



Assam Forest Department



ASSAM PROJECT ON
FOREST & BIODIVERSITY
CONSERVATION



AGENCE FRANÇAISE
DE DÉVELOPPEMENT

BORGORONG JOINT FOREST MANAGEMENT COMMITTEE (JFMC)

Kulshi Range, Kamrup West Forest Division

Central Assam Forest Circle

MICRO-PLAN

(2016-17 to 2025-26)

Prepared by Borgorong Joint Forest Management Committee

**Assisted by
Assam Forest Department**

&

**COMPELO
(IIE, RGVN and CML)**

July 2016

Approved

**Divisional Forest Officer
Kamrup West Division
Bamunigaon**

*Approved vide letter No. SPS/JFMC/KW/APFBC/2465
dated 01-10-2016.*

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 |

BORGORONG JOINT FOREST JOINT FOREST MANAGEMENT COMMITTEE
Kamrup West Forest Division, Central Assam Forest Circle

Micro-Plan for 10 Years
[Livelihood Development Plan & Forest Development Plan]

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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 Borgorong JFMC

This document gives the Micro-Plan for the Borgorong JFMC, which is located in the Kamrup district of Assam. The JFMC falls under the jurisdiction of the Kamrup West Forest 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 August 2016.

2. Village Socio-Economic Profile

Location The Borgorong Joint Forest Management Committee (JFMC) has been formed to cover the existing community dwelling in Borgorong, a village located on the fringe of the Kulshi Reserve Forest. The area covered by the above JFMC falls within the Chayygaon Development Block of Kamrup 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 | Borgorong |
| Habitation | Borgorong |
| Name of Revenue Village | Barigaon No. 2 |
| Name of the Gram Panchayat / VCDC | Barigaon No. 2 |
| Revenue Circle | Palasbari |
| District | Kamrup |
| Forest Division | West Kamrup |
| Forest Range | Kulshi |
| Forest Beat | Kulshi |
| Year Formed | 2016 |
| Description of Boundary of JFMC | As below North: Kulshi Hill South: Kulshi River West: Kulshi Hill East: Kulshi Hill |

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 | Sanjay Rabha |
| Name of Secretary | Kunjalal Bayan |
| Name of Treasurer | |
| No. of Members in Executive Committee | Male: 16 Female: 4 |
| No. of Members in the General Body | All the HH head in the JFMC |

Source: JFMC Records

Households & Population Structure

The village has 42 households, of which all the households are BPL (Below Poverty Line) households.

The total population is 185, of which 88 are male and 97 are female members. All the population are belong to ST.

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

Average HH: It is seen that an average household has 4.40 members in the above habitation. As per the Population Census of 2011, the average size of a rural household in the state was 4.94 persons.

Sex Ratio: The sex ratio in the habitation is found to be 1102 (females per 1000 males), which is considerably higher than the state's sex ratio, which was reported to be 958 females per 1000 males as per the Population Census of 2011.

Table C: Age and Sex distribution

| Age/Sex | Below-14 | Between 15-30 | Between 31-45 | Between 46-60 | Above-60 |
|---------|----------|---------------|---------------|---------------|----------|
| M | 25 | 20 | 15 | 21 | 7 |
| F | 20 | 24 | 19 | 26 | 8 |

Source: PRA

Education & Skills Development

Over 34.59% 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

| Sex/Education | Illiterate | Up-to IV | V-X | HS | Graduate |
|---------------|------------|----------|-----|----|----------|
| M | 26 | 28 | 29 | 4 | 1 |
| F | 38 | 23 | 34 | 2 | 0 |

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) Handicraft
- (b) Handloom
- (c) Bee Keeping
- (d) Agriculture

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 project area is located near the northern foothills of the Khasi Plateau of Meghalaya. It includes plain areas (e.g. near River Kulsi) which are composed of alluvial deposits. The hillocks and foothills in the project area are extensions of the adjoining Khasi Plateau, with the soil of these areas being composed of red soils.

The crops which can be grown in the plain areas and the hillocks usually differ on account of the soil conditions and topography. In addition, some crops can be cultivated in both types of areas, but the cropping practices may differ. In addition, natural depressions called 'julis' are common in and near the project area. These have been converted into paddy fields.

Water

The area is drained by River Kulsi, which flows from the adjoining hills of Meghalaya into the project area before joining the River Brahmaputra to the north. This is a perennial river. It may be noted that many of the rivers flowing from Meghalaya are prone to flash floods on account of torrential rain during the rainy season.

The Brahmaputra Valley is also marked by the presence of wetland, locally called as 'beels'. These are rich in fish and other aquatic resources, and support the needs of the local communities. Some households have private ponds for their personal use.

