





Sapekhati Bam Eco-Development Committee Sivasagar Division, Sivasagar

MICRO-PLAN

(2016-17 to 2025-26)

Prepared by Sapekhati Bam EDC

Assisted by

Assam Forest Department

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COMPELO

(IIE & RGVN)

Appropriated by Bondoloi



Divisional Forest Officer (T)
Shasagai Division, Shasagai

List of Acronyms

Acronym	Full Form	
ACF	Assistant Conservator of Forests	
AfD	Agence France de Développement	
APFBC	Assam Project on Forest & Biodiversity Conservation	
APL	Above Poverty Line	
BPL	Below Poverty Line	
CCF	Chief Conservator of Forests	
CF	Conservator of Forests	
COMPELO	Consulting Service for Micro Planning Enhancing Livelihood	
	Opportunities	
DCF	Deputy Conservator of Forests	
DFO	Divisional Forest Officer	
EDC	Eco-Development Committee	
EPA	Entry Point Activity	
FCA	Forest (conservation) Act, 1980	
FD	Forest Department	
FRA	Forest Rights' Act	
FV	Forest Village	
FYP	Five Year Plan	
GHG	Green House Gases	
GoI	Government of India	

Ha Hectare IEC Information Education & Communication IIE Indian Institute of Entrepreneurship JFMC Joint Forest Management Committee MDR Major District Roads MGNREGS Mahatma Gandhi National Rural Employment Guara MoEFCC Ministry of Environment, Forests & Climate Change NTFP Non Timber Forest Produce	
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MoEFCC Ministry of Environment, Forests & Climate Change NTFP Non Timber Forest Produce	
NTFP Non Timber Forest Produce	ntee Scheme
OBC Other Backward Classes	
ODR Other District Roads	
PCCF Principal Chief Conservator of Forests	
PHC Primary Health Center	
PMU Project Monitoring Unit	
PRA Participatory Rural Appraisal	
REDD+ Reducing Emission from Deforestation and Forest Do	egradation Plus
RGVN Rashtriya Gramin Vikas Nidhi	
RO Range Officer	
Sc Scheduled Caste	
SDG Sustainable Development Goals	
SLF Sustainable Livelihood Framework	
Spp Species	

ST	Scheduled Tribe
SWOT	Strength Weakness Opportunity & Threat
TV	Taungya Village
TV	Television
WLS	Wildlife Sanctuary
WPA	Wildlife (Protection) Act, 1972
WPC	Working Plan Circle

Glossary of Vernacular Name of Trees, Shrubs, Herbs and Other Plants

S.No.	Vernacular Name	Botanical Name
1.	Agar	Aquilaria agallocha
2.	Amra	Spondius mangifera
3.	Amloki/Amla	Embilica officienalis
4.	Aslia/Kalaujha	Cordia myxa
5.	Asok	Sarac indica
6.	Aswatha	Ficus Religiosa
7.	Awal	Vitex pedunculoris (Sila-titu)
8.	Badam	Sterculia alata
9.	Bohera	Terminalia bellerica
10.	Bajrang	Xanthoxylum budrunga
11.	Banak	Schima wallichii
12.	Ban Am	Mangiferra sylvatica
13.	Ban Belphai/Jalpai	Elaeocarpus Floribundus or E. Varunna
14.	Bandar fela (Rata)	Dysoxylum binectariferum
15.	Bandar lathi	Cassia fistula
16.	Bon simul	Bombax insigne
17.	Barun	Crataeva religiosa
18.	Bat	Ficus bengalensis
19.	Bella	Sapium baccatum
20.	Bhadruk	Vitex pubescens
21.	Bhatkar	Vitex heterophylla
22.	Bhola	Morus laevigata
23.	Bhubi	Baccaurea sapida
24.	Bhuri	Trewia nudiflora
25.	Bonsum	Phoebe goalperensis
26.	Borpat	Ailanthus grandis
27.	Banbogori	Heritiera acuminate
28.	Bogori	Zigyphus zuzuba
29.	Charim	Alstonia scholaris
30.	Chakroshi	Chickrassia tabularis

33. C	Chailta Chalmugra Cham	Dillenia indica Hydnocarpus kurzii
34. C	<u> </u>	Hydnocarpus kurzii
	Cham	тушностриз кигди
25 6		Artocarpus chaplasha
35. C	Chami	Polyalthia simiarum
36. C	Chamia	Hibiscus macrophyllus
37. C	Champa	Michelia champaca
38. I	Dalmugra	Gynocordia odorata
39. I	Dephal	Garcinia xanthochymus
40. I	Dewa	Artocarpus lakoocha
41. I	Ohuna rata	Canarium bengalensis
42. I	Dimoru	Ficus glomerata
43. F	Fulkat/phulkat	Stynax serrulatum
44. F	Fulujha/Banmala	Calicarpa macrophylla
45. F	Fuara	Litsea spp
46. C	Gamari	Gmelina arborea
47. C	Garjan	Dipterocarpus turbinatus
48. C	Garumara	Crypteronia paniculata
49.	Gondroi	Cinnamomum glanduliferum
50. E	Bagnala	Litsea sebifera
51. C	Gulal	Diospyros toposia
52. H	Haldi Kat	Adina cordifolia
53. H	Hansh	Albizzia stipulate
54. H	Hartaki	Terminalia chebula
55. H	Hatia	Chikrasia tabularis (Bogi Pom)
56. H	Heloch	Antidesma spp
57. H	Hergoza	Dillenia pentagyna (Oxi)
58. H	Hengl/Engla	Bursera serrata
59. H	Hinaru/Moroi	Albizzia odoratissima
60. H	Hizal	Barringtonia acutangla (Pani-amra)
61. H	Hona/Bhatgila	Oroxylum indicum
62. H	Honur	Stereosparmum spp

63.	Jam	Eugenia spp
64.	Jakura	Macaranga denticulate
65.	Jangli badam	Sterculia alata
66.	Jarul	Lagerstroemia flosreginae
67.	Jhalna	Terminalia myriocarpa
68.	Jhawa	Holigarna longifolia
69.	Jhoki	Bischofia javanica (Uriam)
70.	Jinari	Podocarpus nerrifolia
71.	Kadam	Anthocephalus cadamba
72.	Kat badam	Castanopsis indica
73.	Kala-ujha	Cordia myxa (Lessora)
74	Kanchan	Bauhinia variegate
75.	Karach	Pongamia glabra (karanj)
76.	Kawa thuti	Cordial fragmentissima
77.	Kayengla	Garuga pinnata
78.	Koinari	Miliusa spp
79.	Koroi	Albizzia procera
80.	Korol	Kayea floribunda
81.	Katal	Artocarpus integrifolia
82.	Kow	Garcinia cowa
83.	Kum	Careya arborea (Kumhi)
84.	Kuma	Cedrela toona
85.	Kuroil	Dipterocarpus turbinatus
86.	Kurta	Palaquium polyanthus
87.	Larubandha	Macaranga spp
88.	Lakiam	Mangifera sylvatica
89.	Lonchak	Parkia roxburghii
90.	Luk luki (Panial)	Flacourtia cataphracta
91.	Madhubura	Pterosprmum accerifolium (Hati polia)
92.	Marhal	Vatica lanceaefolia
93.	Mahidal	Cordia fragrantisima
94.	Madar	Erythrina indica

97. N	Maralia Mon	Mallotus albus
	Mon	I I
98. N		Randia dumetorum (Mainphal)
	Monawal	Vitex altissima
99. N	Moroi	Albizzia spp
100 N	Moralia	Mallotus albus
101. N	Nageswar	Messua ferrae (Nahar)
102. N	Newr	Bursera serrata (Nejor)
103. F	Pakhirhar	Diplospora singularis
104. F	Paraia awal/Paroi (Paroli)	Stereospermum chelonoides
105. F	Ping	Cynometra polyandra
106. I	Pipla	Albizzia lucida
107. F	Pisanti	Grewia microcos
108. F	Poma	Cedrela toona (Toon)
109. F	Pongta	Diplospora singluaris
110. F	Poreng	Eleocarpus robustus
111. F	Ramdala	Duabnga sonneratiodes
112. F	Romkota	Quercus spp
113. F	Rata/Phul Rata (Amari)	Amoora wallichii
114. F	Rongi Rata	Dysoxylum hamitonii
115. F	Rudrakksha	Elaeocarpus gonitrus
116. S	Sanjanel	Lagerstroemia parviflora
117. S	Satkora	Citrus hystrix
118. S	Seleng	Elaeo carpus robustus
119. S	Simul	Bombax ceiba (Cotton tree)
120. S	Siris	Albizzia procera (Safed siris)
121. S	Sita	Echinocarpus assamicus (Phul Hingori)
122. S	Sundi, Maricha	Michelia Montana
123. S	Sundi, Til/Jati Sundi	Tallauma phelocarpa
124. S	Sundi, Champa	Michelia champaca
125. S	Satrong	Lophopetalum fimbriatum
126.	Гагиа	Endospamum chinensis

127.	Tezhuara	Myrstia angustifolia
128.	Tezia	Cinnamomum obtusifolium
129.	Tezapata	Cinnamomum spp
130.	Telo	Canophyllum enophyllum
131.	Tula	Tetrameles nudiflora
132.	Tetul	Tamarix indica
133.	Udal	Sterculia alata
134.	Ukhali	Talauma hodgsonii (Baram thuri)

Bamboo

S.No.	<u>Vernacular Name</u>	Botanical Name
1.	Bazail	Pseudostachyum polymorphum
2.	Bhulka	Bamboosa balcooa
3.	Bakail/Burwal/makail	Bambusa pallid
4.	Beri bans	Bambusa mastersii
5.	Dalu	Teinostachyum dullooa
6.	Daral/Lata bans	Melocalamus compactiflorus
7.	Kalia	Bambusa auriculata
8.	Kail	Oxytenanthera nigrocilliata
9.	Kata/ketura	Bambusa valgaris
10.	Kaligoda	Oxytenanthera nigrocilliata
11.	Kali sundi	Oxytenanthera albociliata
12.	Karail/Jati	Dendracalamus strictus
13.	Khang	Dendracalamus longispathus
14.	Lota	Dinocloa maclellandii
15.	Mirtenga/Bijli	Bambusa tulda
16.	Muli	Melocanna baccifer
17.	Parua/paura	Bambusa teres
18.	Pecha/Kako	Dendracalam hamittonii
19.	Rupali/Rupahi	Dendrocalamus longispathus
20.	Pichlee	Bambusa nutans

Canes

S.No.	Vernacular Name	Botanical Name
1.	Golla	Daemonorps jenkinsianus
2.	Horna	Calamus latifolius
3.	Jail	Calamus tenuis
4.	Jhalna	-
5.	Sundi	Calamus guruba

Shrubs

S.No	<u>Vernacular Name</u>	Botanical Name
1.	Biardala	Livistonia jenkinsiana (Toko pat)
2.	Ban laldi	Curcuma spp
3.	Bhat	Clerodendron infortunatum
4.	Dudhkari	Holarrhena antidysenterica
5.	Gandhi	Homalomena rubsescens
6.	Kitta pata	Phrynium imbricatum
7.	Lutki/Phutuki	Melostoma malabarithicum
8.	Patidul/Chhatipat	Licuala peltata
9.	Patidoi (Murta)	Clinogyne dichotma
10.	Pisach ban	Eupotarium spp
11.	Ramgua	Pinanga gracilis
12.	Suchutra/surat pat	Laportea crenulata
13.	Tara pat	Alpinia nutans

Weeds and Grasses

S.No.	Vernacular Name	Botanical Name
1.	Kash	Saccharum procerum
2.	Khagra	Saccharum spontaneum

3.	Ekra	Erianthus raveneac
4.	Nal	Phragmites karka
5.	Rema	Thysanolaena maxima
6.	Khor/Thatching grass	Impereta cylindrical

Epiphytes

S.no	Vernacular Name	Botanical Name
1.	Karau	Loranthus scurrula

Climbers

S.No.	Vernacular Name	Botanical Name			
1.	Bat	Ficus spp			
2.	Chaittalat/panilot	Delima sarmentosa			
3.	Ghilla	Entada scandens			
4.	Kuchai/Boloa lot	Acacia pinnata			

SAPEKHATI BAM ECO DEVELOPMENT COMMITTEE PANIDIHING BIRD SANCTUARY, SIVASAGAR FOREST DIVISION

Micro-Plan (2016-17 to 2026-27)

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SAPEKHATI BAM ECO DEVELOPMENT COMMITEE PANIDIHING BIRD SANCTUARY, SIVASAGAR FOREST DIVISION

Micro-Plan (2016-17 to 2026-27)

PART-I

1. Introduction

1.1 About the Project

The vision of the Assam Project on Forest and Biodiversity Conservation (APFBC) is 'to enable sustainable forest and biodiversity conservation and management in Assam through multi-scale integrative planning and involvement of forest dependent communities in target areas and giving fillip to their livelihood activities through sustainable use of forest and nonforest resources'. The project's objective has been stated as: 'In collaboration with the forest dependent communities, to restore forest eco-systems to enhance the forest dependent community's livelihoods and ensure conservation and sustainable use of biodiversity'.

