



IUCN
PRIMATES
SECTION ON
SMALL APES

Final Project Report

Project Title: Community-based Conservation Initiative of the Western Hoolock Gibbon (*Hoolock hoolock*, Harlan, 1834) in Bangladesh

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1. Project Summary

A community involvement conservation initiative of western hoolock gibbon (*Hoolock hoolock* Harlan, 1834) was conducted in southern and northeastern parts of Bangladesh. This was the first community participated conservation work to protect any primate species in Bangladesh. As part of the project, baseline information of gibbon population, awareness development program among the local community people, forest dependant people, community patrol group, forest villagers and local leader were arranged with the support from Forest Department in order to conserve the highly threatened and less known gibbon habitats of the country. Local community people were actively engaged to raise of awareness among mass community people of which they also supported as citizen scientists by providing important information on gibbons. Community consultation programs were arranged to form the Gibbon Conservation Group at Inani Reserved Forest (21°13'48.50"N 92°03'50.19"E) and Bangdhepa Reserved Forest (21°31'37.08"N 92°08'43.20"E) in southern Bangladesh and Rema-Kalenga Wildlife Sanctuary (24°12'6.09"N 91°62'72.50"E) in northeast Bangladesh. Outreach activities were arranged among school children in northeast and southern Bangladesh. Already, we were able to create a positive attitude towards gibbon conservation among local community people and relevant stakeholders, and initiated habitat restoration program of important gibbon food trees in selected gibbon habitats of the country.

Due to lack of adequate funding, the project mainly focuses on collection of baseline information on gibbon population, positive behavioral change among the relevant stakeholders to initiate sustainable gibbon conservation efforts, and restoration and protection of the gibbon habitats.

2. Major Achievements of the Project

2.1 Population Census

2.1.1 Identification New Gibbon Habitat of the Country

Gibbon habitat of Bangladesh is distributed in southern, southeast and northeastern part which is dominated by mixed-evergreen hilly forest (Fig. 1, 2 & 3). Most of the vegetation of the gibbon habitat of Bangladesh, dominated by the secondary degraded natural forests. Major tree species

are *Dipterocarpus* spp., *Artocarpus chama*, *Tetrameles nudiflora*, *Swintonia floribunda*, *Hopea odorata*, *Bombax ceiba*, *Aphanamixis polystachya*, *Albizia* spp., *Duabhangia grandiflora*, *Syzygium* spp., *Amoora wallichii*, *Mesua ferrea*, *Lophopetalum wightianum*, *Magnifera longipes*, *Lannea coromandelica*, *Lagerstroemia* spp., *Gmelia arborea*, *Ficus* spp., and *Dillenia pentagyna*, etc.

The composition of undergrowth, including bamboo forests, varies considerably from place to place. The commonest species are *Melocanna bambusoides*, *Bambusa tulda*, *Geodorum* sp., *Daemonorops jenkinsianus*, and *Calamus* spp.. There are abundant of creepers, lianas, and epiphytes, which include *Tinospora cordifolia*, *Vitis* spp., *Spatholobus roxburghii*, *Entada pursaetha*, *Derris* spp., *Ipomoea* sp., *Passiflora* spp., *Oberonia* spp., and others.

A baseline field survey has been conducted to confirm the presence of gibbon at different gibbon habitats of the country. By this time, project spotted 3 new gibbon localities in the southern Bangladesh and 7 new localities in the southeast Bangladesh with the help of our local volunteers (Fig. 4 and 5). These areas are situated in Cox's Bazar, Chattogram Hill Tract and Habiganj district. Extensive field visits will be required to know population composition of western hoolock gibbon in these areas for getting more information on the gibbon population.

Rema-Kalenga Wildlife Sanctuary is one of the least known gibbon habitats of the country. Previous studies reveal that only one group of gibbons consisting single individual is present at Rema-Kalenga Wildlife Sanctuary. Project team has confirmed the presence of three groups of gibbons comprising 5, 4 and 1 individuals from the Rema-Kalenga Wildlife Sanctuary (Fig. 6). So, gibbon conservation activities should be expanded to the Rema-Kalenga Wildlife Sanctuary.