**Climate:
Temperature &
Rainfall**

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 area experiences of about 1300 mm rainfall. Temperature in winter varies from 10c to 24c and in summer 24c to 37c.

**Forest & Bio-
diversity**

The forests in the hills near the project area mainly consist of Sal (Shorea robusta), bamboo and other broad leaf species like Gamari (Gmelina arborea), Amla (Phyllanthus emblica), Makri sal, Sida, Ahoi, Poma etc.

The forests can yield a range of NTFP like spices, leafy vegetables, ferns, medicinal plants, bamboo, cane, thatch, fodder, broom stick etc. Additional details in this regard are given at the 'Forest Development Plan'.

Land Use Pattern

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:

Crop Land: 19.5 %
Tree Cover: 65%
Habitation: 11%
Water Bodies: 2 % (incl. water logged areas)
Barren Land: 2.5 %

Land Holdings

The type of households as per land-holding is given at **Table-3** of Record-I. From the same, it is seen that:

Table E: Land holding pattern

| Classification of the Landholding | Total Land Holding (*) | | | | TOTAL |
|-----------------------------------|------------------------|----------|-------|-------------|-------|
| | Landless | Marginal | Small | Semi-Medium | |
| No. of Households | 0 | 18 | 20 | 4 | 42 |

Source: PRA

Livestock

The local community rears animals like cattle, poultry, pigs and goats. The average number of animals reared by the community as per information gathered during the PRA is given in the following table.

Table F- Livestock Rearing in the JFMC

| Type of Livestock → | Cattle | Goats | Poultry | Pigs |
|------------------------------|--------|-------|---------|------|
| Average Nos. per Household → | 4.05 | 1.31 | 6.19 | 0.64 |

Source: Household Survey undertaken in the habitation in May 2016

Table-4 of Record-I may be referred to for the details in the above connection.

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 is borne out by **Table-5** of Record-I, which gives the present status of the village infrastructure.

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

Physical Infrastructure: The habitation is deprived of basic physical infrastructure like paved roads, electricity, water supply, mobile network etc.

Education & Health Facilities: There are minimal educational and health facilities. Public transport is not available, and the community members have to 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 size of the average land-holding is found to be 0.63 hectares, with most of the households having marginal holdings (of less than 1.0 hectare). In the absence of irrigation facilities, the community practices rain fed agriculture during the rainy season (June - September).

Paddy is the main crop. It is planted in nurseries before the onset of the monsoon and transplanted after the first spell of rainfall. The crop is harvested during the winter months of mid-November to mid-December. All 42 households practice the cultivation of rice. Men-folk are involved in the processes, with the women helping out in labour intensive processes like planting and harvesting.

Crop Production Profile

Table-7 of Record-I may be referred to for the production and yield details of the crops grown in the village.

The average yield is stated to range from 1.2 MT to 2 MT (of rice) per hectare. Each household may be producing about 1-1.1 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 2,000-2,500 per annum from the sale of paddy.

Table G: 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 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:

- Paddy Waste
- Household Kitchen Waste
- Surplus Vegetables
- Grazing Land

Markets **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:

- Grocery / PDS: Kulshi at 12 km away (if in other village)
- Weekly / Bi-weekly Market: : Kulshi at 12 km away
- Major Market: : Chayygaon at 22 km away

Water Resources The water resources are tabulated at **Table-10** of Record-I. The main water resources with the water availability is as follows:

- Kulshi river (Water Availability: Perennial / ~~Seasonal~~)
- 2 Nos. Wetland (Water Availability: ~~Perennial~~ / Seasonal)
- 4 Nos. of Stream (Water Availability: Perennial / ~~Seasonal~~)
- Kutch Well (Water Availability: Perennial / ~~Seasonal~~)

Energy Consumption **Table-11** of Record-I shows the major sources of energy in the village. The same have been listed below.

- Fuel Wood- Households Depending: 42 Nos. Source: Firewood Plantation

Socio-economic status **Social set-up:** The village is inhabited by tribal / general community. They have / do not have a caste system. The society is / is not marked by deep social divisions. The observed position of women is satisfactory / not satisfactory.

Economic Condition: The economic position is / is not satisfactory. The main livelihoods are Agriculture, Horticulture. Most households earn Rs. 15000 to

Rs. 22000 per year.

There is / is no large-scale migration of the youth and others for livelihoods.
Additional details are available at the next section.

