



URDHAGANGA JOINT FOREST MANAGEMENT COMMITTEE (JFMC)

J.V. RANGE DOBOKA, NAGAON SOUTH DIVISION

NORTHERN ASSAM CIRCLE

MICRO-PLAN

(2016-17 to 2025-26)

Prepared by Urdhaganga Joint Forest Management Committee

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

July 2016

Approved
msm
**Divisional Forest Officer
Nagaon South Division
Hojai.**

List of Acronyms

AFD	French Development Agency
APFBC	Assam Project on Forest & Biodiversity Conservation
APL	Above Poverty Line
BPL	Below Poverty Line
CML	Centre for Microfinance and Livelihood
COMPELLO	Consortium On Micro Planning And Enhancement Of Livelihood Opportunities
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
IIE	Indian Institute of Entrepreneurship
JFMC	Joint Forest Management Committee
NTFP	Non Timber Forest Produce
OBC	Other Backward Classes
PHC	Primary Health Center
PMU	Project Monitoring Unit
PRA	Participatory Rural Appraisal
SC	Scheduled Caste
SDG	Sustainable Development Goals
ST	Scheduled Tribes
WPC	Working Plan Circle

URDHA GANGA JOINT FOREST MANAGEMENT COMMITTEE
JV Range, Doboka, Nagaon South Forest Division,

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

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1. Introduction	
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 eco-systems 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 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.</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, <i>Rashtriya Gramin Vikas Nidhi</i> (RGVN) and Centre for Microfinance and Livelihood (CML) has been formed to implement (<i>inter-alia</i>) 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.</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 UrdhaGanga JFMC	<p>This document gives the Micro-Plan for the Urdha Ganga JFMC, which is located in the Hojai district of Assam. The JFMC falls under the jurisdiction of the Social Forestry Division of the Nagaon South Forest Circle. 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 in June 2016. The micro-plan has been compiled by IIE based on the project guidelines. The document has been discussed and finalized for adoption in July 2016.</p>
2. Village Socio-Economic Profile	
Location	The Urdhaganga Joint Forest Management Committee (JFMC) has been formed

	to cover the existing community dwelling in Karamgaon village located on the fringe of the JV Range Doboka Reserve Forest. The area covered by the above JFMC falls within the Binnakandi Development Block, of Doboka Revenue Circle of Hojai District of Assam. 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> <tr> <td>Name of the JFMC</td><td>Urdhaganga</td></tr> <tr> <td>Habitation</td><td>Urdhaganga</td></tr> <tr> <td>Name of Revenue Village</td><td>Nil</td></tr> <tr> <td>Name of the Gram Panchayat / VCDC</td><td>Akashi ganga</td></tr> <tr> <td>Revenue Circle</td><td>Doboka</td></tr> <tr> <td>District</td><td>Hojai</td></tr> <tr> <td>Forest Division</td><td>Nagaon South</td></tr> <tr> <td>Forest Range</td><td>JV Range, Doboka</td></tr> <tr> <td>Forest Beat</td><td>Halodhiati</td></tr> <tr> <td>Year Formed</td><td>2013</td></tr> <tr> <td>Description of Boundary of JFMC</td><td>As below North: Urdhaganga River. South: Akashi Ganga Than River. West: Doboka RF (Klurdung hills) & PHE water tank. East: Paddy Field.</td></tr> </table> <p>Source: JFMC Records & Discussions during PRA Exercise in June 2016 Additional details are given at Table-1 of Record-I (Given at Annexure)</p>	Name of the JFMC	Urdhaganga	Habitation	Urdhaganga	Name of Revenue Village	Nil	Name of the Gram Panchayat / VCDC	Akashi ganga	Revenue Circle	Doboka	District	Hojai	Forest Division	Nagaon South	Forest Range	JV Range, Doboka	Forest Beat	Halodhiati	Year Formed	2013	Description of Boundary of JFMC	As below North: Urdhaganga River. South: Akashi Ganga Than River. West: Doboka RF (Klurdung hills) & PHE water tank. East: Paddy Field.
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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> <tr> <td>Name of President</td><td>Mr. Moneswar Bora.</td></tr> <tr> <td>Name of Member Secretary</td><td>Mr. Mahesh Chandra Nath, Forester-I</td></tr> <tr> <td>Name of Treasurer</td><td>Mr. Bolen Dewri</td></tr> <tr> <td>No. of Members in Executive Committee</td><td>Male: 8 Female:3</td></tr> <tr> <td>No. of Members in the General Body</td><td>90</td></tr> </table> <p>Source: JFMC Records</p>	Name of President	Mr. Moneswar Bora.	Name of Member Secretary	Mr. Mahesh Chandra Nath, Forester-I	Name of Treasurer	Mr. Bolen Dewri	No. of Members in Executive Committee	Male: 8 Female:3	No. of Members in the General Body	90												
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Households & Population Structure	<p>The village has 90 households. The number of female headed households is nil. The total population is 300, of which 167 are male and the 133 are female members. Out of the 90 HHs, 83 HHs belong to the ST community and 7 HHs belong to the OBC community.</p> <p>Table-2 of Record-I may be referred for further details in the above regard. From this, it is inferred that:</p> <ol style="list-style-type: none"> (1) The average number of persons in a household is 3.33. (2) The sex ratio is 796 females per 1000 males in the village. 																						

Education & Skills Development	<p>Over 78 % 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 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 skills in the following areas:</p> <ul style="list-style-type: none"> (a) Weaving. (b) Masonry. (c) Livestock rearing. (d) Farming. (e) Cane & Bamboo. (f) Sericulture. <p>Government has been active in promoting formal skills development programmes in the country as well as in the state. The village has not reported receipt of benefits of any such programme has been carried out in the habitation or in nearby areas.</p>
Soil	<p>The soil type of the project area includes:</p> <ul style="list-style-type: none"> • Sand dune soil in plain areas. <p>This type of soil can support different kind of crops, as the soil is reported to be fertile on the whole.</p>
Water	<p>The area is drained by the river Akashi Ganga which flows from the adjoining mountains of Doboka into the project area before joining the River Brahmaputra to the North. This is a perennial river.</p>
Climate: Temperature & Rainfall	<p>The maximum temperature during the summer is 40 ° C. The minimum temperature during the winter is 8°-10 ° C.</p> <p>The annual rainfall is about 300 mm. About two-thirds of the rainfall usually occurs during the rainy season (June-September). The village has high levels of humidity (over 95%) during the rainy months and low levels in the winter (Below 25%).</p>
Forest & Bio-diversity	<p>The local forests have been broadly classified as Deciduous moist and densely vegetated. The main tree species are Bamboo (various species) Neem, Amla, Hilikha, Arjuna, Teak, Fire wood and many other medicinal plants .Additional details in this regard are given at the 'Forest Development Plan'.</p>
Land Use Pattern	<p>Appendix-2 gives the land-use pattern of the village. From the same, it is seen that the land-use in the village is as follows:</p> <ul style="list-style-type: none"> Firewood Plantation 10% Sites allotted for Plantation 72% Fruit Plantation 1% Tree Clad Area 1% Paddy Field 9% Road 1% Settlement Area 5% Pond 8% Stream 1%
Land Holdings	<p>The type of households as per land-holding is given at Table-3 of Record-I. From the same, it is seen that:</p> <ul style="list-style-type: none"> • 22.22% of the households are landless (20 HH) • 78% of the households are marginal farmers (70 HH) • None of the households are small Farmer.
Livestock	<p>The total number of livestock in the village is 715. The main types of livestock possessed by the households include:</p> <p>Cows: 180</p>

	<p>Goats: 100 Poultry: 75 Buffaloes : Nil Bulls : Nil Pigs :360 Sheep : Nil</p> <p>Table-4 of Record-I may be referred to for the details in the above connection.</p>									
Village Infrastructure & Communication Facilities	<p>In any community; the availability of basic infrastructure enables the development of sustainable livelihood options. The present condition of infrastructure in the village is not satisfactory. This is borne out by Table-5 of Record-I, which gives the present status of the village infrastructure.</p> <p>From the above table, the following have been noted with regard to village infrastructure:</p> <p>Physical Infrastructure: The habitation is comprised of very minimal basic physical infrastructure like paved roads, electricity, water supply, mobile network etc. Most of the Roads are Kuccha.</p> <p>Education & Health Facilities: There are minimal educational and no health facilities. Public transport is not available, and the community members have to use bicycles to move around.</p> <p>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.</p> <p>Financial Inclusion: Facilities for financial inclusion like bank and post office are located at a considerable distance from the habitation. The community members have accounts in far away places.</p>									
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> <p>Kharif Crops: Paddy(Aijong, Pankaj,Gaya,Ranjit)</p> <p>Rabi Crops: Mustard</p> <p>Others: Mango, Jackfruit, Cabbage, Brinjal, Chilli, Cauliflower, Tomato, Pumpkin, Gourd etc.</p> <p>All the crops are rain fed.</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 Paddy and vegetables.</p> <p>The production and yield of these crops is given as follows:</p> <table> <tr> <td>(a) Paddy : Production</td> <td>1620 Quintals</td> <td>Yield 56.58 q /ha</td> </tr> <tr> <td>(b) Mustard : Production</td> <td>30 Quintals</td> <td>Yield 9.37q/ha</td> </tr> <tr> <td>(c) Vegetable: Production</td> <td>480 Quintals</td> <td>Yield 12.5 q/ha</td> </tr> </table>	(a) Paddy : Production	1620 Quintals	Yield 56.58 q /ha	(b) Mustard : Production	30 Quintals	Yield 9.37q/ha	(c) Vegetable: Production	480 Quintals	Yield 12.5 q/ha
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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> <p>(a) Crop residue (b) Grazing in forest (c) Household wastage (d) Green fodder</p>									
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> <p>(a) Grocery / PDS: Parokhowa at 2 km away. (b) Weekly / Bi-weekly Market: Parokhowa at 2 km away. (c) Major Market: Parokhowa at 2 km away.</p>									
Water Resources	<p>The water resources are tabulated at Table-10 of Record-I. The main water</p>									