2.2 Positive Behavioral Change among the Relevant Stakeholders to Initiate Sustainable Gibbon Conservation Efforts

2.2.1 Awareness Development Program and School Education Programs

Project primarily selected the members for the Gibbon Conservation Group at Inani Reserved Forest and Bangdehpa Reserved Forest of southern Bangladesh. The members of Gibbon Conservation Group were selected from the local Forest Department, forest villagers, forest

dependant people, local leader and local community people. Already, they have participated in various awareness development programs. The project also conducted the awareness raising activities to the local community, forest dependence people and other relevant stakeholders (Fig. 8 and 9). Five awareness development and open discussion meetings were arranged at Inani and Bangdehepa of Cox's Bazar district, Rema-Kalenga Wildlife Sanctuary and Saltilia Reserved Forest of Habiganj districts. About 300 participants from Forest Department, Co-management Committee, forest villagers, local community, forest dependence people, eco-tour guide, Community Patrol Group were attended in the meetings and expressed their positive commitments towards gibbon conservation (Fig.7). These meetings were presided by the respective Forest Department Officer. Project also discussed the present status and situation of the gibbon population with respective Forest Department official (Fig. 11)

The project also conducted 6 school education programs in northeast and southern Bangladesh. About 600 school children were present at the school education program (Fig. 12). Local Forest Department was also present at this ceremony. Poster distribution, refreshment was provided among school children. Projects also provided support to a Primary School of northeast Bangladesh to celebrate the National Day of Bangladesh.

An awareness material such as poster was freely distributed among community people and relevant stakeholders to raise the voice to save the globally threatened western hoolock gibbon in Bangladesh. Project also provided support through distribution of 120 T-Shirt our local volunteers, Forest Department, forest dependant people, forest villagers, and Forest Department staff.

2.2.2 Celebration of International Gibbon Day

International Gibbon Day is a unique opportunity to disseminate the knowledge and development of awareness among the participants which was influenced the conservation of western hoolock gibbon at Inani Reserved Forest. International Gibbon Day-2018 was celebrated at Inani, Cox's Bazar, Bangladesh on 24 October, 2018. Ishtiaq Uddin Ahmad, Former Chief Conservator of Forests, Bangladesh Forest Department; M Farid Ahsan, Professor, Department of Zoology, University of Chittagong; Hoq Mahbub Morshed, Divisional Forest Officer, Cox's Bazar South Forest Division; other Forest Department Officials and community people were present at the

ceremony (Fig. 14). Audience participated in open discussion with the honorable guests and provided various suggestions for better protection and management of the gibbon habitat at Inani Reserved Forest. T-shirt was also distributed among the participants. Honorable guests visited our project site and observed the various activities of the project. They also planted fig trees and *Syzygium* spp. inside forest.

2.2.3 Consultation with Relevant Stakeholder

The outcome of the project is a great source of information of gibbon population to the respective Forest Department Official for better management and protection (Fig. 11). There is no obvious information on the gibbon population of Inani Reserved Forest, Bangdhepa Reserved Forest and Rema-Kalenga project site. Project had provided the information on status and distribution to respective Forest Department official for protection of the gibbon habitat. There was also fruitful discussion with Cox's Bazar South Forest Division and Cox's Bazar North Forest Division for increasing the patrolling at the identified gibbon habitat of Inani Reserved Forest and Bangdhepa Reserved Forest respectively. Furthermore, local Forest Officials were actively involved in various field activities. In addition, the Chief Conservator of Forests has also officially permitted to carry out our field activities and habitat restoration programs at the three places (two in southern and one in northeast parts) of Bangladesh. Former Chief Conservator Forests of Bangladesh visited our project site which was an important milestone for further management and conservation of western hoolock gibbon in Bangladesh.

2.2.4 Capacity Building of the Local Community

Local community people are involved in the project as Research Assistants. They have been trained up for monitoring of gibbon population, habitat protection, nursery raising and plantation, and also observing other important wildlife (Fig. 15). They also educate the local community to conserve the gibbon population. Now they are able to conduct gibbon population monitoring and raising awareness among the local community.

We are also providing support to the local Forest Offices in identifying the gibbon habitats for regular patrolling activities. Trained local research assistants regularly monitor the

gibbon population at Bangdhepa and Inani Reserve Forests which ensure the better protection of habitats.

Local research assistant were also involved to rescue the trapped wildlife and released into the wild (Fig. 15B). They also engaged to educate the local community people on the importance of conservation of wilderness.

2.3 Restoration and Protection of the Gibbon Habitats

Habitat restoration program is one of the major achievements of the project. Already three nurseries (two in southern and one in northeastern parts of Bangladesh) have been set up with seedlings of 19 important fruiting trees of hoolock gibbon (Table 1). Fruiting trees were identified through literature review by direct field observations, and indigenous knowledge of local community. The seedlings of major planted trees species are *Ficus benghalensis*, *F. benjamina*, *F. religiosa*, *Syzygium* spp., *Mangifera longipes*, *Garcinia xanthochymus*, and *Dillenia pentagyna*. We also have raised seedlings for plantation activities at Bangdhepa and Inani Reserved Forest of Cox’s Bazar in 2019 (Table 1).