The above project is being mainly funded by the *Agence France de Développement* (AFD) - i.e. the French Development Agency, with co-funding from the Government of Assam. The Assam Project on Forest and Biodiversity Conservation Society (APFBC Society) has the mandate for planning, implementation, monitoring, coordination and management of all the activities under the above mentioned project.

1.2 Micro-Planning & Livelihood Development

In order to promote livelihood activities through market potential based value addition; the present project intends to take up activities like entrepreneurship promotion, product processing value addition and marketing under this project. This has become necessary on account of the pressures on existing forest resources due to the growth of population. There is a need to explore value addition to the existing forest and biodiversity products and services, based on the market potential. In addition, non-forest based livelihoods need to be explored and the capacities of the community members need to be built-up through skills development initiatives.

A consortium comprising of Indian Institute of Entrepreneurship (IIE) Guwahati and Rashtriya Gramin Vikas Nidhi (RGVN) has been formed to implement (inter-alia) the micro-planning and livelihood development under the above project. The above consortium has been titled as 'Consulting Service for Micro Planning Enhancing Livelihood Opportunities' - COMPELO in short.

As per project guidelines, this micro-plan includes 'various operations of village and forest development ... livelihood support of forest dependent members and keeping sustainable forest management as the broad objective'. It includes both forest development and livelihood development.

1.3 Micro-Plan for the Sapekhati Bam EDC

This document gives the Micro-Plan for the Sapekhati Bam EDC, which is located in the Sivasagar district of Assam. The EDC falls under the jurisdiction of the Sivasagar Forest Division of the Demow Revenue Circle. The profile of the community is given in the next section.

2. General Description of the Area

2.1 General Description

The Panidihing Bird Sanctuary is located in Sivasagar District of Assam. It was constituted in the year 1999 vide Govt. Notification No. FRW.71/95/Pt.-6 dtd. 10/08/1999 by carving out a small portion of Panidihing RF and a major portion of Non-Cadastral land existed adjacent to the said Reserve Forest.

The Panidihing Bird Sanctuary was constituted with the following areas:-

Panidihing Reserved Forest = 2.93 sq. Km

Non-Cadastral area = 31.00 sq. Km.

Total area of the Panidihing Bird Sanctuary = 33.93 sq. Km

It has also been recognized as an Important Bird Habitat (IBA) Site by Bombay Natural History Society (BNHS). The Protected Area recorded 167 species of birds. The water masses of the PA forms an ideal habitat for indigenous fishes and other aquatic animals and birds.

2.2 Location

The Panidihing Bird Sanctuaryis located in Sivasagar district of Assam within the geographical limits of 27^o 4.5′ N and 27^o 10′ N latitudes and 94^o 25′ E to 94^o 40′ E longitudes. The altitude of the area varies from 100 to 110 meters above mean sea level.

The PA is surrounded by Sapekhaitibam., Kokilamari Village & Milonkur village in the North, the Dhai-ali & the Panidihing Reserved forest in the East, the Desang River in the South and the Brahmaputra river in the west.

The boundary of the PA was demarcated in February '2001 by fixing 38 nos. of R.C.C. boundary pillars (B.P.) along the artificial boundary. It is observed that villagers raise agricultural crops along the northern boundary from B.P. No 7 to 17 and in the southern boundary from B.P. No 31 to 37. The natural boundary demarcated by the Demow River is 6.5 km in length.

2.3 Soils

The area comprises of alluvial flood plains of the Brahmaputra River. There is no rock exposure in an around the PA.

2.4 Water

The main sources of water are the Brahmaputra, Desang and Demow rivers. There are seventeen numbers of Beels of varying sizes inside the PA. The names of the Beels are Balijan, Ghoka, Singorajan, Phuklai, Dighali, Tokia, Jorjoria, Gelademow, Uzantoli, Lalitangkur, Barpathar, Sogunpara, Kandulijan, Pulai, Kotiani & Goroimari Kekurakhati. Beels are distributed uniformly in the PA. During the rainy season the PA is over flooded and hence construction of highlands is absolutely necessary to shelter the animals. Floodwaters deposit huge amount of silt in the PA. At present water bodies are being silted up gradually and no proper study on these water bodies has been done.

2.5 Climate

The area falls under temperate zone and the climate can be divided into four seasons- Viz. Winter season, pre-monsoon, Monsoon and post monsoon season (autumn).

- **Winter season:** The winter season is spreads to the months December, January and February. During this season the weather is cool and pleasant and is sometimes interrupted by casual drizzle bringing cold spells. Fogs are very common and rainfall is very rare.
- **Pre-monsoon:** This is a transitional season in between dry winter and wet monsoon and is spread to the months of March and April. Temperature rises gradually and thunderstorms occur in the later part of the season.
- **Monsoon:** Monsoon season starts from the month of May and continues till the month of September. There is an alternate rise and fall in temperature with very heavy rainfall. Hot, humid and cloudy weather is the characteristic of the season.
- **Autumn season:** October and November constitute the autumn season, which mingle with winter. November is almost free from rain.

The mean annual temperature during winter is 7° C to 23° C and during summer from 21° C to 33° C. June is the hottest month and December and January are the coldest month.

Heavy rainfall occurs during the monsoon season i.e. from May to September. Average annual rainfall recorded during the last 20 years is 2370 mm. Maximum precipitation is recorded during the month July.

2.6 Eco-system and Biodiversity:

The eco-system of the Bird Sanctuary is based in a flood plain, comprising mainly grassland and water bodies locally called "beels" and some stream crisscrossing the entire topography. The Demow river that flows right through the sanctuary is perennial with high water current. It lies between the mighty river Brahmaputra and the river Desang. It is a representative of wet alluvial grassland of the Brahmaputra river.

The sanctuary is an 'Important Bird Area' as per B.N.H.S. Notification and more than 27,000 birds were counted during 2008 by Professor Dr. P.K. Saikia of Guwahati University and his team. Till now, ornithologists have identified more than 267 bird species (migratory 70 sps.) in the sanctuary and many are yet to be identified.

Being an important wetland in between the two rivers, the PA attracts thousands of migratory birds and it is a breeding ground of waterfowls (like endangered large whistling teal, swamp partridge) and fishes. The PA is the heaven for bird watchers and harbours many species of resident waterfowls, seventy species of migratory birds, seven species of storks. The main species found in the PA are Dillenia indica, Ficus glomerata, Albizzia lucida, Anthocephalus cadamba, Eugenia jambolana, Bombax ceiba, Zizyphus jujube, Erythrina variegate, etc.

2.7 Concern of Biodiversity Conservation

Poaching and Fishing: The poaching of migratory birds and illegal fishing take place in and around the PA. Poachers mix chemicals with food grains and keep these in the PA or agricultural fields as baits.

Illegal fishing by local people also takes place in the PA.

Illegal removal of NTFP: the people of the fringe village collect thatch and other grasses for construction of their huts.

Grazing: As the PA area is surrounded by human habitation, there is tremendous grazing pressure from cattle belonging to community members of fringe village.

3. Village Socio-Economic Profile and EDC Profile

3.1 Key Information

Sapekhati Bam is a revenue village and is located in Sivasagar District of Assam. The EDC was registered on 10/01/2017 (Appendix III as per the registration certificate) under the jurisdiction of Sivasagar Forest Division. This village is located in the fringe of Panidihing Bird Sanctuary.

Table-A: Key Information of the EDC

Name of the EDC	Sapekhati Bam			
Name of the Gram	Paschim Panidihing			
Panchayat / VCDC				
Revenue Circle	Demow			
District	Sivasagar			
Forest Division	Sivasagar			
Forest Range	Sivasagar			
Forest Beat	Dichangmukh			
Year Formed	2017			
Registration no.	KNP/FG.761/EDC/RC/SIVASAGAR			
	DIVN./2016-17/02			
Description of Boundary	As below			
of EDC	North: Brahmaputra/Samukjan			
	South: Dhundar bam/Panidihing WLS			
	West:Kumar gaon			
	East:Naharani bam			

Source: EDC Records & Discussions during PRA Exercise in March 2017

3.2 Brief Details of the Executive Committee

The brief details of Executive Committee & General Body of the EDC are contained in the table, which is given below.(**Appendix IV**- Signed list, **APPENDIX V-** Group photo of the EDC members)

Table-B: Brief Details of Executive Committee

Name	Age	Address	Educational	Phone No	Designation
			qualification		
Sri Ramlal Sarma	49	S/O- Lt Badrilal	10th passed	9957850446	President
		Sarma			
		PO-Tengapani			
		PS-Demow			
		Dist-Sivasagar			
		Pin-785671			
Sri Bonomali Bora	58	S/O Lt. Pua Ram	HSLC	9678479182	Member
		Borah			Secretary/
					Beat officer
Sri Gunanidhi	50	S/O Lt Dhanapati	7th passed		Member
Sarma		Sarma			
Sri Binod Sarma	42	S/O Lt Badrilal	HS passed		Member
		Sarma			
Sri Miju Ram Deori	42	S/O Lt Koledhar	10th passed		Member
		Deori			
Sri Ranjit Sarmah	37	S/O Lt Rudra	HSLC passed		Member
		Sarmah			
Mrs Purnima Chetry	42	D/O-Lt Krishna	7th passed		Member
		Bahadur Chetry			
Mrs Chandramaya	47	D/O Lt Devi Prasad	8th passed		Member
Devi		Sarmah			
Mrs Rukmini	36	D/O Gopal Chetry	9th passed		Member
Chetry					
Sri Ganesh Deori	38	S/O Lt Boga Deori	7th passed		Member
Sri Arjun Rai	52	S/O-Lt Bhakta	HSLC passed		Member
		Bahadur Rai			
Sri Ganesh Boral	22	S/O Umnat Boral	HS passed		Member
Sri Lal Bahadur	47	S/O Lt Ghanashyam	9th passed		Member
Chetry		Chetry			

Source: EDC Records

3.3 Households & Population Composition

The village has 350 households, of which 60 households are BPL (Below Poverty Line) households. From the total 350 households, 196 households has been surveyed. The following data and information has been derived from the survey-

Table-C: Demographic Profile

	Demography							
Category	No of Households	Male	Female	Total				
Gen	23	56	50	106				
ОВС	26	64	60	124				
ST	143	347	311	658				
SC	4	12	7	19				
Total	196	479	428	907				

The total population is 907 persons of which 479 are male and the rest are female members. The population includes .Gen -23, SC-4, ST-143, and OBC-26persons.

From this, it is inferred that:

- (1) The average number of persons in a household is 5persons.
- (2) The sex ratio is 89 females per 100 males in the village.

Table-D: Age Group Distribution

Age and Sex Distribution								
Age Class	< 5 years	5-18 years	18-45 years	18-45 years		45-60 years		
Male	103	7:	5	181		89		31

Female	83	92	168	67	18
Total	186	167	349	156	49

3.4 Education & Skills Development

The educational profile of the EDC is given in Table E below.

Table-E: Education Profile

Age class	Primary	Middle	High School	H.S	Graduate	Masters	Illiterate
<25							
years	14	54	97	29	8	4	54
>25							
years	93	90	72	54	15	9	126
Total	107	144	169	83	23	13	180

Over 75% of the population is found to be literate.

Livelihood skills are usually acquired under various settings – formal & informal. In the EDC area, informal means for skills development is the traditional norm. People have traditional skills in the following areas:

- (a) Agriculture
- (b) Weaving
- (c) Livestock rearing
- (d) Bamboo craft

3.5 Land Use Pattern

The population is largely dependent on Agriculture and Livestock.

From the land-use pattern of the village, it is seen that the land-use in the village is as follows:

Crop Land: 40% Tree Cover:16 % Habitation: 30%

Water Bodies: 10% Barren Land: 4 %

3.6 Land Holding Pattern

From the type of households as per land-holding, it is seen that:

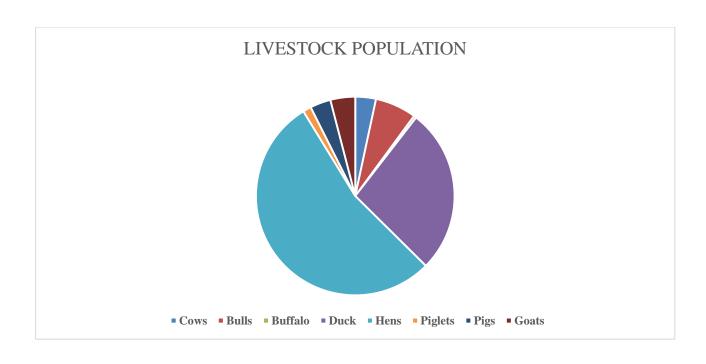
- 44% of the households are large farmers (> 10 Ha)
- 31% of the households are small farmers (2-10 Ha) and
- 25 % of the households are marginal farmers (less than 2 Ha)

3.7 Livestock

The main types of livestock possessed by the households include:

Table: Livestock Details

Sl.No	Livestock	Number
1	Cows	250
2	Bulls	500
3	Buffalo	30
4	Duck	2000
5	Hens	4000
6	Piglets	100
7	Pigs	250
8	Goats	300



3.8 Village Infrastructure & Communication Facilities

In any community; the availability of basic infrastructure enables the development of sustainable livelihood options. The present condition of infrastructure in the village is not satisfactory. This gives the present status of the village infrastructure.