	resources with the water availability is as follows: (a) Check dam (Water Availability: Perennial / Seasonal) (b) Tube well (Water Availability: Perennial/ Seasonal) (c) River (Water Availability: Perennial-/ Seasonal) (d) Stream (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. (a) Fuel wood - Households Depending 90 Nos. Source: forest (b) Kerosene - Households Depending: 90 Nos. Source: Open Market and PDS (c) LPG- Households Depending 10Nos. Source: Govt. (d) Electricity – Households Depending 80 Nos. Source: Private
Socio-economic status	Social set-up: The village is inhabited by Karbi and Hindu community and the inhabitants are classified as Schedule Tribe and OBC Category. The society is not marked by deep social divisions. The observed position of women is satisfactory. Economic Condition: The economic position is not satisfactory. The main livelihoods are Farming, Daily wages, Livestock rearing, Selling Vegetables etc. Most households earn Rs. 60,000 to Rs. 80,000 per year. There is no migration in this JFMC area.
Maps	Appendix-1 gives the following maps, based on PRA exercise: <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

Framework of livelihood Opportunity Analysis has been done with the help of the following criteria:

- Livelihood assets
- Livelihood context
- Priority ranking on potential livelihood

The livelihood situation of Urdhaganga JFMC has been analyzed during the PRA exercise using sustainable livelihood framework of DFID (Department of Funding for International Development). The existing livelihood situation of JFMC is outlined in terms of –

- Natural Capital
- Physical Capital
- Social Capital
- Human Capital
- Financial Capital

4. Natural Capital

In Urdhaganga JFMC under JV Range Doboka Reserve Forest, major natural capital are Bamboo, Teak, Sal and various species of Bamboo and there is only one stream. Majority of the people are dependent on the forest for firewood, green fodder, timber etc. For farming purpose and for livestock rearing, the villagers use the river water.

(Refer table 10, 11, table 3 of FDP for further details)

5. Physical Capital

Majority of the households in the Urdhaganga JFMC are involved in farming activities and are marginal farmers with farming land of less than 2 ha. Detailed land holding pattern is described in the table 3/annexure 6.

The village has 67 numbers of semi-pucca houses, 10 numbers of Pucca houses and the remaining houses are thatch. Among the various sources of energy consumption such as Biomass, kerosene, electricity, LPG and solar light, villagers depend on the firewood and kerosene for household and other uses. Although, some of the household have LPG, reliability is very less. (Refer to table 10, 11)

There is only LP school present within the JFMC area. No other education institution is present. (Refer to table 5)

In case of water sources, 60 HHs have Tubewells and there is a River for their daily access.

6. Social Capital

The villagers are not fully involved in the JFMCs functioning due to lack of awareness on their roles, functions, and specific benefits they are going to receive.

There are no SHG's in the village. However, the village has one Anganwadi Centre and one community Hall where social meetings of the villages are held.

7. Human Capital

78 per cent of total population of the JFMC are educated and 22% of them are Illiterate. (Refer to table 3.3)

8. Financial Capital

There is no government bank or lending institution available in the JFMC area or in the nearby areas. However, villagers lend from informal lending groups, relatives etc.

225 numbers of people have bank account in commercial banks, but they are not aware of the benefits of financial inclusion.

9. Livelihood Context

Livelihood activities of the Urdhaganga JFMC are identified on the basis of following criteria:

- Contribution of particular livelihood activity in the total income of the JFMC
- Percentage involvement of income group in particular livelihood activities.

Priority ranking of the potential livelihood activities

10. Priority Ranking Through PRA Exercise

PRA Exercise	Team from IIE Guwahati carried out PRA exercise in UrdhaGanga village as follows: Date: 16 th June, 2016 Location: Edangengti gaon LP School Numbers Present: 60 In Presence of: JFMC office bearers, Village Headman, community members, Forest Department personnel, etc.
Objective of PRA	The objective was to study the existing household conditions and obtain other primary data about the community for developing the livelihood options and the forest development plan.

Tools Used & Outcomes of the PRA	Different tools were used and outcomes obtained. These include: Social Mapping Wealth Ranking Time Line review Seasonality of Livelihoods Venn Diagram Chapatti Diagram Appendix-3 furnishes detailed information of the above.																										
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.Agriculture2. Livestock3. Weaving4. Sericulture5. Cane& Bamboo <p>Ranking of EPA</p> <table><tr><th>Rank</th><th>Village EPA as ranked</th><th>Details (Appendix-3 has additional particulars)</th><th>Probable source of funding/deptt.</th></tr><tr><td>1.</td><td>Drinking Water</td><td>At least 40 ring wells should be provided in the JFMC area(as the water contains high amount of fluoride and arsenic)</td><td>APFBC/ PHE & Govt. Schemes</td></tr><tr><td>2.</td><td>Road Connectivity</td><td>Black Topping of road From National Highway -54 to Karamgaon village (~2 KM)</td><td>PMGSY/PWD</td></tr><tr><td>3.</td><td>Electricity</td><td>Every Households should be Electrified of the JFMC area.</td><td>DDUGJY(Deendayal Upadhayaya Gram Jyoti Yojana)</td></tr><tr><td>4.</td><td>School</td><td>Upper Primary School</td><td>SSA/ Elementary Education Deptt.</td></tr><tr><td>5.</td><td>Sanitation</td><td>Providing HHL (House Hold Latrine) - Low cost, septic and sanitary type.</td><td>Swach Bharart Mission/ PHE</td></tr></table> <ul style="list-style-type: none">➤ An arrangement of working capital worth Rs 2 Lacs should be arranged from the EPA fund for promoting livelihood activities.➤ A low cost Community work shed cum JFMC office to be setup within the JFMC boundaries for setting up and commissioning of Toolkits/Equipment/Machineries.➤ A low cost livestock rearing shed have to be arranged from the EPA fund for promoting a common livelihood Activity.			Rank	Village EPA as ranked	Details (Appendix-3 has additional particulars)	Probable source of funding/deptt.	1.	Drinking Water	At least 40 ring wells should be provided in the JFMC area(as the water contains high amount of fluoride and arsenic)	APFBC/ PHE & Govt. Schemes	2.	Road Connectivity	Black Topping of road From National Highway -54 to Karamgaon village (~2 KM)	PMGSY/PWD	3.	Electricity	Every Households should be Electrified of the JFMC area.	DDUGJY(Deendayal Upadhayaya Gram Jyoti Yojana)	4.	School	Upper Primary School	SSA/ Elementary Education Deptt.	5.	Sanitation	Providing HHL (House Hold Latrine) - Low cost, septic and sanitary type.	Swach Bharart Mission/ PHE
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Livelihood opportunities	Livelihood Opportunities were identified as follows: Agriculture & Horticulture Livestock NTFP Skills Development Credit Facility Additional discussion about the above has been given below.																										
Agriculture & Horticulture	Table-12 under Record-2 may be seen in this connection for opportunities in the areas of agriculture and horticulture.																										

	<p>The main constraints are:</p> <ul style="list-style-type: none"> (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. (e) Non usages of crop variety. <p>The opportunities are:</p> <ul style="list-style-type: none"> (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. <p>The suggested programmes are:</p> <ul style="list-style-type: none"> • Tractor operation training • Agri.-skill development programme. • Training on insecticides, pesticides, hybrid cultivation etc.
Livestock	<p>Table-13 furnishes additional information about opportunities for livestock rearing.</p> <p>The main constraints are:</p> <ul style="list-style-type: none"> (a) Unable to buy fodder from market due to poor financial condition. (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 <p>The opportunities are:</p> <ul style="list-style-type: none"> (a) Higher income from livestock rearing. (b) Majority of the workforce is engaged in this activity. <p>The suggested programme is:</p> <ul style="list-style-type: none"> (a) Goatery (b) Poultry (c) Cattle rearing
NWFP	<p>The opportunities for NWFP are tabulated at Table-14 under Record-2</p> <p>The main constraints are:</p> <ul style="list-style-type: none"> (a) Lack of proper utilisation of NWFP due to inadequate knowledge. (b) Lack of research on development of high yielding varieties, domestication etc. (c) No technical know-how (d) No processing units (e) Lack of trained personnel and equipment (f) Lack of facilities to fabricate equipment locally <p>The opportunities is:</p> <ul style="list-style-type: none"> (a) Availability of fertile fallow land (b) A ready market for the finished products. <p>The suggested programme are:</p> <ul style="list-style-type: none"> (a) Plantation of Food plants, (b) Medicinal Plant etc.
Specialized Skills	<p>For skills development, the opportunities are tabulated at Table-15 under Record2</p> <p>The main constraints are:</p> <ul style="list-style-type: none"> (a) Lack of product diversification

