



Assam Forest Department



ASSAM PROJECT ON
FOREST & BIODIVERSITY
CONSERVATION



AGENCE FRANÇAISE
DE DÉVELOPPEMENT

BARADOVA JOINT FOREST MANAGEMENT COMMITTEE (JFMC)

BONDAPARA RANGE, KAMRUP WEST FOREST DIVISION

CENTRAL ASSAM FOREST CIRCLE

MICRO-PLAN

(2016-17 to 2025-26)

Prepared by Baradova Joint Forest Management Committee

**assisted by
Assam Forest Department
&
COMPELO
(IIE, RGVN and CML)**

July 2016

Approved.

**Divisional Forest Officer
Kamrup West Division
Bamunigaon**

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List of Acronyms

ACF	Assistant Conservator of Forests
AfD	Agence Francaise de Development
APFBC	Assam Project on Forest & Biodiversity Conservation
APL	Above Poverty Line
BPL	Below Poverty Line
CCF	Chief Conservator of Forests
CF	Conservator of Forests
CML	Centre for Microfinance and Livelihood
COMPELLO	Consortium On Micro Planning And Enhancement Of Livelihood Opportunities
DCF	Deputy Conservator of Forests
DFO	Divisional Forest Officer
EDC	Eco-Development Committee
EPA	Entry Point Activity
FCA	Forest (conservation) Act, 1981
FD	Forest Department
FRA	Forest Rights' Act
FV	Forest Village
FYP	Five Year Plan
GHG	Green House Gases
GoI	Government of India
GP	Gaon Panchayat
Ha	Hectare
HH	Households
IIE	Indian Institute of Entrepreneurship
JFMC	Joint Forest Management Committee
MoEFCC	Ministry of Environment, Forests & Climate Change
MT	Metric Ton
NTFP	Non Timber Forest Produce
OBC	Other Backward Classes
SDP	Skill Development Programme
ST	Scheduled Tribes
SC	Scheduled Caste
PHC	Primary Health Center

PMU	Project Monitoring Unit
PRA	Participatory Rural Appraisal
RO	Range Officer
RGVN	Rashtrya Gramin Vikash Nidhi
SDG	Sustainable Development Goals
SLF	Sustainable Livelihood Framework
SWOT	Strength Weakness Opportunity & Threat
WPC	Working Plan Circle

BARADOVA JOINT FOREST MANAGEMENT COMMITTEE
BONDAPARA RANGE, KAMRUP WEST DIVISION, CENTRAL ASSAM CIRCLE
Micro-Plan for 10 Years
[Livelihood Development Plan & Forest Development Plan]

Table of Contents

Section No	Heading	Page No
1	Introduction	1
2	Village Socio-Economic Profile	2
3	Livelihood Opportunity Analysis	7
4	Livelihood Development Plan	13
5	Forest Development Plan	14
6	Annexure-I	
	List of Beneficiaries Identified For Livelihood Generation Activities	
	(1) Livestock	

1. Introduction

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 non-forest 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.

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, *Rashtriya Gramin Vikas Nidhi* (RGVN) and Centre for Microfinance and Livelihood (CML) has been formed to implement (*inter-alia*) the micro-planning and livelihood development under the above project. The above consortium has been titled as 'Consortium for Micro Planning and 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.

Micro-Plan for the Baragarh Sudem JFMC

This document gives the Micro-Plan for the Baradova JFMC, which is located in the Kamrup District of Assam. The JFMC falls under the jurisdiction of the Kamrup West Division of the Central Assam Forest Circle. The profile of the community is given in the next section.

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 a Participatory Rural Appraisal (PRA) process undertaken by the community and personnel of Indian Institute of Entrepreneurship (IIE) Guwahati in June 2016. The micro-plan has been compiled by IIE based on the project guidelines. The document has been discussed and finalized for adoption in July 2016.

2. Village Socio-Economic Profile

Location

The Baradova Joint Forest Management Committee (JFMC) has been formed to cover the existing community dwelling in Baradova, Dolgama, Upper Hasi, Dagaon, Kadampara villages located on the fringe of the Bondapara Reserve Forest. The area covered by the above JFMC falls within the Boko Development Block of Kamrup (R) District of Assam.

Appendix-1 gives the Village Map.

Key Information

The key information of the JFMC is furnished below.

Table-A: Key Information of the JFMC

Name of the JFMC	Baradova
Habitation	Baradova, Dolgama, Upper Hasi, Dagaon, Kadampara
Name of Revenue Village	Baradova
Name of the Gram Panchayat / VCDC	sukuniapara
Revenue Circle	Boko
District	Kamrup
Forest Division	Kamrup West
Forest Range	Bondapara
Forest Beat	Gamerimura
Year Formed	2013
Description of Boundary of JFMC	As below North: kadampara village. South: bamunigaon East: Panipahar. West: upper hasi

Source: JFMC Records & Discussions during PRA Exercise in June, 2016

Additional details are given at **Table-1** of Record-I. (Given at Annexure)

Brief Details of the Executive Committee & General Body

The brief details of Executive Committee & General Body of the JFMC are contained in the table, which is given below.

Table-B: Brief Details of Executive Committee & general Body

Name of President	Letchson Marak
Name of Member Secretary	Mamat Chandra Kalita
Name of Treasurer	Minu Marak
No. of Members in Executive Committee	Male: 10 Female: 05
No. of Members in the General Body	All the HH head of the JFMC

Source: JFMC Records

Households & Population Structure

The village has 310 households, of which 285 households are BPL (Below Poverty Line) households. All the households are headed by female.

The total population is 1543, of which 791 are male and 752 are female members. All the population belong of the village belong to ST.

Table C: Age and Sex distribution

Sex/Education	Below-14	Between 15-30	Between 31-45	Between 46-60	Above-60
m	142	298	165	120	66
f	166	286	126	95	79

Source: PRA

Table-2 of Record-I may be referred for further details in the above regard.

From this, it is inferred that:

- (1) The average number of persons in a household is 4.97.
- (2) The sex ratio is 951 females per 1000 males in the village.

Education & Skills Development

42.90 percent of the population is reported to be illiterate. Most of the community members have received school level education. On the other hand, relatively fewer households have college educated members.

Table D: Education distribution

Age/Sex	Illiterate	Up-to IV	V-X	HS	Graduate
M	336	242	192	18	3
F	326	236	162	22	6

Source: PRA

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

- a) Agriculture
- b) Horticulture
- c) Sericulture
- d) Handloom and Weaving

Government has been active in promoting formal skills development programmes in the country as well as in the state. However, no such programme has been carried out in the habitation or in nearby areas.

Soil

The soil type of the project area includes:

- Alluvial soil in low lying (clayey soils) and plain areas (loamy soils).
- Red soils in hillocks, hilly parts and forests areas.

Both types of soil can support different kinds of crops, as the soil is reported to be fertile on the whole.

Water

The area is drained by River Sukunia, which flows from the adjoining hills / mountains of Meghalaya into the project area before joining the River Brahmaputra to the north / south. This is a perennial river.

The Brahmaputra Valley is also marked by the presence of wetland, locally called as 'beels', which are rich in fish and other aquatic resources. The village has a wetland where different fish species of Carp (Grass Carp, Rohu, Catla, etc) and Catfish(Magur, Barali, etc)

Climate: Temperature &

The project area gets heavy rainfall during the month of June, July, august and receives moderate rainfall in April, may, and sept. During summer generally the

Rainfall	area experiences of about 1300 mm rainfall. Temperature in winter varies from 10c to 24c and in summer 24c to 37c.
Forest & Bio-diversity	<p>a) Forest type:</p> <p>The formation of forest falls under eastern hill sal forest khasi hills sal type 3c/c1 a(ii). This type occurs in the hilly areas of forest reserves of the Division and sal forms pure patches and groups along the ridges and spurs, the villages and the middle slope being occupied by the miscellaneous species and bamboos. Of late existence of bamboo is nil because of illegal collection.</p> <p>b) Species composition: Other associates are Makrisal (schima wallichii), jia (lannea grandis), koroï (albizzia procra), amlokhi (emblica officinalis), dodhkhuri (halarrhena antidysentrica), bhatghilla (oroxylum indicum), parali (stereosparnum personatum) etc. found in scattered patches.</p> <p>Additional details in this regard are given at the 'Forest Development Plan'.</p>
Land Use Pattern	<p>Appendix-2 gives the land-use pattern of the village. From the same, it is seen that the land-use in the village is as follows:</p> <ol style="list-style-type: none"> 1. 275 hect. of patta land (45% are shallow and the rests are low lying areas) 2. 15 hect. areas of the shallow land are covered by complexes of 4 no. of school, 1 no. of village library, churches and temples, playground and fields, served land for public use.
Land Holdings	<p>The type of households as per land-holding is given at Table-3 of Record-I. From the same, it is seen that:</p> <ul style="list-style-type: none"> • 12 of the households are landless; • 285 of the households are small farmers (2-10 Ha). • 13 of the households are marginal farmers (< 2 Ha).
Livestock	<p>The total number of livestock in the village is 2647 (approx.). The main types of livestock possessed by the households include:</p> <p>Cows: 568 Goats: 224 Pigs: 633 Poultry: 1222</p> <p>Table-4 of Record-I may be referred to for the details in the above connection.</p>
Village Infrastructure & Communication Facilities	<p>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 is borne out by Table-5 of Record-I, which gives the present status of the village infrastructure.</p> <p>From the above table, the following have been noted with regard to village infrastructure:</p> <p>Physical Infrastructure: The habitation is deprived of basic physical infrastructure like paved roads, electricity, water supply etc.</p> <p>Education & Health Facilities: There are minimal educational and health facilities. Public transport is not available, and the community members have to</p>

use bicycles to move around.