Maps

Appendix-1 gives the following maps, based on PRA exercise:

- Village Map
- Village Social Map (with the names and particulars of members in PRA)
- Village Resource Map

3. Livelihood Opportunity Analysis

| | |
|---|--|
| PRA Exercise | <p>Team from IIE Guwahati carried out PRA exercise in Borgorong village as follows:</p> <p>Date: 16-05-2016 Location: Borgorong JFMC community field Numbers Present: 35</p> <p>In Presence of: JFMC office bearers, Village Headman, community members, Forest Department personnel, etc.</p> |
| Objective of PRA | <p>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.</p> |
| Tools Used & Outcomes of the PRA | <p>Different tools were used and outcomes obtained. These include:</p> <p>Social Mapping Wealth Ranking Seasonality of Livelihoods Venn Diagram</p> <p>Appendix-3 furnishes detailed information of the above.</p> |

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. 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 only one LP school within the village. Meanwhile 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. Source of information became an important factor so that people may became 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 | <p>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.</p> <p>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.</p> <p>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.</p> |
| 3. Natural Capital | <p>The project area is renowned for its biological diversity. Key natural assets include trees like Sal, Tik etc. These high value of trees and their extraction for timber exploitation (either for local consumption or for sale to urban centers), causes deforestation and it is directly connected to rural livelihood strategies.</p> <p>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</p> |

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 no HH having their bank accounts along with 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 week, 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 and allied activities
2. Handloom and Handicraft activities
3. NTFP

Table H: Ranking of EPA

| | Village EPA as ranked | Details (Appendix-3 has additional particulars) |
|----|-----------------------|--|
| 1. | LPG connection | 42 HH |
| 2. | Electricity | Solar lights to 42 HH |
| 3. | Road | 12 KM from Kulshi range office to JFMC |
| 4. | Drinking water | Facility to provide safe drinking water |
| 5. | Education | High School within the JFMC |

Source: PRA

- 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 for setting up and commisioning of tool kits/equipments/machineries.


Divisional Forest Officer
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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 I: 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 | - | 4 | - |
| Handicraft related | - | 2 | - | - | - |
| Handloom related | - | 2 | - | - | - |
| 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 preference is given to handicraft sector like skill development on cane and bamboo products and handloom where tailoring and weaving activities came into focus.

- Agriculture & Horticulture
- Handloom
- Handicraft
- NTFP

Additional discussion about the above has been given below.

Forest Development Opportunities

In Borgorong 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. Demarcation of land, 5. Fooder cultivation, 6. Plantation of bamboo, 7. Plantation of tree, 8. Development of degraded forest, 9. Forest protection, 10. Natural regeneration

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) Very negligible use of fertilizers and pesticides, insecticides.
- (b) Lack of irrigation facilities
- (c) Lack of agricultural infrastructure, modern tools and equipment's viz,

power tillers, tractors etc.
(d) Non usages of high yielding seeds etc.

The opportunities are:

- (a) Application of proper and controlled pesticides and insecticides.
- (b) Introduction of new and advance technology
- (c) Well-structured training programme. The villagers are inherited with the skill of cultivation. All they need is improvisation of their skill level.

The suggested programmes are:

- Tractor operation training
- Agri-skill development programme.
- Training on insecticides, pesticides, hybrid cultivation etc.

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
- 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 | <p>The main income generating activities as planned at the village are:</p> <p>The main income generating activities as planned at the village are:</p> <p>Farm Sector :</p> <ol style="list-style-type: none">1. Bee Keeping2. Sericulture3. poultry and piggery4. lac cultivation5. Horticulture <p>Non-Farm sector:</p> <ol style="list-style-type: none">1. Handloom/ Weaving2. Handicraft <p>Source: Table-32 of Record-4</p> |
| SHG Activities | <p>SHGs of the village can plan the following activities:</p> <ol style="list-style-type: none">1. To organise and form Joint liability group for2. To involve the villagers in Livelihood Activities collectively. <p>Source: Table-33 of Record-4</p> |
| Exposure Trips | <p>The following exposure trips are planned:</p> <ol style="list-style-type: none">1. Exposure to Bee Farm2. Exposure visit to Handicraft exhibition3. Exposure visit to handloom Institute4. Exposure visit to Agriculture university for medicinal plantation <p>Source: Table-34 of Record-4</p> |
| Summary of Action Plan | <p>As attached in next page.</p> |
| Convergence | <p>The planned initiatives may be converged with the following schemes of the Government of India:</p> <ol style="list-style-type: none">(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. <p>The above convergence will yield synergies for the present plan, as well as help in sustaining the planned works in the post-project period.</p> |

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 Borgorong 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 Borgorong JFMC:

- (a) Forest areas assigned to the JFMC by the Forest Department; and
- (b) 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 Borgorong JFMC have been summarized below.