	<p>(b) Lack of research on product quality (c) Lack of TQM techniques.</p> <p>The opportunities are:</p> <p>(a) Providing good communication facility (b) Training of the skill holder (c) Financial assistance from govt.</p> <p>The suggested programme are:</p> <ul style="list-style-type: none"> • 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.
Credit Facility	<p>Table-16 under Record-2 discusses this aspect.</p> <p>The main constraints with the reasons are:</p> <p>(a) Financial exclusion (b) Higher rate charged by the private money lender.</p> <p>The opportunities are:</p> <p>(a) Setting up modern financial institution. (b) Adequate awareness.</p> <p>The suggested programme is:</p> <p>(a) Setting up modern financial institution in the nearby areas.</p>
Strategic Interventions	<p>Summarizing the suggested programmes at above as strategic interventions for the Livelihood Development Plan:</p> <p>1 Agriculture & Horticulture: Tractor operation training, Agri-skill development programme ,Training on insecticides, pesticides, hybrid cultivation</p> <p>2. Livestock: Cattle rearing, Goatery, Poultry, Piggery.</p> <p>3.NWFP : Plantation of Food plants, Medicinal Plant etc</p> <p>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, Providing a bulk buy arrangement of the finished product with institutional buyers.</p> <p>5. Credit facility: Setting up modern financial institution in the nearby areas</p>

11. Livelihood Development Plan

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.Livestock 2. Farming 3.Horticulture <p>Non-Farm sector:</p> <ol style="list-style-type: none"> 1. Weaving 2. Electrician 3. Carpentry 4. Tailoring
SHG Activities	<p>SHGs of the village can plan the following activities:</p> <ol style="list-style-type: none"> 1. To create awareness.

	2. To organise and form group 3. To involve the villagers in Livelihood Activities collectively.
Exposure Trips	The following exposure trips are planned: 1. NIL 2. NIL Source: Table-34 of Record-4
Summary of Action Plan	As attached in next page.
Convergence	The planned initiatives may be converged with the following schemes of the Government of India: (a) National Rural Employment Guarantee Scheme - for rural employment (b) Rashtriya Krishi Vikas Yojana (RKVY) - for agricultural and allied development (c) Rashtriya Krishi Sinchay Yojana (RKSJ) - for irrigation, including watershed development (d) National Rural Livelihood Mission (e) Skills Development schemes (f) Other schemes for rural development and livelihoods as found appropriate. The above convergence will yield synergies for the present plan, as well as help in sustaining the planned works in the post-project period.

12. Forest Development Plan of Urdhaganga JFMC

This Forest Development Plan has been prepared after a detailed PRA exercise at the village level as a part of the Micro-Plan of Urdhaganga 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 Urdhaganga JFMC:

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

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

1.1. Forests & Their Conditions

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

Table-1: Conditions of the Forests of Urdhaganga 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: JV Range, Doboka	300 Ha	0Km	Good Area:300 Ha Degraded Area: Nil	2-3m

Beat: Halodhiati Compartment:				
(B) Other Planted Area				
Location: Doboka JV Range, Type of Forest: Deciduous Moist VF / Other :	-	-	-	-
TOTAL	300 Ha		Good Area: - 300Ha Degraded Area: Nil	

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

It is seen that the Urdhaganga JFMC has 300 Ha under its forests, of which 300 Ha is 'Good' and none is 'Degraded'.

1.2. Forest Soil Type

The forests of Urdhaganga 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, P ₂₀₅ and K ₂₀ content of the Soil is comparatively less.	-
Soil Erosion Status	-	-
Presence of:		
(a) Silt	15%	-
(b) Mud-flat	20%	-
(c) Newly accreted land	Low	-
(d) Sand dune	65%	-

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

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

1. Entisol (32.3%)
2. Inceptisol (49.3%)
3. Alfisols (12.3%)
4. Ultisols (6.1%)

1.3. Existing Composition of Flora

In the forests of the Urdhaganga 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 Urdhaganga JFMC

Parameter	Local Name(s)	Biological Name(s)
Major Forest Species	Teak	<i>Tectona grandis</i> Linn
	Sal	<i>Shorea robusta</i>
Associates	Gamari	<i>Gmelina Arborea</i>
Shrubs	Dhekia	<i>Ferns</i>
	Bhot jalakia	<i>Capsicum chinense</i>

Medicinal Plants	Arjun,	<i>Terminalia arjuna</i>
	Hilikha	<i>Terminalia Chebula</i>
	Neem	<i>Azadirachta indica</i>
	Amlakhi	<i>Phyllanthus emblica</i>
Produces		
Others, if any	Jori bet	<i>Calamus erectus</i>
	Jati bet	<i>Calamus tenuis</i>
	Raidang bet	<i>Calamus rotang</i>
	Chuli bet	<i>Calamus flagellum</i>
	Lejai bet	<i>Calamus floribundus</i>
	Kako Bah	<i>D. hamiltonii</i>
	Pahari Jati Bah	<i>Oxytennera parvifolia</i>
	Dulu Bah	<i>Schizostachyum dulloa</i>
	Amlakhi	<i>Emblica officinalis</i>
	Halakh	<i>Terminalia myriocarpa</i>
	Hollong	<i>Dipterocarpus macrocarpus</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 Urdhaganga JFMC.

2.1. Past Protection Measures of the JFMC

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

- (a) Number of households involved: 90
- (b) Number of people involved: 90
- (c) Summary of the measures: Not available
- (d) Any formal mechanism: Patrolling by forest officials

[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 Urdhaganga JFMC

Name of Forest Produce	Average Household Requirement		How met at Present	Source
	Frequency of Requirement	Approx. Qty		
Firewood	High	2460 kg/yr		Forest
Timber for House	Medium	2-3 nos./yr		Forest
Small timber for Implements	-	-		-
Pole / Bamboo	Medium	2-3 nos./yr		Forest

Fodder from Forest	High	2100 kg/yr		Forest
NTFP	High	3500 kg/yr		Forest
Other	-	-		-

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

There are 90 households in the Urdhaganga JFMC. From the above table and this number of households, it is inferred that the total annual requirements of the Urdhaganga village for forest products for own use is as follows:

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

Name of Forest Produce	Community Requirement (Kg per annum) (*)	Remarks
Firewood	50400	Throughout the year
Timber for House	180 nos.	Dec - Jan
Small Timber for Implements	-	-
Pole / Bamboo	180 nos.	Dec - Jan
Fodder from Forest	189000	Throughout the year
NTFP	315000	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 90 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 Urdhaganga JFMC is given in the following table.

Table-5 (A): Collection & Marketing of Forest Produce by Villagers of the Urdhaganga 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	90	1900	Forest
Timber for House	-	-	-	-
Small timber for Implements	-	-	-	-
Bamboo	-	-	-	-
Pole	-	-	-	-
Fodder from Forest	Throughout the year	90	420 kg/yr	Forest
NTFP	-	-	-	-
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 [Urdhaganga JFMC]

Name of Forest Produce	Surplus Marketed (Kg)	How marketed	Average Income per HH from sale of Forest Produce
Firewood	171000 kg/year	-	1650-2500/month

Timber for House	-	-	-
Small timber for Implements	-	-	-
Bamboo		-	-
Pole	-	-	-
Fodder from Forest	37800 kg /year	-	1600-2500/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 Urdhaganga 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 Urdhaganga 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	50400	171000	221400
Timber for House	180 nos.	-	180 nos.
Small timber for Implements	-	-	-
Bamboo	180 nos.	-	180 nos.
Pole	-	-	-
Fodder from Forest	189000	37800	226800
NTFP	315000	-	315000
Other	-	-	-

Source: 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 Urdhaganga JFMC have been summarized below.

• **Table-7: Protection Problems of the Urdhaganga JFMC**

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

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

4. **Components of the Forest Development Plan**

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

Table-8: Protection Plan of the Urdhagnaga 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	Yes	3km	Anytime	High
3. Fire Protection	Yes	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 Urdhagnaga 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 Urdhagnaga JFMC are given here under.