Govt. Offices: The government offices (such as Police station, Gram Panchayat office, 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, the community members do not have bank accounts or postal savings accounts.

Agricultural Crops

The details of the agricultural crops grown in the village is available at **Table-6** of Record-I.

The above shows that the following are the main crops grown in the village.

- a) Kharif Crops: Paddy-Sali; Seasonal Vegetables-Ridge Gourd, White Gourd, Bottle Gourd, Okra, etc.
- b) Rabi Crops: Seasonal Vegetables-Cauliflower, Cabbage, Potato, Mustard, Sesame, etc.
- c) Others: Leafy Vegetables, Jack Fruit, Mango, Pomello, Papaya, etc.

Most crops are rain-fed, except for the Rabi Crops, which are cultivated under irrigated conditions.

Crop Production Profile

- (a) **Table-7** of Record-I may be referred to for the production and yield details of The average yield is stated to range from 1.6 MT to 2.2 MT (of rice) per hectare. Each household may be producing about 0.8-1.2 MT of rice per crop, given its limited land holding.

Leaving out harvesting and storage losses of about 15-20%, the per capita daily availability of rice per household member is estimated to be about 550-600 grams, which is just adequate for a rural person as per the nutritional guidelines of the Indian Council of Medical Research (ICMR). Hence, it is inferred that such farming is mainly at the sustenance level, and there is little (if any) marketable surplus. Income generation from the cultivation of paddy is thus limited. The average household income may be about Rs 3,200-5,500 per annum from the sale of paddy.

Table E: Seasonal cropping pattern

Agricultural crop	Sowing	Plucking	Harvesting
Til(Sesame seed), mustard	June-July	September-October	November-December
Ginger	November-December	February-March	April-May
Paddy	May-June	September-October	November-December
Corn	May-June	July-August	August-September
Horticulture	Throughout the year		
Rice	Throughout the year		

Source: PRA

Fodder Availability	<p>The matter of fodder availability in the village is dealt with at Table-8 of Record-I. The above shows that the main sources of fodder in the village are as follows:</p> <ul style="list-style-type: none"> a) Paddy Waste b) Household Kitchen Waste c) Surplus Vegetables d) Grazing Land
Markets	<p>Table-9 of Record-I shows the location of the different markets from the village. The main markets used by the community are as follows:</p> <ul style="list-style-type: none"> (a) Grocery / PDS: Sukunia (b) Weekly / Bi-weekly Market: : Sukunia (c) Major Market: : Boko
Water Resources	<p>The water resources are tabulated at Table-10 of Record-I. The main water resources with the water availability is as follows:</p> <ul style="list-style-type: none"> (a) Umsujan and Batagurang Nala (Water Availability: Perennial / Seasonal) (b) Hasi <i>pukhuri</i>, Dagaon <i>pukhuri</i> (Wetland) (Water Availability: Perennial / Seasonal) (c) Sukunia River (Water Availability: Perennial / Seasonal) (d) Kutcha Well (Water Availability: Perennial / Seasonal)
Energy Consumption	<p>Table-11 of Record-I shows the major sources of energy in the village. The same have been listed below.</p> <ul style="list-style-type: none"> a) Fuel Wood- Households Depending: 310 Nos. Source: Firewood Plantation b) LPG-Households Depending: 22 Nos. Source: Local Market
Socio-economic status	<p>Social set-up: The village is inhabited by tribal. They do not have a caste system. The society is not marked by deep social divisions. The observed position of women is satisfactory.</p> <p>Economic Condition: The economic position is not satisfactory. The main livelihoods are Agriculture. Most households earn Rs. 15,000 to Rs. 25,000 per year.</p> <p>There is no large-scale migration of the youth and others for livelihoods. Additional details are available at the next section.</p>
Maps	<p>Appendix-1 gives the following maps, based on PRA exercise:</p> <ul style="list-style-type: none"> • Village Map • Village Social Map (with the names and particulars of members in PRA) • Village Resource Map

3. Livelihood Opportunity Analysis

PRA Exercise Team from IIE Guwahati carried out PRA exercise in Baradova JFMC as follows:

Date: 12th May, 2016 **Location:** Community Hall, Baradova Village,
Numbers Present: 30

In Presence of: JFMC office bearers, Village Headman, community members, Forest Department personnel, etc.

Objective of PRA The objective was to study the existing household conditions and obtain other primary data about the community for developing the livelihood options and the forest development plan.

Tools Used & Outcomes of the PRA Different tools were used and outcomes obtained. These include:

Social Mapping
Wealth Ranking
Seasonality of Livelihoods
Venn Diagram

Appendix-3 furnishes detailed information of the above.

Livelihood assessment of the JFMC:

Human capital

1.1 Skill profile: In the project area, as far as human capital is concern, the people are traditionally skills in the farming sector. All the household reported to be farmer in nature and do subsistence agriculture for self-sufficiency. The farmers focus on growing enough food to feed themselves and their families. The output is mostly for local requirements with little or no surplus for trade.

Although it is also seen from the survey that there is an immense potentiality of sericulture, weaving and cane and bamboo industry in the area.

1.2 Occupational profile: In the project area, it is seen that majority of the households having land holding from 2-10 hector (285 HH). It is also found that 12 HH who did not have any land for farming. It is found that the relationship between land holding and livelihood strategies that larger landholding did not imply higher income after a particular class or stage. Having higher land holdings did not suggest a greater dependence on land in terms of higher agricultural income (in cash or food) from their lands.

This suggest need for building skills like cane and bamboo, tailoring and other non-farm based activities so as to enable household to diversify their basket of livelihood option.

1.3 Level of Education: Sustainable livelihood is the capability of people to make their living comfortable and improve their quality of life without endangering the livelihood options of others and education plays an important role to achieve this. The provision of educational opportunities to all people must be facilitate to alleviate poverty and social empowerment.

In the project area, it is seen that there is no facility to attain higher education. There is a need to provide both formal and informal education in the area to equip vulnerable with entrepreneurial and related functional literacy skills.

1.4 Source of Information:

Source of information always a factor for successful society. Perhaps the reason for backward in the forest area is the lack of access to information. There is no such medium (only radio) available in the project area. There is also negligence of forest offices to provide information to the people. Source of information became an important factor so that people may become upto date to compete with modern society with a better livelihood opportunities gathered from various source.

1.5 Culture and tradition

The culture and tradition of a community shows a communities civilisation. The project area is highly cultured and their traditional way of living brought immense potentially of tourism in the area.

1.6 Gender Participation in day to day life

In the project area, males are largely engaged in farm activities such as land preparation, sowing, weeding, inter culture and harvesting. Where females are involve in cooking, child care, livestock rearing etc. It is important to analyse gender participation to see how value addition can be provided based on their skills which they perform in day to day life.

1.7 Migration

Migration is one of the important factor in analysing human capital. Out-migration or in-migration is take place due to available opportunities for better livelihood. In the project area there is no such out-migration or in-migration seen in the PRA. This is due to the less high educated persons available in the area. As education plays an important role in the migration factor. Higher education level increases the migration because people willing to go outside for better livelihood option. The family size also limited.in this certain case migration from ole place to another is seen negligible in te project area.

2. Social Capital

Social capital has been used to explain the improved performance of diverse groups, the growth of entrepreneurial firms, superior managerial performance, enhanced supply chain relations, the value derived from strategic alliances, and the evolution of communities.

In the project area, only limited number of SHG groups are available. In this case, there is a need to strengthen the SHGs and build up village communities and cooperative societies for better performance of the livelihood opportunities in the area.

It is also seen that the delivery of government schemes to the people is very less. Social schemes are yet to be received in the area.

3. Natural Capital

The project area is renowned for its biological diversity. Key natural assets include trees like Haldu, Gamari, Titachopa, Nahar, Bonsum, Bogipoma, Bola etc. These high value of trees and their extraction for fuelwood collection, zhum cultivation, timber exploitation (either for local consumption or for sale to urban centers), causes deforestation and it is directly connected to rural livelihood strategies.

This broad-based dependence on natural resources in the project area, we do not put forward an expectation regarding distinctions in access to natural capital across the populations. There is a need to provide alternative such as LPG connection for cooking etc would provide a lesser dependence in the forest. Other livelihood option to be build up for the same cause to preserve the natural

resource in the project area.

4. Economic & Financial Capital

Economic & Financial Capital indicates the capital base (cash, credit/debt, savings, and other economic assets, including basic infrastructure, production equipment and technologies) which are essential for the pursuit of any livelihood strategies.

In the project area, it is seen that only limited number of people (2 percent of the total households) having their bank accounts. Other facilities like having health insurance, crop insurance, bank loans, availing micro finance is nil.

In this case there is a need to improve the Economic & Financial Capital in the area by providing bank accounts, health insurance, crop insurance, bank loans, availing micro finance in order to improve the livelihood scenario of the area.

5. Physical Capital

Physical capital include the basic infrastructure that people need to make a living, as well as the tools and equipment that they use. For example, transport and communication systems, shelter, water and sanitation systems, and energy.

When we observe the availability of physical capital in the project area, the situation is very poor. There is no good roads, transport and communication systems is very weak, water and sanitation systems are not adequate and access to electricity is nil.

