Khudijam
	Syzygium grande	Dhakijam
Rhamnaceae	Zizyphus oenoplia	
Rubiaceae	Anthocephalus chinensis	
Tiliaceae	Grewia laevigata	
	Grewia microcos	
Ulmaceae	Trema orientalis	
Verbenaceae	Callicarpa arborea	
	Gmelina arborea	Gamar/Gamari
	Premna esculenta	
	Tectona grandis	Shagwan/Shegun/Teak
	Anacissus lanceolata	Kanchoi
Euphorbiaceae	Baccaurea ramiflora	
Tiliaceae	Brownlowia elata	
	Cassia nodosa	Bandarlatia
Symplocaceae	Symplocos racemosa	
SHRUBS		
Apocynaceae	Rauvolfia serpentina	
	Tabernaemontana divaricata	
Euphorbiaceae	Bridelia tomentosa	
Labiatae	Hyptis suaveolens	
Leguminosae	Mimosa pudica	
	Tephrosia candida	
	Uraria hamosa	
Malvaceae	Urena lobata	
Melastomataceae	Melastoma malabathrica	
Plumbaginaceae	Aegialitis rotundifolia	
Rubiaceae	Mussaenda roxburghii	
Sapindaceae	Aphania danura	
Solanaceae	Solanum torvum	

Urticaceae	Sarchochlamys pulcherrima
Verbenaceae	Clerodendrum indicum
	Rhyncotechum ellipticum

FAMILY NAME	SCIENTIFIC NAME	ENGLISH /COMMON NAME
PALM (ERECT & CLIMBING)		
Palmae	Caryota urens	
BAMBOO		
Poaceae	Bambusa rulda	Kaligoda
CLIMBERS		
Acanthaceae	Thunbergia grandiflora	Nillata
Asclepiadaceae	Hoya parasitica	Pargacha
Combretaceae	Calycopteris floribunda	
Compositae	Chromolaena odorata	
	Mikania cordata	
	Mikania scandens	
Convolvulaceae	Ipomoea alba	
	Paederia Foerida	
Dioscoreaceae	Dioscorea bulbifera	
	Dioscorea esculenta	
	Dioscorea glabra	
Leguminosae	Entada phaseoloides	
	Mucuna pruriens	
Liliaceae	Smilax macrophylla	
Passifloraceae	Passiflora foetida	
Sterculiaceae	Buettneria pilosa	
HERBS		
Acanthaceae	Lepidagathis incurva	
Amaranthaceae	Achyranthes aspera	
Anacardiaceae	Swintonia floribunda	Am-Chundal /Civit
Araceae	Colocasia esculenta	
	Colocasia nymphaefolia	
Compositae	Ageratum conyzoides	
Cyperaceae	Cyperus difformis	
	Cyperus iria	
Haloragaceae	Myriophyllum tetrandrum	
Leguminosae	Cassia tora	
	Desmodium alatum	
Liliaceae	Curculigo recurvata	
Malvaceae	Sida acuta	
Musaceae	Musa ornata	
	Musa paradisiaca	
Ongraceae	Ludwigia hyssopifolia	
Orchidaceae	Vanda teres	
Polygonaceae	Polygorum orientale	
Pontederiaceae	Monochoria vaginalis	
Solanaceae	Physalis minima	
Tiliaceae	Triumfetta rhomboidea	
Verbenaceae	Clerodendrum viscosum	
Zingiberaceae	Alpinia galanga	
	Costus speciosus	
Lauraceae	Cinnamomum camphora	
Compositae	Eupatorium odoratum	
	Gymbidium aloifolilum	Orchid
Polygonaceae	Polygonum hydropiper	
GRASS		
Poaceae	Imperata cylindrica	

	Melocanna baccifera	
	Neohouzeaua dulloa	Dalco Bans/Dalu
	Oxytenanthera	Kali Bans
	Saccharum spontaneum	
Convolvulaceae	Thysanolaena maxima	
	Ipomoea batatus	