Table-9: Types of Operations Proposed in the Urdhagnaga 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	No	No	-	-
Protection to Cut Stumps of Trees	No	No	-	-
Watershed Treatment	No	No	-	-
Water Reservoirs	Yes	Yes	May-June	3 Bigha
Grass and Silvi Pastoral activities	No	No	-	-
Bamboo culture and earth piling	Yes	Yes	Apr-May	30 Ha Mulching
Seed Sowing	No	No	-	-
Root & Shoot Cutting & Plantation	No	No	-	-
Cut Back & Coppice Treatment	No	No	-	-
Stone wall fencing/live Hedge fencing	No	No	-	-
Social Fencing	No	No	-	-
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 Urdhagnaga 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 Urdhaganga JFMC

Treatment	Area in Ha under Plantation Module	Priority for Block Plantation	Species	Spacing (metre x metre)
Assisted Natural Regeneration (with plantation in gap)	-	-	-	-
Block Planting	-	-	-	-
Sowing of Neem, Amla, Mahua, Bahera (Medicinal Plants)	-	-	-	-
Enrichment Plantation/ Sowing	-			
Direct Plantation	30 Ha under APFBC	-	Firewood	-
Other	-	-	-	-
Total Area (in Ha.)	30 Ha	-	Firewood	-

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

4.4. Forest Improvement – Action Plan

Action Plan for Block Plantation of Non Saal Mixed with Associates

Name of Plantation : Block Plantation of Saal Mixed with Associates
 Plantation Period : 2016-17 to 2025-26 (10 Years)
 Plantation Area : -
 Spacing : -
 No. of Plants to be : -
 Raised
 Number Blocks : -
 Species : -.
 Rates : -

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	-
2017-18*	Block Plantation 3m x 3m, 1111 plants/ha-during the season of April-June ; GPS marking of the area	-
2018-19*	Block Plantation 3m x 3m, 1111 plants/ha-during the season of April-June ; GPS marking of the area	-
	1st Weeding; Replacement of dead/struggling saplings raised in the previous year	-

2019-20*	Block Plantation 3m x 3m, 1111 plants/ha-during the season of April-June ; GPS marking of the area	-
	2nd Weeding; Replacement of dead/struggling saplings raised in the previous year	-
2020-21*	Block Plantation 3m x 3m, 1111 plants/ha-during the season of April-June ; GPS marking of the area	-
	3rd Weeding	-
2021-22*	4th Weeding; Replacement of dead/struggling saplings raised in the previous year	-
2022-13*	5th Weeding; Replacement of dead/struggling saplings raised in the previous year	-
2023-24*	6th Weeding; Replacement of dead/struggling saplings raised in the previous year	-
2024-25*	7th Weeding	-
2025-26*	8th Weeding	-
Total Budgetary Requirement		-

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

Action Plan for Block Plantation of Mixed Harwood Plantation - Teak with Associates, Firewood and Bamboo

Name of Plantation : Block Plantation of Mixed Harwood Plantation - Teak with Associates, Firewood and Bamboo

Plantation Period : 2016-17 to 2025-26 (10 Years)

Plantation Area : -

Spacing : -

No. of Plants to be Raised : -

Number Blocks : -

Species : -

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	-
2017-18*	Block Plantation 2m x 2m, 2500 plants/ha-during the season of April-June ; GPS marking of the area	-
2018-19*	Block Plantation 2m x 2m, 2500 plants/ha-during the season of April-June; GPS marking of the area	-
	1st Weeding; Replacement of dead/struggling saplings raised in the previous year	-
2019-20*	Block Plantation 2m x 2m, 2500 plants/ha-during the season of April-June; GPS marking of the area	-
	2nd Weeding; Replacement of dead/struggling saplings raised in the previous year	-
2020-21*	Block Plantation 2m x 2m, 2500 plants/ha-during the season of April-June; GPS marking of the area	-
	3rd Weeding	-
2021-22*	4th Weeding; Replacement of dead/struggling saplings raised in the previous year	-

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

* 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

Action Plan for Block Plantation of Non Timber Forest Produce

Name of Plantation : NTFP PLANTATION
Plantation Period : 2016-17 to 2025-26 (10 Years)
Plantation Area : -
Spacing : -
No. of Plants to be : -
Raised
Number Blocks : -
Species : -

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 50 ha, Demarcation of land during the month of December-January, Partition of land in 4 blocks, Land development, Soil Working @ Rs 1000/ha, 3 wired barb fencing 2800 RM @ Rs56.36/RM	-
2017-18*	Block Plantation 2m x 2m, 2500 plants/ha-during the season of April-June ; GPS marking of the area	-
2018-19*	Block Plantation 2m x 2m, 2500 plants/ha-during the season of April-June ; GPS marking of the area	-
	1st Weeding; Replacement of dead/struggling saplings raised in the previous year	-
2019-20*	Block Plantation 2m x 2m, 2500 plants/ha-during the season of April-June ; GPS marking of the area	-
	2nd Weeding; Replacement of dead/struggling saplings raised in the previous year	-
2020-21*	Block Plantation 2m x 2m, 2500 plants/ha-during the season of April-June ; GPS marking of the area	-
	3rd Weeding & Pruning	-
2021-22*	4th Weeding & Pruning; Replacement of dead/struggling saplings raised in the previous year	-
2022-13*	5th Weeding & Pruning; Replacement of dead/struggling saplings raised in the previous year	-
2023-24*	6th Weeding & Pruning	-
2024-25*	7th Weeding	-
2025-26*	8th Weeding	-
Total Budgetary Requirement		-

4.5. Nursery Development Plan

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

(a) JFMC Peoples' Nursery (incl. Departmental Nursery)

The details are given below.

JFMC Nurseries

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

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

Location of Nursery	Species	Year of Development	Number of Seedlings	Remarks
-	-	-	-	-
	-		-	
	-		-	
	-	-	-	-
	-		-	
	-		-	
	-	-	-	-
	-		-	
	-		-	
	-	-	-	-
	-		-	
	-		-	

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

4.6. Maintenance Plan - 10 Years

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

(A) Timber Species Non Saal, Teak, Associates

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

Year(s)	Treatment
-	-
-	-

Source: Discussions with Forest Department personnel & Community members

(B) Bamboo

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

Year(s)	Treatment
-	-

Source: Discussions with Forest Department personnel & Community members

(C) Fuel wood Plantation

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

Year(s)	Treatment
-	-

Source: Discussions with Forest Department personnel & Community members

(D) NTFP / Medicinal Plantation

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

Year(s)	Treatment
-	-

Source: Discussions with Forest Department personnel & Community members

4.7. Miscellaneous Operations Plan

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

Table-13): Miscellaneous Operations in the Urdhaganga JFMC

Operation	Required (Yes / No)	Responsibility	Month / Year	Area (Ha)
No such planned	-	-	-	-

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

5. Expected Benefits

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

5.1. Expected Benefits Related to Wood & Grass

The above has been tabulated below for the Urdhaganga 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 Urdhaganga JFMC

Item	Month	Year (Indicative)	Quantity
Firewood	-	-	-
Timber for House	-	-	-
Small timber for Implements	-	-	-
Bamboo	-	-	-
Pole	-	-	-
Fodder from Forest Trees & Grass	-	-	-
NTFP	-	-	-
Wages	-	-	-
Other	-	-	-

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

NB: According to DFO the Plantation Land is inaccessible due to wild life habitation, extremist problem and the place is also very steep.

5.2. Sharing Mechanisms

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

Table-15: Sharing Mechanism for Urdhaganga JFMC

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

According to Forest Officials of J. V. Dabaka Range the sharing mechanism process has not been started officially and the people who work in the plantation collect the residual remains only.

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

List of Appendices

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APPENDIX 1

HOW TO REACH:

Doboka to Guwahati distance, location, road map and direction

Doboka is located in **India** at the longitude of 26°7'0"N and latitude of 92°52'0"E

Guwahati is located in **India** at the longitude of 91.75 and latitude of 26.19.

Distance between Doboka and Guwahati

The total straight line distance between Doboka and Guwahati is **153 kms** (kilometers) and 188.98 meters. The miles based distance from Doboka to Guwahati is **95.00 miles**. This is a straight line distance and so most of the time the actual travel distance between Doboka and Guwahati may be higher or vary due to curvature of the road.

Doboka to Guwahati travel time

Doboka is located around 153 KM away from Guwahati so if you travel at the consistent speed of 62 KM per hour you can reach Guwahati in 2 hours 35 minutes. Your Guwahati travel time may vary due to your bus speed, train speed or depending upon the vehicle you use.

Doboka to Guwahati Bus

Bus timings from Doboka to Guwahati is around **3 hours** when your bus maintains an average speed of sixty kilometer per hour over the course of your journey. The estimated travel time from Doboka 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. Travel time has been calculated based on crow fly distance so there may not be any road or bus connectivity also.

Bus fare from Doboka to Guwahati

May be around Rs.130.

