

Republic of India
State of Mizoram, Forest Department

Republic of India
Preparatory Survey
on
The Project for Biodiversity Conservation
and Forest Enrichment
in
Mizoram
Final Report
(Advanced Version)
Annex

February 2025

Japan International Cooperation Agency (JICA)

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Kokusai Kogyo Co., Ltd.

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**Preparatory Survey on
The Project for Biodiversity Conservation and Forest Enrichment in Mizoram
in Republic of India**

Final Report (Advanced Version)

Annex

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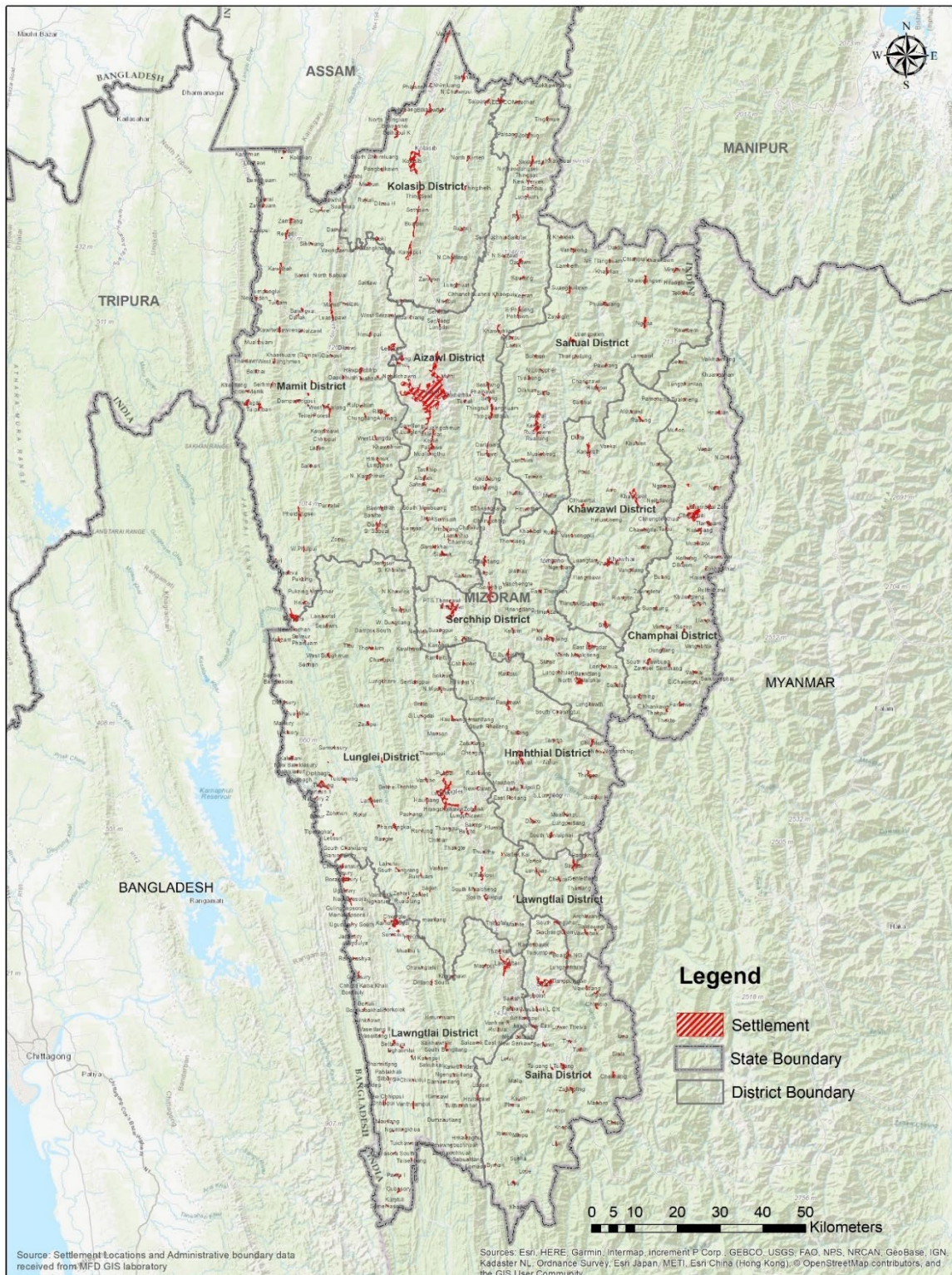
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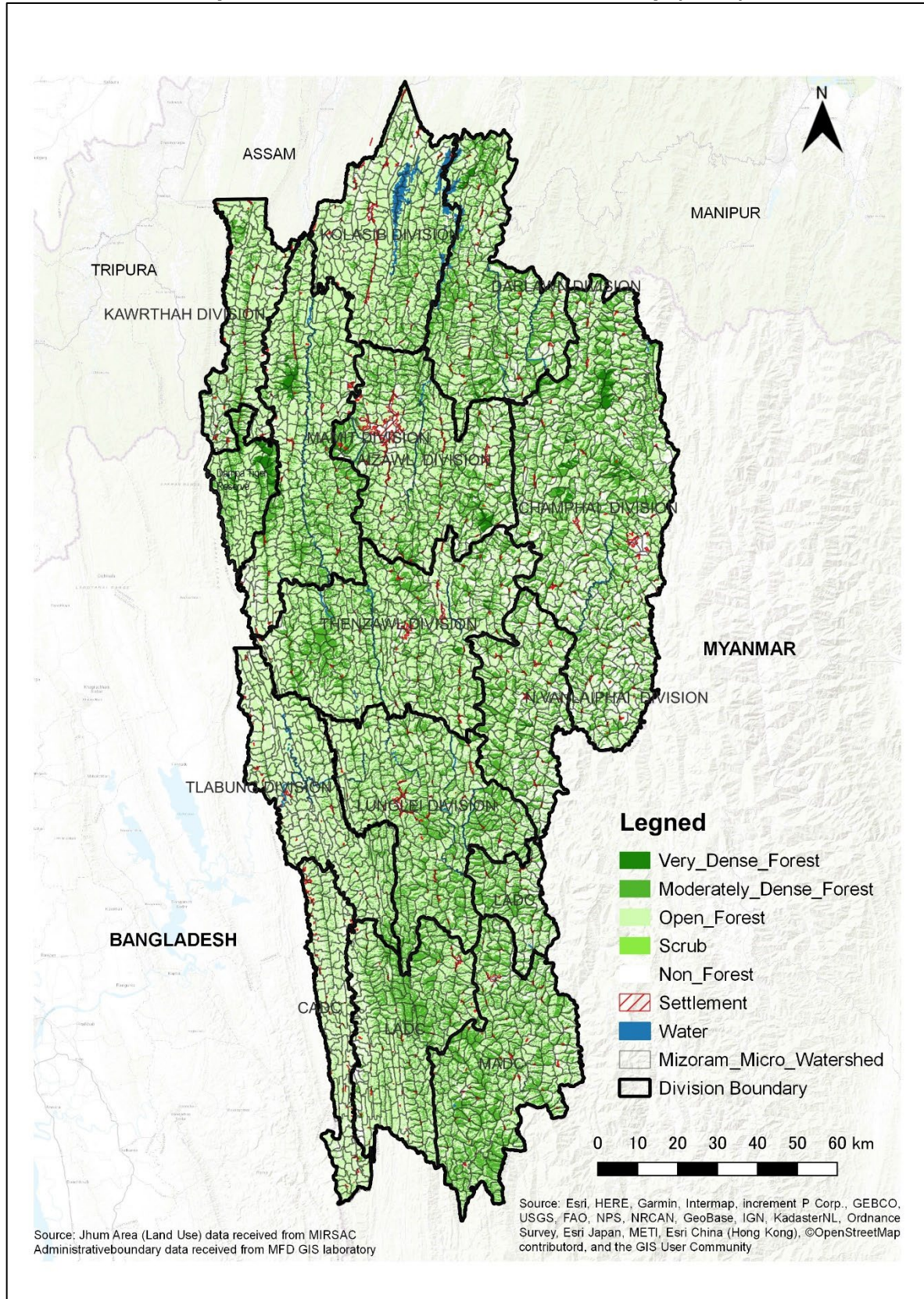
Maps