Table-1: Conditions of the Forests of Borgorong 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: Barduar R.F. of Kulsi Range under Kamrup West Division Beat: Kulsi I.B. 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 Borgorong 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 Borgorong 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 | 23% | - |
| (b) Mud-flat | 32% | - |
| (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 Borgorong JFMC; the salient points of the forest soil type are summarized below:

1. Entisol (29.3%)
2. Inceptisol (52.3%)
3. Alfisols (12.3%)
4. Ultisols (6.1%)

1.3. Existing Composition of Flora

In the forests of the Borgorong 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 Borgorong JFMC

| Parameter | Local Name(s) | Biological Name(s) |
|----------------------|---------------|-----------------------------|
| Major Forest Species | Teak | <i>Tectona grandis</i> Linn |
| 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>Embllica 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 Borgorong JFMC.

2.1. Past Protection Measures of the JFMC

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

- (a) Number of households involved: 42
- (b) Number of people involved: 42 (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 Borgorong JFMC

| Name of Forest Produce | Average Household Requirement | | How met at Present | Source |
|-----------------------------|-------------------------------|------------------------|--------------------|--------|
| | Frequency of Requirement | Approx. Qty | | |
| Firewood | Frequent | 30-60 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 | 4-6 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 42 households in the Borgorong JFMC. From the above table and this number of households, it is inferred that the total annual requirements of the Borgorong village for forest products for own use is as follows:

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

| Name of Forest Produce | Community Requirement (Kg per annum) (*) | Remarks |
|-----------------------------|--|---------------------|
| Firewood | 80800 | Throughout the year |
| Timber for House | 30 nos. | Dec - Jan |
| Small Timber for Implements | - | - |
| Pole / Bamboo | 150 bamboo | Dec - Jan |
| Fodder from Forest | 90800 | Throughout the year |
| NTFP | 6000 | 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 Borgorong JFMC is given in the following table.

Table-5 (A): Collection & Marketing of Forest Produce by Villagers of the Borgorong 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 | 42 | 1320 | Forest |
| Timber for House | Dec - Jan | 42 | 1 nos. | Forest |
| Small timber for Implements | - | - | - | - |
| Bamboo | Dec - Jan | 42 | 10 nos. | Forest |
| Pole | - | - | - | - |
| Fodder from Forest | Throughout the year | 42 | 3 kg per day | Forest |
| NTFP | Throughout the year | 42 | 9 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 [Borgorong JFMC]

| Name of Forest Produce | Surplus Marketed (Kg) | How marketed | Average Income per HH from sale of Forest Produce |
|-----------------------------|-----------------------|--------------|---|
| Firewood | 35000 kg/year | Local Market | 1700-2100/month |
| Timber for House | - | - | - |
| Small timber for Implements | - | - | - |
| Bamboo | 22-40 pc/ month | Local Market | 600-1250/month |
| Pole | - | - | - |
| Fodder from Forest | 800 kg /year | Local Market | 800-1500/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 Borgorong 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 Borgorong JFMC have been summarized below.

• **Table-7: Protection Problems of the Borgorong 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 | No | No |
| 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 Borgorong JFMC, the reasons for degradation of forest are as follows:

- (a) Biotic interference.
- (b) Traditional Cultivation of Tribal People
- (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 Borgorong 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 Borgorong JFMC from the issues discussed earlier at Sub-section 3.1

Table-8: Protection Plan of the Borgorong 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 | 6pm-6am | 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 Borgorong 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 Borgorong JFMC are given here under.

Table-9: Types of Operations Proposed in the Borgorong 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 | 200 Ha |
| Protection to Cut Stumps of Trees | Yes | Yes | All the Year | 200 Ha |

| Treatment | Required (Yes/ No) | Responsibility of JFMC (Yes / No) | Month / Year when can be done | Extent of Area proposed for Treatment (Ha) |
|---|---------------------------|--|--------------------------------------|---|
| Watershed Treatment | Yes | Yes | All the Year | 5 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 Borgorong 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 Borgorong JFMC

| Treatment | Area in Ha under Plantation Module | Priority for Block Plantation | Species | Spacing (metre x metre) |
|--|---|--------------------------------------|------------------|--------------------------------|
| Assisted Natural Regeneration (with plantation in gap) | 45 Ha ANR by APFBC | - | Non Sal NTFP | 2/2 |
| Block Planting | - | - | - | - |
| Sowing of Neem, Amla, Mahua, Bahera (Medicinal | 10 | - | Medicinal Plants | - |

| Treatment | Area in Ha under Plantation Module | Priority for Block Plantation | Species | Spacing (metre x metre) |
|----------------------------------|------------------------------------|-------------------------------|---------|-------------------------|
| Plants) | | | | |
| Enrichment Plantation/ Sowing | - | - | - | - |
| Direct Plantation | - | - | - | - |
| Other | - | - | - | - |
| Total Area (in Ha.) | 55 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 Borgorong 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-2500 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 Borgorong 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 Borgorong JFMC. This includes the Departmental Nursery involved in JFMC works.