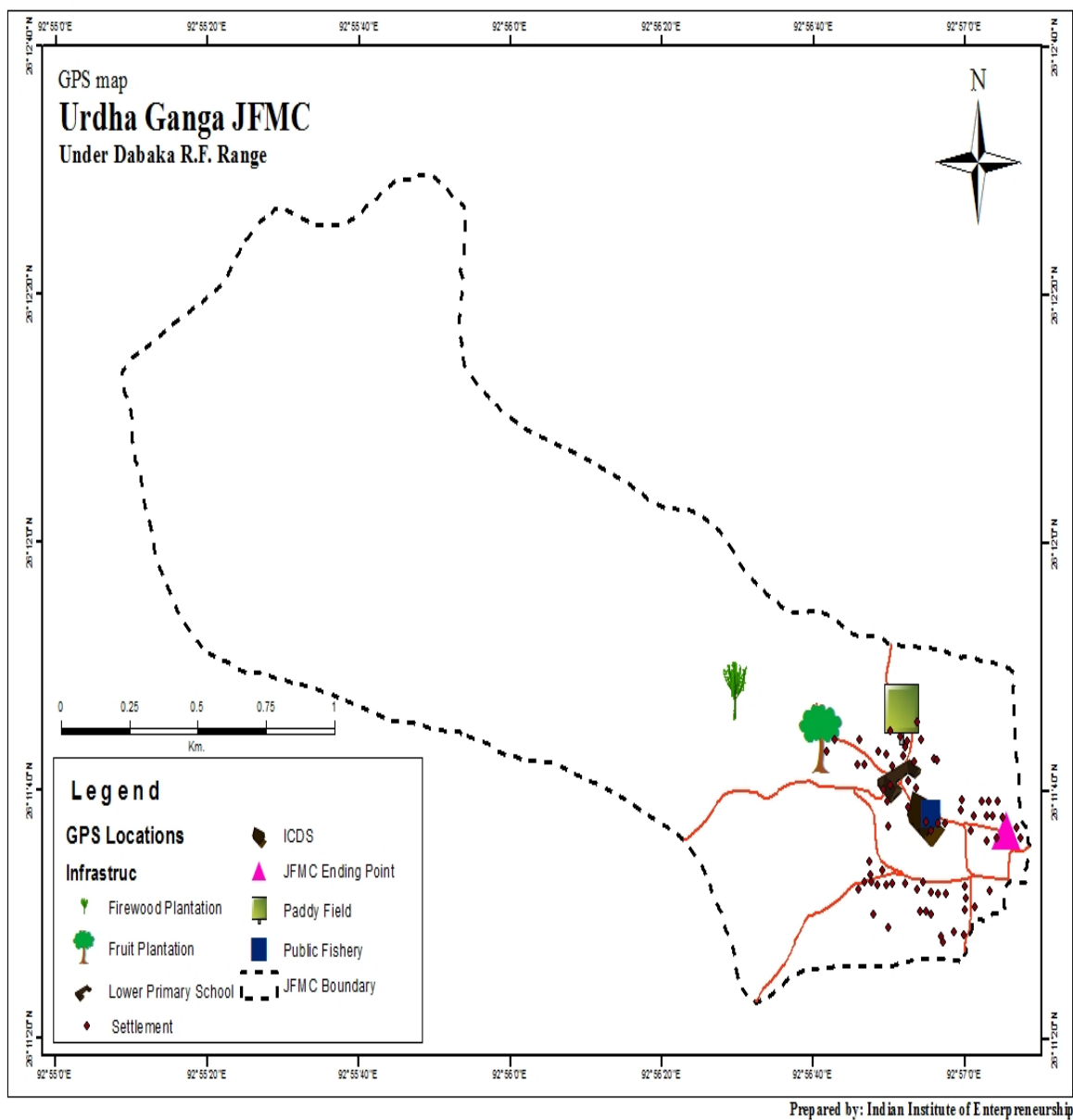
Doboka to Guwahati road map

Doboka is located nearly **east** side to Guwahati. The given east direction from Doboka 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 enroute hotels, tourist spots, picnic spots, petrol pumps and various religious places. The given google map is not comfortable to view all the places as per your expectation then to view street maps, local places see our detailed map here.



APPENDIX 2

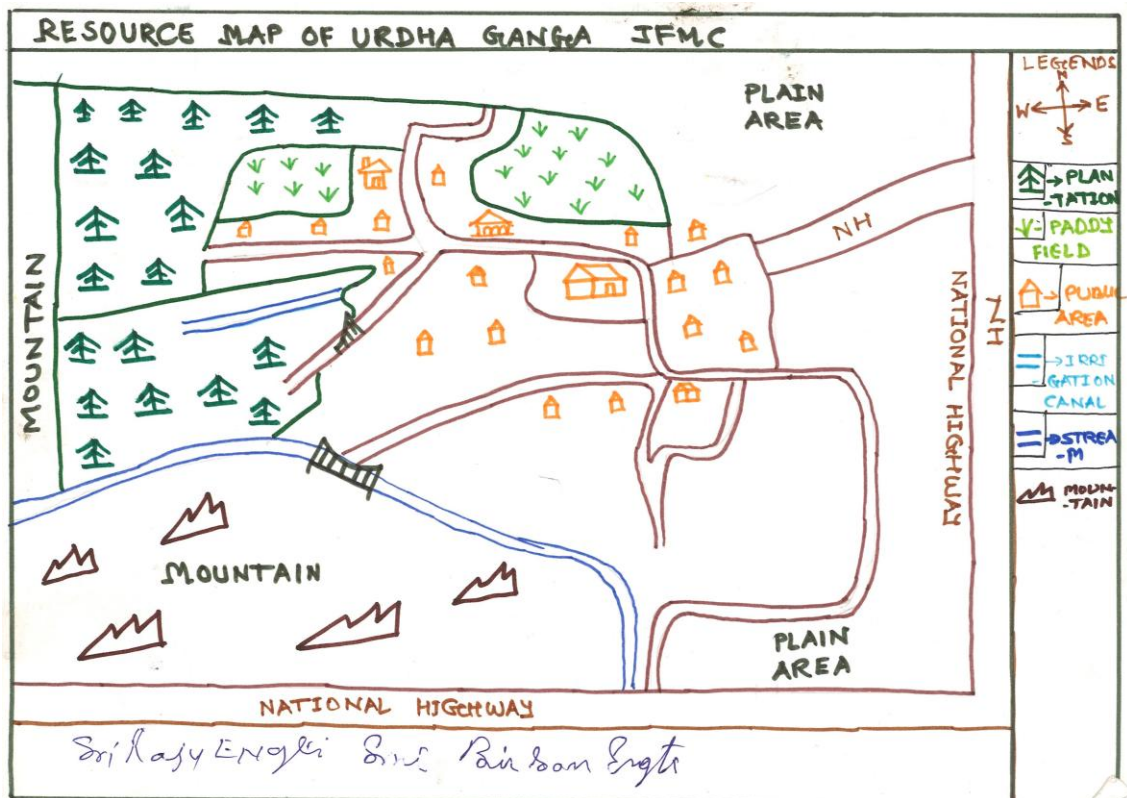
1. Village Map:



2. Social map

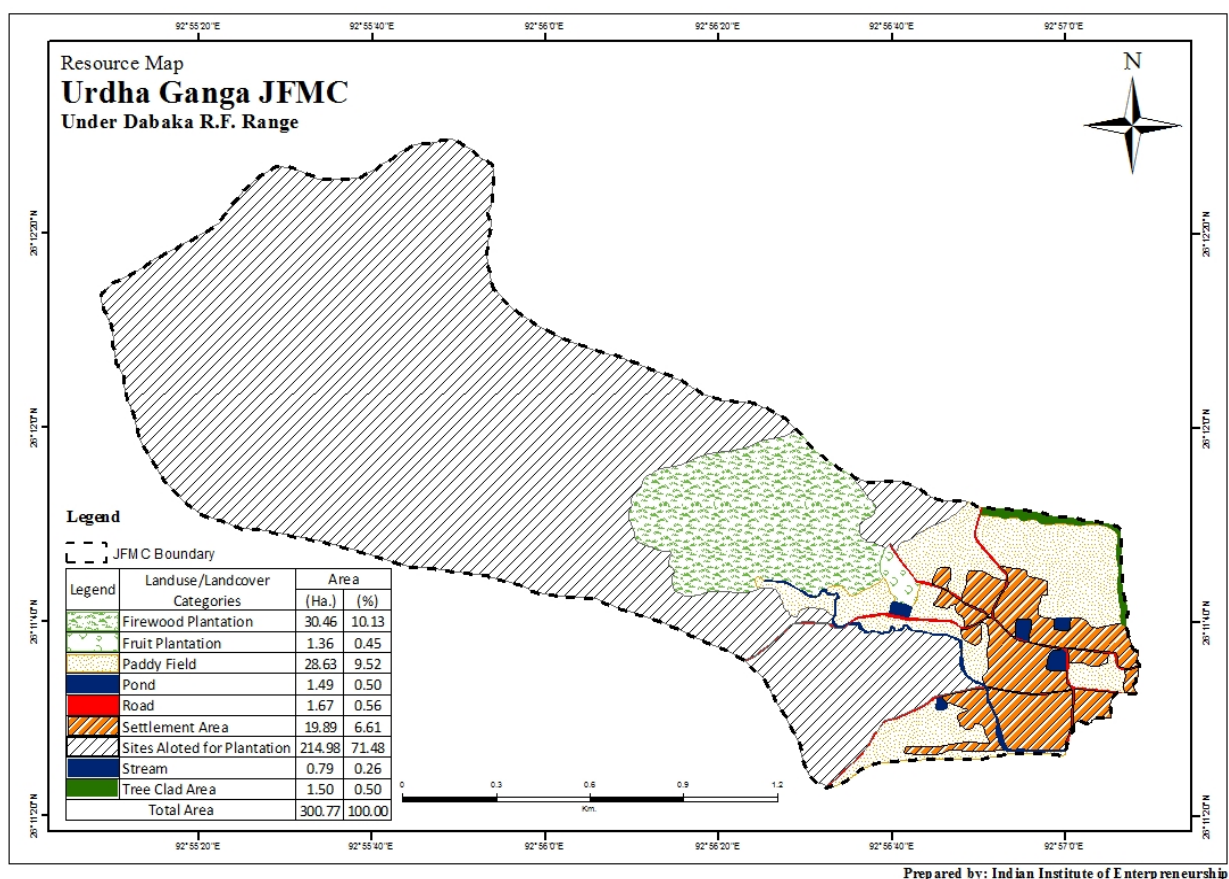


3. Resource Map:



Appendix 3

Land Use map of GIS



Appendix 4

PRA ACTIVITY

Location and Timing of Participatory Rural Appraisal:

Numbers of participants :	60
Time :	1.30 pm, 16 th June 2016
Venue :	Edaningti Gaon L.P School , Urdhaganga

Table – 3.1*Brief about the villages under Urdhaganga JFMC*

Sl. No.	Name of the Village	No. of households	Population		
			Total	Male	Female
1	Urdhaganga	90	300	167	133