ANNEX-3

Source: Rosario's Plan

APEENDIX III.5

LIST OF FAUNA IN THE CHUNATI WILDLIFE SANCTUARY

FAMILY NAME	SCIENTIFIC NAME	ENGLISH /COMMON NAME
Mammals		
Canidae	Canis aureus	Jackal/Shial
Cercopithecidae	Macaca mulatta	Rhesus Macaque/Banor
	Macaca nemestrina	Pig tailed Macaque/Chota Lejwala Banor
	Presbytis phayrei	Phayre's Leaf Monkey /Hanuman
	Presbytis pileatus	Capped Langur/Hanuman
Cervidae	Cervus unicolor	Sambhar
	Munticacus muntjak	Southern Indian Muntjak, Barkin Deer/Maya Harin
Manidae	Manis crassicaudata	Indian Pangolin or Anteater/Ban Rui
Megadermatidae	Megaderma lyra	Bat, Indian False Vampire/Badur
Mustelidae	Lutra lutra	Otter/Uud
Pongidae	Hylobates hoolock	Hoolock Gibbon/Ulluk
Pteropodidae	Pteropus giganteus	Flying-fox, Common/Badur
Sciuridae	Dremomys lokriah	Orange bellied squirre/Kant Birali
	Callosciurus pygerythrus	Irrawaddy Squirrel/Kant Birali
	Ratufa macroura	Highland Giant-squirrel/Kant Birali
Suidae	Sus scrofa	Indian Wild Pig/Shukar
Vespertilionidae	Pipistrellus coromandra	Pipistrel. Indian/Badur
Viverridae	Herpestes auropunctatus	Small Mongoose/Beji
	Herpestes urva	Crab eating Mongoose Kankra Bhula Beji
Birds		
Accipitridae	Haliastur Indus	Brahminy Kite/Bhuban Chil
	Spilornis cheela	Crested Serpent-Eagle
Alcedinidae	Alcedo atthis	Common Kingfisher/machranga
	Halcyon smyrnensis	White-throated Kingfisher/machranga
Apodidae	Cypsiurrus parvus	Palm Swift/Ababil
Ardeidae	Ardeola grayii	Indian Pond-Heron/Kani bok
	Bubulcus ibis	Cattle Egret/Gobok
	Egretta Garzetta	Little Egret/Bok
Bucerotidae	Anthracoceros malabaricus	Pied Hornbill/Dhanesh
Capitonidae	Megalaima haemacephala	Coppersmith Barbet
	Megalaima lineata	Lineated Barbet
Columbidae	Chalcophaps indica	Emerald Dove/Ghughu
	Columba liva	Rock Pigeon/Jalali Kabutar
	Streptopelia Chinensis	Spotted Dove/Tila Ghughu
	Streptopelia transquebarica	Red Collared-Dove/ghughu
	Treron sphenura	Wedge-tailed Green-Pigeon

Corvidae	Corvus macrorhynchos	Lare-billed Crow/Dar Kank
	Dendrocitta Vagabunda	Rufous Treepie/Kutum Pakki
Cuculidae	Cuculus varius	Common Hawk-Cuckoo/Chokgelo
Dicaeidae	Dicaeum erythrorhynchos	Pale-billed Flowerpecker
Dicruridae	Dicrurus adsimilis	Black Drongo/Finge
	Dicrurus aeneus	Bronzed Drongo/Finge
	Dicrurus Paradiseus	Drongo, Racket-tailed/Finge