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

| Location of Nursery | Species | Year of Development | Number of Seedlings | Remarks |
|---------------------|-----------|---------------------|---------------------|----------|
| Borgorong JFMC | Varieties | 2016 | 3,18,000 | 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 Borgorong JFMC.

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

| Name of Nursery | Species | Year of Development | Number of Seedlings | Remarks |
|-----------------|-----------|---------------------|---------------------|----------|
| Borgorong JFMC | Varieties | 2016 | 3,18,000 | 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 Borgorong JFMC is given below. This covers a period of ten years.

(A) Timber Species Sal , Gameri, Tik

Table-12 (A): Maintenance Plan of Teak Plantation in the Borgorong 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 Borgorong 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 Borgorong 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 Borgorong 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 |

| Year(s) | Treatment |
|-----------------------|--|
| 7 th Year | Collection of fruits Minimal pruning for removal of criss-crossing, overcrowding branches |
| 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 Borgorong JFMC are given below.

Table-13): Miscellaneous Operations in the Borgorong 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 Borgorong 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 Borgorong 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 Borgorong 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 Borgorong JFMC

| Item | Month | Year (Indicative) | Quantity |
|----------------------------------|-----------|---------------------|--------------------|
| Firewood | 12 month | | 35-70 Kg/month |
| Timber for House | - | - | - |
| Small timber for Implements | - | - | - |
| Bamboo | 12 month | 22-40 pc/ month | 600 -1250 Kg/month |
| Pole | - | - | - |
| Fodder from Forest Trees & Grass | 12 month | - | 1100-2000 Kg/month |
| NTFP | 3-4 month | - | 10-30 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 Borgorong JFMC.

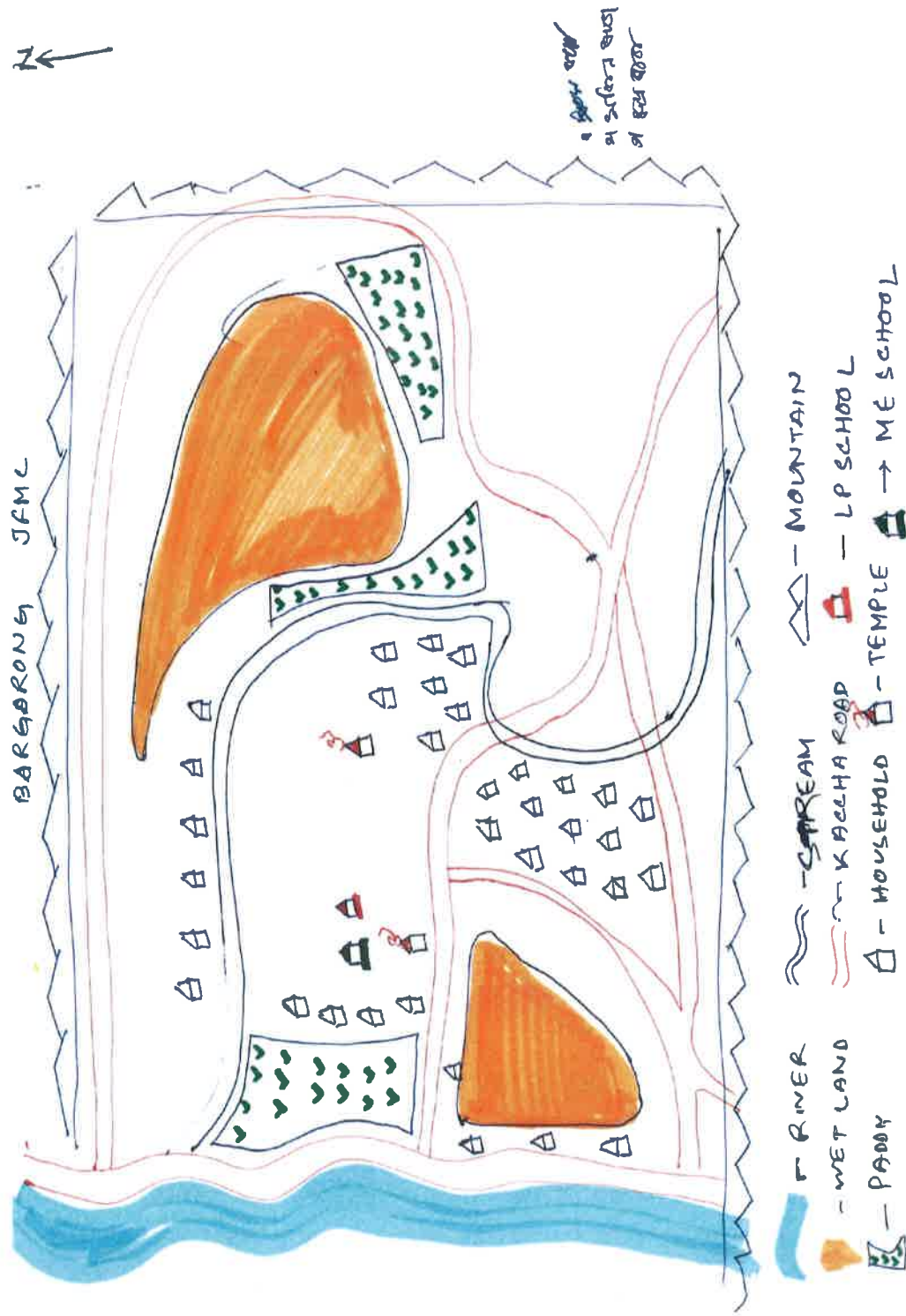
Table-15: Sharing Mechanism for Borgorong JFMC