	Total	65	300	167	133
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Source: Field Survey

Table – 3.2 Age Profile of Urdhaganga JFMC

Age Class	<5 years	5-18 years	18-45 years	45-60 years	>60 years
Male	10	25	70	53	9
Female	9	20	55	42	7
Total	19	45	125	95	16

Table – 3.3 Education Profile of Urdhaganga JFMC

Age Class	K.G/Nursery	Up- to IV	V- VII	VIII- X	X- XII	Graduate	Masters	Illiterate
< 25 Years	3	26	16	18	32	-	-	15
>25 years(Adult)	-	51	17	21	10	24	2	49
Total	3	77	33	39	42	24	2	64

Table – 3.4 Income Distribution of Urdhaganga JFMC

Income Category(in Rs) Yearly	No of HHs
>5000 Rs	-
5,0000-10,000	-
11,000-20,000	-
21,000-30,000	-
31,000-40,000	-
41,000-50,000	25
51,000-60,000	45
61,000-70,000	15
71,000-80,000	4
81,000-90,000	-
91,000-1,00,000	-
<1,00,000	1

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

- Social Mapping
- Wealth Ranking
- Time Line Review
- Seasonality Analysis
- Chapatti diagram

3.1 Social Mapping:

Social mapping is used to visualise the socio-economic aspects of the Urdhaganga JFMC where the housing patterns of the households, the numbers of schools, social infrastructure, and religious beliefs among households. Awareness camp about the project was carried out beforehand. So it was easy to

gather people for the PRA process in the Urdhaganga village. And due to time constraint we have to skip the transect walk. The villagers were enthusiastic about the mapping process and they actively participated in the process.

Table 3.2: Information about the villages

	Village →	Urdhaganga
Social information	Total population	300
	Male	167
	Female	133
	Total households	90
	Numbers of Pucca Houses	10
	No of thatch house	13
	No's of semi pukka house	67
Landmarks	Bridges	0
	Stream	1
	River	-
	PHE	-
	Community hall	1
	Community Hand pump	-
	Ring Well	-
	Embankment	-
	Check Dam	-
	Primary School	1

At first, the people of villagers were asked to draw the main roads of the village and then asked them to locate their houses and locate the important social places and government offices with help of the PRA team members. Two of them voluntarily came out to draw and they were assisted by other villagers and the team members. All the villagers spotted their households in the map. After the mapping process the team members collected the information about the pattern of their household's namely pukka, semi pukka and thatch house.

Findings of social map:

- The participants of social mapping have identified all 90 households out of which 13 households are thatch house or kuccha house. There are 67 are semi Pukka houses and 10 Pucca houses. This shows that the people of the village are still deprived of the basic household schemes from the Government.
- From the observations it is learnt that there is one Community hall, one L.P School, one Drinking water supply Line, one Primary Health care Centre and one anganwadi centre is spotted.
- A main source of water for the villagers is the Pipeline water source which is used by villagers for their day to day use. The water is available throughout the year.

- Provision of Education facility is not satisfactory in the villages as there is only one primary school available within the village. There is one Anganawadi centre in the village but the interesting fact is that there is no infrastructure of the centre.
- The people there belong to the Karbi and Hindu community and are of schedule tribe and OBC caste. The religion of all the villagers is Hindu.

Learnings:

- Electricity is available to 80 HHs of the village of the Urdhaganga JFMC. There is LPG gas connection to only 10HHs of the JFMC. The Household still dependent on forest and use firewood for their cooking purposes. They used to go to the forest for collecting the firewood which is still a concern for the forest department for degradation of the forest.
- The High school and College along with post office is located in Parakhowa which is 2 KM away from the JFMC. The villagers have to cover a considerable distance for their secondary and Higher education.
- There is one community hall available in the JFMC but they also use the Anganwadi centre and the LP School where various meetings are held. Major meeting are – Gram panchayat meeting, village head meetings, forest department meetings and other political meetings.
- 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 Village of the JFMC are 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, tree husks, and seed pods.
- There are some grazing field 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 Karamgaon JFMC have to move to Parakhowa, a distance covered with 2 km, for their weekly marketing activity. Domestic materials, utensils, stationery items, cloths and stationeries are sold in different stalls.

3.2 Wealth Ranking:

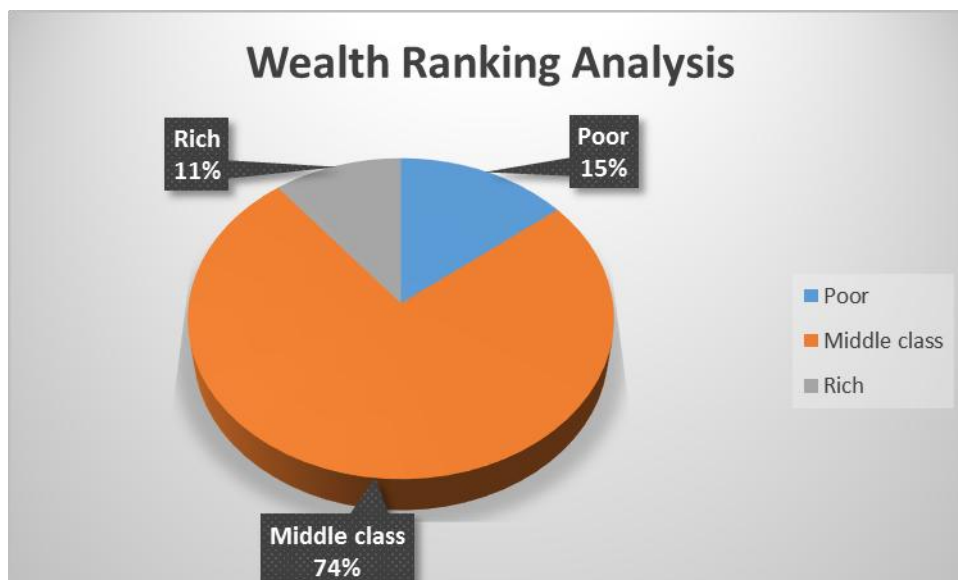
Wealth ranking, or well-being ranking, involves community members identifying and analysing the different wealth groups in a community. It enables evaluators to learn about the socioeconomic stratification of project beneficiaries and local people's definitions and indicators of wealth/well-being.

Wealth ranking was done with the help of the following criteria:

- a) Land holding
- b) Occupation

As such about 15 per cent people are poor, about 74 per cent are belong to middle class and about 11 per cent are categorised to be rich. Poor people are mainly irregular wage earners, sometimes they lease (adhi lua) others land. They have favourable amount of agricultural land.

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
Pre-Independence	About 2 Bigha ponds was excavated by the rulers of Parakhowa during the Ahom Period.	Construction
Post-Independence	An Executive member was elected from the KarbiAnglong District Council from the Village.	Member Selection

Learning:

- It has been observed and learnt from our research and information from the village people that there is no such kind of eventful occurrence in the village. The only constructive event that occurred was the excavation of the pond by the Ahom Kings and the selection of an executive member from the village.

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, labour 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 Aijong, Ranjit, Pankaj, Gaya rice, Mustard, Betel-nut, Ginger, Turmeric Onion, Tomato, etc. The FGD conducted revealed that other major livelihood options available in the JFMC are Livestock rearing (Piggery, poultry), weaving, daily wage labourers, mason, tailoring, carpentry which are not seasonal in nature but is showed in the seasonal mapping.