FAMILY NAME	SCIENTIFIC NAME	ENGLISH /COMMON NAME
Dicruridae	Dicrurus remifer	Lesser Racket-tailed Drongo
Hirundinidae	Hirundo rustica	Barn Swallow/Ababil
Irenidae	Aegithinia tiphia	Common Iora/Fatikjal
	Chloropsis Aurifrons	Golden-fronted Leafbird
Meropidae	Merops leschenaulti	Chestnut-headed Bee-eater/Shui Chura
	Merops orientalis	Little Green Bee-eater/Shui Chura
Monarchidae	Hypothymis azurea	Black-naped Monarch
Motacillidae	Anthus novaeseelandiae	Australasian Pipit/Khanjan
Muscicapidae	Copsychus saularis	Oriental magpie-Robin/Duel
	Orthotomus satorirus	Tailor Bird/Turturi
Necariniidae	Arachnothera langirostris	Little Spiderhunter
	Nectarinia zeylonica	Purple-rumpud Sunbird/Moutushi
Oriolidae	Oriolus xanthornus	Black-hooded Oriole
Phasianidae	Gallus Gallus	Red Junglefowl/Ban Murghee
	Lophura leucomelana	Blackbreasted Kaleej Pheasant/Mathura
Picidae	Blythipicus pyrrhotis	Bay Woodpecker/Kant tukra
	Dinopium bengalense	Woodpecker, Red-backed/Kant Tukra
Psittacidae	Loriculus vernalis	Vernal Hanging-Parrot/Tota/Tia
	Psittacula alexandri	Red-breasted Parakeet/Tia
	Psittacula Roseata	Blossom-headed Parakee/Tia
Pycnonotidae	Pycnonotus cafer	Red-vented Bulbul/Bulbuli
	Pycnonolus jocosus	Red-whiskered Bulbul/Bulbuli
Rallidae	Amaurornis Phoenicurus	White-breasted Waterhen/Dahuk
Strigidae	Bubo bubo	Eurasian Eagle-Owl/Uttum Pencha
	Tyto alba	Barn Owl/Pencha
Strunidae	Acridotheres fuscus	Jungle Myna/Jhule Shalik
	Acridotheres tristis	Common Myna/Bhat Shalik
	Gracula religiosa	Hill Myna/Pahari Myna
	Sturnus contra	Asian Pied starling/Go-Shalik
Zosteropidae	Zosterops palpebrosa	White Eye, Indian, Small
Reptilia		
Colubridae	Chrysopelea ornate	Golden tree snake and Ornate flying snake
	Rhabdophis subminiata	
Emydidae	Cuora amboioensis	Malayan Box Turtle / Bux Kaita
Gekkonidae	Gekko gecko	Gekko/Tokkosh
Scincidae	Mabuya carinata	Mabuya/Shaper mai
Trionychidae	Lissemys punctala	Soft-shelled Terrapin/Shundhi Kasim
Varanidae	Varanus bengalensis	Bengal monitor lizard/Kalo guishap
Amphibians		
Bufonidae	Bufo melanositictus	Common Toad /Kunu Bang
Picidae	Dicaeum cruentatum	Scarletbacked Woodpecker/Kant Tukra
Ranidas	Rana cyanophlycitis	Skipper frog/Kotkoti Beng
	Rana tigerina	Bull frog/Kola Beng

ANNEX-4

Source: Rosario's Plan

APPENDIX IV.5

LIST OF ANIMAL SPECIES THREATENED & ENDANGERED IN THE CHUNATI WILDLIFE SANCTUARY

Animal Group& Family	Scientific Name	English Naame/Local Name	
MAMMALS			
Cervidae	Cervus Unicolor	Sambhar	T
Cervidae	Muntiacus muntjak	Barkin Deer/Maya Harin	T
Pondidae	Hylobates muntiak	Hoolock Gibbon/Ulluk	E
BIRDS			
Strunidae	Gracula religiosa	Hill Myna/pahari Myna	T
REPTILES			
Varanidae			
	Varanus bengalensis T	Bengal monitor Lizard/kalo Guishap	
AMPHIBIANS			
Ranidae	Rana Tigrina	Bull frog/Kalo Beng	T