In order to improve the livelihood of the project area, emphasis should be given to improve the physical structure of the JFMC area by providing road, water and sanitation facilities and solar lights alternative to electricity.

Ranking

Ranking exercise has been done for the following:

- **Livelihoods & Skills Development**
- **Entry Point Activities (EPA)**

Appendix-3 elaborates the above. From the same, it is stated that:


Ranking of Livelihoods & Skills Development

1. Agriculture
2. Horticulture
3. NTFB
4. Weaving/Handloom in Modern Tools
5. Bamboo Product Making

Table F: Ranking of EPA

	Village EPA as ranked	Details (Appendix-3 has additional particulars)
1.	LPG Connection	288 HH
2	Electricity, Solar Light	310 HH
3.	Education	High School within the JFMC
4.	Drinking water	Setting up community safe drinking water facility in cluster mode. (10 Nos.)
5.	Road	Pucca Road within the village with around 1.5 KM.

Source: PRA


Divisional Forest Officer
Kamrup West Division
Bamunigaon

- An arrangement of working capital worth Rs 2 Lacs should be

arranged from the EPA fund for promoting Livelihood activities.

- A low cost community workshed cum JFMC office to be set up within the JFMC boundaries.
- A low cost livestock rearing shed have to be arranged form the EPA fund for promoting a common community Livelihood Activity.

Livelihood opportunities

Livelihood Opportunities were identified as follows:

Keeping the view of the present livelihood of the villagers, an overall assessment of skill needs/ skill preference of JFMC have been analysed. The categorisation has been divided into farm sector and non-farm sector. The responses towards preference towards skill development training programmes have been presented in the following chart.

Table G: Livelihood Opportunities ranking

Type of training programme	Mark the preferred option				
	1	2	3	4	5
Agricultural and allied activities related	1	-	-	-	-
Horticultural related	-	-	-	4	-
Livestock related	-	2	-	-	-
Handicraft related	-	-	-	4	-
Handloom related	-	-	-	4	-
Others (NTFP)	1	-	-	-	-

Source: PRA

It is observed during the PRA that preference for agriculture and allied activities like bee keeping, sericulture related training programmes is highest. This is because of the available resource present in the JFMC area. The second and third preference is given to Horticulture and livestock rearing such as piggery. Handicraft sector like skill development on cane and bamboo products and handloom where tailoring and weaving activities are came less into focus.

- Agriculture & Horticulture
- Livestock
- NTFP

Additional discussion about the above has been given in the action plan with skill development training programme and additional discussion is given below.

Forest Development Opportunities

In Baradova JFMC, ranking has been done in order to understand how people are aware regarding opportunities lead to forest development. The following details provide the rank wise forest development opportunities in the project area. (Matrix ranking is given in Annexure)

1. Plantation of firewood, 2. Raising of nursery, 3. Plantation on medicinal, NTFP etc. 4. Plantation of tree, 5. Plantation of bamboo, 6. Demarcation of land, 7. Development of degraded forest, 8. Natural regeneration, 10. Forest protection

Agriculture & Horticulture

Table-12 under Record-2 may be seen in this connection for opportunities in the areas of agriculture and horticulture.

The main constraints are:

- a) Low Production
- b) Storage & processing
- c) Marketing

The opportunities are:

- a) Increase annual crop cycle
- b) Collection Unit, Packaging
- c) Institutional linkage for marketable outputs

The suggested programme is:

1. Bee keeping and food processing

Livestock

Table-13 furnishes additional information about opportunities for livestock rearing.

The main constraints are:

- (a) Unable to buy fodder from market due to poor financial condition.
- (b) Trees fodder n crop residue are available only for 3-6 months. Green fodder is also not available for the whole year.
- (c) No veterinary care clinic
- (d) Lack of knowledge about the proper rearing of live stock

The opportunities are:

- (a) Higher income from livestock rearing.
- (b) A huge demanded market for milk is available as Kokrajhar district head quarter and West Bengal state is too far from the JFMC.

The suggested programme is:

- (a)Piggery
- (b)Poultry
- (c) Cow

NTFP

The opportunities for NTFP are tabulated at **Table-14** under Record-2

The main constraints are:

- (a) Less collection of NWFP
- (b) No processing units

The opportunities is:

- (a) There is a huge demand for NWFP. To mitigate the demand with availability of fertile fallow land, more plantation can be done.

The suggested programme are:

- (a) Plantation of Food plants,
- (b) Medicinal Plant etc.

Specialized Skills

For skills development, the opportunities are tabulated at **Table-15** under Record-2

The main constraints are:

- (a) Low skill profile
- (b) Lack of product diversification
- (c) Lack of research on product quality
- (d) Lack of TQM techniques

The opportunities are:

- (a) Providing good communication facility
- (b) Training of the skill for capacity building
- (c) Financial assistance from govt.

The suggested programme are:

- Training on Modern Tools and Equipment related to handloom and handicraft.
- Providing modern technology to the villagers
- Skill Up gradation & Training on New Product Development and Product Diversification
- Setting up a raw material bank
- Providing a bulk buy arrangement of the finished product with institutional buyers.
- Market linkage for final product.

Credit Facility

Table-16 under Record-2 discusses this aspect.

The main constraints with the reasons are:

- (a) Financial exclusion
- (b) Higher rate charged by the private money lender.

The opportunities are:

- (a) setting up financial institution extension center
- (b) Adequate awareness.

The suggested programme is:

- (a) Setting extension centers in the nearby areas.

Strategic Interventions

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

- a) **Agriculture & Horticulture:** Tractor operation training, Agri-skill development programme, Training on insecticides, pesticides, hybrid cultivation
- b) **Livestock:** Piggery, Poultry
- c) **NWFP :** Plantation of Food plants, Medicinal Plant etc
- d) **Specialized Skills:** Training on Modern Tools and Equipment, Providing modern technology to the villagers, Skill Up gradation & Training on New Product Development and Product Diversification, Setting up a raw material bank, Providing a bulk buy arrangement of the finished product with institutional buyers.
- e) **Credit facility:** Setting up modern financial institution in the nearby areas

4. Livelihood Development Plan

Income Generating Activities The main income generating activities as planned at the village are:

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

Farm Sector :

1. Bee Keeping
2. Sericulture
3. poultry and piggery
4. lac cultivation
5. Horticulture
6. NTFP

Non-Farm sector:

1. Handloom/ Weaving
2. Handicraft

Source: Table-32 of Record-4

SHG Activities SHGs of the village can plan the following activities:

1. To organise and form Joint liability group for
2. To involve the villagers in Livelihood Activities collectively.

Source: Table-33 of Record-4

Exposure Trips The following exposure trips are planned:

1. Exposure to Bee Farm in Kamrup District
2. Visit to veterinary Department

Source: Table-34 of Record-4

Summary of Action Plan As attached in next page.

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) Rashtriya Krishi Vikas Yojana (RKVY) - for agricultural and allied development
- (c) Rashtriya Krishi Sinchay Yojana (RKSJ) - for irrigation, including watershed development
- (d) National Rural Livelihoods Mission
- (e) Skills Development schemes
- (f) 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 period.

5. Forest Development Plan

This Forest Development Plan has been prepared after a detailed PRA exercise at the village level as a part of the Micro-Plan of Baradova JFMC. The objective of this plan is to provide for the sustenance of the conservation and bio-diversity values, environmental functions and productive potential of the forests assigned to the JFMC; while meeting the consumption and livelihood needs of the community in a sustainable manner.

1. Status of the JFMC Forests

The micro-plan takes into consideration the following categories of the JFM Forests of the Baradova JFMC:

- Forest areas assigned to the JFMC by the Forest Department; and
- Areas planted / to be planted on community lands and other lands outside the notified forest area.

The status of both the above categories of JFMC forests is briefly discussed below.

1.1. Forests & Their Conditions

The details of the status of forest areas assigned to the JFMC have been furnished at Table-3.1 under Proforma-3 ('Forest Development Plan'), which has been attached as Annexure to this micro-plan. After considering other areas planted (or to be planted), the conditions of the forests of the Baradova JFMC have been summarized below.

Table-1: Conditions of the Forests of Baradova JFMC

Identification	Area of JFMC Forest (Ha)	Distance from Village (Km)	Condition of Forest [Good - Forest with crown density of 40% of more Else 'Degraded']	Frequency of Use by Community [2-3 m / 3-6 m / 6-9 m / Over 9 m]
(A) Assigned Forest				
RF / PF Name: Bondapara Range, Kamrup West Division Beat: Gamerimua Compartment:	200 Ha	0Km	Good Area: - 150Ha Degraded Area: 50 Ha	2-3m
(B) Other Planted Area				
Location: Type of Forest: Deciduous Moist VF / Other _____			Good Area: - Nil Degraded Area: Nil	
TOTAL	200 Ha		Good Area: - 150Ha Degraded Area: 50 Ha	

Source: Proforma-3, Table 3.1 / Discussions with Forest Department personnel & Community members

It is seen that the Baradova JFMC has 200 Ha under its forests, of which 150 Ha is 'Good' and 50 Ha is 'Degraded'.

1.2. Forest Soil Type

The forests of Baradova JFMC are located in loamy type(s) of soil. Some salient points of the forest soil type have been given in the following table.

Table-2: Forest Soil Type in JFMC

Parameter	Status in Assigned Forests	Status in Other Planted Areas
Fertility Level	2.3 to 2.94% organic. The available N, P205 and K20 content of the Soil is comparatively less.	-
Soil Erosion Status	-	-
Presence of:		
(a) Silt	24%	-
(b) Mud-flat	31%	-
(c) Newly accreted land	Low	-
(d) Sand dune	45%	-

Source: Proforma-3, 'B. Forest Soil Type' / Discussions with Forest Department personnel & Community members.

