

**MADHYA BALIJAN PATKAI JOINT FOREST MANAGEMENT COMMITTEE
(JFMC)**


DIGBOI FOREST DIVISION

**MICRO-PLAN
(2016-17 to 2025-26)**

**Prepared by
Madhya Balijan Patkai Joint Forest Management Committee**

**Assisted by
Assam Forest Department**

**&
COMPELO
(HE and RGVN)**


**Divisional Forest Officer
Digboi Division, Digboi
Tinsukia, Assam**

July 2017

List of Acronyms

| Acronym | Full Form |
|----------------|--|
| APFBC | Assam Project on Forest and Biodiversity Conservation |
| AFD | <i>Agence France de Développement</i> |
| BPL | Below Poverty Line |
| COMPELO | Consortium for Micro Planning and Enhancing Livelihood Opportunities |
| CML | Centre for Microfinance and Livelihood |
| EPA | Entry Point Activities |
| GIS | Geographical Information System |
| Ha | Hectare |
| IIE | Indian Institute of Entrepreneurship |
| JFMC | Joint Forest Management Committee |
| Kg | Kilogram |
| Km | Kilometer |
| MT | Metric Ton |
| NGO | Non-Governmental Organization |
| NTFP | Non Timber Forest Product |
| NWFP | Non Wood Forest Product |
| PDS | Public Distribution System |
| PRA | Participatory Rural Appraisal |
| RGVN | Rashtriya Gramin Vikas Nidhi |
| Rs. | Indian Rupees |
| SHG | Self Help Group |
| VCDC | Village Council Development Committee |

**MADHYA BALIJAN PATKAI JOINT FOREST MANAGEMENT COMMITTEE
DIGBOI Forest Division**

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

Table of Contents

| Section No | Heading | Page No |
|-------------------|---------------------------------------|----------------|
| 1 | Introduction | |
| 2 | Village Socio-Economic Profile | |
| 3 | Livelihood Analysis-Framework & Tools | |
| 4 | Livelihood Development Plan | |
| 5 | Forest Development Plan | |
| 6 | List of Appendices | |

| 1. Introduction | |
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| About the Project | <p>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 ecosystems to enhance the forest dependent community’s livelihoods and ensure conservation and sustainable use of biodiversity’.</p> <p>The above project is being mainly funded by the <i>Agence France de Développement</i> (AFD) - i.e. the French Development Agency, with cofounding 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.</p> |
| Micro-Planning & Livelihood Development | <p>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.</p> <p>A consortium comprising of Indian Institute of Entrepreneurship (IIE) Guwahati and <i>Rashtriya Gramin Vikas Nidhi</i> (RGVN) has been formed to implement (<i>interalia</i>) the micro-planning and livelihood development under the above project.</p> <p>The above consortium has been titled as ‘Consortium for Micro Planning and Enhancing Livelihood Opportunities’ - COMPELO in short.</p> <p>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.</p> |
| Micro-Plan for the Madhya Balijan Patkai JFMC | <p>This document gives the Micro-Plan for the Madhya Balijan Patkai JFMC, which is located in the Southern side of Lakhpathar Reserve Forest and Northern part of Digboi Reserve Forest under Digboi Forest Division in Tinsukia District of Assam. The Upper Dihing R.F falls under the jurisdiction of Khetu Beat office under Digboi Range of Digboi Forest division. The JFMC is The profile of the community is given in the next section.</p> <p>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 on 21st of April, 2017. The micro-plan has been compiled by IIE based on the project guidelines. The document has been discussed and finalized for adoption of Micro plan for Madhya Balijan Patkai.</p> |

| 2. Village Socio-Economic Profile | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|--------------------------|-----------------------|--------------------------|----------------------|--|----------------------|---|---|-----------------------|------------|-----------------|----------|------------------------|--------|---------------------|--------|--------------------|--------|--------------------|------|--|--|
| Location | The Madhya Balijan Patkai Joint Forest Management Committee (JFMC) has been formed to cover the existing community dwelling in Puberan Nepali Gaon, Balijan Christian Basti, Naharkatia gaon and Vitar Borjan are the villages located on the fringe of the Dihing Patkai RF under Digboi range of Digboi Forest Division. The area covered by the above JFMC falls within the Margherita Development Block of Tinsukia District. Appendix-1 gives the Village Map. | | | | | | | | | | | | | | | | | | | | | | |
| Key Information | <p>The key information of the JFMC is furnished below.</p> <p>Table-A: Key Information of the JFMC</p> <table border="1"> <tr> <td>Name of the JFMC</td> <td>Madhya Balijan Patkai</td> </tr> <tr> <td>Habitation</td> <td></td> </tr> <tr> <td>Name of Revenue Village</td> <td></td> </tr> <tr> <td>Name of the Gram Panchayat / VCDC</td> <td>Borbil Gaon Panchayat</td> </tr> <tr> <td>Revenue Circle</td> <td>Margherita</td> </tr> <tr> <td>District</td> <td>Tinsukia</td> </tr> <tr> <td>Forest Division</td> <td>Digboi</td> </tr> <tr> <td>Forest Range</td> <td>Digboi</td> </tr> <tr> <td>Forest Beat</td> <td>Barjan</td> </tr> <tr> <td>Year Formed</td> <td>2016</td> </tr> <tr> <td>Description of Boundary of JFMC</td> <td>As below North: Lakhpathar RF South: Digboi RF West : Balijan Kuchosi Gaon East: Borjan Gaon</td> </tr> </table> <p>Source: JFMC Records & Discussions during PRA Exercise in 21st April 2017</p> <p>Additional details are given at Table-1 of Record-I. (Given at Annexure)</p> | Name of the JFMC | Madhya Balijan Patkai | Habitation | | Name of Revenue Village | | Name of the Gram Panchayat / VCDC | Borbil Gaon Panchayat | Revenue Circle | Margherita | District | Tinsukia | Forest Division | Digboi | Forest Range | Digboi | Forest Beat | Barjan | Year Formed | 2016 | Description of Boundary of JFMC | As below North: Lakhpathar RF South: Digboi RF West : Balijan Kuchosi Gaon East: Borjan Gaon |
| Name of the JFMC | Madhya Balijan Patkai | | | | | | | | | | | | | | | | | | | | | | |
| Habitation | | | | | | | | | | | | | | | | | | | | | | | |
| Name of Revenue Village | | | | | | | | | | | | | | | | | | | | | | | |
| Name of the Gram Panchayat / VCDC | Borbil Gaon Panchayat | | | | | | | | | | | | | | | | | | | | | | |
| Revenue Circle | Margherita | | | | | | | | | | | | | | | | | | | | | | |
| District | Tinsukia | | | | | | | | | | | | | | | | | | | | | | |
| Forest Division | Digboi | | | | | | | | | | | | | | | | | | | | | | |
| Forest Range | Digboi | | | | | | | | | | | | | | | | | | | | | | |
| Forest Beat | Barjan | | | | | | | | | | | | | | | | | | | | | | |
| Year Formed | 2016 | | | | | | | | | | | | | | | | | | | | | | |
| Description of Boundary of JFMC | As below North: Lakhpathar RF South: Digboi RF West : Balijan Kuchosi Gaon East: Borjan Gaon | | | | | | | | | | | | | | | | | | | | | | |
| Brief Details of the Executive Committee & General Body | <p>The brief details of Executive Committee & General Body of the JFMC are contained in the table, which is given below.</p> <p>Table-B: Brief Details of Executive Committee & general Body</p> <table border="1"> <tr> <td>Name of President</td> <td>Mr. Kailash Chetry</td> </tr> <tr> <td>Name of Secretary</td> <td>Miss Parineeta Singh</td> </tr> <tr> <td>No. of Members in Executive Committee</td> <td>Male: 7 Female: 3</td> </tr> <tr> <td>No. of Members in the General Body</td> <td>370 (represented by the head of the households)</td> </tr> </table> <p>Source: JFMC Records</p> | Name of President | Mr. Kailash Chetry | Name of Secretary | Miss Parineeta Singh | No. of Members in Executive Committee | Male: 7 Female: 3 | No. of Members in the General Body | 370 (represented by the head of the households) | | | | | | | | | | | | | | |
| Name of President | Mr. Kailash Chetry | | | | | | | | | | | | | | | | | | | | | | |
| Name of Secretary | Miss Parineeta Singh | | | | | | | | | | | | | | | | | | | | | | |
| No. of Members in Executive Committee | Male: 7 Female: 3 | | | | | | | | | | | | | | | | | | | | | | |
| No. of Members in the General Body | 370 (represented by the head of the households) | | | | | | | | | | | | | | | | | | | | | | |

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| <p>Households & Population Structure</p> | <p>The village has 370 households, of which 370 households are BPL (Below Poverty Line) households.</p> <p>The total population is 2,210, of which 973 are males and 1237 are female members. Majority of the village population belongs to OBC community followed by SC community, General community and ST community and few households belong to ST community.</p> <p>Table-2 of Record-I may be referred for further details in the above regard.</p> <p>From this, it is inferred that:</p> <p>(1) The average number of persons in a household is 5</p> <p>(2)The sex ratio is 1271 females per 1000 males in the village.</p> |
| <p>Education & Skills Development</p> | <p>Over 97.06 % of the population is reported to be literate. Most of the community members have received school level education. On the other hand, relatively fewer households have college and university educated members.</p> <p>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:</p> <p>a) Weaving</p> <p>b) Bamboo Artisan</p> <p>c) Livestock rearing</p> <p>Government has been active in promoting formal skills development programmes in the country as well as in the state. However, no such programmes have been carried out in the habitation or in nearby areas.</p> |
| <p>Soil</p> | <p>The soil type of the project area includes:</p> <p>The area situated on a layer of clay soil of light yellowish and dark grayish colour up to a depth of about 2.5 m, then a layer of sand (Quartz) up to about 16 m and an under layer of clay, grayish m colour hard and sticky. The soil is found usually acidic in reaction. The major soil groups are (i) new alluvial soil (ii) old alluvial soil, (iii) piedmont soils and (iv) red loamy soil.</p> <p>The soil is reported to be fertile and support various types of crops and different vegetation.</p> |
| <p>Water</p> | <p>The area is drained by River</p> |
| <p>Climate: Temperature & Rainfall</p> | <p>The average temperature 22.9° C. With an average of 27.5 °C, August is the warmest month. In January, the average temperature is 15.9 °C. It is the lowest average temperature of the whole year.</p> <p>The average rainfall is about 2499 mm. About two-thirds of the rainfall usually occurs during the rainy season (June-August). The village has high levels of humidity (over 90%) during the rainy months and low levels in the winter (Below 30%).</p> |