Map 1 District Boundary Map



Source: JICA Survey team (2023)

Map 2 Watershed-wise Forest Cover Map (2019)



Source: JICA Survey team (2023)

Annex

Annex 2.2.1 Detail of cluster for Van Dhan Vikas Kendra

District Wise Number Clusters under Van Dan Vikas Kendra

SN	Name of District	Trainings being imparted to VDVK beneficiaries	Operationalization of VDVKs	
		No. of beneficiaries attending training	No. of VDVK centre sanctioned	No. of operational VDVK centress
1	Aizawl West	84	21	14
2	Aizawl East	72	18	13
3	Lunglei	132	33	19
4	Champhai	68	17	15
5	Serchhip	64	16	8
6	Kolasib	80	20	18
7	Mamit	72	18	17
8	Siaha	64	16	11
Total		636	159	115

Value Added Products and Number of Van Dan clusters engaged

SN	Name of value added products	No. of VDVKs engaged
1	Chilli powder	9
2	Turmeric	13
3	Animal feeds	7
4	Ginger	9
5	Broom	29
6	Betel Nut	11
7	Nimbu/ Lemon	9
8	Jaggery Candy	3
9	Bamboo/ Pickle	13
10	Banana	3
11	Coffee	1
12	Amla Powder	3
13	Sesame oil	1
14	Grape Juice	1
15	Honey	2
16	Tea	1
Total		115

Annex 2.2.2 Outline of Interventions under Mizoram State Rural livelihood Mission

Outline of Interventions under Mizoram State Rural livelihood Mission

1. Farm Based Livelihood	
Objective:	• Universalization of Livelihoods in all intensive blocks • Promotion of agro-ecological practices • Every poor household is supported on at least 2 farm sector livelihoods in an integrated manner (agriculture and livestock) • Assured annual incremental income of more than Rs.50,000 per family per year after 2 years of intervention • Yearlong food & nutritional security for the household created by themselves. • Income streams throughout the year • Creation of Social capital for agriculture, NTFP and livestock, from the best practitioners as extension workers. • Moving from Agro Ecology to Organic
Key Interventions/ sub-programmes:	• Mahila Kisan Shashaktikaran Pariyojana (MKSP) – in Resource Block • State Rural Livelihoods Mission's Annual Action Plan on farm livelihood – in Intensive Block
Mahila Kisan Sashaktikaran Pariyojana (MKSP)	Overview: • Launched in 2010-2011 in different states of India. • It is a special program initiated by National Rural Livelihood Mission for livelihood enhancement and vulnerability reduction • The program envisages empowering women in agriculture by making systematic investments to enhance their participation and productivity, as also create and sustain agriculture based livelihoods of rural women. Intervention areas: • Serchhip and Kolasib district of Mizoram with a project duration of three years (2017-2020) covering four resource block namely Serchhip R.D block, East Lungdar R.D block, Thingdawl R.D block and Bilkhawthlir R.D block. • As the Ministry allowed extension of the project for one year. The project will be extending till 2021. • The total budget approved for the project is Rs 3,60,04,400. The central to state share in funding for MKSP stands at 90:10 ratio. Goals: • To help and organize the working women to have a better income through group approach activity and to give them livelihood based activity for sustainable income. In particular, special concern will be given to widow, divorced and women of poorest of the poor who have the capacity to work. • Providing employment to the landless, small and marginal farmers with special attention to women in rural areas through increasing productivity and production of land based and non land base activities will be the goals of this project.
Convergence	• Convergence with MGNREGA and other line departments.