For the Baradova JFMC; the salient points of the forest soil type are summarized below:

1. Entisol (30.3%)
2. Inceptisol (51.3%)
3. Alfisols (11.3%)
4. Ultisols (7.1%)

1.3. Existing Composition of Flora

In the forests of the Baradova JFMC, the existing composition of the flora has been given as follows. It may be noted that the local forests are classified as deciduous moist Forests.

Table-3: Existing Composition of Flora in the Baradova JFMC

Parameter	Local Name(s)	Biological Name(s)
Major Forest Species	Teak	<i>Tectona grandis Linn</i>
Associates	Gamari	<i>Gmelina Arborea</i>
Shrubs	Dhekia	<i>Ferns</i>
	Bhot jalakia	<i>Capsicum chinense</i>
Medicinal Plants	Arjun,	<i>Terminalia arjuna</i>
	Hilikha	<i>Terminalia Chebula</i>
	Neem	<i>Azadirachta indica</i>
	Amlakhi	<i>Phyllanthus emblica</i>

Produces		
Others, if any	Jori bet	<i>Calamus erectus</i>
	Jati bet	<i>Calamus tenuis</i>
	Raidang bet	<i>Calamus rotang</i>
	Chuli bet	<i>Calamus flagellum</i>
	Lejai bet	<i>Calamus floribundus</i>
	Kako Bah	<i>D. hamiltonii</i>
	Pahari Jati Bah	<i>Oxytennera parvifolia</i>
	Dulu Bah	<i>Schizostachyum dulloa</i>
	Amlakhi	<i>Emblica officinalis</i>
	Arjun	<i>Terminalia arjuna</i>
	Agar	<i>Aquillaria agallocha</i>

Source: Proforma-3, 'C. Composition of Existing Fauna & Flora' / Discussions with Forest Department personnel & Community members.

2. Other Inputs for the Forest Development Plan

The following sub-sections discuss the other inputs for the Forest Development Plan of the Baradova JFMC.

2.1. Past Protection Measures of the JFMC

The measures taken by the Baradova JFMC for forest protection in the past have been discussed as follows.

- (a) Number of households involved: 310
- (b) Number of people involved: 310 (1 Person Per House hold)
- (c) Summary of the measures: Not available
- (d) Any formal mechanism: Not available

[**Source:** Proforma-3, 'JFMC Status - viii + ix' / Discussions with Forest Department personnel & JFMC members]

2.2. 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-4 (A): Domestic Requirement of Forest Produce per Household of the Baradova JFMC

Name of Forest Produce	Average Household Requirement		How met at Present	Source
	Frequency of Requirement	Approx. Qty		
Firewood	Frequent	65-80 kg		Forest

Timber for House	Once in a year	2 nos.		Forest
Small timber for Implements	-	-		-
Pole / Bamboo	Once in a month	2-3 bamboo / per month		Forest
Fodder from Forest	Frequent	5-6 kg per day		Forest
NTFP	Frequent	2-3 kg per day		Forest
Other	-	-		-

Source: Proforma-3, Table-3.2 / Discussions with Forest Department personnel & Community members

There are 310 households in the Baradova JFMC. From the above table and this number of households, it is inferred that the total annual requirements of the Baradova village for forest products for own use is as follows:

Table-4 (B): Total Domestic Requirement of Forest Produce - All Households of the Baradova JFMC

Name of Forest Produce	Community Requirement (Kg per annum) (*)	Remarks
Firewood	150800	Throughout the year
Timber for House	290 nos.	Dec - Jan
Small Timber for Implements	-	-
Pole / Bamboo	750 bamboo	Dec - Jan
Fodder from Forest	150800	Throughout the year
NTFP	214000	Throughout the year
Other		

Source: Table - 4(A) at above & Total Household Number from Community records

(*) = Approx. Qty. of Average Household Requirement (from Table-4 (A) x 65 Households

2.3. Collection & Marketing of Forest Produce by Villagers

Apart from use in the households, the community dependency on forest produces also includes the collection of such items for sale in local markets. The collection and marketing of forest produce by villagers of Baradova JFMC is given in the following table.

Table-5 (A): Collection & Marketing of Forest Produce by Villagers of the Baradova JFMC

Name of Forest Produce	Collection for Marketing			Location of Collection
	Season / Months	No of Households Collecting	Average Qty. Collected (Kg)	
Firewood	Throughout the year	310	3920	Forest
Timber for House	Dec - Jan	310	4 nos.	Forest
Small timber for Implements	-	-	-	-
Bamboo	Dec - Jan	310	18 nos.	Forest
Pole	-	-	-	-
Fodder from Forest	Throughout the year	310	7 kg per day	Forest
NTFP	Throughout the year	310	9-12 kg per day	Forest
Other	-	-	-	-

Source: Proforma-3, Table-3.3 / Discussions with Forest Department personnel & Community members

In the above connection, the following table gives additional pertinent information.

Table-5 (B): Collection & Marketing of Forest Produce - Additional Information [Baradova JFMC]

Name of Forest Produce	Surplus Marketed (Kg)	How marketed	Average Income per HH from sale of Forest Produce
Firewood	146000 kg/year	Sukunia market	1700-2100/month
Timber for House	-	-	-
Small timber for Implements	-	-	-
Bamboo	32-50 pc/month	Sukunia market	700-1250/month
Pole	-	-	-
Fodder from Forest	1800 kg /year	Sukunia market	1000-1500/month
NTFP	-	-	-
Other	-	-	-

Source: Proforma-3, Table-3.4 / Discussions with Forest Department personnel & Community members

2.4. Total Requirements of Forest Produce - Domestic Use & Marketing

The total requirements of forest produce by the community members of the Baradova JFMC have been summarized below - based on the information in the previous sub-sections.

Refer to: Tables 4 (B) & 5 (B) of this Section, given at the previous pages

3. Forest Protection Issues

3.1. Protection Problems

The protection issues of the forests of Baradova JFMC have been summarized below.

- **Table-7: Protection Problems of the Baradova JFMC**

Type of Problem	Relevant (Yes / No)	Significant (Yes / No)
Grazing - Local Animals	Yes	Yes
Grazing - Animals from Other Area	Yes	Yes
Illicit Felling of Timber	Yes	Yes
Smuggling of Timber	Yes	Yes
Accidental Fires	Yes	Yes
Encroachment of Forest Lands	Yes	Yes
Incident of Snake bites/life threats/risks while protecting forest	Yes	Yes
Theft of Medicinal Plants	Yes	Yes

Source: Proforma-3, Table-3.5 / Discussions with Forest Department personnel & Community members

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

- (a) Grazing - Local Animals
- (b) Grazing - Animals from Other Area

3.2. Reasons for Degradation of the Forest

In the Baradova JFMC, the reasons for degradation of forest are as follows:

- (a) Biotic interference
- (b) Encroachment
- (c) Extremist problem in hill sides

[**Source:** Proforma-3, Table-3.6 / Discussions with Forest Department personnel & Community members]

4. Components of the Forest Development Plan

The following sub-sections discuss the main components of the Forest Development Plan of Baradova JFMC; viz. the plans for Protection, Forest Improvement (Treatment), Nursery Development, Maintenance and Miscellaneous Operations.

4.1. Protection Plan

The Protection Plan given at below, discusses the measures for the protection of the forests of Baradova JFMC from the issues discussed earlier at Sub-section 3.1

Table-8: Protection Plan of the Baradova JFMC

Protection Work [to be filled from Table 3.7 of Proforma-3 as applicable]	Location in Forest Area	Quantification of the Measures [Length, Area, Size etc.]	Timing	Priority [High / Medium / Low]
1. Engagement of Watcher	R.F.	3 km	All times	High
2. Informers award	R.F.	3km	Anytime	High
3. Fire Protection	R.F.	3km	Anytime	High

Source: Proforma-3, Table-3.7 / Discussions with Forest Department personnel & Community members

Thus, it is seen that the significant protection measures planned to be undertaken in the Baradova JFMC (with high / medium priority) are as follows:

- (a) Fencing
- (b) Fire protection

4.2. Types of Operations Proposed

The types of operations proposed for the treatment of degraded areas of the JFMC Forest of Baradova JFMC are given here under.

Table-9: Types of Operations Proposed in the Baradova JFMC

Treatment	Required (Yes/ No)	Responsibility of JFMC (Yes / No)	Month / Year when can be done	Extent of Area proposed for Treatment (Ha)
Restoration of Degraded Forests	Yes	Yes	June - July	300 Ha
Protection to Cut Stumps of Trees	Yes	Yes	All the Year	300 Ha
Watershed Treatment	Yes	Yes	All the Year	5 Ha

Treatment	Required (Yes/ No)	Responsibility of JFMC (Yes / No)	Month / Year when can be done	Extent of Area proposed for Treatment (Ha)
Water Reservoirs	Yes	Yes	All the Year	5 Ha
Grass and Silvi Pastoral activities	Yes	Yes	All the Year	-
Bamboo culture and earth piling	Yes	Yes	All the Year	R.F
Seed Sowing	Yes	Yes	All the Year	-
Root & Shoot Cutting & Plantation	Yes	Yes	All the Year	-
Cut Back & Coppice Treatment	Yes	Yes	All the Year	-
Stone wall fencing/live Hedge fencing	Yes	Yes	All the Year	200 Ha
Social Fencing	Yes	Yes	All the Year	200 Ha
Other Activities(Protection of Elephants)	Yes	Yes	All the Year	R.F

Source: Proforma-3, Table-3.9 / Discussions with Forest Department personnel & Community members

Thus, it is seen that the following are the treatment operations which have been proposed in the forest area of the Baradova JFMC:

- (a) Seed Sowing
- (b) Root & Shoot Cutting & Plantation etc.