Table-F: Physical Infrastructure

SL.	Point Infrastructure	Location	Number	Approximat	Condition
No.		Inside Village	(If	e Distance	and status
		or Outside	applicable)	from village	of present
				, if outside	use
				(m/Km)	
1	Bus stand	Outside		2 km	Poor
2	Primary Health Centre	Inside			Fair
3	Primary School	Inside	4		Poor
4	Middle School	Inside	1		Poor
5	High School	Inside	1		Fair
6	HS School	Outside	1	5 km	Fair
7	College	Outside	4	12 km	Fair
8	Post Office	Outside		11 km	Fair
9	Bank	Outside		2½ km	Fair

10	Telephone	Outside		11 km	Fair
11	Anganwadi Centre	Inside	5		Fair
12	Gram Panchayat	Inside	1		Fair
	Office				
13	Revenue Circle Office	Outside	1	11 km	Fair
14	Police Outpost/Thana	Outside	1	11 km	Fair
15	Forest Beat Office	Outside	1	11 km	Fair
16	Forest Range Office	Outside	1	20 km	Fair
17	Railway Station	Outside	1	60 km	Fair
18	Drinking Water	NILL	-	-	-
	Sources				
19	Community Hall	NILL	-	-	-
20	House with Electricity		300		
21	Street Lighting	NILL	-	-	-
22	No. of Tractors		2		
23	No. of Power Tillers		4		
24	Temple/Namghar	Inside	3		
25	District Head Quarter	Outside	3	33 km	
26	No. of Vehicles		50		
	(Cars/Trucks)				
27	No. of JCB	NILL			
28	Nearest Market	Inside			Good

From the above table, the following have been noted with regard to village infrastructure:

Physical Infrastructure: There is no proper physical infrastructure in the village. There is no proper school building, paved roads, water and sanitation facilities, street lights, street sheds etc. There is no public means of transport so the community members are dependent upon bicycles and private vehicles.

Education & Health Facilities: The community has few people with higher educational qualifications. High schools and colleges are quite far away from the village. The infrastructures of existing schools are poor and needs repair.

Health facilities in the village are very poor. There is a primary health centre which does not

function properly. It has very minimal facilities causing health hazard for the community

Govt. Offices: The government offices (such as Police station, Revenue office, Forest Beat office etc.) are located at a considerable distance, which gets amplified as the villagers do not have access to regular public transport from either the habitation or from nearby areas.

Financial Inclusion: Facilities for financial inclusion like bank and post office are located at a considerable distance from the habitation. Hence, a very few community members have bank accounts or postal savings accounts.

3.9 Agriculture/Crops

Crops grown in the area are rice, turmeric, gourds, mustard, pulses, tomato, potato, onions etc.

Maximum numbers of households are involved in paddy cultivation.

The production and yield of these crops is given as follows:

(a) Khali Paddy: Production 800Quintal; Yield 60quintal /ha

(b) Mustard: Production 200 quintal; Yield 13quintal/ha

(c) Pulses: Production 190 quintal; Yield 13 quintal/ha

(d) Vegetables: Production 50 quintal; Yield 67 quintal/ha

3.10 Fodder Availability

The village depends on the nearby forest. The main sources of the fodder in the village are as follows:

a) Local cropland

b) Local Market

c) Fringes of Panidihing Wildlife Sanctuary

3.11 Markets

The main markets used by the community are as follows:

(a) Grocery / PDS: 2km away.

(b) Weekly / Bi-weekly Market: : 2km away

(c) Major Market: 12 km away

3.12 Water Resources

The main water resources with the water availability are as follows:

(a) Brahmaputra river (Water Availability: Perennial)

(b)Boloma jan (stream) (Water Availability: Seasonal)

(c) Tube wells: No.300 (Water Availability: Adequate)

3.13 Energy Consumption

The major sources of energy in the village have been listed below.

(a) Fuelwood: Number of Households Depending: 350 (Source: Local village)

(b) Kerosene: Number of Households Depending: 350 (Source: Market)

(c) LPG: Number of Households using: 200 (Source: Market)

(d) Electricity: Number of households connected: 300

3.14 Socio-economic status

Social set-up: The village is inhabited by Nepali and Deori community. Deori community has majority of population. Both the communities follow Hindu religion. Deori community belongs to Schedule Tribe while Nepali community to General and Other Backward Caste. There seems to be social divisions among the Nepali community while Deori communities do not have any social divisions. Both the communities have diverse traditions and customs, which are reflected through various festivals they which they celebrate throughout the year. Both the community has patriarchal society system.

Economic Condition: The economic position of the communities is not satisfactory. The main livelihood is based on agriculture and allied activities. There are very few people who are engaged in secondary and tertiary activities like petty business or services. The average income of a household is Rs.30,000-45,000 per annum.

Additional details are available in the next section.

4. Livelihood assets profile and vulnerability contexts

This section deals with the livelihood assets and their current status in the village. The vulnerability context has also been analysed in the section

4.1 Livelihood Assets Analysis

As per the Sustainable Livelihood framework (SLF) there are five most important livelihood assets i.e. Human capital, financial capital, social capital, natural capital and physical capital that are needed for livelihood enhancement in a village. The status of the five capitals have been analysed and are given below:

Human Capital

Human capital includes all the resources that are possessed by the villagers in terms of educational qualification, skills, knowledge and experience. The village has moderate percentage of educated people. Most of the youth in the village have primary and secondary educational qualification.

Agriculture and allied activity is popular among the villagers and it is practised relying on the traditional and basic knowledge. Bamboo crafting, masonry, carpentry, daily wage earning etc. are activities in which most male members of the village are engaged. Femalemembers on the other hand are engaged in weaving, dairyfarming, sowing and harvesting in fields; and other household works like cooking, pickle making etc. In terms of job profile there are a few government school teachers, defence personnel, petty business man and factory workers.

Physical Capital

Physical capital includes all the physical infrastructures that are located within the village. Sapekhati Bam village has roads connecting to the main centre of the district. There are culverts along the connecting roads of the village. There is electricity connection throughout the village. Maximum numbers of households have electricity connection.

Sapekhati Bam village has four primary schools, one middle school and five Anganwadi centres. Buildings of the school are not up mark and do not have proper facilities.

Majority of the families have houses made of bamboo and cane. There are only a few concrete houses in the village. There is a water supply facility which is non-functioning. The embankment that lies to the northern most part of the village plays a very vital role in flood management as it blocks inundated water of river Brahmaputra entering the village.

Natural Capital

Sapekhati Bam village has fair enough of natural capital. There is a wide stretch of crop landwhich is fertile and well drained by natural rainfall. It accounts about 4000 bighas while around 89 bighas of land is low productivity areas. The Panidihing Wildlife Sanctuary lies to the south-western part of the village. This sanctuary is famous for rare birds like bar-headed goose, greylag goose, spot-billed duck, mallards, gadwall, pigeon, garganey, shoveller, red crested pochard, common pochard, ferruginous duck, adjutant stork, kingfisher, lesser adjutant stork, open bill stork, white necked stork.

The river Brahmaputra lies to the northern part of the village. There is a stream named *Boloma Jan* that drains the village. This stream provides scope for fishing and irrigation facility for crop cultivation.

The village also has ample amount of bamboo, grasses and trees that are used by the villagers for various household purposes.

Social Capital

Social capital includes all the elements and institutions that are related to the social life of the community members. The village consist of mix community population; they are Nepali, Deori and general Assamese. All these communities follow same religion i.e. Hindu, but have their own traditions and customs. There are three temples, five number of Anganwadi centres and a youth club.

All the village level administration is done by the procedures of the Panchayati Raj Institution. The Gaon Burha is considered to be the head of the village and has the responsibility of decision making and planning in matters related to village administration.

The communities of Sapekhati Bam village celebrate different kinds of festivals with great pomp and vigour. These festivals are celebrated with traditional dances and preparation of ethnic food items.

Financial Capital

The financial capital of the Sapekhati Bam village is not sound. As the village is in remote location, access to financial institution is poor. Major banks and postal services are at a distance of about 20kms from the village. However a few bank Customer Service Points(CSPs) situated near the village helps in monetary transactions. There are 350 people who have bank account and 30 persons with health insurance.

Selling of agriculture allied products; livestock and wage earning are the main source of income for the villagers. However there are few persons who run petty business like vegetable vendor, firewood sell or grocery shop.

4.2 Livelihood Asset Pentagon

Based on the analysis and assessment of the existing five livelihoods assets in the village a livelihood pentagon was studied. The livelihood pentagon is not balanced and gaps could be plugged by taking appropriate livelihood strategies and actions that are mentioned in the village development plan and livelihood development plan

4.3 Vulnerability Context Analysis:

Sapekhati Bam village is highly vulnerable to natural hazards like flood. During the period of June-September, flood creates havoc in and around the village. The crop land gets submerged in water, and the main road connecting the village to the nearby areas also goes flooded. This causes serious communication problem. Moreover, aftermath flood there is a severe spread of water borne diseases. The village is also prone to seasonal diseases like dysentery and malaria. Dysentery usually takes the form of epidemic during July-October and Malaria affects mostly during March& April.

Crops are damaged by pest attack during the months of September-November. There is depredation of elephant throughout the year causing damage to crops and houses of the villagers. Buffalo also depredates in the cropland especially during harvesting months of November till February.

4.4 Seasonality:

The seasonality calendar given below clearly shows the different crop production and hazard profile of the EDC area. Among the major crops grown in the area, Bodo paddy is cultivated from January to April, while Sali paddy from June to October. There are also other vegetables such as pumpkins, tomatoes, potatoes, cabbages and other crops such as maize and mustard that are grown in the area.

It is evident from calendar that the EDC area is susceptible to many kinds of hazards such as floods during June to September which disrupts crops and spread diseases like malaria (March to April) and dysentery (July to October). Animal depredation is another vulnerability concern for the locality. Elephants and buffalo depredation causes damage to standing crops and property.

Seasonality Calendar of Sapekhati Bam EDC

Months	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
	BoroPaddy					Sali Paddy						
Crops							Vegetables(Cabba				page,	
									P	umpk	in,Pota	ıto
										Ton	nato)	
	Maize								Mustard			
Risk						Flood						
Factor/	Malaria				Dysentery							
Hazards												
Animal	Elephant				Elephant							
depredation	Bu	ffalo									Ви	ffalo

5. Existing plans and programs

This Chapter deals with certain essential linkages with other key planning and execution mechanisms and processes which have direct bearing upon microplanning. The topmost among these is the Working Plans which provide an overall umbrella for sustainable development and forestry and wildlife conservation in forest areas of the State. In wildlife areas, these plans are known as Management Plan. In addition, there are several plan scheme components such as the Tribal Sub Plan (TSP), and Scheduled Caste Component Plan (SCP) which also get implemented in forest villages through the Forest Department. There are several line departments providing health, education, power, irrigation and livelihood services. Often these departments also implement schemes in the forest villages.

After the promulgation of the Assam Joint (Peoples' Participation) Forestry Management Rules, 1998 in Assam, the joint forest management got initiated, and the JFMCs and EDC were constituted in 2002. Prior to this, some working plans had prescriptions for joint forest management or constituted JFMC circles. However, the National Working Plan Code, 2014 gave the right impetus to the microplanning and has incorporated detailed guidelines to this effect. This Microplan is based on the 2014 National Working Plan Code.

5.1 Eco Sensitive Zone

Introduction:

Panidihing Bird Sanctuary under Sivasagar Forest Division within the State of Assam is rich in avifauna with 167 identified bird species both from resident and migratory points of view. The eco-system is basically a wetland associated with the network of the mighty Brahmaputra river system. Due to the nature of marshy eco-system the diversity of aquatic plants and animals are maximum and quite significant. Since avifaunal and aquatic animals cannot be confined with the protected area network, as such it is aimed to provide 'shock-absorbers' within the 'transition zone' of the animals by regulating certain activities around the sanctuary to minimize the negative impacts. Therefore, within the provisions of IBWL's Decision dtd. 21st January'2002, National Wildlife Action Plan (2002-2006), Decision of National Board for Wildlife 17th March'2005, Hon'ble Supreme Court's decision vide Writ Petition No. 460/2004 and within the Statuary Provisions of sections 5 C (1) of the Wildlife (Protection) Act 1972, Section 3 of the Environment (Protection) Act 1986 and Section 5 (1) of the Environment (Protection) Rules 1986, this proposal has been made to declare the Eco-Sensitive Zone (ESZ) around Panidihing Bird Sanctuary identifying the ecologically sensitive localities within the parameters of richness of

flora and fauna, rarity and endemism of species in the area within the guidelines as provided by the Department of Environment & Forests (Wildlife Division), Govt. of India.

Constitution of Suggestion Committee for Eco-Sensitive Zone of Panidihing Bird Sanctuary

A committee has been formed namely Panidihing Bird Sanctuary Eco-Sensitive Zone Suggestion Committee as per the guidelines as provided by the Department of Environment & Forests, Wildlife Division, Govt. of India.