| 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.


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Annexure 5



Social and resource map of Bargarong JPMC

Bargorony JFMC

| | Road | Drinking water | Electricity | Hospital | Veterinary | Community hall | Irrigation | Sanitation | Education | Mark shed | Handloom | Mark scoring | Position |
|---|------|----------------|-------------|----------|------------|----------------|------------|------------|-----------|-----------|----------|--------------|----------|
| A | A | A | A | A | A | A | A | A | A | A | A | A | 1st |
| B | B | B | B | B | B | B | B | B | B | B | B | B | 2nd |
| C | C | C | C | C | C | C | C | C | C | C | C | C | 3rd |
| D | D | D | D | D | D | D | D | D | D | D | D | D | 4th |
| E | E | E | E | E | E | E | E | E | E | E | E | E | 5th |
| F | F | F | F | F | F | F | F | F | F | F | F | F | 6th |
| G | G | G | G | G | G | G | G | G | G | G | G | G | 7th |
| H | H | H | H | H | H | H | H | H | H | H | H | H | 8th |
| I | I | I | I | I | I | I | I | I | I | I | I | I | 9th |
| J | J | J | J | J | J | J | J | J | J | J | J | J | 10th |
| K | K | K | K | K | K | K | K | K | K | K | K | K | 11th |

1. Electricity
2. Sanitation
3. Road
4. Drinking water
5. Education
6. Irrigation

7. Hospital
8. Veterinary
9. Market-shed
10. Community hall
11. Handloom

Handloom
Mark shed
Education
Irrigation
Sanitation
Community hall
Veterinary
Hospital
Drinking water
Electricity
Road