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| <p>Forest & Biodiversity</p> | <p>The local forests have been broadly classified as Alluvial Plain Sal Forest and Eastern Terrain Sal Forests. The main tree species are Hollong, Titasopa, Holokh, Ajar, Uriam, Bonbogori, Khokon, Nahor etc. The forests can yield a range of NTFP like spices, leafy vegetables, ferns, medicinal plants, bamboo, thatch, fodder, etc. Additional details in this regard are given at the ‘Forest Development Plan’.</p> |
| <p>Land Use Pattern</p> | <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: Crop Land: Tree Cover: Habitation: Water Bodies: 4 % (incl. water logged areas) Barren/Fallow Land: :</p> |
| <p>Land Holdings</p> | <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"> • 100 % of the households are marginal farmers (less than 2 Ha) |
| <p>Livestock</p> | <p>The total number of livestock in the village is 1405. The main types of livestock possessed by the households include: Cows: 450 Goats: 310 Bull: 410 Pig: 35 Table-4 of Record-I may be referred to for the details in the above connection.</p> |
| <p>Village Infrastructure & Communication Facilities</p> | <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. From the above table, the following have been noted with regard to village infrastructure: Physical Infrastructure: The habitation is not deprived of basic physical infrastructure like paved roads, electricity, water supply, mobile network etc. Education & Health Facilities: There are minimal educational is available. Health and Public transport is available within 3km. 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 within 2-8 Km, 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 3-6km distance from the habitation. Hence, the community members have less bank accounts or postal savings accounts.</p> |

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| Agricultural Crops | <p>The details of the agricultural crops grown in the village is available at Table-6 of Record-I.</p> <p>The above shows that the following are the main crops grown in the village.</p> <ol style="list-style-type: none"> Kharif Crops: Paddy-Sali; Rabi Crops: Seasonal Vegetables-Potato, Raddish, Brinjal, etc. Other: Tea Leaf <p>Therefore all the crops are depended on rainfall</p> |
| Crop Production Profile | <p>Table-7 of Record-I may be referred to for the production and yield details of the crops grown in the village.</p> <p>The maximum numbers of households are involved in growing crops like 100. The production and yield of these crops is given as follows:</p> <ol style="list-style-type: none"> Paddy: Production 390.6 MT Yield 2.52 MT /ha Tea Leaf: Production 0.10 MT Yield Seasonal Vegetables: Production 141 MT Yield 2.3 MT/ha |
| 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> <ol style="list-style-type: none"> Paddy Waste Household Kitchen Waste Surplus Vegetables Grazing Land Forest |
| 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> <ol style="list-style-type: none"> Grocery / PDS: Within the Village Weekly / Bi-weekly Market: : Balijan at 3 km away Major Market: : Digboi at 8 km away |
| 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> <ol style="list-style-type: none"> River Water (Water Availability: Perennial / Seasonal) Tube well (Water Availability: Perennial / Seasonal) Stream (Water Availability: Perennial / Seasonal) Ring 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> <ol style="list-style-type: none"> Fuel Wood- Households Depending: 370 Nos (Main). Source: Forest Plantation Kerosene- 160 Nos. (Secondary) LPG- 160 Nos. (Secondary) |
| Socio-economic status | <p>Social set-up: The village is inhabited by tribal and Non tribal community and is comprised of OBC and Schedule Caste. The society is not marked by deep social divisions. The observed position of women is satisfactory.</p> |


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| | <p>Economic Condition: The economic position is / is not satisfactory. The main livelihood is tea plantation and Rice Cultivation. The household earn from a minimum of Rs. 48,000 to a maximum of Rs. 2, 40,000 per year. 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

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| PRA Exercise | <p>Team from IIE Guwahati carried out PRA exercise in Laina village as follows: Date: 21st of April, 2017 Location: Gram Panchayat Hall, Pubarun Nepali Village, 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: Social Mapping Wealth Ranking Time Line review Seasonality of Livelihoods Venn Diagram Appendix-3 furnishes detailed information of the above.</p> |
| Ranking | <p>Ranking exercise has been done for the following:</p> <ul style="list-style-type: none"> • Livelihoods Skills Development • Entry Point Activities (EPA) <p>Appendix-3 elaborates the above. From the same, it is stated that: Ranking of Livelihoods & Skills Development</p> <ol style="list-style-type: none"> 1. Weaving/Handloom in Modern Tools 2. Tailoring 3. Bamboo Product Manufacture and Making 4. Fishery 5. Livestock Rearing 6. Areca Nut Leaf Plat Manufacture and Marketing |

Madhya Balijan Patkai Joint Forest Management Committee (JFMC),
Digboi Forest Division

| Ranking of EPA | | | |
|---------------------------------|---|---|---------------------------------|
| | Village EPA as ranked | Details (Appendix-3 has additional particulars) | Probable source of funding/dept |
| 1. | Community Hall/Training Centre | Construction of Community Hall cum Training Centre along with Boundary wall | APFBC |
| 2. | Drinking Water | At least 13 RO Plant and 8 Tube well should be installed within the village | PHE/APFBC |
| 3. | LPG connection with cylinder | To 50 BPL families | APFBC / UJJWALA |
| 4. | Solar home light system | To 50 BPL families | APFBC / MNRE/NBARD |
| 5. | Sanitation | Construction of 10 no's Toilet at social places namely Namghar, School, Mandir and Church etc | Swachh Bharat Mission (Rural) |
| 6. | Village Internal Roads | 5 Km Village roads between four villages should be constructed. | PMGSY /MGNREGA/DRDA |
| 7. | Drains | Construction of drain at road side | PMGSY /MGNREGA/DRDA |
| 8. | Bridge | Construction of Bridge Balunalla 40 ft | APFBC |
| 9. | Renovation of School | 7 no's school should be renovated which is inside the JFMC area | SSA |
| 10. | Peoples Nursery | A People nursery within the JFMC area for fruits plantation(which will be maintained by JFMC area approx 4 bigha) | APFBC |
| Livelihood opportunities | Livelihood Opportunities were identified as follows: <ul style="list-style-type: none"> • Skills Development • Agriculture & Horticulture • Livestock • NTFP • Credit Facility Additional discussion about the above has been given below. | | |


Divisional Forest Officer
Digboi Division, Digboi
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| <p>Agriculture & Horticulture</p> | <p>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: <ul style="list-style-type: none"> • Agri-skill development programme. • Training on insecticides, pesticides, hybrid cultivation etc. • Irrigation • Credit facilities. </p> |
| <p>Livestock</p> | <p>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 and less supply. (b) Trees fodder and 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 demand for livestock products like pork, chicken, eggs, etc in the nearby markets. The suggested programme is: (a) High Yielding Variety Pig Rearing (b) High Yielding Variety Poultry Rearing (c) Dairy (d) Fisheries</p> |
| <p>NTFP</p> | <p>The opportunities for NTFP are tabulated at Table-14 under Record-2 The main constraints are: (a) Less availability of NWFP (b) No technical know-how (c) No processing units The opportunities is: (a) Availability of fertile fallow land (b) Generation of Livelihood from collection The suggested programme are: (a) Plantation of Food plants, Fodder, Etc (b) Medicinal Plants and aromatic plants (c) Herbal plants</p> |

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| <p>Specialized Skills</p> | <p>For skills development, the opportunities are tabulated at Table-15 under Record-2 The main constraints are: (a) Lack of product diversification (b) Lack of product quality</p> <p>The opportunities are: a) Know-how of Traditional Skills, viz-sericulture, weaving b) Availability of Work-Centre (c) Availability of Man-power</p> <p>The suggested programme is: (a) Training on Modern Tools and Equipment (b) Providing modern technology to the villagers (c) Skill Up gradation & Training on New Product Development and Product Diversification (d) Setting up a raw material bank (e) Providing a bulk buy arrangement of the finished product with institutional buyers.</p> |
| <p>Credit Facility</p> | <p>Table-16 under Record-2 discusses this aspect. The main constraints with the reasons are: (a) Financial exclusion (b) Involvement of unorganized money lender (c) Lack of Credit Appraisal</p> <p>The opportunities are: (a) Setting up modern financial institution (b) Adequate awareness.</p> <p>The suggested programmes are: (a) Setting up modern financial institution in the nearby areas. (b) Financial Inclusion Initiatives</p> |
| <p>Strategic Interventions</p> | <p>Summarizing the suggested programme at above as strategic interventions for the Livelihood Development Plan:</p> <ol style="list-style-type: none"> 1. Agriculture & Horticulture: Tractor operation training, Agri-skill development programme, Training on insecticides, pesticides, hybrid cultivation 2. Livestock: Piggery, Poultry 3. NWFP : Plantation of Food plants, Medicinal Plant etc 4. 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, Market Linkage with institutional buyers. 5. Credit facility: Setting up modern financial institution in the nearby areas |

| 4. Livelihood Development Plan | |
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| Income Generating Activities | <p>The main income generating activities as planned at the village are:</p> <p>Farm Sector :</p> <ol style="list-style-type: none"> 1. Dairy 2. Poultry and Piggery 3. Agriculture 4. Horticulture 5. Pisciculture 6. Sericulture <p>Non-Farm sector:</p> <ol style="list-style-type: none"> 1. Handloom/ Weaving 2. Heavy Motor Driving 3. Electrician <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 generate entrepreneurial awareness 2. To organize and form Joint Liability Groups(JLG) 3. 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. At least two Exposure tips to Successful JFMC, within Assam and other States. |
| 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 Programme (f) Help from departments of education, Sericulture, Veterinary, Irrigation, Industrial and Fishery. (g) 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 Madhya Balijan Patkai 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 Madhya Balijan Patkai 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 Madhya Balijan Patkai JFMC have been summarized below.

Table-1: Conditions of the Forests of Madhya Balijan Patkai 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 / PRF Name: UDRF (EB) Beat Name- Borjan | 300 Ha | 500 mtr | Good Area: 250 Ha Degraded Area: 50 Ha | Over 9 m |
| (B) Other Planted Area (UDRF West Block) | 20 Ha | Within 100 mtr | Good Area: 10 Ha Degraded Area: 10 Ha | Nil |
| TOTAL | 320 Ha | | Good Area: 260 Ha Degraded Area: 60 Ha | |

Source: Discussions with Forest Department personnel & Community members

1.2. Forest Soil Type

The forests of BalijanMilijuli JFMC are located in old alluvial soil, (iii) piedmont soils and (iv) red loamy soil (Source: Google)

Table-2: Forest Soil Type in Madhya Balijan Patkai JFMC

| Parameter | Status in Assigned Forests | Status in Other Planted Areas |
|-------------------------|----------------------------|-------------------------------|
| Fertility Level | High | High |
| Soil Erosion Status | No Soil Erosion | No Soil Erosion |
| Presence of: | | |
| (a) Silt | Nil | Nil |
| (b) Mud-flat | Nil | Nil |
| (c) Newly accreted land | Nil | Nil |
| (d) Sand dune | Nil | Nil |

Source: Discussions with Forest Department personnel & Community members

For the Madhya Balijan Patkai JFMC; the salient points of the forest soil type are summarized below:

- (a) The Red Soil is Fertile in Nature
- (b) No Soil Erosion in the recent past
- (c) No Presence Silt, Mud-flat, newly accreted land or Sand dune

1.3. Existing Composition of Flora

In the forests of the Balijan Milijuli JFMC, the existing composition of the flora has been given as follows. It may be noted that the local forests are classified as Upper Assam Wet Tropical Evergreen Forests.