4.3. Forest Improvement Plan - Advance Works & Creation

The pertinent details in the above connection have been tabulated as follows.

Table-10: Forest Improvement Planned in the Baradova JFMC

Treatment	Area in Ha under Plantation Module	Priority for Block Plantation	Species	Spacing (metre x metre)
Assisted Natural Regeneration (with plantation in gap)	35 Ha ANR by APFBC	-	Non Sal NTFP	2/2
Block Planting	-	-	-	-
Sowing of Neem, Amla, Mahua, Bahera (Medicinal Plants)	10	-	Medicinal Plants	-

Treatment	Area in Ha under Plantation Module	Priority for Block Plantation	Species	Spacing (metre x metre)
Enrichment Plantation/ Sowing	-	-	-	-
Direct Plantation	-	-	-	-
Other	-	-	-	-
Total Area (in Ha.)	45 Ha	-	-	-

Source: Proforma-3, Table-3.8 / Discussions with Forest Department personnel & Community members

4.4. Forest Improvement - Annual Targets

5. Table-10 (A) and (B): Annual Targets of Forest Improvement in Baradova JFMC (Year-1 to Year-5) and (Year-6 to Year-10)

The annual targets in the above connection are given below for a ten year period.

Name of Plantation	: Block Plantation of Saal Mixed with Associates
Plantation Period	: 2016-17 to 2025-26 (10 Years)
Plantation Area	: 100 ha
Spacing	: 2m X 2 m-1100 plants per ha
No. of Plants to be Raised	: 110000 (11000 approx. annually)
Number Blocks	: 10 Numbers(10 ha each)
Species	: Saal ; Associates-Gamari, Sissoo, Titasopa, etc.
Rates	: As Approved by APFBCS(to be increased by 20% every two years)

Action Plan for Creation of Plantation		
Financial Year	Activities	Amount
2016-17	Identification of suitable site for regeneration-examine possibilities of natural seed fall-determine intensity and nature of biotic interference-Area Not Less than 100 ha, Demarcation of land during the month of December-January, Partition of land in 4 blocks, Land development, Soil Working @ Rs 1000/ha	100000
2017-18*	Block Plantation 3m x 3m, 1111 plants/ha-during the season of April-June ; GPS marking of the area	497000
2018-19*	Block Plantation 3m x 3m, 1111 plants/ha-during the season of April-June ; GPS marking of the area	497000
	1st Weeding; Replacement of dead/struggling saplings raised in the previous year	61600
2019-20*	Block Plantation 3m x 3m, 1111 plants/ha-during the season of April-June ; GPS marking of the area	596400
	2nd Weeding; Replacement of dead/struggling saplings raised in the previous year	73920
2020-21*	Block Plantation 3m x 3m, 1111 plants/ha-during the season of April-June ; GPS marking of the area	596400
	3rd Weeding	147840

2021-22*	4th Weeding; Replacement of dead/struggling saplings raised in the previous year	266112
2022-13*	5th Weeding; Replacement of dead/struggling saplings raised in the previous year	354816
2023-24*	6th Weeding; Replacement of dead/struggling saplings raised in the previous year	266112
2024-25*	7th Weeding	266112
2025-26*	8th Weeding	266112
Total Budgetary Requirement		3989424

* Silvicultural thinning to be undertaken on intervals of five years post plantation

Source: Proforma-3, Table-3.10 / Discussions with Forest Department personnel & Community members

Name of Plantation : Block Plantation of Teak Mixed with Associates, Firewood and Bamboo
Plantation Period : 2016-17 to 2025-26 (10 Years)
Plantation Area : 100 ha
Spacing : 2m X 2 m-2500 plants per ha
No. of Plants to be Raised : 110000 (11000 approx. annually)
Number Blocks : 10 Numbers(10 ha each)
Species : Teak; Associates-Ajar, Khoroi, Khayer, Sissoo, Jia, Arjun, Ghora Neem, Bamboo(Jaati, Kako, Bholoka, Bijili), etc

Action Plan for Creation of Plantation		
Financial Year	Activities	Amount
2016-17	Identification of suitable site for regeneration-examine possibilities of natural seed fall-determine intensity and nature of biotic interference-Area Not Less than 100 ha, Demarcation of land during the month of December-January, Partition of land in 4 blocks, Land development, Soil Working @ Rs 1000/ha	100000
2017-18*	Block Plantation 2m x 2m, 2500 plants/ha-during the season of April-June; GPS marking of the area	262500
2018-19*	Block Plantation 2m x 2m, 2500 plants/ha-during the season of April-June; GPS marking of the area	262500
	1st Weeding; Replacement of dead/struggling saplings raised in the previous year	26950
2019-20*	Block Plantation 2m x 2m, 2500 plants/ha-during the season of April-June; GPS marking of the area	315000
	2nd Weeding; Replacement of dead/struggling saplings raised in the previous year	32340
2020-21*	Block Plantation 2m x 2m, 2500 plants/ha-during the season of April-June; GPS marking of the area	315000
	3rd Weeding	64680
2021-22*	4th Weeding; Replacement of dead/struggling saplings raised in the previous year	266112
2022-13*	5th Weeding; Replacement of dead/struggling saplings raised in the previous year	155232

2023-24*	6th Weeding; Replacement of dead/struggling saplings raised in the previous year	116424
2024-25*	7th Weeding	116424
2025-26*	8th Weeding	116424
Total Budgetary Requirement		2149586

* Silvicultural thinning to be undertaken on intervals of five years post plantation

5.1. Nursery Development Plan

The Nursery Development Plan for the Baradova JFMC depends on the following types of Nurseries:

- (a) JFMC Nurseries (incl. Departmental Nursery)
- (b) Other Nurseries - SHG & Private.

The details are given below.

JFMC Nurseries

The following table gives the details of the nurseries of the Baradova JFMC. This includes the Departmental Nursery involved in JFMC works.

Table-11 (A): JFMC Nurseries of the Baradova JFMC

Location of Nursery	Species	Year of Development	Number of Seedlings	Remarks
Baradova JFMC	Varieties	2016	8,28,000	Proposed

Source: Proforma-3, Table-3.11 / Discussions with Forest Department personnel & Community members

Other Nurseries

The following table gives the details of other nurseries near the Baradova JFMC.

Table-11 (B): Other Nurseries near the Baradova JFMC

Name of Nursery	Species	Year of Development	Number of Seedlings	Remarks
Baradova JFMC	Varieties	2016	8,28,000	Proposed

Source: Proforma-3, Table-3.12 / Discussions with Forest Department personnel & Community members

5.2. Maintenance Plan - 10 Years

The maintenance plan for plantations raised in the Baradova JFMC is given below. This covers a period of ten years.

(A) Timber Species Sal, Gamera, Tik

Table-12 (A): Maintenance Plan of Teak Plantation in the Baradova JFMC

Year(s)	Treatment
1 st Year	Periodic weeding and removal of creepers Ring formation
2 nd Year	Removing of all dominating weeds affecting supply of sunlight

Year(s)	Treatment
	Gap filling Training the plants for straight pole formation
3 rd Year	Removal of side branches
4 th Year	Pruning the nearby trees
5 th Year	Pruning the nearby trees
6 th Year	Gap plantation
7 th Year	Gap plantation
8 th Year	Gap plantation
9 th Year	Gap plantation
10 th Year	Removal of alternative row of teak

Source: Discussions with Forest Department personnel & Community members

(B) Bamboo

Table-12 (B): Maintenance Plan of Bamboo Plantation in the Baradova JFMC

Year(s)	Treatment
1 st Year	Weeding and removal of dominating other weeds Ring formation around the buses
2 nd Year	Weeding and removal of dominating other weeds Ring formation around the buses
3 rd Year	Removal of culms
4 th Year	Removal of culms
5 th Year	Removal of culms and trimming of criss-cross culms
6 th Year	Removal of culms and trimming of criss-cross culms Light pruning to improve adequate sunlight and aeration
7 th Year	Removal of culms and trimming of criss-cross culms Light pruning to improve adequate sunlight and aeration
8 th Year	Removal of culms and trimming of criss-cross culms Light pruning to improve adequate sunlight and aeration
9 th Year	Removal of culms and trimming of criss-cross culms Light pruning to improve adequate sunlight and aeration
10 th Year	Removal of culms and trimming of criss-cross culms Light pruning to improve adequate sunlight and aeration

Source: Discussions with Forest Department personnel & Community members

(C) Fuel wood Plantation

Table-12 (C): Maintenance Plan of Fuel Wood Plantation in the Baradova JFMC

Year(s)	Treatment
1 st Year	Weeding around the fuel wood seedlings Ring formation around the seedlings
2 nd Year	Weeding around the fuel wood seedlings Ring formation around the seedlings
3 rd Year	Cutting of side branches, Removal of criss-crossing
4 th Year	Cutting of side branches, Removal of criss-crossing
5 th Year	Rows of plantation
6 th Year	Remove Stumps
7 th Year	Prune trees (This would create a 15 years pruning cycle)
8 th Year	Cutting of side branches and weeding
9 th Year	Cutting of side branches and weeding
10 th Year	Cutting of side branches and weeding