Figure 3.2: Seasonal Map of Urdhaganga JFMC

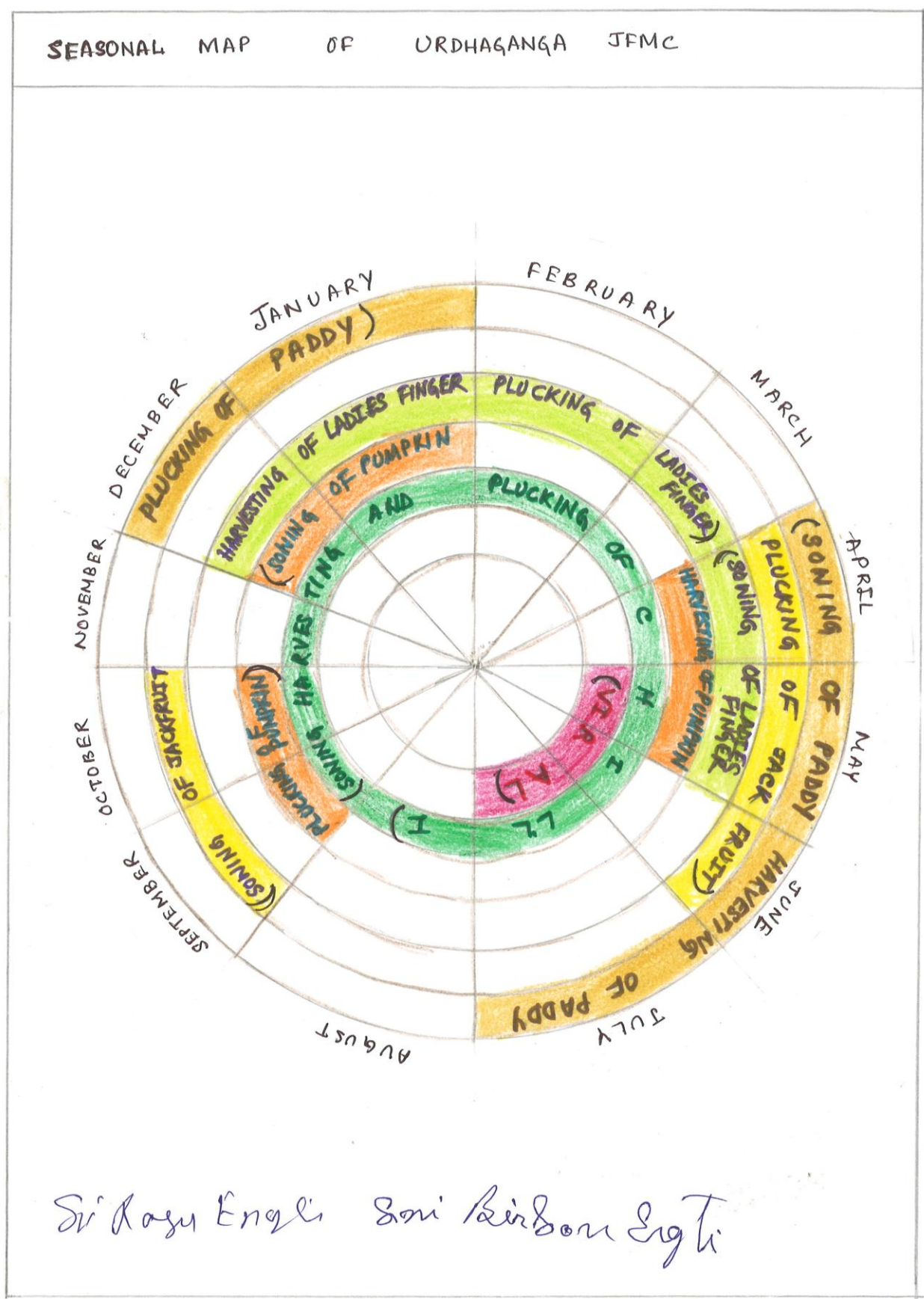


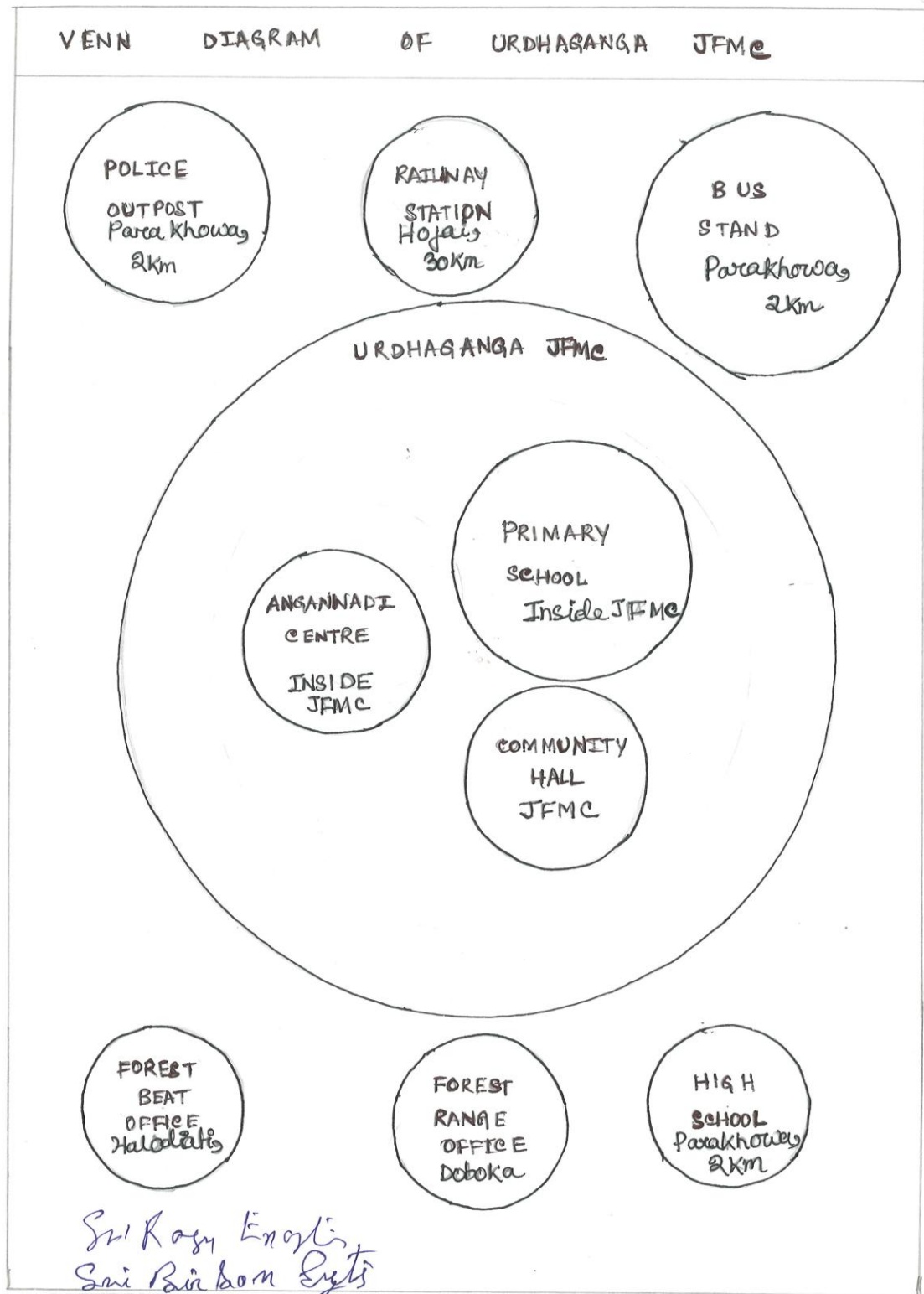
Table 3.4 Seasonal cropping pattern

Categories	Time of Activity			
Farming		Sowing	Harvesting	Plucking
	Paddy	April- May	June-July	Dec-Jan
	Pumpkin	Dec-Jan	April-May	
	Ladies Finger	April-May	Dec-Jan	Feb-March
	Jackfruit	Sep-Oct		April-June
	Pineapple	Sep-Oct		April-June
	Chilli	Throughout the year		
Non-Farming	Weaving	Throughout the year		
	Livestock Rearing			
	Daily Wage Earning			
	Shop-keeper			
	Masonry			
	Electrician			
	Tailoring			

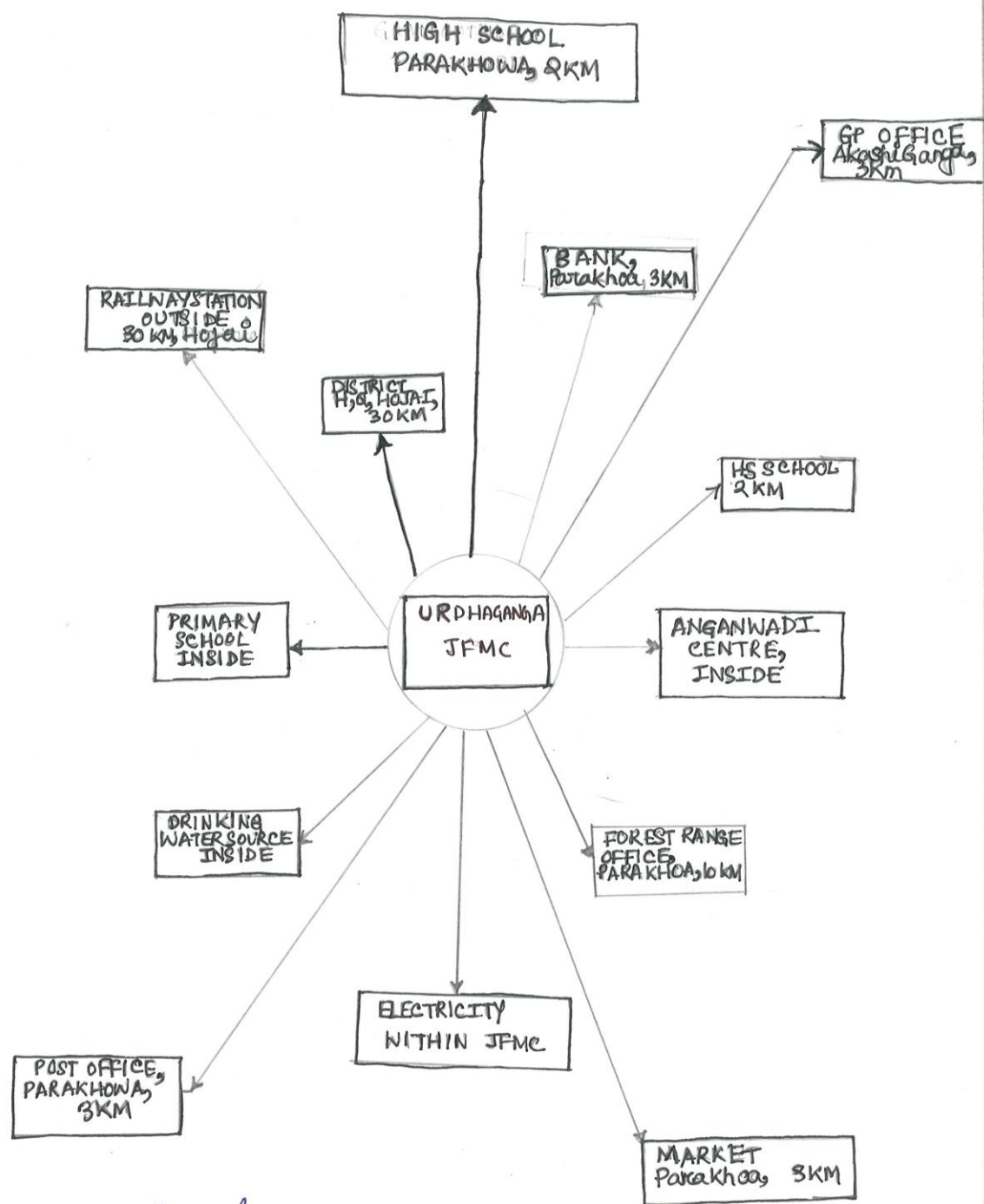
Learnings:

- Water availability is less during the period October to March, so agricultural productivity become less in this period.