Table-3: Existing Composition of Flora in the Madhya Balijan Patkai JFMC

| Parameter | Local Name(s) | Botanical Name(s) |
|----------------------|---------------|----------------------------------|
| Major Forest Species | Hollong | <i>Dipterocarpus macrocarpus</i> |
| Associates | Hollock | <i>Terminalia myriocarpa</i> |
| | Ajar | <i>Lagrsloomia Speciosa</i> |
| | Arjun | <i>Terminalia arjuna</i> |
| | Udal | <i>Sterculia Villosa</i> |
| | Simul | <i>Bombax ceiba</i> |
| | Bakul | <i>Mimusops elengi</i> |
| | Siris | <i>Albizia lebbeck</i> |
| | Dhuna | <i>Canarium bengalenses</i> |
| | Sam | <i>Artocarpus chapasha</i> |

| | | |
|------------------|-----------------------------|--|
| | Nahar | <i>Mesua ferrca</i> |
| | Sassi | <i>Aqeilatia agallecha</i> |
| Shrubs | Betibah | <i>Bambusa mastersii</i> |
| | Bhekuri | <i>Solanum indicum</i> |
| | Bajal bah | <i>Pseudostachyum polymorphum</i> |
| | Bor-manmani | <i>Centella asiatica</i> |
| | Ekra, bata | <i>Sclerostachya fusca</i> (Syn:- <i>Saccharum</i>) |
| Medicinal Plants | Hilikha | <i>Terminalia chebula</i> |
| | Bhomora, Bahera | <i>Terminalia belerica</i> |
| | Thutmala | <i>Garuga pinnata</i> |
| | Dalchini | <i>Cinnamomum zeylanicum</i> |
| Produces | Bamboo- Jati bah Kakobah | <i>Bambusa</i> <i>Dendrocalamus hamiltonii</i> <i>Tulda</i> |
| | Bet- Jati bet Lejai bet | <i>Rangi bet Calamus floribundus</i> <i>Calamus floribundus</i> |
| Others, if any | - | - |

Source: 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 Madhya Balijan Patkai JFMC.

2.1. Past Protection Measures of the JFMC

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

- (a) Number of households involved: 370
- (b) Number of people involved: 2210
- (c) Summary of the measures: There is no such record of protection measures taken by the members of the JFMC before formation of the JFMC
- (d) Any formal mechanism: Nil

[Source: 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 Madhya Balijan JFMC

| Name of Forest Produce | Average Requirement | Household | How met at Present | Source |
|------------------------------|--------------------------|---|---|----------------------|
| | Frequency of Requirement | Approx. Qty/year | | |
| Firewood | 100% | 550 kg to 730 kg | Cutting poles & Branches of trees | Reserved Forest Area |
| Timber for House (pole size) | 60% | 4 to 5 numbers | Do | Do |
| Small timber for Implements | 100% | 0.3 m ³ to 0.45 m ³ | Do | Do |
| Bamboo | 60% to 70% | 50 to 60 numbers | Cutting of culms | Do |
| Fodder from Forest | 100% | 2190 kg | Cutting of grass, leaves and straying of cattle | Do |
| NTPF | 100% | 182 to 200 kg | Collecting manually | Do |
| Other | | | | |

Source: Discussions with Forest Department personnel & Community members

There are 370 households in the Madhya Balijan Patkai JFMC. From the above table and this number of households, it is inferred that the total annual requirements of the Madhya Balijan village for forest produce for own use is as follows:

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

| Name of Forest Produce | Community Requirement (Kg per annum) (*) | Remarks |
|------------------------------|--|--|
| Firewood | 55000 to 73000 kg | The villages use firewood besides LPG @ 1.5 kg to 2 kg per day |
| Timber for House (Pole size) | 240 to 300 numbers | |
| Small Timber for Implements | 30 to 45 m ³ | |
| Pole / Bamboo | 3000 to 4200 bamboo | Used for Fencing, construction of houses and articles |

| | | |
|--------------------|----------------------|--|
| Fodder from Forest | 219000 kg | |
| NTFP | 18200 kg to 20000 kg | |
| Other | | |

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 Madhya Balijan Patkai JFMC is given in the following table.

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

| Name of Forest Produce | Collection for Marketing | | | Location of Collection |
|-----------------------------|--------------------------|-----------------------------|------------------------------------|------------------------|
| | Season / Months | No of Households Collecting | Average Qty. Collected (Kg) / year | |
| Firewood | Oct to March | 10% to 20 % | 4800 kg to 9600 kg | Forest |
| Timber for House | - | - | - | - |
| Small timber for Implements | - | - | - | - |
| Bamboo | Oct to March | 10% | 4800 numbers | Forest Area |
| Pole | - | - | - | - |
| Fodder from Forest | - | | - | - |
| NTFP | Throughout the Year | 40% | 480 kg | Forest |
| Other | - | - | - | - |

Source: 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 Madhya Balijan Patkai JFMC

Table-5 (B): Collection & Marketing of Forest Produce -

| Name of Forest Produce | Surplus Marketed | How marketed | Average Income per HH from sale of Forest Produce |
|-----------------------------|------------------|--------------|---|
| Firewood | - | - | - |
| Timber for House | - | - | - |
| Small timber for Implements | - | - | - |
| Bamboo | - | - | - |

| | | | |
|--------------------|---|---|---|
| Pole | - | - | - |
| Fodder from Forest | - | - | - |
| NTFP | - | - | - |
| Other | - | - | - |

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

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

Table-6: Total Requirements of Forest Produce by Villagers of the Madhya Balijan Patkai JFMC

| Name of Forest Produce | Community Requirement (Kg per annum) From Table-4(B) | Surplus Marketed (Kg) From Table-5(B) | Total Requirements (Kg) |
|-----------------------------|--|---------------------------------------|-------------------------|
| Firewood | - | -- | - |
| Timber for House | - | - | - |
| Small timber for Implements | - | - | - |
| Bamboo | - | - | - |
| Pole | - | - | - |
| Fodder from Forest | - | - | - |
| NTFP | - | - | - |
| Other | - | - | - |

3. Forest Protection Issues

3.1. Protection Problems

The protection issues of the forests of Madhya Balijan Patkai JFMC have been summarized below.

Table-7: Protection Problems of the Madhya Balijan Patkai JFMC

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

Source: Discussions with Forest Department personnel & Community members

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

- (a) Grazing of Local Animals

3.2. Reasons for Degradation of the Forest

In the Madhya Balijan Patkai JFMC, the reasons for degradation of forest are as follows:

- (a) Grazing of Domestic animals.

4. Components of the Forest Development Plan

The following sub-sections discuss the main components of the Forest Development Plan of Madhya Balijan Patkai 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 Madhya Balijan Patkai JFMC from the issues discussed earlier at Sub-section 3.1

Table-8: Protection Plan of the Madhya Balijan Patkai 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] |
|---|--------------------------------|--|----------------|--|
| Social Fencing | UDRF (EB), GPS Co-ordinates | Length= Breath= Area= | Grazing Season | High |
| Fire Protection | Nil | Nil | Nil | Nil |

Source: Discussions with Forest Department personnel & Community members

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

- (a) Social 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 Madhya Balijan Patkai JFMC are given hereunder.

Table-9: Types of Operations Proposed in the Madhya Balijan Patkai 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 | March- July | 50 Ha |
| Protection to Cut Stumps of Trees | No | No | No | No |
| Watershed Treatment | No | No | No | No |
| Water Reservoirs | No | No | No | No |
| Grass & Silvi-pasture | Yes | Yes | No | 10Ha |
| Bamboo Plantation | No | No | No | No |
| Seed Sowing | Yes | Yes | April to June | 10Ha |
| Root & Shoot Cutting & Plantation | Yes | Yes | June-July | |
| Cut Back & Coppice Treatment | No | No | No | No |
| Physical Fencing | Yes | Yes | November-February | 50 Ha |
| Social Fencing | Yes | Yes | June-July | 100 Ha |
| Other Activities | No | No | No | No |

Source: 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 Madhya Balijan Patkai JFMC:

- (a) Seed Sowing
- (b) Root & Shoot Cutting & Plantation
- (c) Physical Fencing
- (d) Social Fencing

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 Madhya Balijan Patkai JFMC

| Treatment | Area in Ha under Plantation Module | Priority for Block Plantation | Species | Spacing (meter x meter) |
|--|--|-------------------------------------|--------------------------|-------------------------|
| Assisted Natural Regeneration (with plantation in gap) | 20 Ha / year for five year | 20 Ha Block of ANR | Holong, Halokh, Azar etc | 2m x 2 m |
| Block Plantation | 20 (Fire wood) Ha / Year for five year | 20 Ha Block of Fire wood | Maz, | 2m x 2 m |
| Plantation of Neem, Amla, (Medicinal Plants) | 20 Ha / year for five year | 20 Ha Block of Medicinal plantation | | 2m x 2 m |
| Enrichment Plantation | 0 | | | |
| Direct Plantation | 0 | | | |
| Other | 0 | | | |

Source: Discussions with Forest Department personnel & Community members

4.4. Forest Improvement – (Action Plan Enclosed as annexure-I)

1.1. Nursery Development Plan

The Nursery Development Plan for the Madhya Balijan Patkai JFMC are taken as follows with due consultation of the Committee and Forest Department Personnel.