ANNEX-5
Source: Rosario's Plan

APPENDIX V.5

LIST OF PROTECTED ANIMAL SPECIES FOUND IN THE CHUNATI WILDLIFE SANCTUARY

Animal Group & Family	Scientific Name	English Name/Local Name
MAMALS (9)		
Cercopithecidae	Macaca mulatta	Rhesus Macaque/Banor
Cercopithecidae	Macaca nemestrina	Pig tailed macaque/Chota Lejwala Banor
Cercopithecidae	Presbytis phayrei	Phayre's Leaf Monkey/Honuman
Cercopithecidae	Presbytis pileatus	Capped Langur/Hanuman
Cervidae	Cervus unicolor	Sambhar
Cervidae	Muntiacus muntjak	Sothern Indian Muntjak, Barkin Deer/Maya Harin
Madinae	Manis crassicaudata	Indian Pangolin or Anteater/Ban Rui
Sciuridae	Dremomys lokrah	Orange bellied squirrael/Kant Birali
Sciuridae	Callosciurus pygerythrus	Irrawaddy Squirrel/Kant Birali
BIRDS (48)		
Accipitridae	Haliastur Indus	Brahminy Kite/Bhuban Chil
Accipitridae	Spilornis cheela	Crested Serpent Eagle
Alcedinidae	Alcedo atthis	Common Kingfisher/Machranga
Alcedinidae	Halcyon smyrnensis	White-throated Kingfisher/Machranga
Apodidae	Cypsiurrus parvus	Palm Swift/Ababil
Bucerotidae	Anthracoceros malabaric	Pied Hornbill/Dhanesh
Capitonidae	Megalaima haemacephal	Coppersmith Barbet
Capitonidae	Megalaima lineata	Lineated Barbet
Columbidae	Chalcophaps indica	Emerald Dove/Ghughu
Columbidae	Columba livia	Rock Pigeon/Jalali Kabutal
Columbidae	Streptopelia chinensis	Spotted Dove/Tila Ghughu
Columbidae	Streptopelia tranquebaric	Red Collared-Dove/Ghughu
Corvidae	Corvus macrorhynchos	Large-billed Crow/Dar Kank
Corvidae	Dendrocitta vagabunda	Rufous Treepie/Kutum Pakki
Cuculidae	Cuculus varius	Common Hawk-Cuckoo/Chokgelo
Dicaeidae	Dicaeum erythrorhyncho	Pale-billed Flowerpecker
Dicaeidae	Dicrurus assimilis	Black Drongo/Finge
Dicaeidae	Dicrurus aeneus	Bronzed Dorngo/Finge
Dicaeidae	Dicrurus paradiseus	Drongo, Racket-taileed/Finge
Dicaeidae	Dicrurus remifer	Lesser Racket Racket-tailed Drongo
Hirundinidae	Hirundo rustica	Barn Swallow/Ababil
Irenidae	Aegithinia Tiphia	Common lora/Fatikjal
Irenidae	Chloropsis aurifrons	Golden-fronted Leafbird
Meropidae	Merops leschenaulti	Chestnut-headed Bee-eaten/Shui Chura
Meropidae	Merops orientalis	Little Green Bee-eater/Shui Chura
Monarchidae	Hypothymis azurea	Black-naped Monarch
Motacillidae	Anthus novaeseelandiae	Australasian Pipit/Khanjan
Muscicapidae	Copsychus saularis	Oriental magple-Robin/Duel
Muscicapidae	Orthotomus satorirus	Tailor Bird/Turturi
Nectariniidae	Archnothera langirostris	Little Spiderhunter
Nectariniidae	Nectarinia Zeylonica	Prople-rumped Sunbird/Moutushi
Phasianidae	Gallus gallus	Red Junglefow/Ban Murghee
Phasianidae	Lophura leucomelana	Blackbreasted Kaleej Pheasant/Mathura

Picidae	Blythipicus pyrrhotis	Bay Woodpecker /Kant Tukra
Psittacidae	Loriculus vernalis	Vernal Hanging-Parrot/Tota/Tia

Animal Group & Family	Scientific Name	English Name/Local Name
Psittacidae	Psittacula alexandri	Red-breasted parakeet/Tia
Psittacidae	Psittacula roseate	Blossom headed parakeet/Tia
Pycnonotidae	Pycnonotus cafer	Red-vented Bulbul/Bulbuli
Pycnonotidae	Pycnonotus jocosus	Red-Whiskered Bulbul/Bulbuli
Rallidae	Amaurornis phoenticurus	White-breasted Waterhen/Dahuk
Strigidae	Bubo bubo	Eurasian Eagle-Owl/Utum Pencha
Strigidae	Tyto alba	Barn owl/pencha
Strunidae	Acridotheres fuscus	Jungle Myna/Jhule Shalik
Strunidae	Acridotheres tristis	Common Myna /Bhat Shalik
Strunidae	Gracula religiosa	Hill Myna/Pahari Myna
Strunidae	Sturnus contra	Asian Pied Starling /Go-Shalik
Zosteropidae	Zosterops palpebrosa	White Eye, Indian, Small
REPTILES (1)		
Varanidae	Varanus bengalensis	Bengal monitor lizard /Kalo guishap
AMPHIBIANS	None	