Project planted about 2,000 seedlings of *Ficus* spp., *Syzygium* spp., *Garcinia* sp. and *Mangifera longipes* at the gibbon habitat of the Inani Reserved Forest and Bangdhepa Reserved Forest (Fig 16, 17, 18 and 19). Many of the planted seedlings were still survive in the nature (Fig. 20 and 21)

Beside the habitat restoration program, project also distributed figs seedlings among the local community people to develop the positive attitude for protection and restoration of gibbon habitats. About 50 seedlings were distributed among the people (Fig. 22).

Table 1: List of seedlings at the three nurseries

Sl no.	Local Name	Scientific name
1	Bot	<i>Ficus benjamina</i>
2	Bot	<i>Ficus bengalensis</i>
3	Bot	<i>Ficus reliogiosa</i>
4	Bot	<i>Ficus tinctoria</i> var.

		<i>Jibosa</i>
5	Dumur	<i>Ficus racemosa</i>
6	Dumur	<i>Ficus variegata</i>
7	Uri-am	<i>Mangifera longipes</i>
8	Deoa	<i>Artocarpus lacucha</i>
9	Chapalish	<i>Artocarpus chaplasha</i>
10	Cawphal.	<i>Garcinia cowa</i>
11	Jalpai.	<i>Elaeocarpus tectorius</i>
12	Kalojam	<i>Syzygium cumini</i>
13	Khudijam.	<i>Syzygium fruticosum</i>
14	Guda Jam	<i>Syzygium sp</i>
15	Neul/Gutgutia	<i>Protium serratum</i>
16	Hargoza	<i>Dillenia pentagyna,</i>
17	Bon-amra	<i>Spondias sp</i>
18	Hariaki	<i>Terminali chebula</i>
19	Lotkon	<i>Baccaurea motleyana</i>

2.4 Observation of other Wildlife and threats to the wildlife habitats

The project also observed the other wildlife species present in project area. About 29 species of mammals and 251 species of birds were so far recorded from Inani Reserved Forest which constitutes the one of the richest wildlife habitat of Bangladesh (Fig. 24). Six species of primates were noted from here including western hoolock gibbon. It is a natural breeding ground of Asian Elephant (*Elephas maximas*) and connected by an elephant crossing corridor between nearby Mynanmar and Nikkonchari under Bandarabans district. Fishing cat (*Prionailurus viverrinus*), India leopard (*Panthera pardus pardus*) were observed during study of which Indian leopard is one of the rarest wildlife species in Bangladesh (Fig. 23). Slaty-backed flycatcher (*Ficedula erithacus*) was recorded from here which also contributed a first country record. The most important and globally threatened reptile species were reticulated python (*Python reticulatus*), elongated tortoise (*Indotestudo elongata*) and Burmese softshel turtle (*Amyda cartilaginea*) (Fig..

Important wildlife habitat of Inani Reserved Forest is on the verge of extinction due to the huge influx of the Rohingya refugees from nearby Mynanmar. About one million Rohingya

refugees were settled down at Ukhia and Teknaf Upazila under Cox's azar district where mostly settled at inside or around Inani Reserved Forest. They dependant on the forest for firewood, which was destroyed the forest at a alarming rate. If the present situation will be continue, the wildlife of Inani Reserved will be vanished within a short period of time (Fig. 26).

3. Sustainability Project

The project has received a small grant of USD 4,300.00 from IUCN Section on Small Ape for habitat restoration project at Inani Reserved Forest. The project team is also searching small grant support from other sources as well as from the Government of Bangladesh.