The Nursery Development Plan for the Madhya Balijan Patkai JFMC

| SL | Particulars | Location | Area | Remarks |
|----|--|--------------------------|------|---|
| 1 | Central Nursery / people nursery for plantation, free distribution on various occasions, sale to earn income of JFMC | Within the JFMC boundary | 3 Ha | 400 beds to produce 3 lakhs stump, direct and tall planting seedlings; 50 mother beds to produce 2 lakhs poly pot seedlings with estimated cost of Rs. 19,91,541.00 (Enclosed as annexure-II) |
| 1 | Central Nursery / people nursery for plantation, free distribution on various occasions, sale to earn income of JFMC | Within the JFMC boundary | Ha | 135 beds to produce 1 lakhs stump, direct and tall planting seedlings; 25 mother beds to produce 1 lakhs poly pot seedlings with estimated cost of Rs. 17,68,015 (Enclosed as annexure-III) |

1.2 Nursery Action Plan

Nursery Action Plan for Madhya Balijan Patkai JFMC

| SL | Particulars | 2015-2016 Rs | 2016-2017 Rs | 2017-2018 Rs | 2018-2019 Rs | 2019-2020 Rs |
|----|----------------------------|-----------------|-----------------|-----------------|-----------------|--------------------------|
| 1 | 3 Ha Nursery (Cr + Maint.) | 0 | 19,91,541.00 | 0 | 0 | 0 |
| | Maint. (60% of Cr.) | 0 | | 11,94,925.00 | 11,94,925.00 | So on if it is continued |
| 2 | 1 Ha Nursery (Cr + Maint.) | 0 | 17,68,015.00 | 0 | 0 | 0 |
| | Maint. (60% of Cr.) | 0 | 0 | 10,60,809.00 | 10,60,809.00 | Do |

1.2. Maintenance Plan - 10 Years (As stated above in action plan of plantation)

2. Expected Benefits

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

2.1. Expected Benefits Related to Wood & Grass

The above has been tabulated below for the Madhya Balijan Patkai 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 Balijan Milijuli JFMC

| Item | Month | Year (Indicative) | Quantity |
|----------------------------------|---------------------|----------------------|----------|
| Firewood | Throughout the year | 2026-27 onwards | |
| Timber for House | Throughout the year | 2040 Onwards | |
| Small timber for Implements | - | - | |
| Bamboo | Throughout the year | 2030 Onwards | |
| Pole | - | - | |
| Fodder from Forest Trees & Grass | Throughout the year | 2026-27 onwards | |
| NTFP | Throughout the year | 2035 onwards | |
| Wages | Throughout the year | 2016-17 onwards | |
| Other | - | - | |

Source: Discussions with Forest Department personnel & Community members

2.2. Sharing Mechanisms

The sharing mechanism for the benefits is indicated below for members of the Madhya Balijan Patkai JFMC.

Table-15: Sharing Mechanism for Madhya Balijan Patkai JFMC

| Method | Items |
|---------------------------------------|---------------------|
| To be shared equally | NTFP |
| To be freely collected by the members | Firewood, |
| Other Methods | Processing of NTFPs |

Source: Discussions with Forest Department personnel & Community members

6. List of Appendices

| Appendix No | Heading |
|-------------|---|
| 1 | Maps Village Map Village Social Map Village Resources Map |
| 2 | Land Use Map of Village (GIS) |
| 3 | PRA Exercise |
| | Social Mapping Wealth Ranking Time Line review Seasonality of Livelihoods Venn Diagram Chapatti Diagram Priority Ranking- Potential Livelihoods and EPA |
| 4 | Photographs |
| 5 | List of JFMC Members |
| 6 | Filled Up Tables (Proforma-1 to Proforma-4) Table Nos. 1-37 |

Appendix 1

HOW TO REACH

Digboi to Guwahati distance, location, road map and direction:

Digboi is located in Assam, India at the longitude of 95.61 and latitude of 27.4. Guwahati is located in Assam, India at the longitude of 91.75 and latitude of 26.19.

Distance between Digboi and Guwahati:

The total straight line distance between Digboi and Guwahati is 503 KM. This is a straight line distance and so most of the time the actual travel distance between Digboi and Guwahati may be higher or vary due to curvature of the road.

Digboi to Guwahati Travel Time:

Digboi is located around 503 KM away from Guwahati so if you travel at the consistent speed of 50 KM per hour you can reach Guwahati in 11 hours (approx). The Guwahati travel time may vary due to the bus speed, train speed or depending upon the vehicle use.

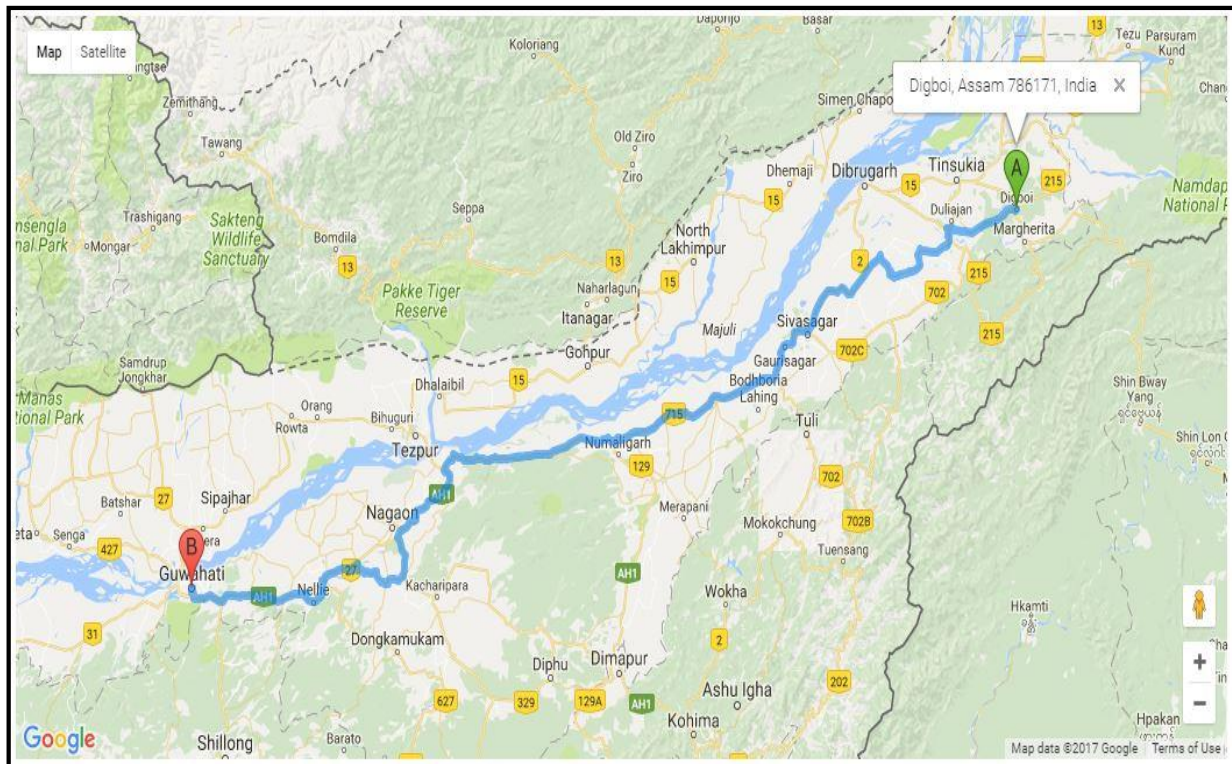
Digboi to Guwahati Bus:

Bus timings from Digboi to Guwahati is around 11 hours when bus maintains an average speed of 60 KM per hour over the course of journey. The estimated travel time from Digboi to Guwahati by bus may vary or it will take more time than the above mentioned time due to the road condition and different travel route.

Bus fare from Digboi to Guwahati may be around Rs.550/-(approx).

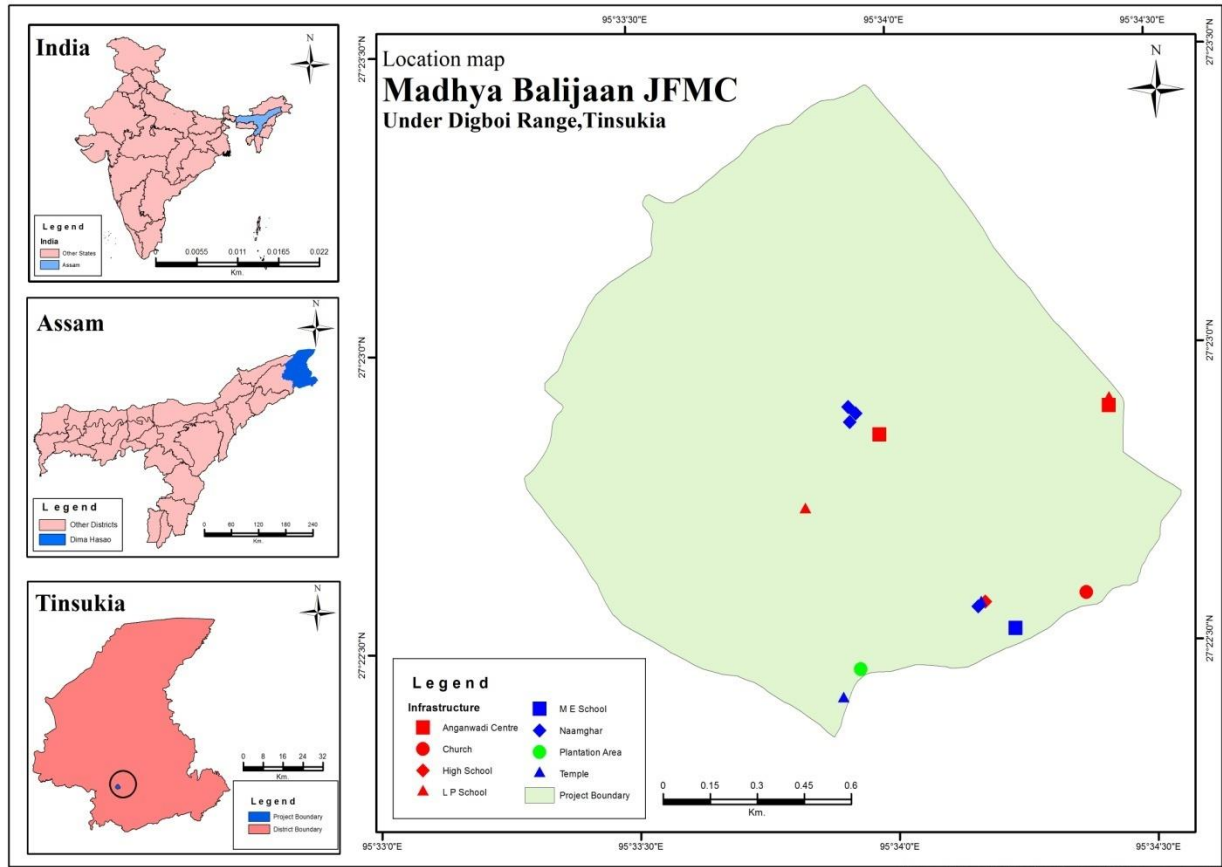
Digboi to Guwahati Road Map:

Digboi is located nearly east side to Guwahati. The given east direction from Digboi is only approximate. The given Google map shows the direction in which the blue color line indicates road connectivity to Guwahati. In the travel map towards Guwahati you may find enrooted hotels, tourist spots, picnic spots, petrol pumps and various religious places. The given Google map shows the travel road map of Digboi to Guwahati.