ANNEX-6
Source: Rosario's Plan

APPENDIX VI.5

LIST OF GAME SPECIES FOUND IN THE CHUNATI WILDLIFE SANCTUARY

Animal Group & Family	Scientific Name	English Name/Local Name
MAMMALS		
	None	
BIRDS		
Ardeidae	Ardeola grayii	Indian Pond-Heron/Kani Bok
Ardeidae	Bubulcus ibs	Cattle Egret/Gobok
Ardeidae	Egretta garzetta	Little Egret/Bok
REPTILES		
	None	
AMPHIBIANS		
	None	

ANNEX-7
Source: Rosario's Plan

APPENDIX VII.5

LIST OF PLANT & ANIMAL SPECIES OF CHUNATI WILDLIFE SANCTUARY INCLUDED IN CITES1,II&III

Animal Group & Family	Scientific Name	English Name/Local Name	
MAMMALS			
Cercopithecidae	Macaca mulatta	Rhesus macaque/Banor	II
Cercopithecidae	Macaca nmestrina	Pig tailed Macaque/Chota Lejwala Banar	II
Cercopithecidae	Presbytis Phayrei	Phayre's Leaf Monkey/Hanuman	II
Cercopithecidae	Prespytis Pileatus	Capped Langur/Hanuman	I
Manidae	Manis crassicaudata	Indian Pangolin or Anteater/Ban Rui	II
Mustelidae	Lutra lutra	Otter/Uud	I
Pongidae	Hylobates hoolock	Hoolock Gibbon/Ulluk	I
BIRDS			
Accipitridae	Haliastur indus	Brahminy Kite/Bhuban Chill	II
Accipitridae	Spilornis cheela	Creasted Serpent-Eagle	II
Psittacidae	Lorculus vernalis	Vernal Hanging-Parrot/Total/Tia	II
Psittacidae	Psittacula alexandri	Red-breasted Parakeet/Tia	II
Psittacidae	Psittacula roseate	Blossom-headed Parakeet/Tia	II
Strigidae	Tyto alba	Barn owl/Pencha	II
REPTILES			
Trionychicae	Lissemys punctata	Soft-shelled Terrapin/Shundhi Kasim	II
Varanidae	Varanus benegalensis	Bengal Monitor Lizard/Kalo Guishap	I
AMPHIBIANS			
Ranidae	Rana tigrina	Bull Frog/Kola Beng	II

ANNEX-8

APPENDIX VIII.5

CLIMATIC DATA OF THE CHUNATI WILDLIFE SANCTUARY

5.1. Monthly and annual Rainfall in Millimeter (a) & Number of Rainy Days (b) (1991-1996) 1/

Year		Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Annual
1991-92	(a)	261.4	636.1	728.8	650.7	316.0	268.8	223.8	107.9	17.4	0.0	174.9	0.0	3385.8
	(b)	6	16	21	24	21	19	13	3	1	0	8	0	123
1992-93	(a)	0.9	78.4	510.7	411.8	190.3	286.3	309.4	0.0	27.3	33.8	0.0	220.7	2069.6
	(b)	1	9	14	23	17	17	12	0	2	1	0	10	106
1993-94	(a)	78.9	431.3	716.3	473.8	633.3	243.2	54.5	17.3	0.0	4.2	7.7	157.7	2818.2
	(b)	10	19	22	19	24	20	7	4	0	1	3	4	133
1994-95	(a)	172.9	141.9	341.9	398.0	302.0	96.5	123.8	57.9	0.0	0.0	5.3	26.3	1666.5
	(b)	8	14	18	23	24	9	10	2	0	0	3	3	114
1995-96	(a)	48.6	302.0	301.4	527.7	528.3	117.9	101.6	315.8	0.0	0.0	103.5	178.2	2525
	(b)	4	6	17	20	18	14	6	9	0	0	4	2	100
Mean	(a)	112.5	318.0	519.8	492.4	394.0	207.5	162.6	99.8	9.0	7.6	58.3	116.6	2493.1
	(b)	5.8	12.8	18.4	21.8	20.8	15.8	9.6	3.6	0.6	0.4	3.6	3.8	117.0