Source: Discussions with Forest Department personnel & Community members

(D) NTFP / Medicinal Plantation

Table-12 (D): Maintenance Plan of NTFP / Medicinal Plantation in the Baradova JFMC

Year(s)	Treatment
1 st Year	Weeding around the seedlings Ring formation Nipping of terminal Disbudding to delay the fruit set to next season
2 nd Year	Weeding around the seedlings Ring formation Nipping of terminal Disbudding to delay the fruit set to next season
3 rd Year	Collection of fruits, Seeds and minimal pruning to remove dead
4 th Year	Collection of fruits Minimal pruning for removal of criss-crossing, overcrowding branches
5 th Year	Collection of fruits Minimal pruning for removal of criss-crossing, overcrowding branches
6 th Year	Collection of fruits Minimal pruning for removal of criss-crossing, overcrowding branches
7 th Year	Collection of fruits Minimal pruning for removal of criss-crossing, overcrowding branches

Year(s)	Treatment
8 th Year	Collection of fruits Minimal pruning for removal of criss-crossing, overcrowding branches
9 th Year	Collection of fruits Minimal pruning for removal of criss-crossing, overcrowding branches
10 th Year	Collection of fruits Minimal pruning for removal of criss-crossing, overcrowding branches

Source: Discussions with Forest Department personnel & Community members

5.3. Miscellaneous Operations Plan

The miscellaneous operations planned in the Baradova JFMC are given below.

Table-13): Miscellaneous Operations in the Baradova JFMC

Operation	Required (Yes / No)	Responsibility	Month / Year	Area (Ha)
(i)Medical/Health care Camp	Yes	VSS	Feb-Mar	JFMC
(ii)Centre For Non-Formal education	Yes	VSS	Feb-Mar	JFMC
(iii)Promotion of Fuel Saving Devices	Yes	VSS	Feb-Mar	JFMC
(iv)Cattle improvement/health improvements	Yes	VSS	Feb-Mar	JFMC

Source: Proforma-3, Table-3.13 / Discussions with Forest Department personnel & Community members

Marketing Operations

For produce from the Baradova JFMC, the planned marketing operations are:

- (a) Linkage will be established with traders inside and outside the district
- (b) Selling to the Ban Bazar
- (c) Participation in Exhibition

Expected Benefits

This sub-section furnishes the benefits expected from the forests protected by members of the Baradova JFMC, as well as the sharing mechanism for the usufruct benefits.

5.4. Expected Benefits Related to Wood & Grass

The above has been tabulated below for the Baradova JFMC. The benefits are expected from the forests protected by its members under this Forest Development Plan.

Table-14: Expected Benefits from Forests Protected by Members of Baradova JFMC

Item	Month	Year (Indicative)	Quantity
Firewood	12 month		65-70 Kg/month
Timber for House	-	-	-
Small timber for Implements	-	-	-
Bamboo	12 month	32-50 pc/ month	800 -1250 Kg/month
Pole	-	-	-
Fodder from Forest Trees & Grass	12 month	-	1500-2000 Kg/month
NTFP	3-4 month	-	20-30 Kg/Year
Wages	12 month	200 -300 Rupees/Day	Forest
Other	-	-	

Source: Proforma-3, Table-3.14 / Discussions with Forest Department personnel & Community members

5.5. Sharing Mechanisms

The sharing mechanism for the benefits is indicated below for members of the Baradova JFMC.

Table-15: Sharing Mechanism for Baradova JFMC

Method	Items
To be shared equally	Collected Individually
To be freely collected by the members	Medicinal Plants, Fodder, Broom Stick
Other Methods	Na

Source: Proforma-3, Table-3.15 / Discussions with Forest Department personnel & Community members.

Annexure (Record 1)

Table 1: Basic data of the village:

Table 1: Basic data of the JFMC

Name of the JFMC	Date of establishment	No. of members in executive	Name of the president	Name of the Member secretary	Money in VDF	Contribution per family /per person	Social fencing used	Yes / No	Remarks on special attainment	Grading %of success by RFO
Baradova	2013	20	LatchsonMarak	Mamat Chandra Kalita	Nil	Nil	No		-	-

Table -2: Demographic status of the project JFMC

Households (No.)	ST			Sex ratio (per 1000 male)	Avg. HH size
	Total	Male	Female		
310	1543	791	752	951	4.97

Source: - Field survey report.

Table3 Village wise farmer category on the basis of land holding

Large farmer >10 ha.	small farmer 2-10 ha.	Marginal farmer (household) <2ha.	Land less (household)	total
-	285	13	12	310

Table 4 : Cattle Population of the JFMC

Cows	Buffaloes	Goat	Poultry	Pig	Total
568	6	284	1222	633	2647

Table 5 Infrastructure of the JFMC

Sl no	Infrastructure	Location	Distance from village
1	Electricity	30% of the HH	Poor
2	Gas connection	5% of the HH	Poor

3	Transport	Pucca Road	1 km
4	PHE	Sukunia	4km
5	LP school	Inside	1km
6	High school	Sukunia	7km
7	Post office	Sukunia	7km
8	Bank	Boko	22 km
9	Anganawadi centre	Inside	--
10	VCDC	Sukunia	7km
11	Revenue Office	Boko	22 km
12	Police station	Boko	22 km
13	Forest Office	Bondapara	8 km
14	Bus facility	Sukunia	7km
15	Railway Station	Boko	22 km
16	District head quarter	Chayygaon	37 km

Table 6 Agriculture Crops

	Rain Fed		Irrigation	
	Name of the crop	Area (in ha.)	Name of the crop	Area (in hac)
Kharif	Sali rice	25	NA	
Rabi	Mustard	6	NA	
Others	Vegetable, Fruits	10	NA	2

Table 7 Crop production profile

Type of crop	Total Production (approx) in MT	No of household growing
Paddy	1.6 – 2.2	310
Oil seeds	0.2- 0.4	280
Vegetable	0.8 – 1.0	310
Fruits	0.3 – 0.5	180

Table 8 fodder availability of the JFMC

types	1-3 month	3-6 month	>6 month
Crop residue			✓
Trees fodder		✓	
Grasses		✓	
Green Fodder		✓	
Grazing in Forest		✓	

Table 9 Location of market from the village

For Purchase	Location	Distance from village if in other village (in km)
Grocery shop	Sukunia	7 Km
Weekly Market	Gamerimuwa	4 Km
Major Market	Boko	22 Km
Forest Corporation Sale Depot.	Kukurmara	40 Km
TenduPatta PHAD	--	--
Fish Market	Sukunia	7 Km
Medicinal Plant collection Centre	--	--
Forest Corporation Medicinal plant Collection Centre	--	--

Table 10: showing the water resource facility available in the village

Water source	number	Availability of water	uses
Check dam	1	Seasonal	Irrigation, livestock rearing
Stream	1	Seasonal	Irrigation, livestock rearing
Tube well	12	Perennial	Domestic use
River	1	Seasonal	All type of use
Community ring well	-	-	-

Table11 showing the Energy Consumption of the JFMC

Type of Fuel	Number of household depending	Number of months dependent	Sources (local, village, forest, other sources)	Major/ Secondary
Fuel wood	46	12	Forest	Major
Kerosene stove	10-15	12	Market	Secondary
Gobar/Bio gas	NA	-	-	-
LPG	NA	-	-	-
Electric Heater	NA	-	-	-

RECORD: II
LIVELIHOOD OPPORTUNITY ANALYSIS

Table 12: showing the agricultural and horticultural status

Constraints	Reason	Opportunities	Programme
Low Production	<ul style="list-style-type: none"> • Traditional way of cultivation. • Only one crop undertaken annually (Sali) • Very negligible use of fertilizers and pesticides, insecticides. • Lack of irrigation facilities. • Lack of agricultural infrastructure, modern tools and equipment's viz, power tillers, tractors etc. • Non usages of high yielding seeds. 	<ul style="list-style-type: none"> • Application of proper and controlled pesticides and insecticides. • Introduction of new and advance technology. • Well-structured training programme. The villagers are inherited with the skill of cultivation. But an improvisation of skills is the need of the hour. • Usage of high yielding seed programme. 	<ul style="list-style-type: none"> • Tractor operation training • Agri-skill development programme. • Training on insecticides, pesticides, hybrid cultivation
Storage and Production	<ul style="list-style-type: none"> • Lack of common storing place • Lack of cold storage facility due to non-availability of electricity 	<ul style="list-style-type: none"> • Helpful in preserving unsold products for a longer period of time. • They can store their product and sell it when there is a higher demand. 	<ul style="list-style-type: none"> • Packaging • Transportation and distribution.
Marketing	<ul style="list-style-type: none"> • Lack of transporting facilities for carrying products • Less contact with the direct market; much dependency upon middle man • No knowledge on marketing know-how, dependence on traditional system of selling. 	<ul style="list-style-type: none"> • Smooth transportation facility will help the farmers to carry their products to the nearby markets. • Generate highest market price by removing middle men. • More knowledge about the current market situation as well as the current value of their products. • They can sell their products outside of the state, as the JFMC is located in Assam West Bengal border and Bhutan border is also not far from it. 	<ul style="list-style-type: none"> • Buyers sellers meet

Table 13 Livestock

Constraints	Reasons	Opportunities	Programme
Less grazing land	<ul style="list-style-type: none"> • Not Applicable 		
Availability of fodder	<ul style="list-style-type: none"> • Unable to buy fodder from market due to poor financial condition • Trees fodder n crop residue are available only for 3-6 months. Green fodder is also not available for the whole year. 	<ul style="list-style-type: none"> • Higher income from livestock rearing. • The villagers can make it as an alternative livelihood opportunity if they have the easy access of livestock fodder. 	Linkage with veterinary department for better opportunities in livestock sector.
Veterinary care facility	<ul style="list-style-type: none"> • No veterinary care clinic • Lack of knowledge about the proper rearing of live stock 	<ul style="list-style-type: none"> • Disease control • Increases the life span of cattle. • It will also help to aware the villagers and will encourage them for livestock rearing. 	
Production of milk	<ul style="list-style-type: none"> • Less availability of fodder • No scientific knowledge on cattle rearing to increase the milk production. 	<ul style="list-style-type: none"> • Training on the milk production can enhance the skill of milk production. • Availability of supplements like cattle “Milk Booster, Milk Plus” etc. can increase the production of milk in the area. 	
Milk market	<ul style="list-style-type: none"> • Less contact with the direct market for milk • Unaware of the market demand of different milk made products. 	<ul style="list-style-type: none"> • A huge demanded market for milk is available as Kokrajhar district head quarter and West Bengal state is too far from the JFMC. 	