The committee members include:

- i. Sri Diganta Borboruah, AFS, DFO, Sivasagar Forest Division
- ii. Circle Officer, Demow Revenue Circle
- iii. Dr. Rebajyoti Stafford, Lecturer, Sivasagar College, Joysagar.
- iv. Sri Biman Taye, President, Pachim Panidihing Gaon Panchayat

The committee has suggested the following parameters for framing the proposal of Eco-Sensitive Zone for Panidihing Bird Sanctuary. These include:

- i. Extent of Eco-Sensitive Zone around Panidihing Bird Sanctuary.
- ii. The requirement of the Eco-Sensitive Zone for Panidihing Bird Sanctuary to act as shockabsorber.
- iii. Suggestion for the best method land use for management of Panidihing Eco-Sensitive Zone.
- iv. Suggestions for broad based thematic activities to be included in the Master Plan for the region.

Significance of Panidihing Bird Sanctuary

The Panidihing Bird Sanctuary is located in Sivasagar District of Assam. It was constituted in the year 1999 vide Govt. Notification No. FRW.71/95/Pt.-6 dtd. 10/08/1999 by carving out a small portion of Panidihing RF and a major portion of Non-Cadastral land existed adjacent to the said Reserve Forest.

The Panidihing Bird Sanctuary was constituted with the following areas:-

Panidihing RF = 2.93 sq. Km

Non-Cadastral area = 31.00 sq. Km.

Total area of the Panidihing Bird Sanctuary = 33.93 sq. Km

Panidihing Bird Sanctuary, an important bird habitat, is located in Sivasagar district of Assam within the geographical limits of 27° 4.5′ N and 27° 10′ N latitudes and 94° 25′ E to 94° 40′ E longitudes. The altitude of the area varies from 100 to 110 meters above mean sea level. It has

also been recognized as an Important Bird Habitat (IBA) Site by Bombay Natural History Society (BNHS). The PA recorded 167 species of birds. The water masses of the PA forms an ideal habitat for indigenous fishes and other aquatic animals and birds.

The area comprises of alluvial flood plains of the river Brahmaputra. The entire area of PA is more or less a flat ground interspersed with streams and water bodies (Beels). The main sources of water are Brahmaputra, Dishang & Dimow river. There are 14 Nos. of Beels inside the PA. During the rainy season the whole PA is flooded & at the end of the rainy season the excess water is drained out through Dimow & Dischang river into the river Brahmaputra. So, there is a water scarcity in the winter season. The PA is predominantly covered by Grass land & wetlands. The PA is surrounded on its 3 (three) sides by human habitation. There is tremendous amount of grazing pressure from cattle belonging to forest fringes villagers. Migratory birds are also visited the PA in winter session.

Committee for drafting notification of eco sensitive zone for Panidihing Bird Sanctuary

A committee as follows was constituted to prepare the Draft Notification for defining and demarcating of Eco-Sensitive Zone for Panidihing Bird Sanctuary vide Govt. of Assam, Environment and Forest Department Notification no. FRW.1/2007/114 dt 5th November 2014, in pursuance of Govt. of India Guideline issued vide no. 1-9/2007WL-1(Pt.) dtd. 09/02/2011:

i) Sri Y. Suryanarayan, IFS Chairperson

ii) Dr Alka Bhargava, IFS Member

iii) Sri C.R. Bhobora, IFS Member Convenor

This was modified vide FRW.1/2007/127 dt 24.4.2015 as follows:

i. Dr Alka Bhargava, IFS Chairperson

ii. Sri Y. Suryanarayan, IFS Member

iii. Sri C.R.Bhobora, IFS Member Convenor

By a partial modification vide FRW.1/2007/134 dt 17.6.2015 Sri Y. Suryanarayan, IFS was replaced by Sri Utpal Bora as member of the Committee.

Sri N.K. Malakar, DFO, Sivasagar Division was also co-opted in the committee due to his extensive knowledge of the area and local requirements.

Public Hearing

As the some of the revenue area in the proposed eco-sensitive Zone also falls under the Sivasagar Revenue Circle, the Circle Officer, Sivasagar Revenue Circle was also included in the Suggestions Committee and reconstituted as follows:

i. Divisional Forest Officer, Sivasagar Division

- ii. Circle Officer, Demow Revenue Circle.
- iii. Circle Officer, Sivasagar Revenue Circle.
- iv. Dr. Rebajyota Stafford, Lecture, Sivsagar College, Joysagar
- v. President, Pachim Panidihing Gaon Panchayat

A notice was published in the daily "Dainik Janombhumi" dtd. 02/06/2015 to announce public hearings on 10/06/2015 and 11/06/2015 at 3 (three) locations. All the stakeholders and the suggestion committee members were invited to be present in the said public hearing.

As per the recommendation of the above committee the entire Panidihing R.F. should be included in the proposed eco sensitive zone. The stakeholders i.e. forest villagers of Panidihing R.F. were invited on 23.06.2015 at Demow Forest Beat Office for discussion over the inclusion of Panidihing R.F. in the proposed ESZ. The Circle Officers, Dimow; Councillor, Pachim Panidihing Panchayat and the forest villagers were present. The forest villagers agreed to the inclusion of Panidihing RF in the proposed Eco-Sensitive Zone.

Legal Status of land in the proposed eco-sensitive zone

The Eco-sensitive Zone is proposed on forest and revenue land. Some of the revenue land is owned by the patta holders.

Area in forest land 21.39 sq. km
Area in revenue land 233.45 sq. km
Total 254.84 sq. km

The broad based thematic activities to be included in the Master plan

- (a) The people of the northern fringe localities within the Eco-Sensitive Zone are very poor and their livelihood is basically cattle rearing, which are mostly unproductive cows and buffaloes. The people rear cattle in large number and let them loose to graze in the open areas including the PA. Grazing by large number of cattle will cause destruction to the eco-system not only of the proposed Eco-Sensitive Zone but also that of the PA. So, it shall be aimed to regulate the same through introduction of high breed cattle and promote stall feeding for improved returns to the owners as well for protection of the PA and Eco-sensitive zone
- (b) The big land masses in between River Brahmaputra and the P.A. within the proposed Eco-Sensitive Zone, are lying idle and may be taken up for afforestation activities through Eco-Development Committees (EDC). These would enhance the habitat of

- elephant/wildlife. This EDC would be associated in protection and conservation of the biodiversity of the Eco Sensitive Zone.
- (c) Some of the people around the Eco-Sensitive Zone are earning livelihood through fishing. In order to safeguard the livelihood of the people of the Eco-Sensitive Zone, it shall be aimed at encouraging scientific fish-farming among the communities within the Eco-Sensitive Zone for improving the economy of the people and better safeguard of the Eco-Sensitive Zone. Alternate income generating options would also be introduced for these communities, including the EDCs, to decrease the pressure on forests for livelihoods.

Details of land use pattern within the proposed Eco-sensitive Zone

The economy of the fringe of PA and forest villagers is mostly based on agriculture, fishing & animal husbandry. Almost all the population are poor and some of them are below poverty line also. The domestic cattle of the Khutis (cattle herder) tend to graze inside the protected area. Many families of the forest fringe villages have been traditional fishermen. Fishing activities are conducted mainly in beels (wetland) & Brahamaputra river.

a) Agricultural activities include paddy cultivation, : 70% approx pisciculture, sericulture, rearing cattle etc.

b) Unspecified forests including bamboo cultivation : 10% approx
 c) Human settlement, market, road & bridges, industry : 20% approx
 etc.

Conclusion

The proposed Panidihing Bird Sanctuary Eco-Sensitive Zone shall minimize the negative impacts of human activities by regulating some of the activities and prohibiting the more deleterious ones as necessary for ecological sustenance of the area. The people residing within the zone as well as the fringes of the PA will be associated in eco-restoration activities. Hand in hand with conservation and protection, it would be the endeavor to improve the living standards of the people within the Eco-Sensitive Zone of Panidihing Bird Sanctuary through eco-friendly activities as detailed in the Master Plan to be completed after final notification of the eco-sensitive zone.

5.1.2. No. Development Zone

No development Zone in nearest of Panidihing Bird Sanctuary.

5.2 Linkage with the Tiger Conservation Plan(TCP).

No tiger reserve are under Sivasagar (T) Division, Sivasagar

Eco-Development Committees:

In 1995-96, the Government of India decided to implement The India Eco Development Project as a five-year pilot project in 7 protected areas. The IEDP envisaged Eco-development as a strategy that in to conserved biodiversity by addressing both the impact of the local people on the protected areas and impact of the protected areas on local people.

As on today there are 15 registered EDCs under Sivasagar (T) Division, Sivasagar FDA. Eco Development Committees will be formed in all the fringe villages bordering Panidihing Bird Sancutary on the periphery of the P.A.. A Confederation of EDCs comprising of representatives of all the EDCs would be constituted and have been registered. In each village, Self Help Groups will be formed for different income generating activities. Existing Eco-Clubs under National Green Corps in the fringe village schools of the area will be converted to Nature Clubs. Wherever Eco Clubs are lacking, efforts would be made to constitute them. The Nature Clubs may also include institutions and organisations formed independently to educate people on environment and its values.

Livelihood Support Initiatives through Village Micro Plans:

Effective PRA exercises and socio-economic surveys in the fringe and forest villages would be conducted with the help and support of local NGOs and Institutions in order to make micro plans for the villages. With the help of the micro-plans, livelihood support to the villagers will be provided through various income generating activities (IGA).

The Eco Development programme of the Panidihing Bird Sanctuary has been undertaken with the following objectives-

- To create a congenial relation between the Panidihing Bird Sanctuary management and the people, this will act as an effective barrier against attempt of poachers and miscreants.
- To improve capacity of Protected Area management to conserve resources of the Sanctuary and to achieve local co-operation in achieving Sanctuary management objectives.
- To develop effective and extensive support for eco-development by putting in places an effective participatory conservation model for Panidihing Bird Sanctuary.

Specific Issues to be tackled through the Eco Development Programme -

- 1. Alternative livelihood strategies.
- 2. Improvement of living condition.
- 3. Mitigating negative impact arising out of man animal conflict.
- 4. Community development work.
- 5. Non consumptive use of Protected Area through eco-tourism.
- 6. Dependence of villagers on forest resources.
- 7. Sustainable use of forest resources.

Broad strategies for operationalizing the Eco Development Programme -

- Conduct participatory micro-planning and provide implementation support for ecodevelopment.
- 2. Provide assistance forvillage Eco-development program which specify measurable action by villagers to strengthen conservation effort of the Park management.
- 3. Implementation of Eco-development activities which will encourage alternative livelihood and resource use, conservation and protection of the Protected Area.
 - Other suggested initiatives are-
- Livelihood Support Initiative through Village Micro-plans
- EDC Livelihood Support Initiative:
- Mitigation of Human Wildlife Conflicts
- Village Development Activities:
 - -Entry point activities
 - Income Generation Activities IGA)
- Human Resources Development/Capacity Building Plan
- Ecotourism Activities

Monitoring and Evaluation

Expected Commitments from the EDCs:

- 1. No destruction of PA habitat due to activities such as grazing, encroachment, illegal forest fire, illegal felling, illegal NTFP collection etc.
- 2. No poaching or illegal felling in the Protected Area.
- 3. Provision of intelligence, information and other assistance in the prevention and investigation of offences and offenders.

- 4. Facilitating registration of all fire arms in the village.
- 5. Ensuring 100% immunization of village livestock.
- 6. Participation in sustainable eco tourism without damage to the PA habitat.
- 7. Maintenance of cordial relationship with the PA management.

Microplan Implementation Strategy: Micro-planning support teams composed of protected area personnel, NGOs and villagers will assist village communities to develop and implement Microplans on a continuing basis. Micro-plan should accommodate all issues such as guidelines, investment criteria, training programme, schedule, and commitment etc. so as to ensure achieving the set objectives. Strengthening of EDCs should be carried out in the fringe villages of the Reserve Forest buffer area components. The rural development works in the fringe villages can be taken up in collaboration with other line departments. The monitoring and evaluation of the eco development activities will be carried out by other than the implementing agencies. Local NGOs, Institutions, university can be asked to evaluate the ongoing activities. All the eco-development programmes should have in- built Monitoring and Evaluation mechanism so as ascertain the progress in right direction and also keep the ongoing activities in right track through timely corrective measures.

5.3 Forest Department Initiatives in the past

No fund allotted to the EDCs so far. But the following works executed by the Sapekhati Bam JFMC during 2007-08 & onwards.

During 2008-09 the Sapekhati Bam JFMC created 10 ha. Plantation under scheme Artificial Re-generation and during 2007-08 10 ha. Under scheme Re-generation medicinal herbs and shrubs the details are shown below.

S1.	Year of	Name of	Area planted	Expenditure	Remarks
No.	creation	scheme		incurred	
1	2008-09	Artificial Re-	10 ha.	Rs. 44,880/-	Creation
	2009-10	generation		Rs. 31,230/-	Maintenance
	2010-11			Rs. 4,630/-	Maintenance
	2011-12			Rs. 14,200/-	Maintenance
2	2007-08	Re-generation	10 ha.	Rs. 50,000/-	Creation
	2008-09	medicinal		Rs. 73,320/-	Maintenance

2009-10	herbs	and	Rs. 44,900/-	Maintenance
2010-11	shrubs		Rs. 4,630/-	Maintenance
2011-12			Rs. 11,400/-	Maintenance

Besides the following works done by the Sapekhati Bam JFMC during 2007-08

- 1. 2 nos. of Community hall constructed at a cost of Rs. 4,00,000/- and
- 2. 11 nos. of Ring well installed at a cost of Rs. 3,20,000/-

5.4 Schemes of other departments

No scheme has been undertaken by other departments in the EDC.