	• Convergence with MOVCDNER for promotion of organic farming. • Convergence with NEIDC for pigsty construction. • Convergence with Animal Husbandry & Veterinary Department for Animal Health Camp.
Others:	<u>Outcomes:</u> Measurable outcomes for village : • Livelihoods Community Resource Person • Custom Hiring Centre • Non chemical Pest Management (NPM) shop suitable for Mizoram • Regular Farmer Field School • Vaccination and deworming • Animal Health camp • Collective marketing • Village livelihood maps and intervention plan Measurable outcomes for Household (HH) : • Strengthen multiple livelihoods - Every household should have more than 2-3 source of income • Adopted agro-ecological practices - seed, soil, water, crop protection, harvest & post-harvest • Agri-nutri garden • Adopted livestock practices- Health management (Deworming, Vaccination and Ethno-veterinary treatment), General management (Housing, Hygiene, care of new born and pregnant animal), Feed management (Ration balancing, Fodder conservation, preparation of feed bolus, Azolla and Hydroponics), Breed management (Prevent inbreeding and selection of animals for breeding)

2. Non-Farm Livelihoods	
Objective:	• Improving and supporting existing livelihoods of the poor through enhancing and expanding livelihoods options and tapping new opportunities in non-farm sectors. • Develop local resources by training village level community cadre (Community Resource Person for-Enterprise Promotion) to facilitate and handholding support to rural households/SHG member in entrepreneurship/micro enterprises development. • Enabling rural poor to set up enterprise and support rural entrepreneur/enterprises by developing their skills and support rural entrepreneurs by financial inputs. • To identify the possibility of developing entrepreneurship amongst rural households and enhancing incomes through developing vocational and entrepreneurial skills and by creating opportunities for self/wage employment. • Micro enterprise promotion and development to facilitate economic empowerment of rural household through marketing and hand holding support to existing and new micro enterprises.
Key Interventions/ sub-programmes:	<u>Aajeevika Grameen Express Yojana (AGEY):</u> It is a sub-scheme of Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (DAY-NRLM) introduced by the Ministry of Rural Development, Govt. of India in the financial year 2017-18.

	During FY 2017-18 Mizoram State Rural Livelihoods Mission (MzSRLM) has taken up this scheme and implemented in 3 Rural Development Blocks wherein 18 vehicles are in operation on a pilot basis. The Scheme was expanded during FY 2018-19 in 7(seven) Rural Development Blocks wherein additional 30 vehicles were again provided. Till date 48 Motor vehicles are being operated and run by 48 Self Help Groups under MzSRLM across 10 Rural Development Blocks. Objectives of AGEY • To provide an alternative source of livelihoods to members of Self Help Groups by facilitating them to operate public transport services in backward rural areas. • To provide safe, affordable and community monitored rural transport services to connect remote villages with key services and amenities (including access to markets, education and health) for the overall economic development of the area by making use of the supports available within the framework of DAY-NRLM. <u>Start Up Village Entrepreneurship Project (SVEP)</u> It is a sub-scheme under the Deendayal Antyodaya Yojana - National Rural Livelihoods Mission (DAY-NRLM) with the objective of helping rural households including women to set up enterprises. Skill-building support is provided to all the entrepreneurs supported through Community Resource Persons for Enterprise Promotion (CRP-EP). <u>Community Enterprise Fund (CEF)</u> Community Enterprise Fund (CEF) is provided @ Rs. 1 Lakh (maximum) per Individual Enterprise and Rs. 5 lakhs (maximum) for Group Enterprises.
Convergence	<u>MzSRLM on Rural Tourism:</u> MzSRLM in convergence with Tourism Department has provided training and handholding support to 21 SHG Households who own and run Home stay in Champhai, Khawzawl, Khawbung & Reiek RD Blocks.

3. Financial Inclusion	
Objective:	NRLM facilitates universal access to affordable cost-effective reliable financial services for the poor. These include: • Financial literacy, • bank account, savings, • credit, • insurance, • remittance, • pension, and • Counseling on financial services. The core of the NRLM financial inclusion and investment strategy is “making poor the preferred clients of the banking system and mobilizing bank credit”.