1/ Source: Bangladesh Water Department Board, Surface Water Hydrology Division, Station 302, Anwara, Chittagong.

5.2. Monthly and annual Minimum (a) & Maximum (b) Temperatures (Degree Celsius) (1990-1994) 2/

Year		Jan.	Feb.	Mar.	April	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
1990	(a)	14.6	18.3	19.4	22.0	25.3	25.3	24.9	25.7	25.1	23.6	21.5	16.1	21.9
	(b)	25.8	28.5	28.8	31.1	32.5	31.7	30.0	32.2	32.2	31.2	30.2	26.9	30.1
1991	(a)	14.2	17.1	22.1	-	25.6	25.7	25.8	25.6	25.4	24.2	18.9	15.3	-
	(b)	25.2	29.0	32.5	-	32.2	30.5	31.2	32.0	31.3	31.2	28.3	26.5	-
1992	(a)	13.8	16.7	22.1	24.9	24.4	25.6	25.0	25.0	25.3	24.3	20.8	15.0	22.0
	(b)	24.9	26.0	29.6	32.7	32.6	32.0	31.1	31.9	31.8	31.2	29.5	25.9	30.0
1993	(a)	13.9	16.9	19.1	22.3	23.5	24.6	25.1	25.1	24.5	23.9	19.4	15.1	21.2
	(b)	25.8	27.5	29.7	32.1	32.1	31.0	31.4	31.0	31.4	31.5	29.3	27.3	30.1
1994	(a)	14.0	15.6	20.6	23.4	25.5	25.9	25.5	25.4	25.7	24.1	20.3	14.6	21.8
	(b)	26.8	27.5	30.4	32.1	32.9	31.7	31.4	31.8	32.6	31.8	29.9	27.4	30.6
Mean	(a)	14.2	17.0	20.7	23.2	24.9	25.5	25.3	25.4	25.3	24.1	20.2	15.3	21.7
	(b)	25.7	27.8	30.2	32.0	32.5	31.4	31.1	31.8	31.9	31.5	29.5	26.9	30.2

1/ Source: Bangladesh Meteorological Department, Climate Division Chittagong Station (Latitude 22^0 16' N & Longitude 91^0 49' E).

5.3. Monthly and Annual Minimum (a) & Maximum (b) Humidities (%) (1990-1994) 2/

Year		Jan.	Feb.	Mar.	April	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
1990	(a)	39	40	35	40	58	60	62	-1	60	52	49	-1	41.08
	(b)	98	96	98	100	100	100	100	98	97	98	97	98	98.3
1991	(a)	35	29	27	-1	-1	64	-1	40	60	57	34	32	31.25
	(b)	96	97	95	0	97	100	98	100	100	97	98	97	89.58
1992	(a)	39	32	60	41	48	59	61	60	63	42	42	37	48.66
	(b)	100	98	98	97	95	100	100	100	100	100	98	100	98.83
1993	(a)	32	26	24	29	51	34	60	62	60	52	34	39	41.91
	(b)	100	100	100	100	100	100	100	100	98	98	98	100	99.5
1994	(a)	28	24	14	34	49	64	60	65	46	53	-1	32	39
	(b)	100	96	100	100	97	100	100	98	100	100	100	98	99.08
Mean	(a)	34.6	30.2	32	28.6	41	56.2	48.4	45.2	57.8	51.2	31.6	27.8	40.38
	(b)	98.8	97.4	98.2	79.4	97.8	100	99.6	99.2	99	98.6	98.2	98.6	97.06

2/ Source: Bangladesh Meteorological Department, Climate Division Chittagong Station (Latitude 22^0 16' N & Longitude 91^0 49' E).