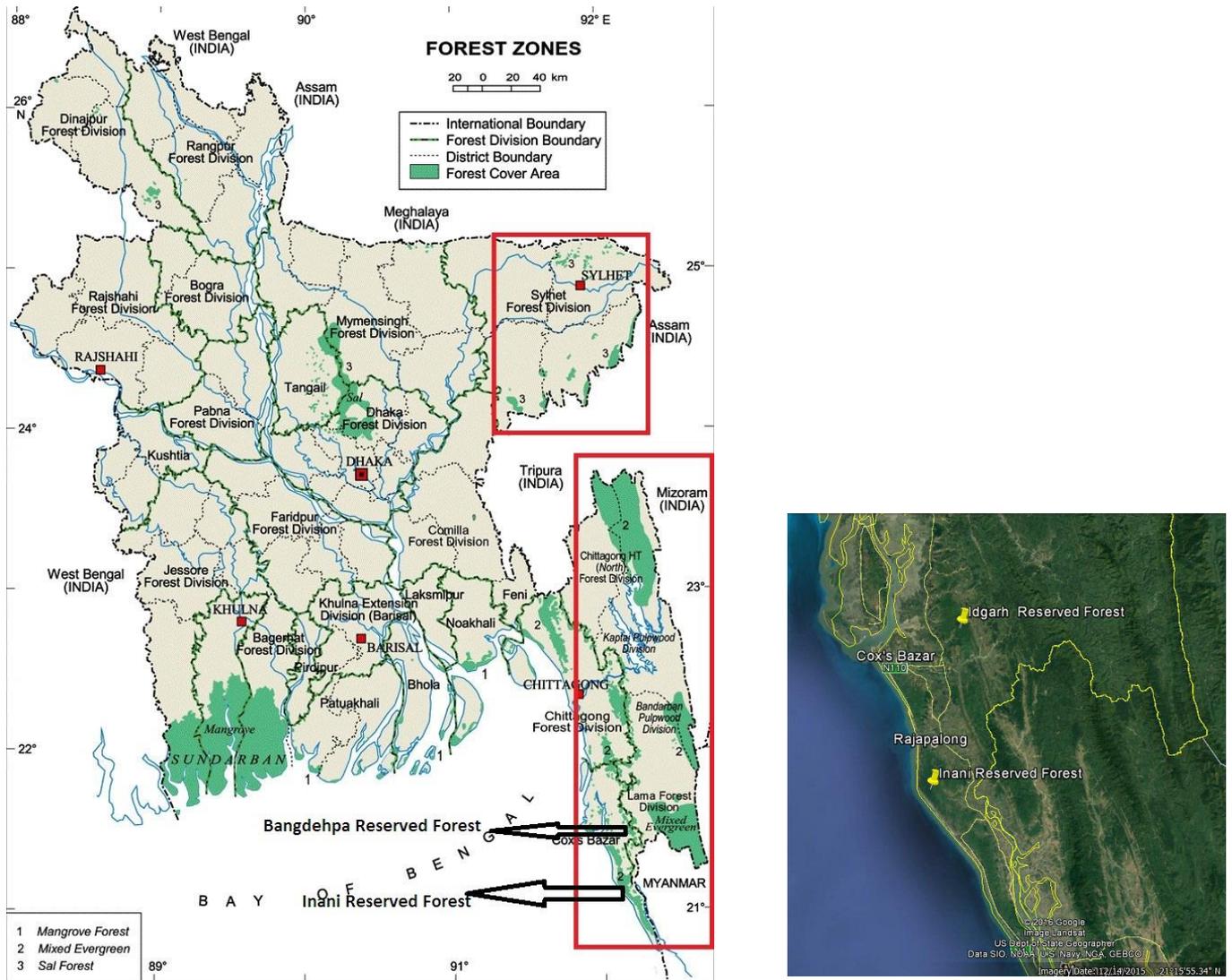
4. Financial Statement

Some expenditure of the project site at Inani Reserved Forest was covered by small grant of IUCN Section on Small Apes including the labor cost for plantation, honorarium of one local Research Assistant(s), awareness campaign while local research assistant, travel and accommodation, seed and poly-bag purchase costs for the nursery was expensed by GCA. Fund has been disbursed according to proposed budget in the proposal.

Project Expenditure in BDT up to July, 2018 (1 USD = 82.2 BDT)

Type of Expenditure	Expenditure in BDT	Expenditure in USD
Honorarium for local research assistant	51,000.00	620.44
Honorarium for local assistants	22,000.00	267.64
Honorarium GIS mapping	–	
Honorarium for field investigator	50,000.00	608.27
Travel	71,795.00	873.42
Accommodation	31,800.00	386.86
Meals	39,800.00	484.18
Meeting and workshop	19,400.00	236.01
Awareness Program	19,100.00	232.36
Printer	10,900.00	132.60
Poster, banner	27,300.00	332.12
Stationery and misc. cost	5,540.00	67.40
Plantation	65,700.00	799.27
Total Expenditure (up to July)	414,335.00	5040.57
Fund Received	411,000.00	5000.00
Deposit	(-)3335	(-)40.57