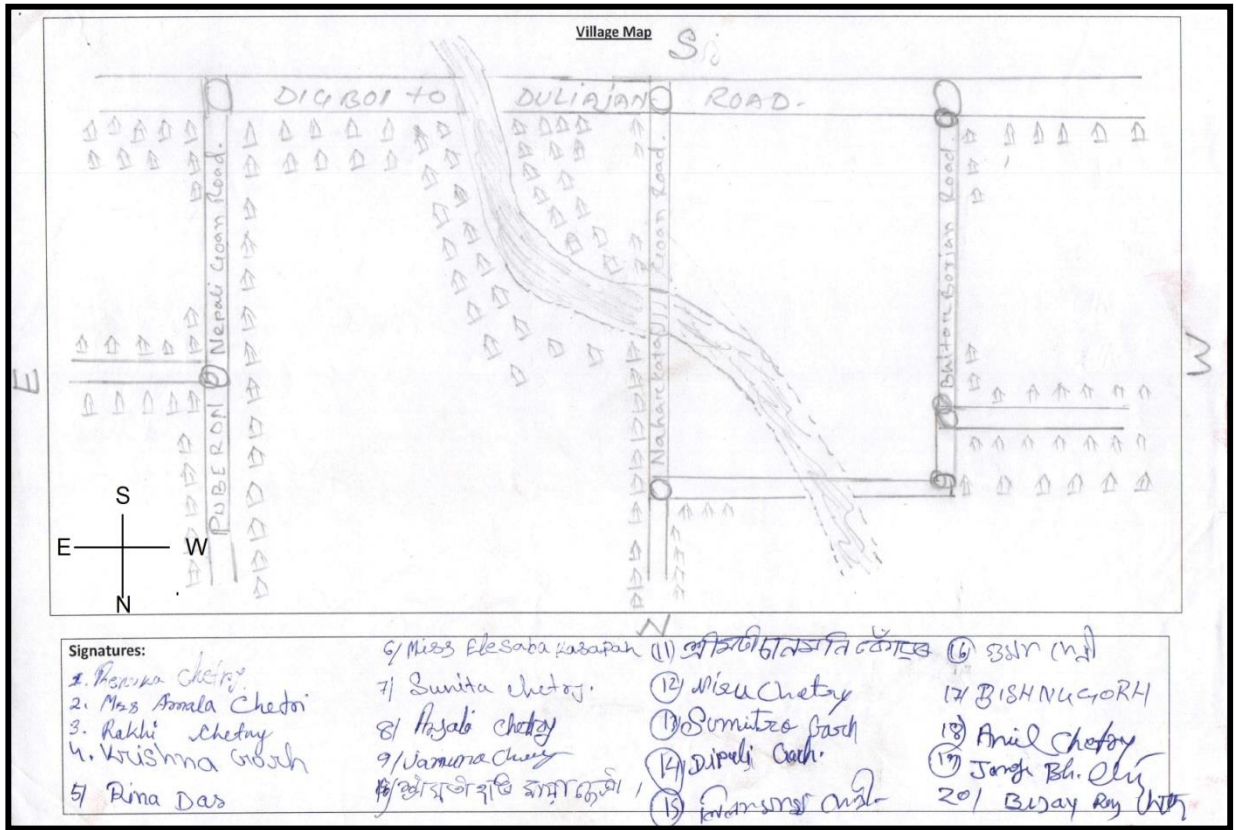


Appendix 1

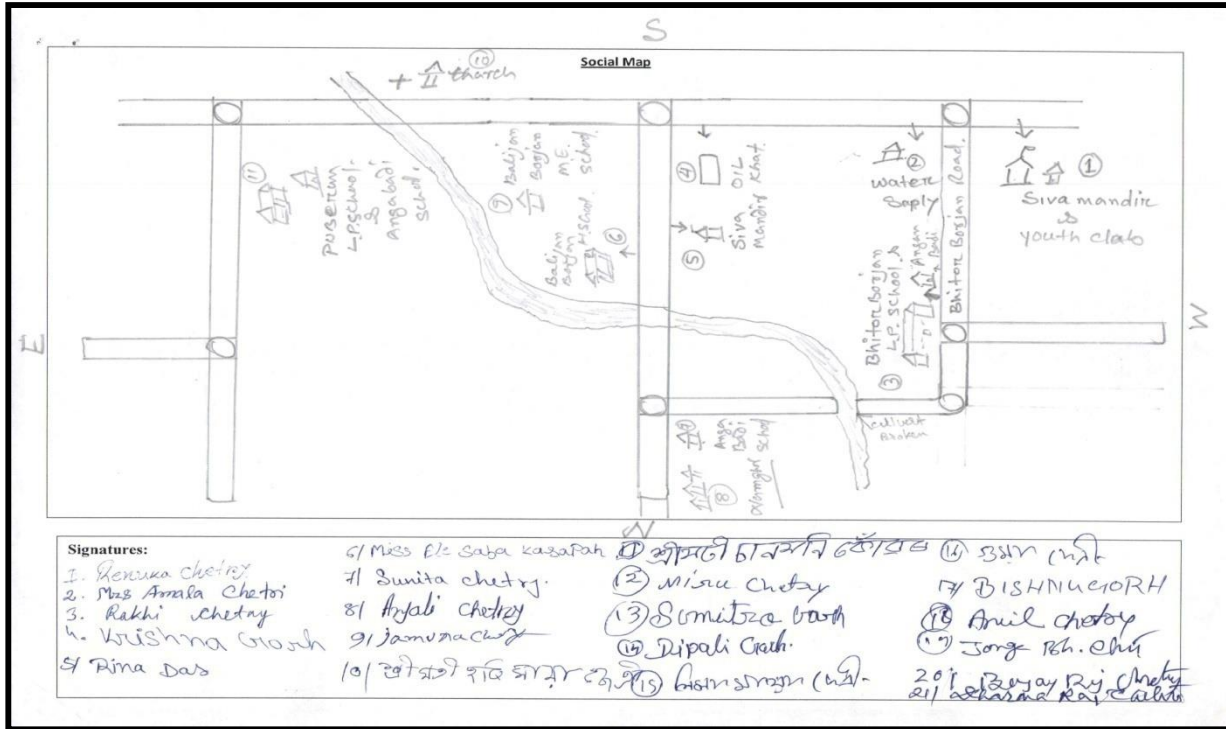
Location Map of the Madhya Balijaan Patkai JFMC



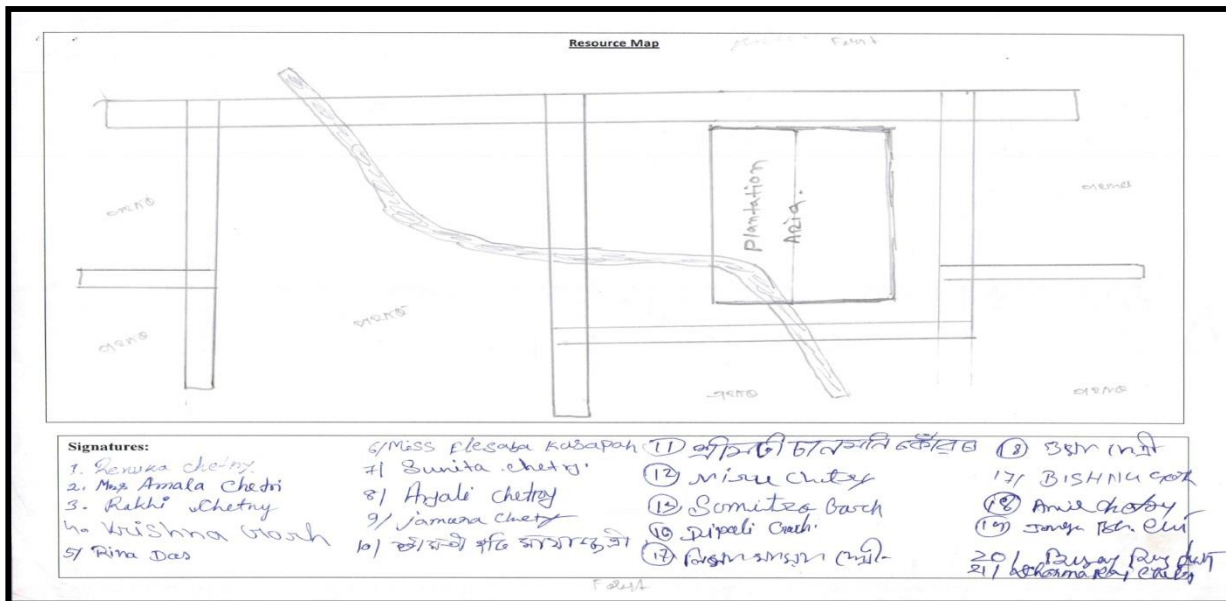
Village Map of the Madhya Balijaan Patkai JFMC