5.4. Average Monthly and Annual Humidities (%) (1990-1994) 2/

Year	Jan.	Feb.	Mar.	April	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
1990	77	75	75	78	79	84	88	82	83	81	82	79	80
1991	77	75	75	-	79	85	85	85	85	84	79	76	-
1992	78	77	83	78	79	84	86	84	86	84	79	78	81
1993	76	75	75	79	82	86	85	86	85	82	78	75	80
1994	74	66	77	78	80	85	86	86	83	82	79	75	79
Mean	76	74	77	78	80	85	86	85	84	83	79	77	80

2/ Source: Bangladesh Meteorological Department, Climate Division Chittagong Station (Latitude 22^0 16' N & Longitude 91^0 49' E).

5.5 Average Monthly and Annual Sunshine Hours Per Sunny Day (1990-1994) 2/

Year	Jan.	Feb.	Mar.	April	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Annual
1990	8.0	7.2	6.7	8.2	6.2	3.8	-	6.8	6.0	6.7	6.3	7.5	-
1991	7.4	8.2	8.7	-	-	-	-	6.1	5.8	6.6	7.2	8.0	-
1992	7.7	6.6	7.6	8.2	6.8	4.9	3.6	5.5	5.7	6.4	6.9	7.9	6.5
1993	7.9	8.3	7.6	8.7	6.3	3.8	4.2	4.4	5.2	7.3	8.3	8.4	6.8
1994	8.4	9.1	7.6	8.0	7.2	3.0	3.9	4.6	6.7	7.1	7.1	8.1	6.8
Mean	7.9	7.9	7.7	8.3	6.7	3.9	3.9	5.5	5.9	6.9	7.2	8.0	6.7

2/ Source: Bangladesh Meteorological Department, Climate Division Chittagong Station (Latitude 22^0 16' N & Longitude 91^0 49' E).

ANNEX-9
Source: DFO Wildlife and Nature Conservation, Chittagong.

17. STAFFING & ORGANIZATIONAL STRUCTURE OF THE CHUNATI WILDLIFE SANCTURY

Conservator of Forests Wildlife Circle, Dhaka (Newly Created)
Mr. Samsur Rahman, C.F.

D.F.O.

Wildlife and Nature Conservation, Chittagong.
Mr. Tapan Kumar Dey, D.C,F.

A.C.F.
Sanctuary In Charge (Not posted)

Staff In Position .

Forest Ranger-1
Deputy Ranger-2
Forest Guard-1
Plantation Mali-4
Boatman-2
……
Total- 10