SAPEKHATI BAM ECO DEVELOPMENT COMMITTEE PANIDIHING BIRD SANCTUARY, SIVASAGAR FOREST DIVISION

Micro-Plan (2016-17 to 2026-27)

PART-II

6. Micro plan Objectives, SWOT and GAP Analysis

6.1 Micro plan Objectives

A village level Micro-Plan is a village development plan and forest development plan, which is need based and site specific, commensurate to available resources. As the unit of the plan is small, it is called a micro plan. The Micro plan tries to meet the twin objectives of:

- i. Enhancing livelihoods
- ii. Biodiversity conservation and maintaining the ecological balance

In India, micro-plans have become an integral part of the joint forest management approach adopted by the Government of India. In this context, a micro-plan is a simple document prepared with the active participation of the community members. The community (village) is the unit for such micro-planning. The document aims to link local forest based resources to local needs and programme objectives of the Forest Department. As per the JFM Guidelines of 2000, the Forest Officers and EDC should prepare a micro plan after having detailed PRA exercise in the village. The micro-plans of the EDC are to be incorporated into the working plans of the Forest Department.

The present micro-plan has been prepared by members of the community, including both male and female members. This document has emerged as an outcome of the following Participatory Rural Appraisal (PRA) process undertaken by the community and personnel of RashtriyaGraminVikasNidhi (RGVN) in the month of April 2017. The steps followed are enumerated briefly below:-

- a) Community meetings organized at the outset in the month of April, 2017 to discuss
 the objective of the project and obtaining their cooperation to gather the required
 information about the community and its contexts;
- b) Collection of the baseline data on the community and its contexts as per the available formats:
- c) Validation of collected information through community discussions held thereafter; and
- d) Preparing the outline of the Action Plan as per the community participation and feedback.
- e) The micro-plan has been compiled by RGVN based on the project guidelines. The document has been discussed and finalized for adoption by the month of May,2017.

6.2 Need Assessment and GAP Analysis

Based on the resource assessment, capacity assessment, livelihoods assets mapping and vulnerability assessment through focused group discussions, PRA exercises, village level and household level survey, the need assessment, gap analysis and SWOT analysis was carried out. The action plan, livelihood, village development strategies and forestry development plan were conceptualized for the JFMC primarily based on this analysis.

Training Need Assessment:

- a. Capacity building of communities through regular awareness programmes on important development issues like Forests and Biodiversity, Sustainable development, climate change issues, Gender issues, Financial inclusion, importance of WATSAN, Soil and water conservation, Flood management should be carried out. A mechanism for the same is proposed in the action plan for village development.
- b. Skill Development: Conducting regular review of livelihood skills and providing specialized training on use of equipment and tools and processes and procedures for livelihood enhancement to be conducted on a regular basis as proposed in the action plan for livelihood development.

GAP Analysis

- Poor road connectivity of the village
- Lack of infrastructure
- Lower rate of literacy
- Poor knowledge of agriculture and its scientific methods
- Flood affected area

6.3 SWOT Analysis

The SWOT analysis was carried out through participatory approach by involving both male and female members of the community.

Strengths

- i. Fertile agricultural land
- ii. Traditional knowledge of the community in weaving, livestock rearing dairy;
- iii. Communal harmony

Weaknesses

- i. Lack of infrastructure and technical knowledge
- ii. Lack of higher education among youths
- iii. Alcoholism among the community
- iv. Dependency for livelihood only on agriculture and allied activities

Opportunities

- i. Use of modern technology in agriculture and allied activities
- ii. Dairy farming
- iii. Modernization and commercialization of dairy and weaving
- iv. Up gradation of traditional skills through training.

Threats

- i. Flood and erosion of village roads and cropland
- ii. Elephant depredation
- iii. Spread of diseases
- iv. Degradation of agriculture land due unscientific cultivation methods

6.4 PRA Exercise

Appendix VI(A) to VI(D) gives the **PRA** maps

A team from RGVN Guwahati carried out PRA exercise in the village in the month of April, 2017 The details are as follows:

Date: 28/03/2017 Location: Sapekhati Bam L.P School

Numbers Present: 37

In Presence of: EDC members, Village Headman, community members, Forest department personnel.

Awareness and orientation programme was conducted at village level before taking up the participatory mapping and transect walk. The main themes covered during awareness and orientation included the following:

- (a) Participatory Planning
- (b) Participatory tools & Methods
- (c) Importance of Microplanning and role of EDC
- (d) Environmental issues
- (e) Climate change and Climate variation
- (f) Ecological balance and Ecosystem management (traditional and scientific)
- (g) Sustainable livelihood Framework

- (h) Livelihood Assets Pentagon and importance of social capital
- (i) Cluster formation & SHG, Financial inclusion
- (j) Marketing and Value addition
- (k) Development agenda and its relationship with environment and ecological balance
- (l) Gender Issues and gender equality

Observations: The communities actively participated during the discussions and PRA exercise. The following important points have emerged:

- The EDC has been formed and registered recently i.e. on the date of 10/01/2017.
- There have been very few awareness and orientation programs in the EDC in the past.
- They appreciated the importance of micro planning and were very supportive and cooperated during the micro planning process.
- It was for the first time that Under the APBFC the NGO has come and interacted with the
 community and created awareness and proper orientation not only about the project but
 also on the development issues including environmental and ecological aspects to growth
 and development.
- The communities have good local wisdom and traditional knowledge regarding the environment, forestry and other livelihood issues like pest control, livestock management etc.
- They shared their concern over the climate variation and its ill effects on agriculture and health in the village. They are keen to learn more on the scientific facts about climate change issues.
- A sense of importance was observed among the people as they understood the important role they had towards reducing causes leading to climate variation by protecting the nearby forests and a sense of ownership seems to be gripping them boosting their self esteem.

Community Need Assessment: Based on the PRA exercise, Focus group discussions, consultations with village community, EDC members, forest staff and other stakeholders the Village Development plan and Livelihood development Plan was prepared for the EDC. Through the participatory approach the community Need Assessment was carried out. The people's needs can be categorized as follows:

1. Structural Needs

2. Non Structural needs

These needs can be classified further into long term needs and short term needs. The details of the community's needs are given in the village development plan.

The structural needs of the people have direct and indirect linkage with livelihood improvement. These include improvement of infrastructure like roads, school buildings, Health care infrastructure, drinking water supply system, water tanks, ring wells etc. Construction of toilets, community halls and training sheds, market sheds.

The non structural needs of the people include provision for skill training, provision of veterinary services, health care services, mobile doctors team, requirement of teachers for schools in the villages, capacity building through training and awareness on financial inclusion, SHG and cluster formation, provision for raw materials, village maintenance & development fund/ community fund for EDC, Value addition of traditional products and marketing linkages. Exposure visits to best practice sites relating to joint forest management, community participatory project cites, artisans villages and participation in melas, trade fairs etc.

7. Village Development Plan

Considering the long term and short term needs for village development a village development plan was prepared in consultation with the community members as well as the EDC members. The measures planned by the community members for the village development are as follows:

- a) The village requires up-gradation of infrastructures like school building, water supply and market sheds.
- b) The village has no medical facilities for the people or for the animals. One PHC and one veterinary facility are to be provided in the village. This step will make a drastic change in the lives of the people.
- c) There is no proper source for drinking water in the area. The existing water sources are not tested in a long time. Water supply or PHE is to be made available so as to ensure proper source of water in the village and also to test the existing sources of water.
- d) There is frequent depredation of elephant in the village; solar fencing is required in the boundary of the village to curb the depredation.
- e) There is also a need for solar street lights as the electricity power supply is erratic and gets damaged with minor wind.
- f) There is urgent need for public transport and communication facilities as the village is located in a remote area.
- g) The community members are unaware of the health hazard that arises due to improper sanitation. Proper awareness campaign should be provided among the villagers on the use of latrine as most prefer open defecation.
- h) The village has fertile cropland, so there is a scope for commercialization of agro-allied production through intensive methods.
- i) The village connecting roads are poor and less maintained. There is need for paved roads and culverts for smooth communication of the villagers.
- j) Flood occurs every year so there is need for flood protection measures. A raised platform will be very beneficial to provide shelter for the people and the cattle during flood.
- k) There is good scope for eco-tourism in *Gorokhia* temple which is located in the southern most part of the village. The temple has a large pond and open area where local fairs and exhibitions are held.

7.1 Ranking of EPA

For village development, the community proposes to take up a number of Entry Point Activities. The EPA includes infrastructure development and skill development and both are directly linked with other.

A. Short term Activity

Rank	Village EPA as ranked	Details	Budget in Rupees 14.0 lakhs	
1	Construction of Community hall	Length-50 ft Breadth -30ft		
2	Requirement of furniture utensil etc.	Screen 30 nos. Chair 100 nos. Table 3 nos. Tarpaulin 3 nos. Generator set 1 no. Utensils etc. L/s	1.5 lakhs	
3	Distribution of Water Filter to provide pure drinking water facility	150 nos. to 150 nos. household @ Rs. 3000/-	4.5 lakhs	
4	Installation of solar light	In 10 different place of the village road L/s	3.0 lakhs	
5	Distribution of livestock - Goat and Pig	80 nos. to 80 nos. families @ Rs. 5,000/- X 80	4.0 lakhs	
6	Construction of Gate	In front of the Gorokhiya Than	1.5 lakhs	

B. Long term Activity

1	Construction	of i. Around Sapekhati Bam L.P School	- 300 mtr	
	Boundary wall	ii. Around Kokilamari L.P. school	-300 mtr	
		ii. Around Gelapathar L.P. School	- 200 mtr	
		v. Around Sapekhati Bam Namghar	-100 mtr	
		v. Around Sapekhati Bam Bishnu mandir	-100 mtr	
		Total	l - 1200 mtr	84.0 lakhs
		@ of Rs. 7000 X 1200-M		

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Divisional Forest Officer (T) Swasagar Division, Sivaeegar

2	Construction of toilet with running water for Girls and Boys	ii. For Kokilamari L.P. school -1 no.	6.0 lakhs
3	Improvement of Village Road		2.35 lakhs
4	Construction of Road Shed	5 nos. in different places of the Road @ Rs. 50,000/- X 5	2.50 lakhs
5	Construction of pool	5 nos. in different places of the Road @ Rs. 50,000/- X 5	2.50 lakhs
5	Provided shop house to Physically handicap	For 10 nos. to 10 nos. handicap person @ Rs. 50,000/- X 10	5.0 lakhs
6	Repairing of School	For Sapekhati Bam L.P. School L/s	0.50 lakhs
7	Construction of concrete Floor	At Garokhiya Than - 5.5 mtr X 5.5 mtr L/s	1.5 lakh

Division, Sivasagar

8. Livelihood Development Plan

Effective PRA exercises and socio-economic surveys in the fringe and forest villages have been conducted with the help and support of EDC members and RGVN in order to prepare microplan for the village. Various Income Generating Activities (IGA) were identified through focus group discussions and PRA. Some of the important income generating activities as identified by the communities include:-pisciculture, vegetable farming, poultry, dairy farming, apiculture, mushroom farming, decentralized nursery, tailoring, small crafts, jute crafts, bamboo crafts, candle making, incense stick making, pickle making, etc. Value addition to the products can be made by processing, grading packing/ bottling and labelling professionally. Inputs, equipment, raw materials required for the IGA were identified. A marketing platform, called Van Bazar, is proposed to be established to showcase and sell products from EDCs.

8.1 Ranking

Ranking of Livelihood and Skill Development

- Agriculture
- Livestock rearing
- Weaving
- Bamboo craft

8.2 Livelihood Opportunities

Livelihood were identified as follows:

- Agriculture and horticulture development
- Skill development for weavers
- Livestock rearing modernization
 Skill development in handicraft

8.3 Agriculture & Horticulture

The main constraints are:

- (a) Flood prone area
- (b) Elephant & buffalo depredation
- (c) Lack of technical knowledge
- (d) Lower local market price
- (e) Poor means of transportation

The opportunities are:

- (a) Multiple cropping
- (b) High Yielding Variety of paddy
- (c) Horticulture development
- (d) Nursery Development

8.4 Livestock

The main constraints are:

- (a) Disease
- (b) Flood affect
- (c) Low demand

The opportunities are:

- (a) Dairy farming
- (b) Goatery
- (c)Poultry modernization

8.5 NTFP

The main constraints are:

- (a) Lack of knowledge by community about NTFP utility
- (b) Lack of marketing linkage
- (c) Lack of proper knowledge about value addition

The opportunities are:

- (a) Fruits and medicinal plants can be used for commercial processing and value addition
- (b) Awareness creation about conservation and judicial usage of NTFP.