Village Social Map

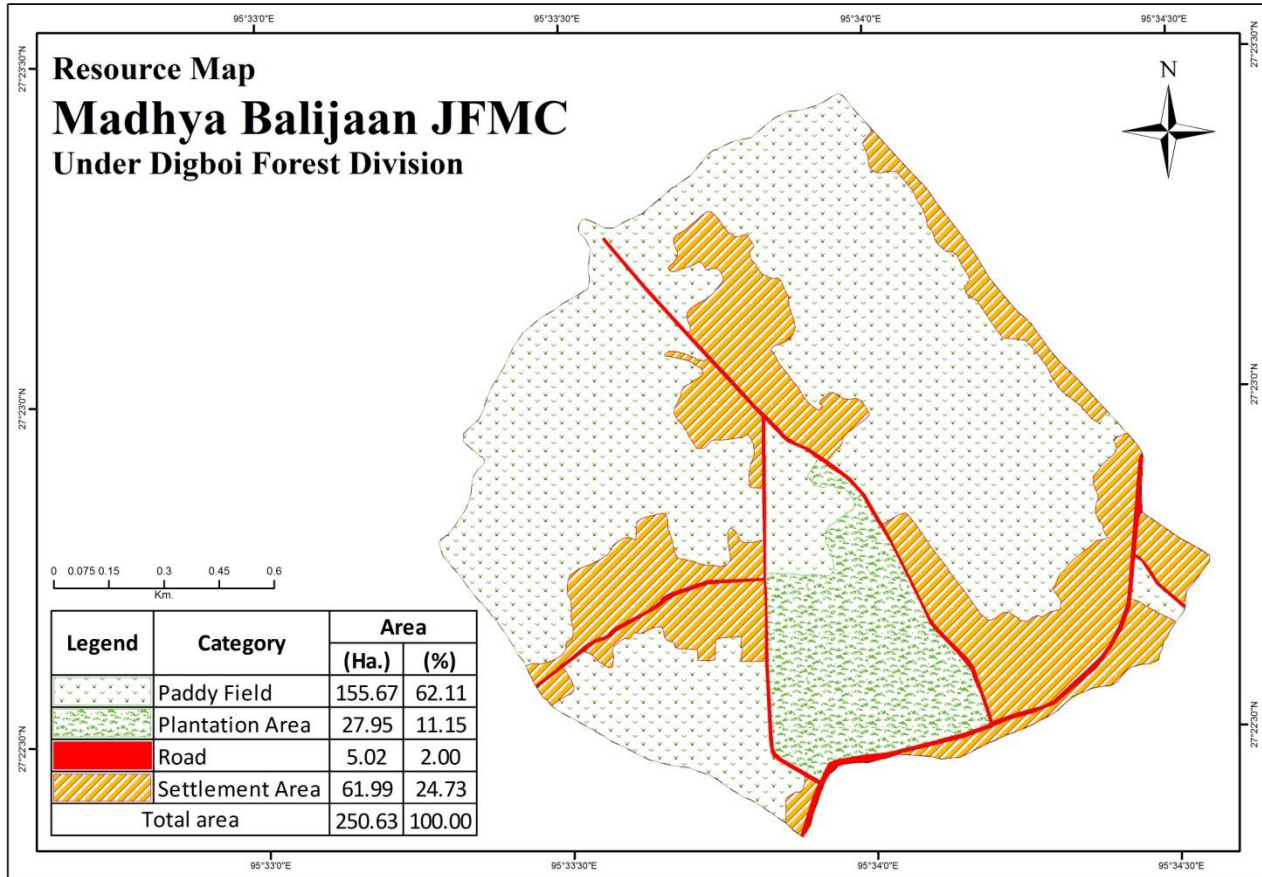


Resource Map



Appendix 2

Land Use Map/ Resource Map of the JFMC (GIS)



Appendix 3

PRA ACTIVITY

Location and Timing of Participatory Rural Appraisal:

| | |
|---------------------------|--|
| Numbers of participants : | 35 |
| Time : | 11:00 am, 21 st April, 2017 |
| Venue : | GP Hall (Pubarun Nepali Gaon) |

Table – 3.1 Brief about the villages under LANKASHI PURBANACHAL JFMC

| Sl. No. | Name of Village | Households (No.) | Population (No.) | | | Avg. HH size |
|---------|-------------------------|------------------|------------------|------------|-------------|--------------|
| | | | Total | Male | Female | |
| 1. | Pubarun Nepali Gaon | 120 | 700 | 300 | 400 | 5.83 |
| 2. | Balijan Christian Basti | 70 | 350 | 151 | 199 | 5.00 |
| 3. | Naharkata | 80 | 480 | 192 | 288 | 6.00 |
| 4. | Vitor Borjan | 100 | 680 | 330 | 350 | 6.8 |
| | Total | 370 | 2210 | 973 | 1237 | 5.97 |

Source: Field Survey

Different PRA tools used under the exercise of PRA technique are:

- a) Social Mapping
- b) Wealth Ranking
- c) Time Line Review
- d) Seasonality Analysis
- e) Chapatti diagram

3.1 Social Mapping:

Social mapping is used to visualize the socio-economic aspects of the Madhya Balijan Patkai JFMC where the land holding patterns of the households, the numbers of schools, social infrastructure, and religious beliefs among households. Awareness among the villagers was carried out by the field teams; in order to infuse the self-consciousness for protection and enhancement of the forest areas. People from all the households of the village gathered for the PRA process, which was conducted in the community hall of the village. The PRA process was marked with enthusiasm and active participation from all people present. The social and resource mapping process, was undertaken with the help of the villagers in identifying and marking the village. Villagers voluntarily came out to draw the maps. All the villagers spotted their households in the map. After the mapping process the team members collected the information about the pattern of their dwelling namely pucca, semi pucca, and IAY and thatch house.

Table 3.2: Information about the Madhya Balijan Village

| Social Information | Details | Numbers |
|---------------------------|--------------------------------------|----------------|
| | Total population | 2210 |
| | Male | 973 |
| | Female | 1237 |
| | Total households | 370 |
| | Pucca House (Nos.) | 44 |
| | Semi-Pucca House (Nos.) | 63 |
| | IAY House (Nos.) | 111 |
| | Tin Roof Kutcha House (Nos.) | 152 |
| Landmarks | Culvert (Nos.) | 1 |
| | Stream (Nos.) | 1 |
| | River (Nos.) | 0 |
| | PHE (Nos.) | 1 |
| | Community hall (Nos.) | 0 |
| | Community Wells (Nos.) | 0 |
| | Play Ground cum Grazing filed (Nos.) | 0 |

Findings of social map:

- The participants of social mapping have identified all 370 households out of which 44 households have pucca house; 63 households have semi pucca house; 111 households have IAY house and 152 households have Kutcha house with Tin Roof.
- Other than the class based division of the households, important places like schools, and playground, stream, hand pump and bridges are mapped.
- Main sources of water for the villagers are the hand pumps. The water from the hand-pumps is used for day to day purposes. Less number of households depends on ring well for water. Though the agricultural land of the village is rain-fed though the water from the river and the wetland are used by the villagers for farming purposes.
- The primary education facility is available in the village which includes a L.P. School and an Anganwadi Centre.
- All of the people belong to the Nepali, Tea Tribe, Assamese community with backward caste and schedule caste. The religion of maximum villagers is Hindu and less is Christian.

Learnings:

- Electricity is available in 370 homes of the Madhya Balijan Patkai JFMC. There is LPG gas connections in 160 homes. The 210 households still dependent on forest and use firewood and kerosene stove for their cooking purposes. They used to go to the forest for collecting the firewood, which includes branches and snags. Occasionally, villagers cut down trees from the forest, for their personal use which is a concern for forest department as it is leading to degradation for the forest.

- The primary health centre, post office, high school is located at Balijan (3 km); The villagers have to cover a long distance for their health check-up.
- The villagers of the Madhya Balijan JFMC have to go Digboi (8Km) for their Banking and college.
- The availability of fodder for domestic animals depends on the resource available in the forest area and the capacity of the household who can rear the livestock's. The Madhya Balijan is fully dependent on crop residue, trees fodder, grasses, and green fodder. Field residues are materials left in an agricultural field after the crop has been harvested. These residues include stalks and stubble (stems), leaves, and seed pods.
- There are some grazing fields where villagers use for their cattle rearing. These fields are available for a maximum of six months. Seasonal grazing incorporates "grazing animals on a particular area allows the land that is not being grazed to rest and allow for new forage to grow.
- The villagers of the Madhya Balijan JFMC have to go Digboi, a distance covered with 8 km, for their weekly marketing activity. Domestic materials, utensils, bangles, cloths and stationeries are sold in different stalls.

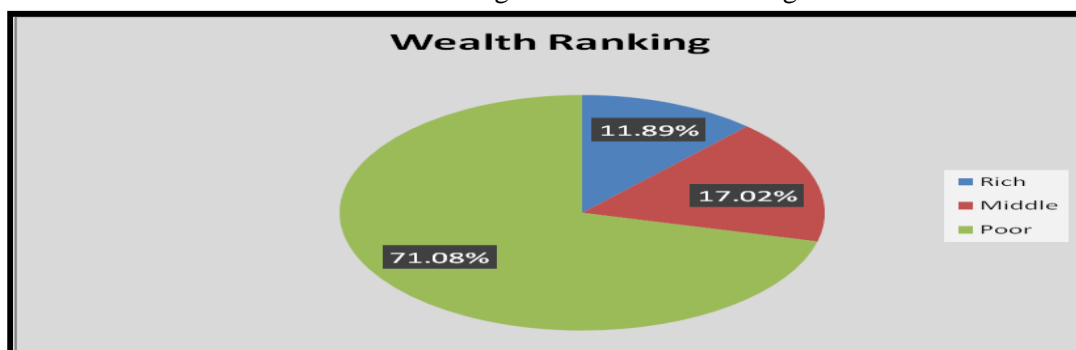
3.2 Wealth Ranking:

Wealth ranking, or well-being ranking, involves community members identifying and analyzing the different wealth groups in a community. It enables evaluators to learn about the socioeconomic stratification of project beneficiaries and local people's definitions and indicators of wealth/well-being. Wealth ranking was done with the help of the following criteria:

- a) Land holding
- b) Occupation
- c) BPL Card Holding
- d) Dwelling Status

About 11.89 per cent people in the village are categorized as rich (about 2ha of agricultural land, Pucca House, Non BPL Category, Govt. Occupation); 17.02 per cent of the households belong to middle class (about 1ha of agricultural land, Semi Pucca House, BPL Category, Occupation-Agriculture) and about 71.08 per cent (negligible agricultural land, Kutcha House, BPL Category, Occupation-Wage Earning) are categorized to be poor.

Figure 3.1: Wealth Ranking



3.3 Timeline Review

In order to know the past important cum historical events over time, the team has conducted the timeline analysis. The team members discussed about the local events to the village head, elderly persons and also to some young people to have an idea about how they dealt with those situations and what was the impact of those events on their lives as well as on the development of the village. Our time line illustrates the following events.

Table 3.3: Timeline review

| Year | Event | Type |
|------|--------------------------|--------------|
| 1950 | Establishment of Village | Construction |
| 1960 | First LP School | Education |
| 1962 | First ME School | Education |
| 1985 | First High school | Education |

The Village Establish in the year 1950 after the Massive Earth quake occurred in Assam. The village people mostly migrated. The villagers had access to primary education after the period of independence.

The establishment of the JFMC in the year 2016 has a major impact in regeneration of the degraded for under the Nayegaon PRF.