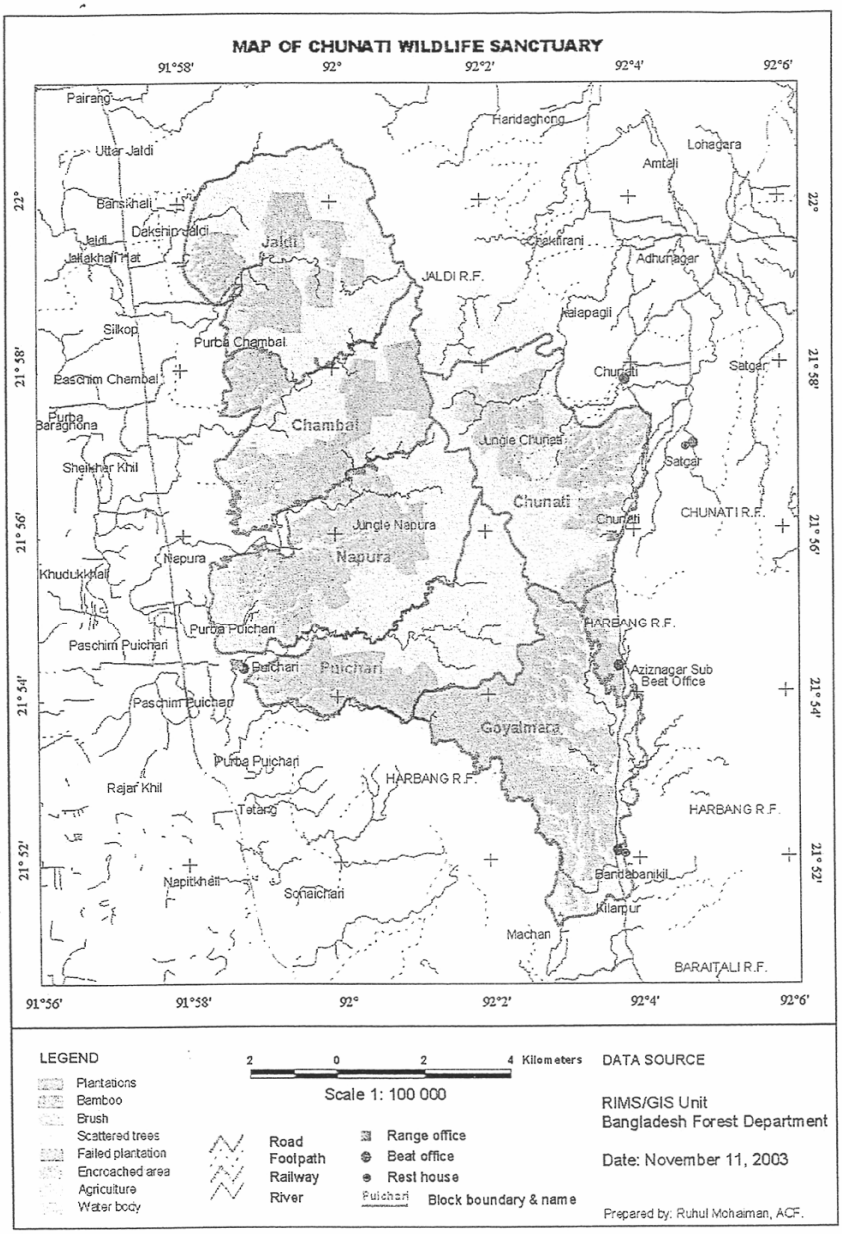
Sanctioned but not filled up

Administrative & Visitor Service Section
- 1-Forester
- 1-Extension Specialist
- 1-Radio Operator
- 1-Driver Mechanic
- 2-Laborer
- 3-MLSS

Forest & Wildlife Management Section
- 1-Forester
- 2-Research Assistants
- 6-Forest Guards
- 2-Laborers

Source: D.F.O. Wildlife and Nature Conservation Division, Chittagong. (Personal Communication).

ANNEX- 10


MAP OF CHUNATI WILDLIFE SANCTUARY
91°58'
92°
92°2'
92°4'
92°6'
91°56'
22°
21°58'
21°56'
21°54'
21°52'
Pairang
Uttar Jaldi
Bansikhali
Dakshin Jaldi
Jaldi
Jalakhali Hat
Silkop
Purba Chambal
Paschim Chambal
Purba Baraghona
Sheikhar Khil
Napura
Khuduk Hat
Purba Puichari
Paschim Puichari
Puichari
Paschim Puichari
Purba Puichari
Rajar Khil
Tetang
Napitkhali
Sonaichari
Haridaghong
Lohagara
Amtali
Chakirani
Adhunagar
JALDI R.F.
Kalapagli
Chunati
Satgar
Chambal
Jungle Chunati
Satgar
Chunati
Chunati
CHUNATI R.F.
Jungle Napura
Napura
HARBANG R.F.
Aziznagar Sub Beat Office
Goyalmara
HARBANG R.F.
HARBANG R.F.
Bandabanikil
Kilanur
Machan
BARAITALI R.F.
LEGEND
Plantations
Bamboo
Brush
Scattered trees
Failed plantation
Encroached area
Agriculture
Water body
2 0 2 4 Kilometers
Scale 1: 100 000
Road
Footpath
Railway
River
Range office
Beat office
Rest house
Puichari
Block boundary & name
DATA SOURCE
RIMS/GIS Unit
Bangladesh Forest Department
Date: November 11, 2003
Prepared by: Ruhul Mohaiman, ACF.