8.6 Specialized Skills

The main constraints are:

- (a) Lack of training institutes
- (b) Lack of vocational knowledge
- (c) Lack of access to modern equipment and tools

The opportunities are:

- (a)Weaving
- (b) Bamboo craft
- (c) Modern poultry and livestock rearing

8.7 Credit Facility

The main constraints with the reasons are:

- (a) Poor inclusion by Microfinance Institutions
- (b) Higher rate of interest charged by private money lenders
- (c) Lack of knowledge about different schemes launched by the government for providing loans

The opportunities are:

- (a) Micro finance Institutions
- (b) Motivation to form SHG
- (c) Provision of coverage under different government schemes

8.8 Strategic Interventions

Summarizing the suggested programmes above as strategic interventions for the Livelihood Development Plan:

- 1. Increase agriculture productivity through introduction of high yielding variety of crops and through proper irrigation system.
- 2. Skill development in trades like Weaving, Tailoring, Handicraft, Nursery and Mushroom cultivation
- 3. Training the community about advance dairy farming(stall feeding) and poultry raising techniques.
- 4. Introduction of micro finance institutions.
 - 5. Facilitating SHG and JLG formation

8.9 Income Generating Activities

The main income generating activities as planned in the village are:

- 1. Weaving
- 2. Bamboo craft
- 3. Dairy farming
- 4. Tailoring
- 5. Nursery and medicinal plant development
- 6.Poultry
- 7. Mushroom cultivation
- 8.Goatery

8.10 SHG activities

SHGs of the village can plan the following activities:

- 1. Weaving & Tailoring
- 2. Goatery
- 3. Poultry
- 4. Horticulture

8.11 Exposure Trips

The following exposure trips are planned:

- 1. Good practices /projects of JFMC in North Eastern Region
- Participation in melas and fairs like Agri-Horti Show, SARAS mela and other melas organized by TRIFED
- 3. Trips to nearby countries on training on bamboo treatment and handicraft/furniture making

8.12 Convergence

The planned initiatives may be converged with the following schemes of the Government of India:

- (a) National Rural Employment Guarantee Scheme for rural employment
- (b) RashtriyaKrishiVikasYojana (RKVY) for agricultural and allied development
- (c) RashtriyaKrishiSinchayYojana (RKSY) for irrigation, including watershed development
- (d) National Rural Livelihoods Mission
- (e) Skills Development schemes
- (f) Prime Minister UjjwalaYojana
- (g) NRLM
- (h) NRHM
- (i) Bamboo Mission
- (j) Other schemes for rural development and livelihoods as found appropriate. The above convergence will yield synergies for the present plan, as well as help in sustaining the planned works in the post-project periods.

9. Forest Development Plan of Sapekhati Bam EDC

This Forest Development Plan has been prepared after a detailed PRA exercise at the village level as a part of the Micro-Plan of Sapekhati Bam EDC. The objective of this plan is to meet the dual objective of conserving forest and bio-diversity and at the same time meeting the livelihood needs of the community in a sustainable manner.

The micro-plan takes into consideration the following categories of the forest of the Sapekhati Bam EDC.

- 1. Forest area assigned to the EDC by the Forest Department and
- 2. Areas to be planted on community lands and other land outside the notified forest and protected area

The status of both the above category of EDC forests is briefly discussed below.

i. Forest Village Management in the past.

During 2008-09 the Sapekhati Bam JFMC created 10 ha. Plantation under scheme Artificial Re-generation and during 2007-08 10 ha. Under scheme Re-generation presinel herbs and shrubs, the details are shown below.

S1.	Year of	Name of	Area planted	Expenditure	Remarks
No.	creation	scheme		incurred	
1	2007-08	Artificial Re-	10 ha.	Rs. 50,000/-	Creation
	2008-09	generation		Rs. 44,880/-	Creation
	2009-10			Rs. 31,230/-	Maintenance
	2010-11			Rs. 4,630/-	Maintenance
	2011-12			Rs. 14,200/-	Maintenance
2	2007-08	Re-generation	10 ha.	Rs. 50,000/-	Creation
	2008-09	presinel herbs		Rs. 73,320/-	Creation
	2009-10	and shrubs		Rs. 44,900/-	Maintenance
	2010-11			Rs. 4,630/-	Maintenance
	2011-12			Rs. 11,400/-	Maintenance

Besides the following works done by the Sapekhati Bam JFMC during 2007-08

- 3. 2 nos. of Community hall constructed at a cost of Rs. 4,00,000/- and
- 4. 11 nos. of Ring well installed at a cost of Rs. 3,20,000/-

ii. Domestic Requirements of Forest Produce

The dependency of the local community on forest produce for household requirements is available in the table given at below.

Table-1(A): Domestic Requirement of Forest Produce per Household of the Sapekhati Bam EDC

Name of Forest Produce	How met at Present	Source
Firewood	Forest & Homestead	Forest
Timber for House	Forest & Market area	Forest & Market
Small timber for	Forest & Homestead &	Forest & Homestead
Implements	Market	& Market
Pole / Bamboo	Forest & Homestead	Forest & Homestead
Fodder from Forest	Forest	Forest & Private land
NTFP	Forest	Forest
Other		

Source: Discussions with Forest Department personnel & Community members

Table-2 (B): Total Domestic Requirement of Forest Produce – 273 nos. (Approx)

Households of the Sapekhati Bam EDC

Name of Forest Produce	Community	Remarks
	Requirement	
	(Kg per annum)	
Firewood	327600	@ of 100 kg/per month
		for one year
Timber for House	655200	@ of 200 kg/per month
		for one year
Small Timber for	245700	@ of 75 kg/per month for
Implements		one year

Pole / Bamboo	163800	@ of 50 kg/per month for
		one year
Fodder from Forest	982800	@ of 300 kg/per month
		for one year
NTFP	163800	@ of 50 kg/per month for
		one year
Other		

9.2 Forest Protection Issues

9.2.1. **Protection Problems**

The protection issues of the forests of Sapekhati Bam EDC have been summarized below

Table-2: Protection Problems of the Sapekhati Bam EDC

Type of Problem	Relevant (Yes / No)	Significant (Yes / No)
Grazing - Local Animals	Yes	Yes
Grazing - Animals from Other	No	No
Area		
Illicit Felling of Timber	No	No
Smuggling of Timber	No	No
Accidental Fires	No	No
Encroachment of Forest Lands	Yes	Yes
Others		

Source: Discussions with Forest Department personnel & Community members

Thus, it is seen that the significant forest protection issues facing the above EDC are:

- (a) Grazing of Local Animals.
- (b) Encroachment of local people.

9.2.2 Reasons for Degradation of the Forest

In the Sapekhati Bam EDC, the main reasons for degradation of forest are Grazing, Encroachment & Flood.

9.3 Components of the Forest Development Plan

The following sub-section discuss the main component of the forest development plan of Sapekhati Bam EDC viz the plan for protection habited improvement, nursery development, Wetland conservation, man-animal conflict reduction, grazing plan for villagers and ecotourism plan.

9.3.1 Protection Plan

The protection Plan is twofold, namely wildlife protection and secondly Forest protection in terms of control over grazing and illicit felling of trees in the reserve forest and maintenance of status quo in regards of encroachment as well as to over the illegal fishing to be stop in Panidihing Bird Sanctuary.

Wildlife Protection:

The Protection Plan given below discusses the measures for the protection of Panidihing Bird Sanctuary. The Forest Department shall constitute Local Protection Squad from the youth members belonging to the villages involve in crop protection. They are provided with equipment like crackers, torches and battery. However, there are certain issues such as

- 1. Issue of Uniform and shoes
- 2. Issue of training and skilling
- 3. Lack of scientific methods and inputs

Therefore, in view of the above, the following are prescribed:

- 1. They should be provided minimum wages/ honorarium
- 2. The squad should be made at par with Village Defence Party (VDP)
- 3. The squad should be well armed with equipment such as boots, raincoat, uniform, torch lights, batteries and other required accessories.
- 4. Regular training and motivational camps to be held for the Local Protection Squad
- 5. EDC to monitor the works and performance of the Local Protection Squad consists by youths of villages every month.

Forest Protection:

As revealed in the PRA, the communities are dependent upon the Panidihing Bird Sanctuary for their daily requirement of firewood, grazing and timber. In order to further degradation of the habitat, the following measures are prescribed

1. All the EDC households to be given an alternate source for cooking such as Biogas (gobar gas), solar cooker, other modified fuel wood burner, LPG etc.

- 2. All the EDC household to be supplied with alternate sources of energy for lighting etc. such as solar/ wind/ hybrid energy solutions
- 3. The grazing pressure should be reduced gradually. (Village Grazing Land)
- 4. The EDC should strictly monitor the entry of villagers or any outsiders inside the Wild Life Sanctuary without permission.
- 5. The EDC should create awareness among the people so that fishing is stopped totally within the sanctuary area.
- 6. The EDC should ensure that degradation of the habitat inside the sanctuary should be stopped by creating awareness among the people. Proper authorities are to be informed in case of violation of the rules and sections as per the provision of Indian Wildlife (Protection) Act 1972.
- 7. The EDC should take active part in the restocking of the degraded areas of the Panidihing Bird Sanctuary and habitat improvement plan undertaken by the forest Department. A habitat improvement plan where the communities can participate has also been presented in the next section.

Habitat Improvement Plan:

The Panidihing Bird Sanctuary famous for migratory and indigenous birds as well as various species of local fishes and reptiles. It is also the home of verity wild life like Great Crested Grebe, Little Grebe, Spotted billed Pelican, Rosy Pelican, Cormorant, Little Cormorant, Darter, Grey Heron, Purple Heron, Large Egret, Intermadiate Egret, Little Egret, Pond Heron, Chiness Pond Heron, Cattle Egret, Night Heron, Chestnut Bittern, Yellow Bittern, Verities of Storks, Ducks & Geese like Barheaded Goose, Greylag Goose, White fronted Goose, Pintail Duck, Common Teal, Spotbilled Duck, Eggles & Vulture, Falcons, Plovers, sandpipers, Pigeons, Doves, Parrots, Cuckoos, Owls, Kingfishers etc. and local fishes like Kuchia, Chenga, Chegeli, Sal, Goroi, Sol, Magur, Bhecheli, Kholihona, Singi, Bhangon, Hingora, Kanduli, Pabho, Chelkona, Dorikona, Gangatoop, Borali, Kawoi etc.

The following Habitat Improvement works are prescribed to be undertaken with the help of the EDC:

- 1. Removal of encroachment beyond the notified village boundaries
- 2. Plantation of Species for wildlife in the degraded area / encroachment area.
- 3. Large Plantation of fuel wood and fodder species in the village area.

- 4. Fuelwood species could be short rotation crops of 10 to 15 years after which the harvest should be shared with the EDC. The intermediate thinning also needs to be shared with the EDC.
- 5. Thinning from other plantations also should be share with the EDC.
- 6. The EDC should be involved in all habitat improvement works including weed removal and the de-siltation works.

Nursery Development Plan:

Nursery is an excellent source of livelihood arising out of forestry activities. The following are prescribed:-

- 1. The EDC should develop a 0.25 Ha Nursery for polypots and naked bed seedlings.
- 2. Each seedling could be sold at Rs 5-8 to the department and at slightly higher pieces to other MoU to be entered into by the EDC and DFO/Forest Department in this regards.
- 3. The nursery should be of fruit bearing, important forest species and medicinal plants.

Wetland Conservation Plan:

Panidihing Bird Sanctuary is a unique place of wetland ecosystem with diverse flora and fauna. It is the prime habitat for partial habitat of Asiatic Wild Elephant & Wild buffalo. Apart from this it acts as roosting and nesting ground for migratory and indigenous water birds. However this unique wetlands eco system is confronted with several problems such as shrinkage in size and depth of the water bodies due to heavy siltation and choking of water bodies by water hyacinths.

The following prescriptions are made for wetland conservation.

- 1. The wetlands in the village area to be de-silted thoroughly.
- 2. Local variety of fish alone to be cultured in the village wetlands
- 3. Fishing to be regularized by the EDC, and all income to be deposited in the EDC account.
- 4. Sprinkler irrigation to be used
- 5. Crops needing less water to be promoted along with organic manuring.
- 6. The wetlands on the north of the embankment to be deslited.
- 7. The EDC should not allow any fishing outside the village areas in the sanctuary. Heavy penalty should be imposed upon the defaulters.
- 8. Conducting extensive research on various aspects of wetland eco-system.

Man - Animal Conflict Reduction Plan:

Depredation from wild elephants and other animals are common. Damage to human life and property is consequent in chance encounters with wildlife. To mitigate the man animal conflict situation, the following are prescribed:-

- 1. Small tongies/ watch towers to be created by the Forest Department to keep watch and ward on stray wildlife. The posts should be manned by people from the village on turn by turn basis.
- 2. Anti Depredation Squad to be created in the EDC
- 3. Torches & search lights, crackers and kerosene should be supplied regularly by the Department to the Anti Depredation Squads.
- 4. The EDC should monitor the functioning of the Anti Depredation Squad
- 5. All the crops should be insured regularly
- 6. All persons should be covered under the Pradhan Mantri Suraksha BimaYojana
- 7. The Forest Department should enhance the ex-gratia grant.
- 8. The process of awarding ex-gratia should be simplified so that the affected families do not have to wait for long to receive compensation.
- 9. The EDC president's certification should be sufficient to certify that the damage has occurred.
- 10. Solar power fencing to be modified by EDC. During flood management committee should remove all the wire insulators.