3.4 Seasonal Mapping of Livelihood Activities

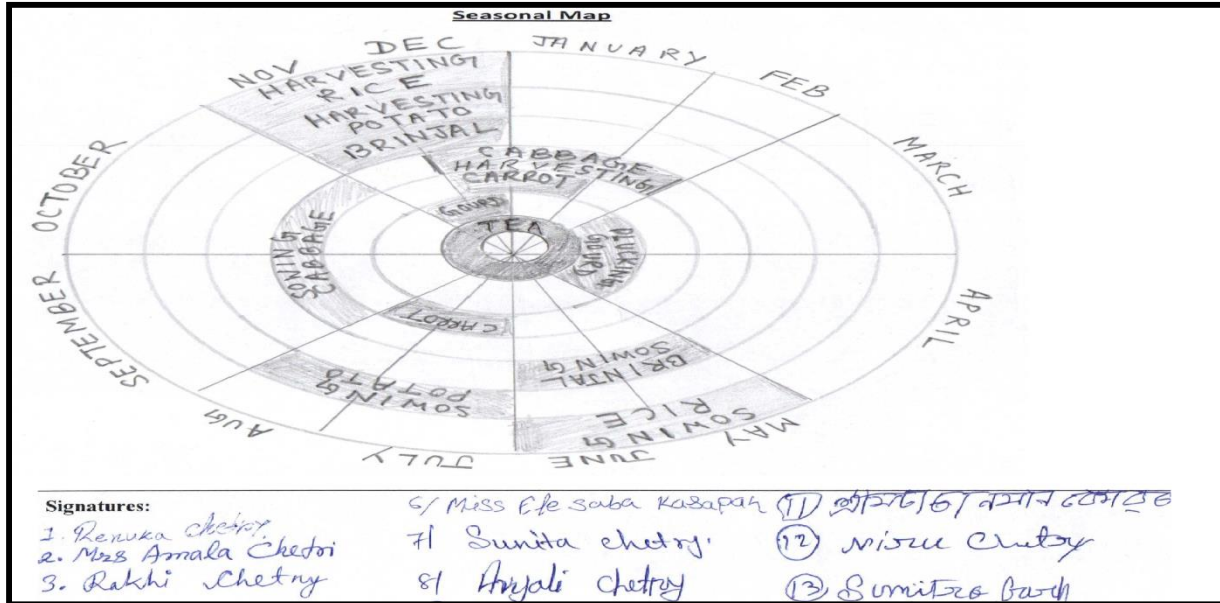
Seasonal calendars drawn by the local people are very useful means of generating information about seasonal trends within the community and identifying periods of particular stress and vulnerability. Best undertaken in the context of a group discussion (to help verify the information obtained), seasonal calendars are often drawn on the ground with the relative trends depicted using stones or seeds, as in a preference-ranking matrix. In other instances, simple line graphs can be drawn to show seasonal increases or decreases. A whole series of seasonal variables can be included in one calendar to give an overview of the situation throughout the year. These variables can include: rainfall, crop sequences, labor demand, availability of paid employment, out-migration, incidence of human diseases, expenditure levels, and so on. Important periods, such as festivals, can also be shown. Seasonal mapping mainly covers the seasonal variation of crops. In seasonal mapping, we considered agricultural crops and the timing of three activities viz. sowing, cropping and harvesting criteria and collected the details throughout the year. From the seasonal mapping, it has been noticed that the main crops grown in the village are rice, Tea leaf, Betel nut, Orange, Cabbage, and Cauliflower etc. The FGD conducted revealed that other major livelihood options available in the JFMC are Livestock rearing (Cow, Goat), shop-keeping, weaving, daily wage laborers which are not seasonal in nature but is showed in the seasonal mapping.

Table 3.4 Seasonal cropping pattern of the JFMC

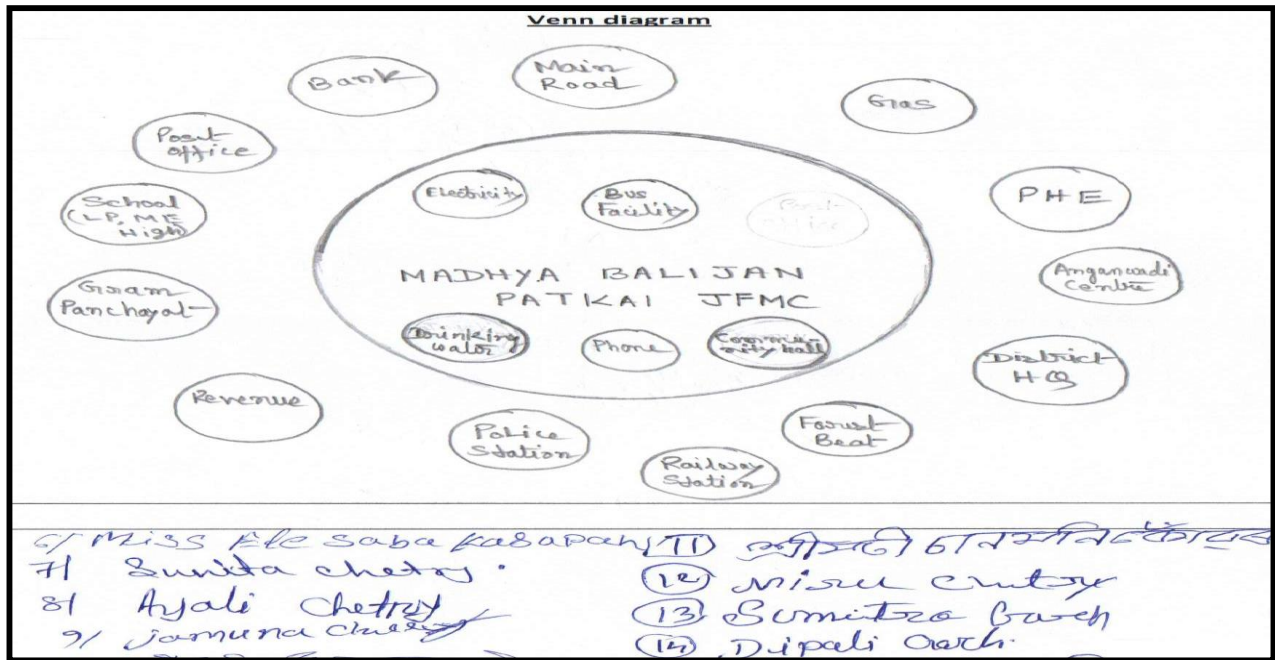
| Categories | Time of Activity | | | |
|----------------------------|---------------------|---------------------|---------------------|-----------|
| | | Sowing | Harvesting | Plucking |
| Farming | Rice | May- June | Nov-Dec | |
| | Tea Leaf | Throughout the Year | | |
| | Cabbage | Sept-Oct | | Nov-Dec |
| | Brinjal | May-June | | Nov-Dec |
| | Potato | July- Aug | June | Nov-Dec |
| | Carrot | July-Aug | | Nov-Dec |
| | Gourd | Nov | | Mar-April |
| | Non- farming | Weaving | Throughout the year | |
| Livestock Rearing | | | | |
| Daily Wage Earning | | | | |
| Shop-keeper Masonry | | | | |
| | | | | |

Learning's: Water availability is less during the period October to March, so agricultural productivity becomes less in this period.

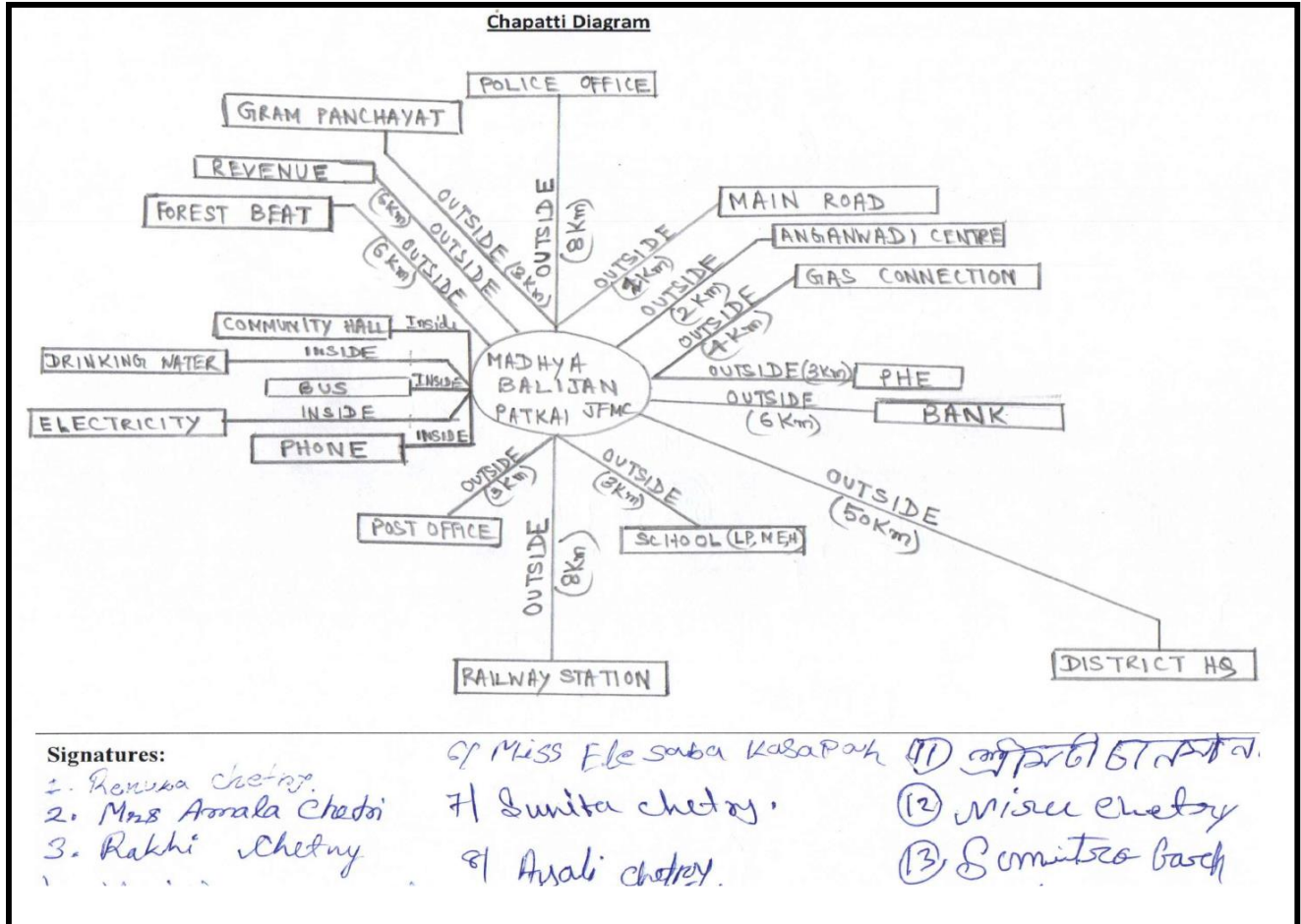
Seasonal Diagram



Venn Diagram



Chapatti Diagram



Priority Rankings: Potential Livelihoods and EPA

Priority Ranking of Livelihood Activities

| Livelihood Activities | | Wearing | Fishery Training | Bamboo Craft | Excess leaf plot | Tailoring | Livestock | | | | | Marks | Rank |
|-----------------------|---|---------|------------------|--------------|------------------|-----------|-----------|---|---|---|--|-------|------|
| | | A | B | C | D | E | F | G | H | I | | | |
| Wearing | A | X | A | A | A | A | A | | | | | 5 | 1st |
| Fishery Training | B | | X | C | B | E | B | | | | | 2 | 4th |
| Bamboo craft | C | | | X | C | E | C | | | | | 3 | 3rd |
| Excess leaf plot | D | | | | X | E | F | | | | | 0 | 6th |
| Tailoring | E | | | | | X | E | | | | | 4 | 2nd |
| Livestock | F | | | | | | X | | | | | 1 | 5th |
| | G | | | | | | | | | | | | |
| | H | | | | | | | | | | | | |
| | I | | | | | | | | | | | | |