Figures



A

B

Figure 1: Map of forested areas of Bangladesh: A- Red rectangles show the gibbon habitats of Bangladesh and black arrows indicate major project areas; B- Google earth image of major project site at Inani Reserved Forest and Bangdhepa Reserved Forest



A



B

Figure 2: Gibbon habitat of northeast Bangladesh: A- Satchhari National Park; B- Rema-Kalenga Wildlife Sanctuary



A



B

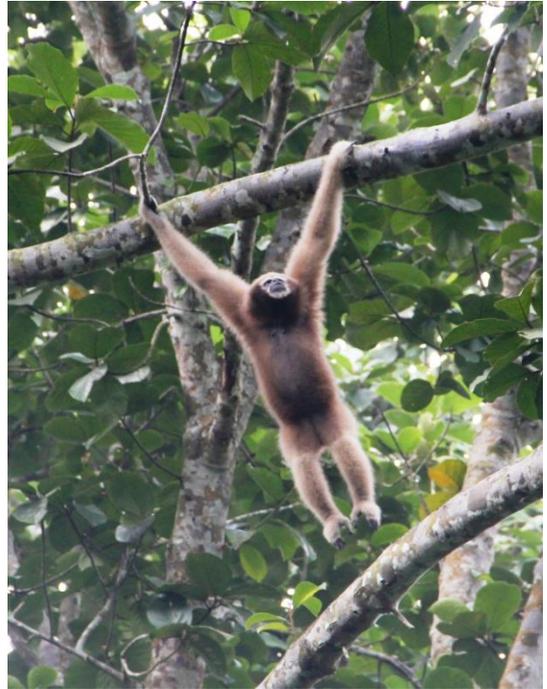
Figure 3: Gibbon habitats in southern Bangladesh: A-Inani Reserved Forest; B- Bangdhepa Reserved Forest



Figure 4: Conducting base line survey to know the presence of gibbon in northeastern Bangladesh



A



B

Figure 5: Western hoolock gibbon at new locality: A- Male gibbon; B- Female gibbon



Figure 6: Western hoolock gibbon at the Rema-Kalenga Wildlife Sanctuary, Habiganj



A



B



C



D

Figure 7: Awareness development program: A - Awareness development meeting and open discussion at Rema-Kalenga Wildlife Sanctuary, Habiganj; B - Awareness meeting and open discussion at Bangdhepa, Cox's Bazar; C - Awareness campaign at Forest Office of Saltila, Habiganj; D - Showing picture of gibbon to the local people at Bangdhepa, Cox's Bazar



A



B

Figure 8: Awareness development activities with forest dependant people and local community in northeast Bangladesh



Figure 9: Awareness development program with local leader and community people



A



B

Figure 10: A- Poster distribution and T-shirt distribution to the Forest Department; B- Awareness development program



A



B

Figure 11: Discussion with Forest Department Officers for better protection of the gibbon habitats: A - Divisional Forest Officer, Cox's Bazar North Forest Division; B - Range Officer, Kalenga Forest Range Office



Figure 12: School education program in southern and northeast Bangladesh




উল্লুক (Western Hoolock Gibbon) বৃক্ষবাসী ও প্রধানত ফলভোজী হওয়ায় সাধারণত এরা মাটিতে নামে না, তাই এদের জন্য নিরবিচ্ছিন্ন বাসস্থল প্রয়োজন

উল্লুক বীজের বিস্তার ঘটিয়ে বনের পরিবেশ রক্ষায় গুরুত্বপূর্ণ ভূমিকা পালন করে এটি বাংলাদেশের একটি মহাবিপন্ন বন্যপ্রাণী



Save the Forest

বন বাঁচাই





Save the Hoolock Gibbon

উল্লুক বাঁচাই

আবাসস্থল ধ্বংসের ফলে এরা আজ বিলুপ্তির পথে
 আমাদের ভবিষ্যৎ প্রজন্ম কি এদের দেখতে পাবে?
 আসুন, ভবিষ্যৎ প্রজন্মের স্বার্থে উল্লুক সংরক্ষণে এগিয়ে আসি

“Western Hoolock Gibbon Conservation Initiative of Bangladesh” Project

Figure 13: Prepared poster for awareness development program



Figure 14: Celebration of International Gibbon Day-2018 at Inani, Cox's Bazar

A



A



B



C



D

Figure 15: Capacity building of local research assistant: A - Camera trap set up by local research assistant; B - Gibbon monitoring at Bangdhepa; C - Gibbon monitoring at Rema-Kalenga Wildlife Sanctuary