EPA ranking of Bargorony

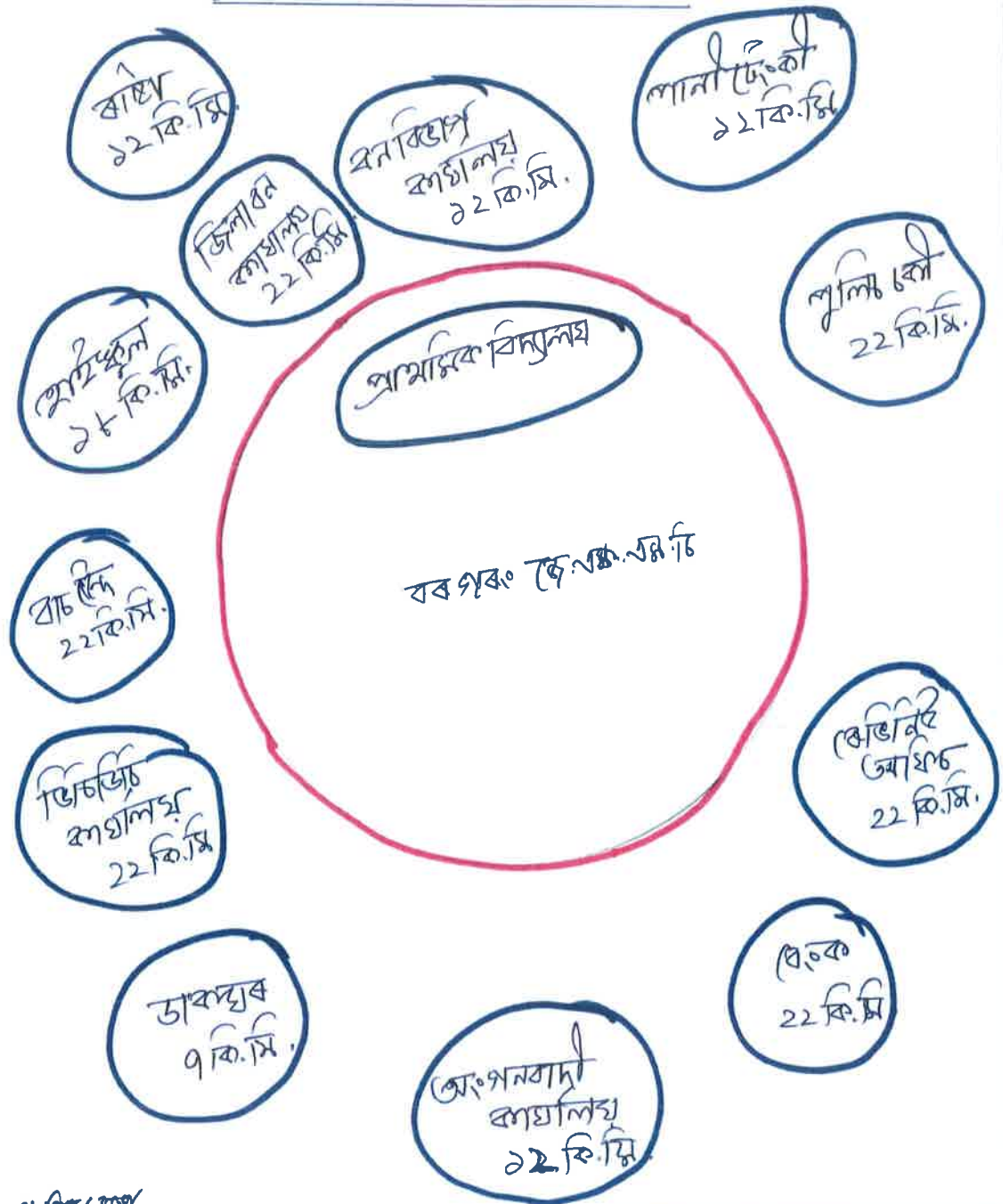
Bargorong JFMC.

| | 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 | A | x | C | A | E | A | G | H | I | J. | 3 | 6th. |
| Forest protection | B | x | C | A | E | B | G | H | I | J. | 1 | 7th. |
| Plantation on (Medicinal, NTFB etc) | C | | x | C | C | C | G | H | C | C | 7 | 3rd. |
| Plantation bamboo | D | | | x | D | D | G | H | D | D | 4 | 5th. |
| Plantation teak | E | | | | x | E | G | H | E | J | 4 | 5th. |
| Natural regeneration | F | | | | | x | G | H | I | J | 0 | 8th. |
| Plantation of firewood | G | | | | | | x | G | G | G | 9 | 1st |
| Raising of nursery | H | | | | | | | x | H | H | 8 | 2nd |
| Fodder cultivation | I | | | | | | | | x | J. | 5 | 4th |
| Demarcation of boundary | J | | | | | | | | | x | 5 | 4th. |

1. Plantation of Firewood.
2. Raising of Nursery.
3. Plantation on (Medicinal, NTFB etc.)
4. Demarcation of Boundary.
5. Fodder cultivation
6. Plantation on bamboo.
7. Plantation of teak,
8. Development of degraded forest.
9. Forest Protection
10. Natural Regeneration.