Priority Ranking of Entry Point Activity

| Entry Point Activities | | Culvert | Community Hall | Drinking Water | Sanitation | Road | Drain | Fencing at plantation sites | | | | | | Marks | Rank |
|-----------------------------|---|---------|----------------|----------------|------------|------|-------|-----------------------------|---|---|---|---|--|-------|------|
| | | A | B | C | D | E | F | G | H | I | J | K | | | |
| Culvert | A | X | A | A | A | A | A | A | | | | | | 6 | 1st |
| Community Hall | B | | X | B | B | B | B | B | | | | | | 5 | 2nd |
| Drinking Water | C | | | X | C | C | C | C | | | | | | 4 | 3rd |
| Sanitation | D | | | | X | D | D | D | | | | | | 3 | 4th |
| Road | E | | | | | X | E | G | | | | | | 1 | 6th |
| Drain | F | | | | | | X | G | | | | | | 0 | 7th |
| Fencing at Plantation sites | G | | | | | | | X | | | | | | 2 | 5th |
| | H | | | | | | | | | | | | | | |
| | I | | | | | | | | | | | | | | |
| | J | | | | | | | | | | | | | | |
| | K | | | | | | | | | | | | | | |

Signatures:

1. Kamesh Chettri
 2. Mrs. Amala Chettri
 3. Rakhi Chettri
 4. Krishna Chettri

5. Rina Das
 6. Mrs. Ehsaba Khasari
 7. Sumita Chettri
 8. Ajali Chettri

9. Jyoti Chettri
 10. ...
 11. ...
 12. ...

13. Somitesa Chettri
 14. Dipali Chettri
 15. ...
 16. ...

Appendix 4

Photographs



PRA ACTIVITY





Group Photo

Appendix 5 : List of JFMC Members

Appendix 6 (Record I)

Table 1: Basic data of the village:

Table 1: Basic data of the JFMC

| Sl no | Name of the JFMC | Date of Establishment | Name of Members in executive committee | Name of the President | Name of the secretary | Money in VDF | Contribution per family/per person | Social fencing used Yes/No | Remarks on special attainment | Grading % of success by RFO |
|-------|------------------------------|-----------------------|--|-----------------------|------------------------|--------------|------------------------------------|----------------------------|-------------------------------|-----------------------------|
| | Madhya Balijan Patkai | 2016 | 10 | Kailash chetry | Parineeta Singh | | | | | |

Table 2: Village wise population data:

Table -2.1: Demographic status of the project villages

| Sl. No. | Name of village | Households (No.) | ST | | | Sex ratio (per 1000 male) | Avg. HH size |
|---------|-------------------------|------------------|-------|------|--------|----------------------------|--------------|
| | | | Total | Male | Female | | |
| 1 | Pubarun Nepali Gaon | 120 | 700 | 300 | 400 | 1333 | 5.83 |
| 2 | Balijan Christian Basti | 70 | 350 | 151 | 199 | 1318 | 5.00 |
| 3 | Naharkata | 80 | 480 | 192 | 288 | 1500 | 6.00 |
| 4 | Vitor Borjan | 100 | 680 | 330 | 350 | 1060 | 6.8 |

Source: - Field survey report.

Age Profile: The younger generation of Madhya Balijan Patkai Village outnumbers the other generations. More than 30%, of the entire population of the Madhya Balijan Patkai Village are adults, of which only 3% of the village is Senior Citizens.

Table -2.2: Age Profile of the population

| Age Classification | <5 | >5 and <18 | >18 and < 45 | >45 and <60 | >60 |
|--------------------|-----|------------|--------------|-------------|-----|
| Male | 156 | 341 | 282 | 136 | 58 |
| Female | 210 | 376 | 408 | 148 | 95 |

Table 3: Village wise farmer category on the basis of land holding

Table 3: Village wise farmer category on the basis of land holding

| Sl no | Name of the village | Type of famer according to land holding | | | | |
|-------|-------------------------|---|-----------------------|-----------------------------------|-----------------------|-------|
| | | Large farmer >10 ha. | small farmer 2-10 ha. | Marginal farmer (household) <2ha. | Land less (household) | Total |
| 1 | Pubarun Nepali Gaon | - | | 120 | | 120 |
| 2 | Balijan Christian Basti | | | 70 | | 70 |
| 3 | Naharkata | | | 80 | | 80 |
| 4 | Vitor Borjan | | | 100 | | 100 |

Table 4: Cattle Population

Table 4: Cattle Population of the JFMC

| Sl No | Name Of The Village | Village Wise No Of Cattles Or Type Of Animal | | | | | | | | |
|-------|---------------------|--|-----------|------|-------|-------|--------|-----|---------|-------|
| | | Cows | Buffaloes | Goat | Sheep | Bulls | Camels | Pig | Poultry | Total |
| 1 | Laina Gaon | 140 | | 110 | | 130 | | | | 380 |
| 2 | Dimorunula | 30 | | 10 | | 50 | | 10 | | 100 |
| 3 | Bukajan | 160 | | 40 | | 120 | | 10 | | 330 |
| 4 | Dhulijan | 120 | | 150 | | 110 | | 15 | | 395 |

Table 5: Village wise Infrastructure

Table 5 showing village wise infrastructure

| Sl No | Infrastructure | Location | Distance from village |
|-------|-------------------|--------------------|-----------------------|
| 1. | Electricity | Within the Village | |
| 2. | Gas connection | | |
| 3. | Transport | Balijan | 3Km |
| 4. | PHE | Balijan | 3Km |
| 5. | LP school | Within the Village | |
| 6. | High school | Within the Village | |
| 7. | Bank | Digboi | 6km |
| 8. | Anganawadi centre | Within the Village | |
| 9. | Revenue Office | Digboi | 6km |
| 10. | Police station | Digboi | 8km |

| | | | |
|-----|-----------------------|--------------------|------|
| 11. | Forest Office | Borjan | 6km |
| 12. | Post office | Within the Village | |
| 13. | Bus facility | Within the Village | |
| 14. | Railway Station | Digboi | 8km |
| 15. | District head quarter | Tinsukia | 50km |

Table 6: Agricultural crops

Table 6: Agriculture Crops

| Type of Crop | Rain Fed | | Irrigation | |
|---------------|------------------|---------------|------------------|---------------|
| | Name of the crop | Area (in ha.) | Name of the crop | Area (in hac) |
| Kharif | Rice (Sali) | 155.0 | - | - |
| Rabi | | | - | - |
| | | | - | - |
| Others | Tea Leaf | 15.0 | - | - |
| | Vegetable | 61.5 | - | - |

Table 7: Crop production profile:

Table 7 Crop production profile of Madhya Balijan Patkai JFMC

| Type of crop | Total Production (approx) in Metric Ton | No of household growing | Average production (Metric Ton / hac) approx | Area under crop (hac) approx |
|------------------|---|-------------------------|--|------------------------------|
| Paddy | 390.6 | 222 | 2.52 | 155.0 |
| Tea Leaf | 1.5 | 25 | 0.10 | 15.0 |
| Vegetable | 141.45 | 123 | 2.3 | 61.5 |

Table 7: Fodder Availability

Table 8: fodder availability of the JFMC

| Types | 1-3 month | 3-6 month | >6 month |
|-------------------|-----------|-----------|-----------|
| Crop residue | - | Available | - |
| Trees fodder | - | Available | - |
| Grasses | - | - | Available |
| Green Fodder | - | - | Available |
| Grazing in Forest | - | - | Available |

Table 9: Location of market from the village

Table 9: Location of market from the village

| For Purchase | Location | Distance from village if in other village (in km) |
|--|--------------------|---|
| Grocery shop | Within the village | |
| Weekly Market | Digboi | 6 km |
| Major Market | Digboi | 6 km |
| Forest Corporation Sale Depot. | NA | - |
| Tendu Patta PHAD | NA | - |
| Fish Market | Digboi | 6 km |
| Medicinal Plant collection Centre | NA | - |
| Forest Corporation Medicinal plant Collection Centre | NA | - |

Table 10: Water Resources Facility:

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

| Water source | Number | Availability of water | Uses |
|--------------|--------|-----------------------|-----------------|
| Tube well | 330 | Perennial | Domestic use |
| Ring Well | 40 | Perennial | Domestic use |
| River | 1 | Seasonal | All type of use |
| Canal | 1 | Seasonal | All type of use |

Table 11: Energy consumption:

Table 11: 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 | 370 | 12 | Forest | Major |
| Kerosene stove | 160 | | | Secondary |
| Gobar/Bio gas | NA | - | - | - |
| LPG | 160 | - | Market | Secondary |

Table 11 (A): Education Status

| SI No | Categories | Percentage |
|-------|-----------------------|------------|
| 1 | Up to ME | 14.48% |
| 2 | Class VIII to class X | 17.33% |
| 3 | Class X to XII | 58.19% |
| 4 | Graduate | 6.87% |
| 5 | Master | 0.18% |
| 6 | Children | 1.44% |
| 7 | Illiterate | 1.50% |

Record II : LIVELIHOOD OPPORTUNITY ANALYSIS

Table 12: Agriculture and Horticulture:

Table 12: showing the agricultural and horticultural status

| | Reason | Opportunities | Programme |
|------------------------|---|--|---|
| Low Production | <ul style="list-style-type: none"> • Traditional way of cultivation. • Only one crop undertaken annually • 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 Processing | <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

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 is 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. | HYV Cattle Rearing |
| 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. | Linkage with veterinary dept. |

| | | | |
|--------------------|---|--|--------------------|
| 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. | HYV Cattle Rearing |
| 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 Tinsukia district. | - |

Table 14: NWFP

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

Table 15: Specialized skill

Table 15: Specialized 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 |

Madhya Balijan Patkai Joint Forest Management Committee (JFMC),
Digboi Forest Division

| | | | |
|--------------------------------|---|--|---|
| 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 standardized 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 Up gradation & Training on New Product Development and Product Diversification |

Table 16: Credit facility

Table 16 Credit facility

| Constraints | Reason | Opportunities | Programme |
|-----------------------------|---|--|--------------------------------|
| Indebtness | <ul style="list-style-type: none"> No Access to organized lending source | <ul style="list-style-type: none"> Setting up modern financial institution in the nearby areas. | Financial inclusion initiative |
| Rate of interest | <ul style="list-style-type: none"> Higher lending rates charged by the private money lender | <ul style="list-style-type: none"> Subsidized 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 | |



[Signature]
Divisional Forest Officer
Digboi Division, Digboi
Tinsukia, Assam