3.5 Venn Diagram



3.6 Chapatti Diagram



Sir, Bapu, E. S. G. S.
Sri B. S. S. S. S.

EPA Activities		Drinking Water A	Road Connectivity B	Electricity C	School D	Sanitation E	Marks	Rank
Drinking Water	A	x	A	A	A	A	4	1
Road Connectivity	B		x	B	B	E	3	2
Electricity	C			x	D	E	2	4
School	D				x	E	1	5
Sanitation	E					x	2+	3

Livelihood activity:

Livelihood Activities		Agriculture & Horticulture A	Livestock B	Weaving C	Sericulture D	Cane & Bamboo E	Marks	Rank
Agriculture & Horticulture	A	x	A	A	A	A	4	1
Livestock	B	x	x	B	B	B	3	2
Weaving	C	x	x	x	C	C	2	3
Sericulture	D	x	x	x	x	E	1	5
Cane & Bamboo	E	x	x	x	x	x	1+	4

EPA AND LIVELIHOOD ACTIVITY OF URDHAGANGA JFMC

EPA activity

EPA Activities	Drinking Water (A)	Road Connectivity (B)	Electricity (C)	School (D)	Sanitation (E)	Marks	Rank
Drinking Water (A)	X	A	A	A	A	4	1
Road Connectivity (B)		X	B	B	E	3	2
Electricity (C)			X	D	E	2	4
School (D)				X	E	1	5
Sanitation (E)					X	2 ⁺	3

Livelihood Activity

Livelihood Activities	Agriculture & Horticulture (A)	Livestock (B)	Weaving (C)	Sericulture (D)	Cane & Bamboo (E)	Marks	Rank.
Agriculture & Horticulture (A)	X	A	A	A	A	4	1
Livestock (B)	X	X	B	B	B	3	2
Weaving (C)	X	X	X	C	C	2	3
Sericulture (D)	X	X	X	X	E	1	5
Cane & Bamboo (E)	X	X	X	X	X	1 ⁺	4

Signature

Sh. Raj Singh. Smt. Bir Singh

PHOTOGRAPHS



PRA ACTIVITY



COMPLETION OF SOCIAL MAPPING



A SNAP WITH THE VILLAGERS

Annexure 5
LIST OF JFMC MEMBERS

RECORD 7 : MEMBERSHIP REGISTER

URDHAGANGA
Name of JFMC

Division

Range

DOBOKA TV RANGE.

Beat HALODHIATI

JFMC Code

Sr. No.	Name	Father's / Husband's name	Age	Male / Female	Education	SC/ST / BC/OBC
1	Momeswar Bora,	L. To Kanti Bora	49	M	HSLC	OBC
2	Bolen Bora,	Mr. BHADRAM DEURI	75	M	9	ST
3	Paramananda Bora,	Uma Kanta Bora	48	M	BA	OBC
4	Nitul Semapati,	HANSHAM SENAPATI	38	M	9	ST
5	Raju Singh,	L. To KONTI ENGTI	51	M	8	ST

6) Arumkather, 35 M 9 ST
 7) Babu Teom, 55 M 9 ST
 8) Dilip Bora, 45 M 5 OBC
 9) Dulu Stira, MAHESHWARI 36 F 9 SC
 10) Chinu Rangpiti, 36 F 9 ST
 11) Ranju Tesompi, 35 F 9 ST.

6) LORSING KATHER (F).

7) BORSINGH TEOM (F).

8) HIREN BORA (H).

10) JAYANTA KEO (H).

11) JINTU KEO (H).

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Momeswar Bora
President
 JFMC URDHA GANGA
 Doboka Range
 Sree Mahesh Ch. Nelli
Member Secy.
 JFMC URDHA GANGA
 Doboka Range

Annexure 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	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
1	Urdhaganga	2013	11	Moneswar Bora	Mahesh Chandra Nath, Forester-I	-	-	-	-	80%

Table 2: Village wise population data:

Table -2: Demographic status of the project villages

Sl. No.	Name of village	Households (No.)	ST			OBC			Sex ratio (per 1000 male)	Avg. HH size
			Total	Male	Female	Total	Male	Female		
1	Urdhaganga	90	250	127	123	50	31	19	796	3.33
	Total	90	250	127	123	50	31	31	796	3.33

Source: - Field survey report.

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

Table3:1 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	Urdhaganga	-	-	70	20	90
	Total	-	-	70	20	90

Table 4: Cattle Population:

Table 4: Cattle Population of the JFMC

Sl	Name of the village wise no of cattles or type of animal
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no	village	cows	buffaloes	Poultry	Goat	bulls	camels	pig	total
1	Urdhaganga	180	-	75	100	-	-	360	715
Total		180	-	75	100	-	-	360	715

Table 5: Village wise Infrastructure:

Table 5 showing village wise infrastructure

Sl no	Infrastructure	Location	Distance from village
1	Electricity	Parakhowa	2km
2	Gas connection	Parakhowa	2km
3	Transport	Parakhowa	2km
4	PHE	Parakhowa	2km
5	LP school	Inside	0.5km
6	High school	Parakhowa	2km
7	Post office	Parakhowa	2km
8	Bank	Parakhowa	1Km
9	Anganawadi centre	Inside	0.5Km
10	VCDC	Parakhowa	4km
11	Revenue Office	Hojai	30km
12	Police station	Parakhowa	12km
13	Forest Office	Doboka	4km
14	Post office	Parakhowa	4km
15	Bus facility	Parakhowa	7km
16	Railway Station	Hojai	30km
17	District head quarter	Hojai	30km

Table 6: Agricultural crops

	Rain Fed		Irrigation	
	Name of the crop	Area (in ha.)	Name of the crop	Area (in hac)

Kharif	Sali rice	28.63	-	-
Rabi	Mustard	3.2	-	-
Others	Vegetable, Fruits	38.4	-	-

Table 7: Crop production profile of URDHAGANGA JFMC:

Table 7 Crop production profile of Urdhaganga JFMC

Type of crop	Total Production (approx) in quintals	No of household growing	Average production (quintal/ hac) approx	Area under crop (hac) approx
Paddy	1620	80	56.58	28.63
Oil seeds	30	10	9.37	3.2
Vegetable	480	80	12.5	38.4

Table 8: Fodder Availability (animal)

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

Table 9 Location of market from the village

For Purchase	Location	Distance from village if in other village (in km)
Grocery shop	Parakhowa	2 km
Weekly Market	Parakhowa	2 km
Major Market	Doboka Bazar	12 km

Forest Corporation Sale Depot.	NA	-
Tendu Patta PHAD	NA	-
Fish Market	Parakhowa	2km
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
Check dam	Nil		
Stream	1	Adequate	Drinking, Bathing, Irrigation, livestock rearing
Tube well	60	Adequate	Drinking, Bathing, Irrigation, livestock rearing
Supply Water Pipeline	1	Adequate	Drinking, Bathing, Irrigation, livestock rearing

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	90	12	Forest	Major
Kerosene stove	90	12	Market	Secondary
Gobar/Bio gas	NA	-	-	-
LPG	10	12	Govt.	Secondary

RECORD: II

LIVELIHOOD OPPORTUNITY ANALYSIS

Table 12: Agriculture and Horticulture:

Table 12: showing the agricultural and horticultural status

Constraints	Reason	Opportunities	Programme
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Low Production	<ul style="list-style-type: none"> • Traditional way of cultivation. • Only one crop undertaken annually (Paddy) • 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 • Agro-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. 	<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 	<ul style="list-style-type: none"> • Higher income from livestock rearing. 	

	<ul style="list-style-type: none"> 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"> The villagers can make it as an alternative livelihood opportunity if they have the easy access of livestock fodder. 	
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 milk market is in demand. 	

Table 14: NWFP

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.
Unsustainable	<ul style="list-style-type: none"> NA 	<ul style="list-style-type: none"> Availability of 	<ul style="list-style-type: none">

extraction		fertile fallow land	
Low rates	<ul style="list-style-type: none"> • NA 	<ul style="list-style-type: none"> • NA 	<ul style="list-style-type: none"> • NA
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"> • 	<ul style="list-style-type: none"> •

Table 15: Specialised skill

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

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. 	
Rate of interest	<ul style="list-style-type: none"> • Higher lending rates charged by the private 	<ul style="list-style-type: none"> • Subsidised credit arrangement 	

	money lender		
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 	