Livelihood Ranking of Bargorong JFMC

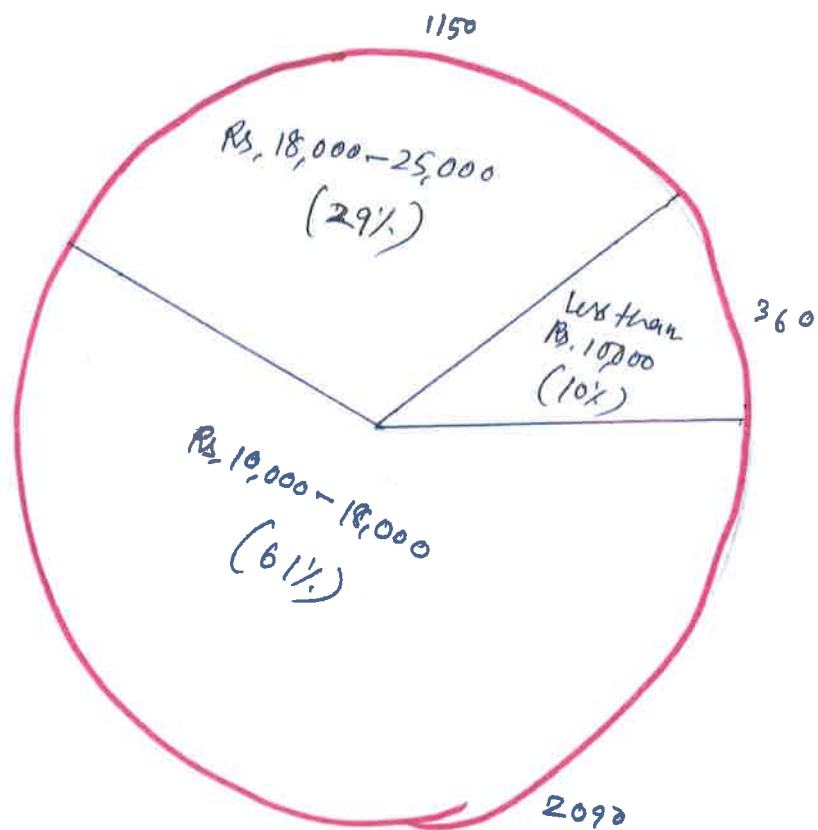
ভেনাচিত্র - বরগুণা জে.সফ.এম.টি



২/ সিলেট জেলা
৩/ সিলেট জেলা
০/ সিলেট জেলা

Ven Diagram representation of Bargorong JFMC

Pie chart (Wealth Ranking) - Bargarong IPMC



24 ଡିଗ୍ରୀ ମାତ୍ର
 4 ମିନିଟ୍ ସାଥୀ
 01 ମିନିଟ୍ ମାତ୍ର

Wealth ranking in Pie diagram representation

ANNEXURE

Annexure (Record I)

Table 1: Basic data of the JFMC

| Sl no | 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 |
|-------|------------------|-----------------------|-----------------------------|-----------------------|------------------------------|--------------|-------------------------------------|---------------------|----------|-------------------------------|----------------------------|
| | Borgorong | 2016 | 20 | Sanjay Rabha | Kunjalal Bayan | 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 | | |
| 42 | 185 | 88 | 97 | 1102 | 4.94 |

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 |
|----------------------|-----------------------|-----------------------------------|-----------------------|-------|
| - | 38 | 4 | - | 310 |

Table 4 : Cattle Population of the JFMC

| Cows | Buffaloes | Goat | Poultry | Pig | Total |
|------|-----------|------|---------|-----|-------|
| 189 | - | 55 | 260 | 27 | 531 |

Table 5 Infrastructure of the JFMC

| Sl no | Infrastructure | Location | Distance from village |
|-------|----------------|------------|-----------------------|
| 1 | Electricity | Nill | Nill |
| 2 | Gas connection | Nill | Nill |
| 3 | Transport | Pucca Road | 12 km |
| 4 | PHE | Kulshi | 12 km |

| | | | |
|----|-----------------------|-----------|-------|
| 5 | LP school | Inside | 1km |
| 6 | High school | Kulshi | 18 km |
| 7 | Post office | Kukurmara | 7km |
| 8 | Bank | Chayygaon | 22 Km |
| 9 | Anganawadi centre | Kulshi | 12 Km |
| 10 | VCDC | Chayygaon | 22 Km |
| 11 | Revenue Office | Chayygaon | 22 Km |
| 12 | Police station | Chayygaon | 22 Km |
| 13 | Forest Office | Kulshi | 12 Km |
| 14 | Bus facility | Chayygaon | 22 Km |
| 15 | Railway Station | Chayygaon | 22 Km |
| 16 | District head quarter | Chayygaon | 22 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 | 26 | NA | |
| Rabi | Mustard | 2 | NA | |
| Others | Vegetable, Fruits | 15 | NA | 3 |

Table 7 Crop production profile of BARADOVA JFMC

| Type of crop | Total Production (approx) in quintals | No of household growing | Average production (quintal/ hac) approx | Area under crop (hac) approx |
|--------------|---------------------------------------|-------------------------|--|------------------------------|
| Paddy | 840 | 42 | 21 | 40 |
| Oil seeds | 6 | 16 | 1.5 | 4 |
| Vegetable | 6.7 | 46 | 1 | 6.7 |
| Fruits | 2.6 | 46 | 1 | 2.6 |

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 | Kulshi | 12 km |
| Weekly Market | Kulshi | 12 km |
| Major Market | Chayygaon | 22 Km |
| Forest Corporation Sale Depot. | kukurmara | 18 Km |
| Tendu Patta PHAD | -- | -- |
| Fish Market | Locally available | -- |
| 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 | 42 | 12 | Forest | Major |
| Kerosene stove | Nil | - | - | - |
| Gobar/Bio gas | Nil | - | - | - |
| LPG | Nil | - | - | - |
| Electric Heater | Nil | - | - | - |

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 | |


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