Figure 16: Seedbed and seedlings of nursery at Inani Reserve Forest, Cox's Bazar

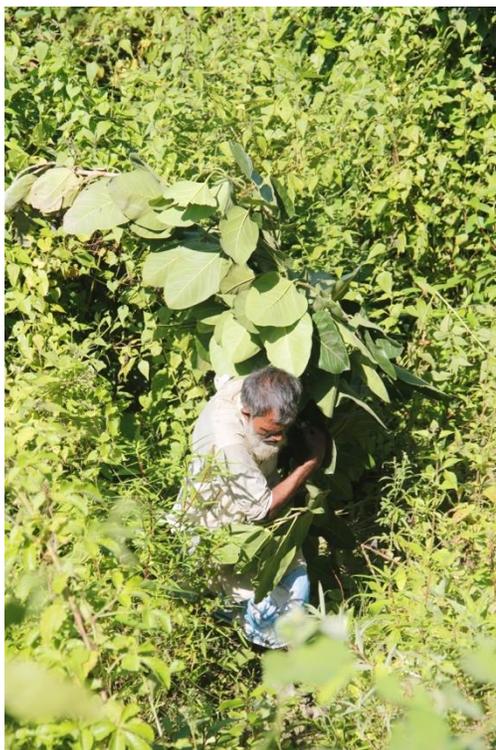


Figure 17: Plantation activities at Inani Reserve Forest, Cox's Bazar



Figure 18: Plantation activities at Banghdhepa, Cox's Bazar



Figure 19: Seedlings raising at the nursery of Rema-Kalenga Wildlife Sanctuary



A

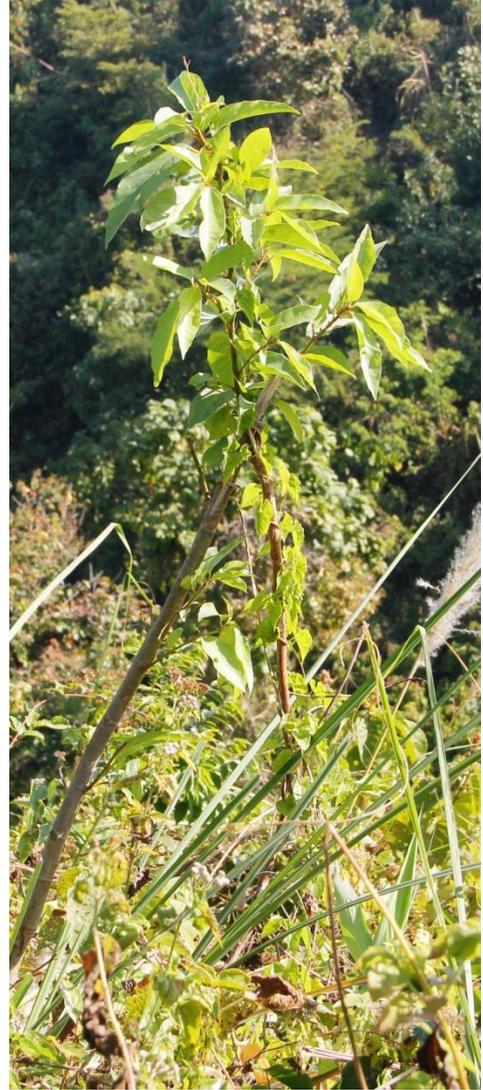


B

Figure 20: Planted saplings, A- *Ficus benghalensis*; B-*Ficus religiosa*



A



B

Figure 21: planted Saplings, A- *Syzygium* sp.; B- *Ficus hispida*



Figure 22: Distributed saplings at Inani, Cox's Bazar



A



B



C



D



E

Figure 23: Mammals of Inani Reserved Forest: A-Asian elephant; B-Pugmark of Indian leopard; C-Barking deer; D-Phayre's leaf maonkey and E-Pig-tailed macaque



A



B



C



D



E

Figure 24: Rarest birds species of Inani Reserved Forest: A- Tickells thrush; B-Asian glossy starling; C-Oriental pied hornbill; D-Green imperial pigeon and E- Mixed flock of green pigeon



A



B



C

Figure 25: Reptiles species of Inani Reserved Forest: A-Elongated tortoise; B-Burmese softshell turtle; C- Reticulated python



Figure 26: Threats of Inani Reserved Forest due to Rohingya settlement from nearby Myanmar