Table 14 NWFP

Constraints	Reasons	Opportunities	Programme
Less collection	<ul style="list-style-type: none"> • Less availability of NWFP 	<ul style="list-style-type: none"> • Availability of fertile fallow land 	<ul style="list-style-type: none"> • Plantation of Food plans, Medicinal Plant etc. • Improve in processing of NTFP
Unsustainable extraction	<ul style="list-style-type: none"> • NA 	<ul style="list-style-type: none"> • Availability of fertile fallow land 	
Low rates	<ul style="list-style-type: none"> • NA 	<ul style="list-style-type: none"> • 	
Value addition	<ul style="list-style-type: none"> • No processing units • Non availability of required resources • No technical know-how 	<ul style="list-style-type: none"> • 	

Table 15: Specialised skills: Handloom

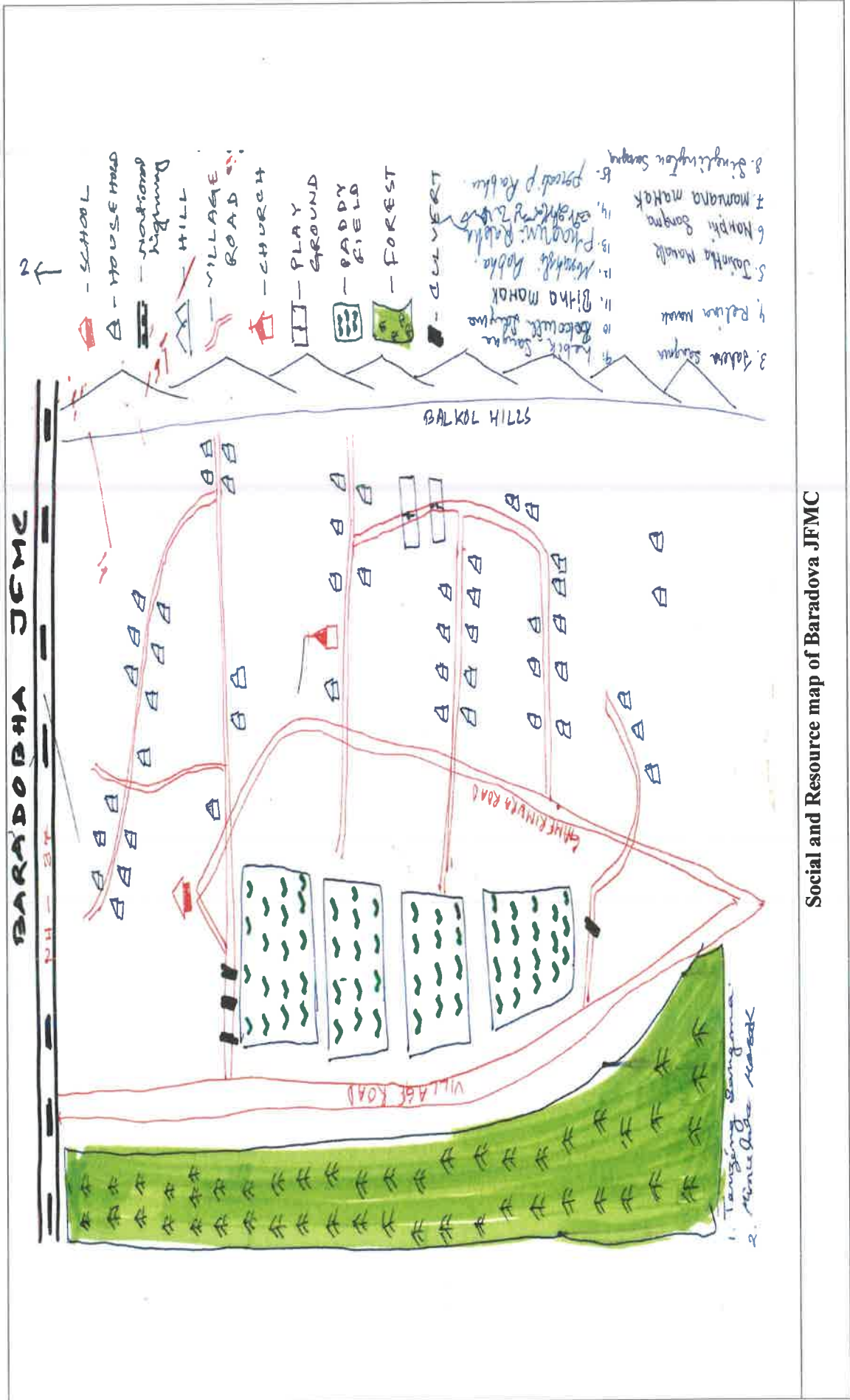
Constraints	Reasons	Opportunities	Programme
Raw material availability	<ul style="list-style-type: none"> • Non-Availability of Raw Materials within reachable location (market 7km away) • No Storage 	<ul style="list-style-type: none"> • Common place for setting a raw material storage 	<ul style="list-style-type: none"> • Setting up a raw material bank
Product quality	<ul style="list-style-type: none"> • Shortage of High Quality Materials • Use of Traditional machineries 	<ul style="list-style-type: none"> • Developing Quality Products for new market exploration. 	<ul style="list-style-type: none"> • Training on Modern Tools and Equipment. • Providing modern technology to the villagers
Marketing potential	<ul style="list-style-type: none"> • No standardised market • No pricing policy • No linkage with the institutional buyers • No Product Diversification or New Product Development. 	<ul style="list-style-type: none"> • Exploring new markets with diversified products 	<ul style="list-style-type: none"> • Providing a bulk buy arrangement of the finished product with institutional buyers.
Credit facilities	<ul style="list-style-type: none"> • No linkage with the banks or post office saving banks. • Unaware of the development schemes of banks and government 	<ul style="list-style-type: none"> • Financial assistance by the Govt. • Providing easy access to credit. 	<ul style="list-style-type: none"> • Microfinance, Term Loans, Working Capital Arrangement
Product Diversification	<ul style="list-style-type: none"> • No Product Diversification or New Product Development. • Lack of concept for product diversification. 	<ul style="list-style-type: none"> • Developing Demand Based Products, as per the needs of the modern day market. 	<ul style="list-style-type: none"> • Skill Upgradation & Training on New Product Development and Product Diversification

Table 16 Credit facility

Constraints	Reason	Opportunities	Programme
Indebtness	Nil	<ul style="list-style-type: none"> • Setting up modern financial institution in the nearby areas. 	Linkage with financial institution for better credit facility with financial inclusion.
Rate of interest	<ul style="list-style-type: none"> • Higher lending rates charged by the private money lender 	<ul style="list-style-type: none"> • Subsidised credit arrangement 	
Availability of loan	<ul style="list-style-type: none"> • Fear of risk taking • No knowledge of documentation 	<ul style="list-style-type: none"> • Start-ups entrepreneurial venture 	
Mortgage difficulty	<ul style="list-style-type: none"> • Unavailability of proper documentation of mortgaged property. 	<ul style="list-style-type: none"> • Proper awareness about documentation in the area 	


Divisional Forest Officer
Kamrup West Division
Bamunigaon

Annexure 5



Social and Resource map of Baradova JPMC

Baradova JFMC.

	Road	Drinking water	Electricity	Hospital	Veterinary	Community hall	Irrigation	Sanitation	Education	Market shed	Handloom	Mark scoring	Position
A	B	C	D	E	F	G	H	I	J	K			
B	K	D	D	A	A	A	A	H	I	A	A	5	2 nd
C	X	B	B	B	B	B	B	H	I	B	B	8	3 rd
D		X	C	C	C	C	C	C	C	C	C	9	1 st
E			X	D	D	D	D	H	I	D	D	5	2 nd
F				X	E	E	G	H	I	E	E	3	5 th
G					K	K	G	H	I	I	K	0	8 th
H						K	K	H	I	G	G	4	4 th
I								K	H	H	H	9	1 st
J									A	I	I	8	2 nd
K										A	I	2	6 th
										X	X	1	1 th

* Solve Light. Remain the 1st preference for all the people in the JFMC.

1. Electricity.
2. Sanitation.
3. Education.
4. Drinking water.
5. Road.
6. Hospital.
7. Irrigation.
8. Veterinary.
9. Market-shed.
10. Handloom.