4. Institution Building and Capacity Building (IB/CB)	
Objective:	Targeted poor households (women) into aggregate institutions of the poor that provide them with voice, space, and resources.
Key Interventions/ sub-programmes:	<u>Universal Social Mobilisation</u> At least one member from each poor household would be brought under the Self-Help Group network. Poor are identified through participatory processes – Participatory Identification of Poor (PIP) firstly conducted during Internal Community Resource Person’s Round (village Entry). The Gram Panchayat authorises the final list of poor in the village. MzSRLM adopts its home-grown model by identifying Internal Community Resource Persons from SHG members and provided intensive immersion training to best practices States and NROs and deployed them to become a torch of the Mission Implementation. <u>Building Capacities</u> NRLM ensures the poor are provided with the requisite skills for managing their institutions, linking up with markets, managing their existing livelihoods, and enhancing their credit absorption capacity and creditworthiness. A multi-pronged approach is adopted for providing continuous capacity building of the targeted families, SHGs, their federations, government functionaries, bankers, NGOs, and other key stakeholders. The focus is to develop and engage community professionals and community resource persons (CRP) for capacity building of SHGs and their federations and other collectives. <u>Building Institutions of the Poor</u> The SHGs are federated at the village levels and called Village Organisations (VO). The VO is federated into Cluster Level Federation (CLF). MzSRLM works towards building and strengthening its capacity. MzSRLM also promotes livelihoods collectives that help the poor to enhance their livelihoods through deriving economies of scale, backward and forward linkages, and access to information, credit, technology, markets, etc. MzSRLM invests in building ‘social capital’ – Community Facilitators, CRPs, Community Auditors, etc who are crucial in making NRLM community-driven and sustainable. MzSRLM also works towards the social development of SHG members through FNHW (Food, Health, Nutrition, and WASH) intervention. FNHW interventions aim accessibility to Nutritious food, Health condition, Sanitation, hygiene, and clean water by creating awareness and practices among Members.
Convergence	These platforms ‘of the poor’ and ‘for the poor’ would partner with local self-governments, public service providers, banks, the private sector, and other mainstream institutions to facilitate the delivery of social and economic services to the poor.

5. Others	
Objective:	<u>Social Inclusion and Social Development (SI/SD)</u> Mizoram State Rural Livelihoods Mission (MzSRLM) promotes all round development for the Self-Help Group members. Though economic services to the poor are crucial and prioritized at the initial stage, social development of the poor is also inevitable to have reach real and sustained development. For this, interventions under Social Inclusion and

Key Interventions/ sub-programmes:	Social Development are being taken up. <u>FNHW:</u> MzSRLM work towards social develops of SHG members through FNHW (Food, Health, Nutrition and WASH) intervention. FNHW interventions aims at accessibility and availability of Nutritious food, better health care system for children, lactating mother, adolescent etc, better Sanitation and hygienic practices, availability of safe and clean water by creating awareness and practices among SHG Members. The intervention was started into four RD Blocks from 2019 onwards and the plan was to universalized all blocks under these interventions during FY 2023-24. <u>Gender Intervention:</u> As NRLM believes that gender sensitization and social action should be mainstreamed in its framework, systems, institutions and processes to achieve sustainable social, economic and political development. Mizoram SRLM thus mobilizes poor women in general and also undertakes special mobilization efforts for reaching women in exploitative situations/ occupations (Single women, divorced, separated, survivors of violence, trafficked women, HIV+ve women etc.) in particular. <u>Social Inclusion:</u> As saturation of the normal SHG is almost completed, NRLM feels the need to include Elderly, PWDs and Minorities into SHG fold and thus Mizoram SRLM has undertaken steps for the inclusion of Elderly, PWD and Minorities into the SHG fold so as to promote sustainable Livelihoods for all sections of society.
Convergence	<u>PRI-CBO Convergence –</u> PRI-CBO convergence project is carried out in 2 district namely Serchhip and Mamit. MzSRLM is working together with National Research Organization (NRO), Kudumbashree of Kerala. The main objective of PRI-CBO convergence is to teach the CBOs and the Village councils how to work together for the betterment and overall development of their village. Also, importance is given to Village Poverty Reduction Plan (VPRP) which is a sub component of Gram Panchayat Development Plan (GPDP) is where CBOs in the form of VO/SHG plan for the development of their village and is to be incorporated into the final GPDP after approval at the Gram Sabhas.