Grazing Plan for village

The following prescriptions are made for control of grazing:

- 1. The EDC shall evolve novel methods for grazing control / stall feeding, develop village grazing land and fodder plantation.
- 2. High Yielding Variety cattle should slowly replace the existing cattle population.
- 3. The EDC should impose dis-incentives on families having large number of cattle.
- 4. Stall feeding to be promoted by the Forest Department
- 5. Diary Development activities to be taken up by the EDC using high milk yielding cows.
- 6. There should be a conscious plan by the EDC to stop grazing completely within next 5 years.
- 7. All cattle to be immunized regularly, and the EDC should monitor the same. No unimmunized cattle should be allowed to be grazed.

8. ICT could be used to study grazing pattern and suggest corrective measures.

Eco-Tourism Plan:

Panidihing Bird Sanctuary is a famous for migratory and indigenous Bird with full of common fishes. The Sanctuary with its rich biodiversity resources is the favoured destination of both domestic and foreign tourists and getting the top priority as tourist destination in the state.

The following prescriptions are made in respect of eco-tourism:

- 1. Educational wildlife tourism has a great potential in Panidihing Bird Sanctuary which should be actively promoted by the Forest Department.
- 2. Home stay should be encouraged from now onwards from amongst the EDC members.
- 3. The Department should provide funding for creating home stay facilities by the village communities
- 4. A number of eco-tourism trails should be developed with the help of Forest Department and the local communities
- 5. Such eco-trails may be actively promoted by the Department.
- 6. Local tourist guides should be trained in tourism and foreign languages
- 7. Commercial tourism should be discouraged.

10. Implementation Strategies, Timelines and Budget

10.1 Roles and Responsibility Matrix

For the three sub plans namely Livelihood Development Plan, Village Development Plan and Forest Development Plan, a matrix of roles and responsibilities has been developed. The matrices have been shown below for each of the sub plans separately.

Livelihood Development Plan

Stakeholde rs	Planning	Manpower	Trainin g	Funding	Production & Value Addition	Marketin g	M&E
EDC	,	✓			✓	~	
NGO	,	✓			✓	~	
Skilling Agencies	,	√			√		
Forest Deptt	,	✓		,		✓	
Line Deptt.	,	✓		,			

Village Development Plan

Stakeholders	EDC	Forest Departme	Line Departmen ts	NGO	Training Institutio ns	Govt. of India/Corp
		111	ts .		115	
Solar Power		✓	✓			✓
Solar/Hybrid		✓	✓			✓
Street Lights						
Sprinkler		✓	✓		~	✓
Irrigation						
LPG		✓			~	✓
Power Pumps		✓	✓			✓
Training Center		✓			~	✓

Community Hall	✓	✓		
cum EDC Office				
Roads	✓	✓		
WATSAN	✓	✓		✓
School	✓			
Health Infra	✓	✓	✓	✓
Organic farming/ vermicompost	✓	✓	~	✓

Forest Development Plan

Stakeholders	EDC	Forest Departme nt	Line Departmen ts	NGO	Training Institution s	District Admin
Forest Protection		✓				✓
Wildlife Protection		✓	✓		✓	
Habitat Improvement		✓	✓		✓	
Nursery Development		√			✓	
Wetland Conservation		√				✓
Man-Animal Conflict		✓				
Grazing Control		✓	✓			
Eco-Tourism		✓	✓			

10.2Finance and Budget

The budget for the microplan has been prepared based on annual requirement of the three sub plans namely the Livelihood Plan, Village Development Plan and Forest Development Plan. The consolidated table is given below.

Sl No.	Plan	Amount (Rupees)	Remarks
1.	Livelihood Development Plan		
2.	Village Development Plan		
3.	Forest Development Plan		
	TOTAL		

Livelihood Development Plan

Sl No.	Item of Work	Amount (Rupees)	Remarks
1.	Skill Development & Training		
2.	Dairy Farming		
3.	Poultry/ Fishery/ Duckery		
4.	Computers		
5.	Trades and Callings		
6.	Handicrafts		
7	Kits and Equipment		
8	Value Addition & Certification		
9	Packaging and Marketing		
10	Exposure Visits		
11	SHG/ JLG/ Cluster Formation & Credit		
	TOTAL		

Annual Village Development Plan:

Sl No.	Item of Work	Amount	Remarks
1.	Solar Power		
2.	Solar/Hybrid Street Lights		
3.	Sprinkler Irrigation		
4.	LPG		
5.	Power Pumps		
6	Training Center		
7	Community Hall cum EDC Office		
8	Roads		
9	WATSAN		
10	School		
11	Health Infra		
12	Organic farming/ vermi-compost		
	TOTAL		

Annual Forest Development Plan

Sl No.	Item of Work	Amount	Remarks
1.	0.25 Ha Nursery		
2.	10 Ha Fuelwood Plantation Creation		
3.	Desiltation of water bodies		
4.	Anti Depredation Squad		
5.	Crop Insurance		
6.	Life Insurance		
7.	Cattle Insurance		
	TOTAL		

10.3 Action Plans and Strategies:

Each of the **three** plans namely the Village Development Plan, Forest Development Plan and Livelihood Development Plan would require short term and long term action plans strategies in order to realize the prescriptions of the Microplan. Short term strategies should focus on activities to be taken up from 0-5 years, and long term plan should focus on activities to be taken up in 5-10 years of this Plan.

Livelihood Development Action Plan:

The livelihood action plan may be divided into three parts namely, skilling, production & marketing and value addition. The most immediate want of the population is skilling. The skilling requirements needs to be viewed at basic level and advanced level. Once the trades and skill requirements have been frozen, the basic skills should be imparted within a period of 1 year for all willing members of the village both men and women in a phased manner. During this period, some of the trainees could also start production. The most marketable outputs need to be channelized to the available markets in order to create the brand effect and assess the marketability of the production in terms of quality and value.

Village Development Action Plan:

The village development action plan may be divided into the short term plan and the long term. In the short term plan activities like Solar lighting, Providing LPG connections, construction of Community hall and training centre and water sanitation needs would be addressed. In the long term plan for the village the activities like construction of schools, health care facilities would be taken up. Providing improved tools and equipments for enhancing agriculture production along with water sprinklers, power pumps would be provided.

Forest Development Action Plan: The forest development action plan comprises of the short term action plan and the long term plan. The short term plan includes formation and strengthening of forest protection squads, Nursery development, desiltation of water bodies, formation of anti-depredation squads, Tongi construction and firewood plantations. In the long term action plan activities like Plantation, Crop improvement and habitat improvement would be taken up.

10.4 Institution Building, Networking and Partnership

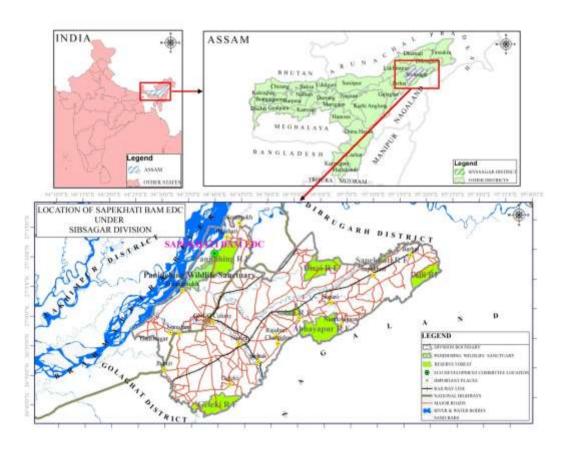
EDC: The EDC to be upgraded both in terms of its infrastructure assets and in terms of acting as a resource center for village and forestry development. The proposed EDC office along with the community hall in the entry point activity to be provided with modern equipment like computer/ TV and support equipment like generator etc. Building capacity of EDC members through training programs on use of computers, maintaining and updating records/ accounts keeping and village level/ forestry data on a regular basis. The EDC office to be upgraded as a resource centre, an activity and training hub. Improving their networking skills and creating awareness regarding development schemes of other departments and modalities for partnership.

LIST OF APPENDIX

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I(B)	Location Map of Sapekhati Bam EDC
II	Approach map to EDC
III(A)	EDC Registration Certificate
IV	Executive Members of Sapekhati Bam EDC
V	Executive Members group Photo of Sapekhati Bam EDC
VI	List of members present during PRA & FGD(Signed list)
VII(A)	Community map of Sapekhati Bam EDC
VII(B)	Resource map of Sapekhati Bam EDC
VII(C)	Hazard map of Sapekhati Bam EDC
VII(D)	Venn Diagram
VIII	Entry point Activities
IX(A)	Training list of Sapekhati Bam EDC (Proposed)
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XI	GPS Coordinates

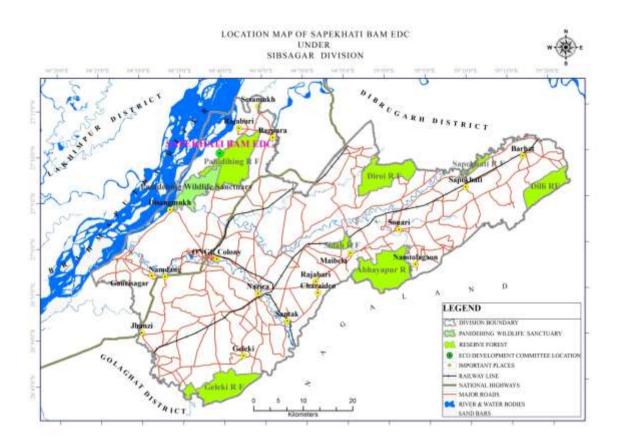
Appendix I(A)

Location Map of EDC in India



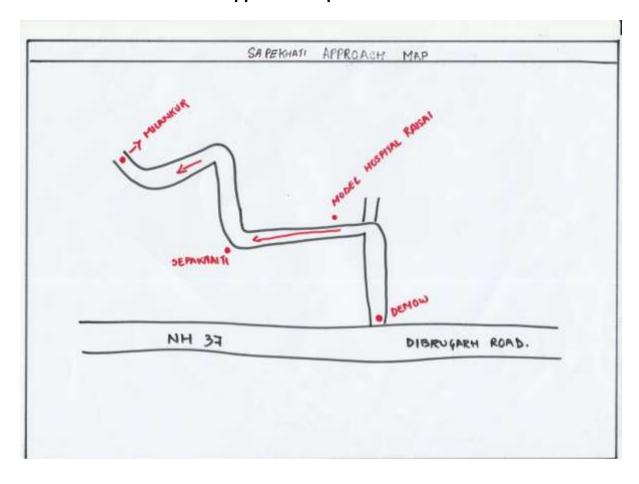
Appendix I (B)

Location Map of Sapekhati Bam EDC



Appendix II

Approach map to EDC



Appendix III (A)

EDC Registration Certificate



GOVERNMENT OF ASSAM ENVIRONMENT AND FOREST DEPARTMENT OFFICE OF THE DIRECTOR KAZIRANGA TIGER RESERVE BOKAKHAT,ASSAM

CERTIFICATE OF REGISTRATION OF ECO DEVELOPMENT COMMITTEE

Registration No.KNP/FG.761/EDC/RC/SIVASAGAR DIVN./2016-17/02, Date.10/01/2017

SAPEKHATI BAM Eco-Development Committee of Sivasagar Division under PANIDEHING BIRD SANCTUARY is hereby registered under the provisions of rule 7(vii) of Assam Joint (People's Participation) Forestry Management Rules, 1998.

The Registration of the Eco-Development Committee has been done to encourage people for conservation & protection of Forests & Wildlife and implementation of developmental works in the fringe villages situated around Panidehing Wildlife Sanctuary.