1. Tonging Sangma
2. Mera Jale Metak
3. Jaleha Sangma
4. Ralina Mawak
5. Jaintha Mawak
6. Marphi Sangma
7. Mawara Mandk
8. Singlingkon Sangma

12. Karkali Kabko.
13. Pungum: Palata
14. Pradip Kabko
15. Pradip Kabko.
9. Kestik Sangma
10. Karkali Sangma
11. Bitha Matak

EPA ranking of Baradova JFMC

Baradova JFMC.

	Dev. Of Degraded Forest	Forest protection	Plantation (medicinal, NTFB etc)	Plantation bamboo	Plantation teak	Natural regeneration	Plantation of firewood	Raising of Nursery	Fodder cultivation	Demarcation of boundary	Marks scoring	Position
	A	B	C	D	E	F	G	H	I	J		
Dev of degraded Forest	X	A	C	D	E	A	G	H	A	J	3	6th
Forest protection		X	C	D	E	B	G	H	A	J	2	7th
Plantation on (Medicinal, NTFB etc)			X	C	C	C	G	H	G	C	7	3rd.
Plantation bamboo				X	E	D	G	H	D	D	5	4th.
Plantation teak					X	F	G	H	E	E	5	4th
Natural regeneration						X	G	H	I	J	1	7th.
Plantation of firewood							X	G	G	G	9	1st
Raising of nursery								X	H	H	8	2nd
Fodder cultivation									X	J	4	5th.
Demarcation of boundary										X	4	5th.

11. Bitha Manak
12. Wairaki Rakka
9. Kelik Sangma
10. Robokit Sangma

1. Isang Sangma
2. Mani Sangma
3. Takha Sangma
4. Relia Manak
5. Josintha Manak
6. Manthi Sangma
7. Manian o. M. 21.12.16
8. Singleton Sangma

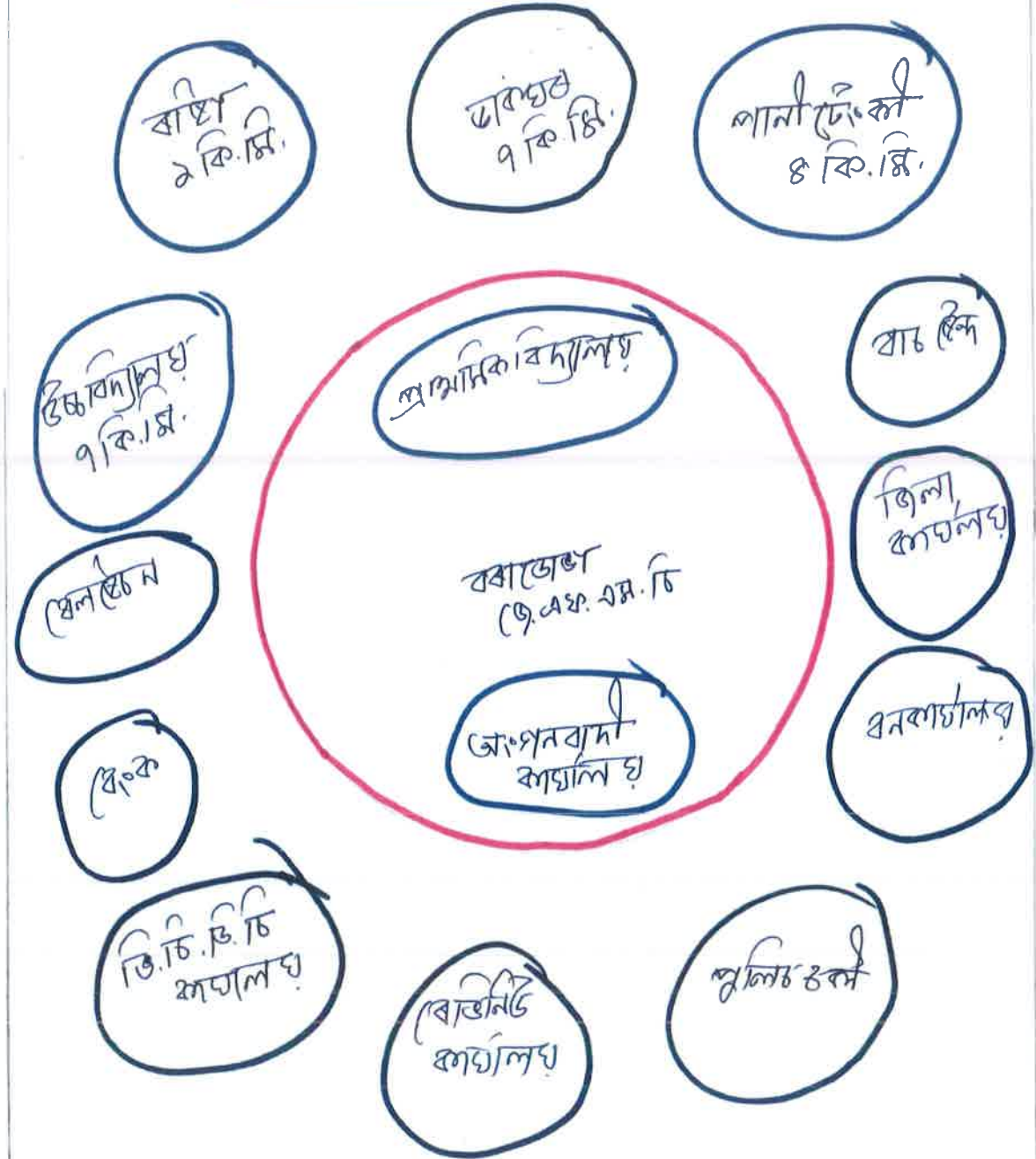
5. Plantation of bamboo.
6. Demarcation of land.
7. Fodder cultivation
8. Dev. of degraded forest.
9. Natural regeneration.
10. Forest protection.

1. Plantation of firewood.
2. Raising of nursery.
3. Plantation on medicinal, NTFB etc.
4. Plantation of teak.

13. Phagun Rakha
14. Phagun Rakha
15. Phagun Rakha

Livelihood ranking of Baradova JFMC

ভেনাচিত্র - বরাদোজ (জি.এফ.এম.টি)



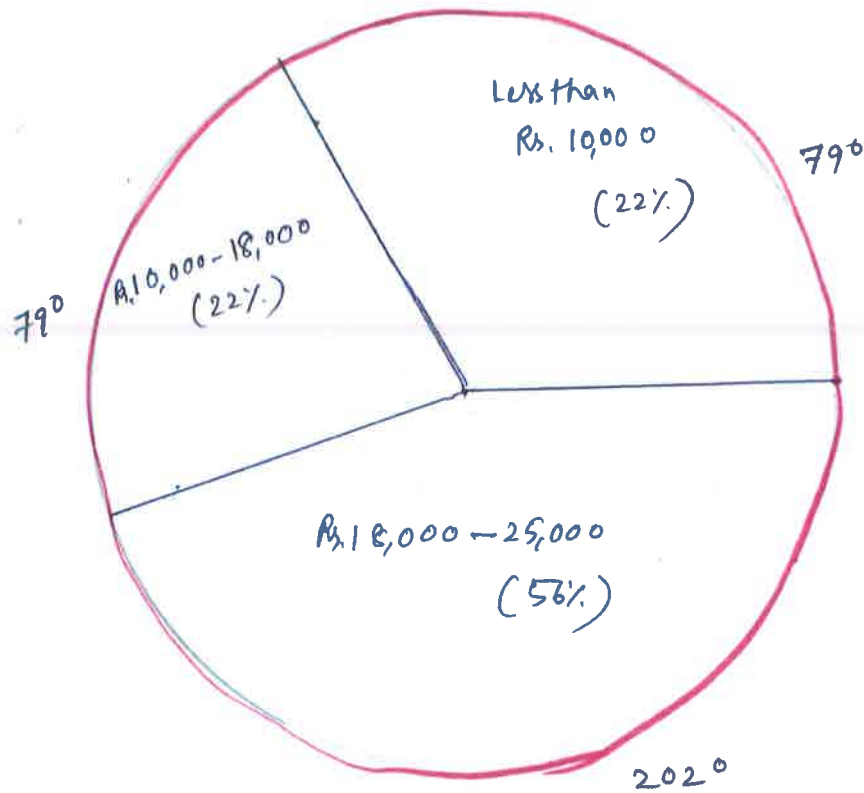
1. Temzang Sangma
2. Minakada Manak
3. Saheta Sangma
4. Relena Manak
5. Jaintha Manak
6. Manphi Sangma

7. Maniana Manak
8. Singlinton Sangma
9. Lebik Sangma
10. Bokouelh Sangma
11. Bittha Manak

12. Manakade Rabha
13. Phagumi Rabha
14. (partially obscured)
15. Pradip Rabha

Ven Diagram of Baradova JFMC

Pie chart (wealth Ranking) - Boradova JFMC



1. Tanjung Sangma
2. Minulaba Marak
3. Jahera Sangma
4. Relina Marak
5. Jasinta Marak

6. Nauphi Sangma
7. maniana marak
8. Singlington Sangma
9. Lebit Sangma
10. Bokoruth Sangma

11. Bitha marak
12. Mindaghi Rabha.
13. Phaguni Rabha
14. ~~Ararabha Marak~~
15. pradip Rabha.

Wealth ranking analysis in Pie diagram of Baradova JFMC