(Dr.Satyendra Singh, IFS)

Director, Kaziranga National Park Bokakhat:785612:Assam

Appendix IV

Executive Members of Sapekhati Bam EDC

ND	Sapekhati Name	Age	Education	Fotheris name, address
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4	" Binod Sarryna	42	H-S. "	et Bodrilal Sarma
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6	Ranjit Sammah	37	H.S.LC II	L+ Rudra Saremak
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12	Gramesh Borral	22	H. S "	Sri ummath Boreal
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Sa	President / Secretary paykasbare ECO-Development Committee Sivasagar Division			Silvand Bad Forest F.C.
				Desingmuch Beat Sivasagar
				President / Secretary Racovation ECO-Development Committee

Appendix V

Executive Members group Photo of Sapekhati Bam EDC



SAPEKHATI BAM ECO DEVELOPMENT COMMITTEE GROUP PHOTO
Sitting(Left to Right): i.Ram Lal Sarma(President) ii.Chandramaya Devi iii.Bonomali Bora(Member Secretary/Beat Officer) iv.Purnima Chetry

v.Rukmini Chetry Standing(Left to Right): vi.Binod Sarma vii.Ganesh Boral viii.Ranjit Sarma ix.Mijuram Deori x.Arjun Rai xi.Lal Bahadur Chetry *Not present in the photo- xii.Ganesh Deori xiii.Gunanidhi Sarma

Appendix VI

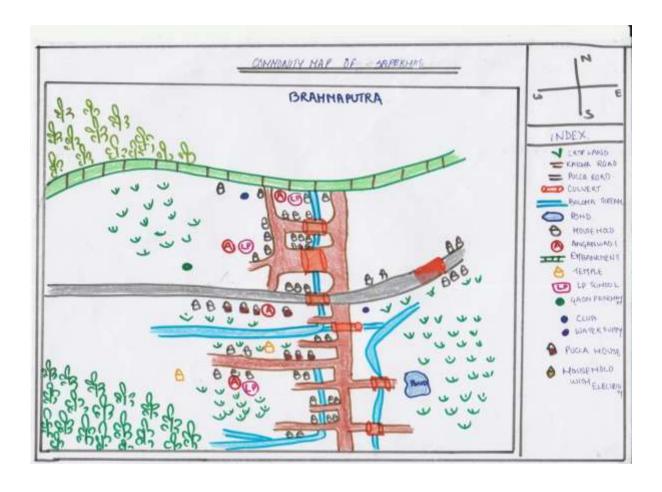
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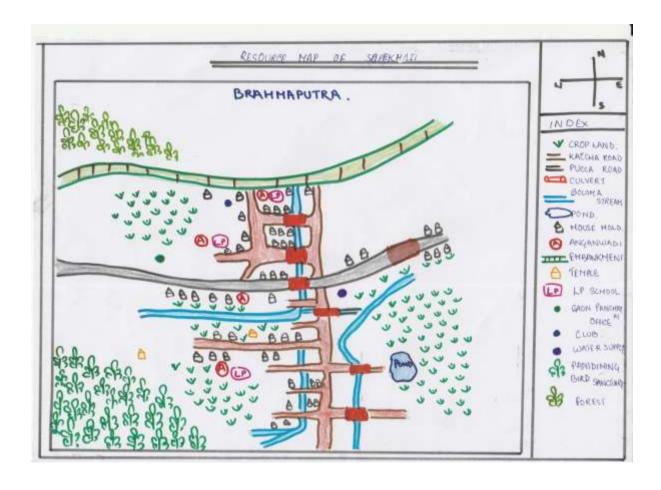
Appendix VII (A)

Community map of Sapekhati Bam EDC



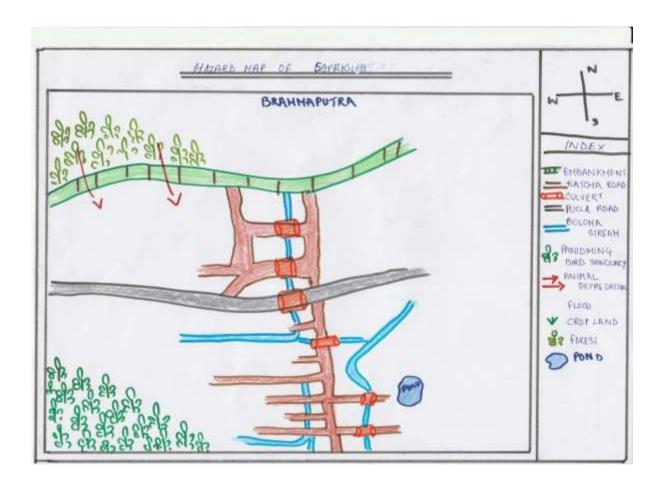
Appendix VII (B)

Resource map of Sapekhati Bam EDC



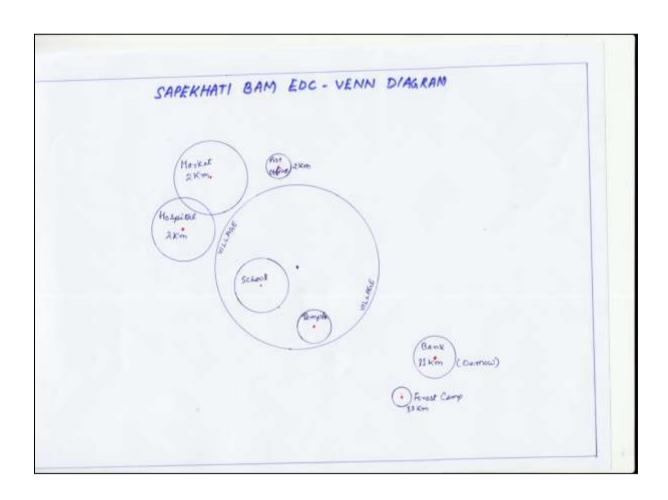
Appendix VII(C)

Hazard map of Sapekhati Bam EDC



Appendix VII (D)

Venn Diagram



Appendix VIII

Entry point Activities

লালেকাভি বাম EDC সক্ষকালীন কামৰ বিবৰণ

र्वाक सर	কামণ দাম	স্থিত্যে বিজ্ঞা	অনুমানিক টকাৰ মূল্য
,	ভারনিকটি হল নির্মাণ	5) an x 80 70	38,00000/-
*	কমিমিটটি হলৰ বাবে আচৰাব		3,40,000/-
10	বিশুদ্ধ খোৱা পদী আহিলা খোগান	১) ১৫০ ঘনলৈ ১৫০ টা ফিল্টান	8,80,000/-
	সৌৰ চাতি	5) 50 BI MOMBIS	0,00000/-
đ	পত পালন	৯) ৮০ টা পরিয়াললৈ একোজনী গাছবি বা ছালালী ৫০০০/- উক্তিত হোগাল	8,60000/-
	্ডাৰণ নিৰ্মাণ	১) গ্ৰথীয়া থানৰ সন্ধ্যত	\$,00,000/-

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Divisional Forest Officer (T)
Swasagar Division, Sivaeegar

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<u>সাপেখাতি বাম EDC</u> দীৰ্ঘকালীন কামৰ বিবৰণ

চুম্বিক নং	কামৰ নাম	সবিশেষ বিবৰণ	অনুমানিক টকাৰ মূল্য
5	সীমাৰ পকীবেৰা নিৰ্মাণ	১) সপেখাতীবাম এল. পি. স্কুলৰ চাৰিওকাৰে = ৩০০ মিটাৰ	
		২) ককিলামাৰি এল. পি. জুলৰ চাৰিওকায়ে = ৩০০ মিটাৰ	
		ত) গোলাপথাৰ এল, পি. জুলব চাৰিওকাৰে = ২০০ মিটাৰ	
		চাবিওকাংগ = ১০০ মিটাব চাবিওকাংগ = ১০০ মিটাব	
		৫) সাপেখাতী বাম বিজ্ঞানিব চাৰিওকাৰে – ৩০০ মিটাৰ	
		মুঠ = ১২০০মিটাৰ প্ৰতি মিটাৰত ৭০০০/- X ১২০০মিটাৰ	b8,00000/-
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		মুঠ = ২,৩৫০ কিঃমিঃ প্রতি কিঃমিঃ ১,০০০০০/- x ২,৩৫০ কিঃমিঃ	2,00,000/-

Divisional Forest Stricer. Forest Range Officer Sivasager Division, Sivasager Sivasagar Mange

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Provident / Secretary for Separation
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Divisional Forest Officer (T) Contd... Sivasagar Division, Sivaeagar

সাপেৰাতি বাম EDC দীৰ্ঘকালীন কামৰ বিবৰণ

চ্মিক নং	কামৰ দাম	সবিশেষ বিবৰণ	অনুমানিক টকাৰ মূলা
8	জীৰণি চৰা নিৰ্মাণ	১) পাঁচ ঠাইত পাঁচটা প্রতি ঠাইত — ৫০,০০০/- x ৫ টা	2,60,000/-
¢	পুল নিৰ্মাণ	১) ৫ ঠাইত প্রতি পুলত ৫০,০০০/- X ৫ টা	2,60,000/-
6	বিকলাংগ লোকলৈ সংস্থাপন	১) ১০ জন x ৫০,০০০/- টকা	4,00000/-
٩	ন্দুল মেৰামতি	সাপেথাতী বাম এল. পি. স্কুল	@0,000/-
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Olvisional Forest Officers orest Range Officer Sivasager Orvision, Sivasagar Plance

Divisional Forest Officer (T)
Swasagai Division, Sivasagai

Appendix IX (A)

Training list of Sapekhati Bam EDC (Proposed)

	SL	Name		Computer List
	PTO		MAGE	Address
	1	Sni Bikash Sazema	24	Sarekhali Bam
	2	" Krcishna Sarema	20	Sapekhali Barn
	25	" Growesh Boxal	22	Sarakhati Bam
	4	Miss Nitu Somma	17	Sapekhali Bam
	4	" Milam Chetzy	14	D0
4	6	Sni Rajon chotry	16	Do
	6	" Sanjilo Sarema	18	Do
	声	" Luhit chatry	15	Do
	8	"Bishal Biswakoruma	15	00
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	20	" Rashwi Biswakorema	34	Do
	75	" Granga Rai	22	DO
	.16	" Karcan Chetrey	17	200
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Divisional Forest Officer (T) Swasagar Division, Sivasagar Contd...

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E'D'C	06	Sapekati	Bam	, Sivaraga

		Computer List		
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4	Heeralal Bhujel	14	1×	
2	Radhika Bhujel	15	×	
3	Deepa mahanta	13	3-1/11	
5	Rima Sarmah	14	×	
5	Kamakhya Sarmah	21	× pass	
26	Kavita Sarmah	14	×	
7	Anjank Sarmah	15	×	
28	Arun Sarmah	14	(×	
30	Puja Sarmah	23	B. A Pass	
30	Rashmi Rai	21	XII	
34	Azirt Rai	17	×	
32	Angal Adhikari	14	1×	
39	Milan Mahanta	16	1×	
364	Nirmal Sarmah	23	×II	
	04/2017			

Sri Ran lal samoh

President / Secretary Espaphaliam ECO-Development Connitrea Bristage Otrison

> Divisional Forest Officer (T) Sivasagai Division, Sivasagar

Contd....

7/		Age	ADDRESS
14	Name	31	Sapekati
2	Mrs. Indira Rigal	23	De
3	" Uttara Rigal	23	000
4	1. Rashmi Sarmah	36	100
5	" Mina Sarmah	40	De
6	Pobitra Adhikari	29	90
7	" Ganga Giri	43	00
8	11 Joinati Rai	23	Do.
9	" Rashmi Rai " Kendra Kumari Sarnah	34	0.0
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13	" Sita Sarmah	34	20
12	" Aruna Bhujel	29	Do
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Divisional Forest Officer (T) Sivasagai Division, Sivasagar

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4	" Babita Devi	39	D0
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6	" Tara Devi	32,	-Do
7	" kal pama De vi	35.	Do
9	"Debika Devi	38	DO
9	" Rukmini Chafrey	35	Do
10	v Del Devi Mala	24	Do
11	. Jasiya Sahabni	35	. Do
- 12	" Jaleshari Mala	40	Do
154	" " Anjour. Peau	30	80
14	" Ramila Timoina	28	Do
15	, Mina Rai	35	Do
16	· Benzikumari Chelry	45	Do
17	- Rita Chetrey	40	Do

Divisional Forest Officer (T)
Sivasagar Division, Sivasagar

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Divisional Forest Officer (T)
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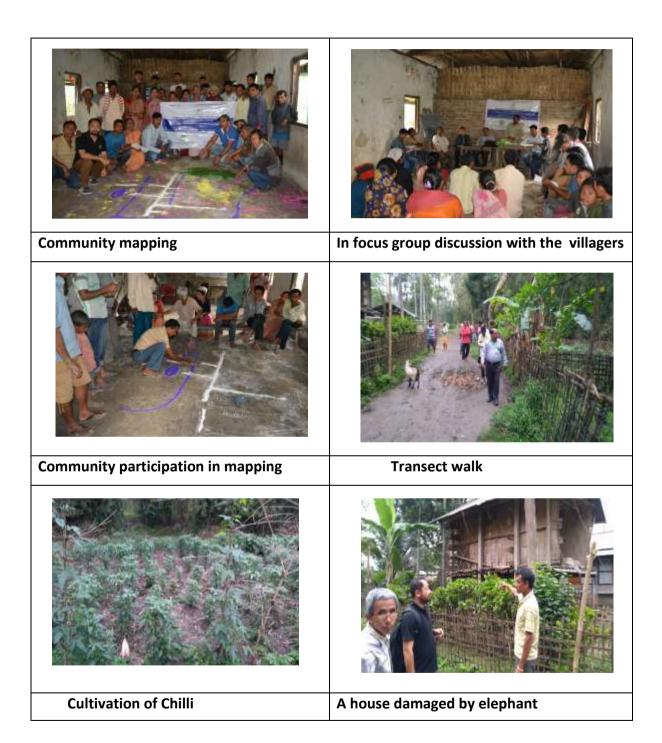
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> Divisional Forest Officer (T) Sivasagai Division, Sivasagar

Appendix X

Photographs



Appendix XI

GPS Coordinates

1. Sapekhati L.P. School	N-27°10'16"
	E-94°39'47"
2. Temple Gorokhiya	N-27°10'6"
	E-94°39'50"
3. Sapekhaiti Culvert	N-27°11'5"
	E-94°40'45"
4. Sapekhaiti Bam	N-27°10'22.08"
	E-94°37'30"

Sivasagar Division (Sapekhatibam EDC)				
Sl. No.	Amendments Suggested	Corrections Done		
1.	Change in EPA	Chapter 7 and Appendix VIII		
2.	Table- F: Physical Infrastructure	Chapter 3 (Sub-heading: 3.8)		

Divisional Forest Officer (T)
Swasagar Division, Sivasagar