Source: JICA survey team based on the Mizoram State Rural Livelihood Mission Website
(<https://srlm.mizoram.gov.in/>)

Annex 3.1.1 List of Tree Species Exempted from the Requirement of Felling Permission

S.N	Botanical Name	Local name/ Common Name
1	<i>Albizzia stipulata</i>	Vang
2	<i>Alstonia scholaris</i>	Devil tree/ Thuamriat
3	<i>Anogeissus acuminata</i>	Yon/ Zairum
4	<i>Baccaurea ramiflora</i>	Bhooby tree/ Pangkai
5	<i>Bauhinia pupurea</i>	Butterfly tree/ Vaufavang
6	<i>Bauhinia variagata</i>	Mountain Ebony/ Vaube
7	<i>Callicarpa arborea</i>	Hnahkiah
8	<i>Drimycarpus racemosus</i>	Telsur/ Vawmbal
9	<i>Erythrina subumbrans</i>	Dadap/ Fartuah-hling-neilo
10	<i>Erythrina variegata</i>	Coral tree/ Fartuah
11	<i>Eucalyptus species</i>	Nawalhthing
12	<i>Grevillea robusta</i>	Silver oak
13	<i>Helicia excels</i>	Sialhma
14	<i>Hevea brasiliensis</i>	Para rubber/ Thelret
15	<i>Hibiscus macrophyllus</i>	Vaiza
16	<i>Lannea coromandelica</i>	Jhingan/ Tawitawsuak
17	<i>Mangifera indica</i>	Aam/ Theihai
18	<i>Melia azadirachta</i>	Meem/ Nim-suak
19	<i>Parkia roxburghii</i>	Zawngtah
20	<i>Sterculia urens</i>	Khaukhim
21	<i>Trema orientalis</i>	Charcoal tree/ Belphuar

Source: Environment, Forest & Climate Change Department, Government of Mizoram. Notification No. B. 11020/42/2015-FST.

Annex 3.1.2 The Mizoram Gazette Notification No: No. B. 11020/1/2003 - FST, the 15th May, 2020



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NOTIFICATION

No. B. 11020/1/2003 - FST, the 15th May, 2020. In exercise of the power conferred by sub-section 3 of Section 6 of the Mizoram Forest Act, 1955, and in supersession of notifications issued earlier on fixation of royalty rates and classification of trees/timber, the Governor of Mizoram is pleased to revise the classification of trees/timber along with the royalty rates for various forest produce in Mizoram as follows, with immediate effect and until further orders:

I. CLASSIFICATION OF TREES / TIMBER

Sl.No.	BOTANICAL NAME	MIZO NAME	COMMON NAME
<u>A – I Class</u>			
1.	<i>Mesuaferrea</i>	Herhse	Nahor, Nageswar
2.	<i>Tectonagrandis</i>	Tlawr/Teak	Teak
3.	<i>Xyliadolabrifformis</i>	Thinguk	Pyinkado
4.	<i>Micheliachampaca</i>	Ngiauhnahlai	Champ, Tita-sopa
5.	<i>Morusmacroua</i>	Lungli	Bol-kimbu
6.	<i>Chukrasiatabularis</i>	Zawngtei	Chickrassy, Bongapoma
7.	<i>Terminalictmyriocarpa</i>	Char	Hollock
8.	<i>Adina cordifolia</i>	Lungkhup	Haldu
9.	<i>Dipterocarpesturbinatus</i>	Lawngthing	Gurjan
<u>A – II Class</u>			
10.	<i>Acacia catechu</i>	Lawithing	Khai
11.	<i>Amoorawallichii</i>	Sahatah	Amoora
12.	<i>Artocarpuschaplasha</i>	Tatkawng	Chaplash
13.	<i>Cephalotaxusgriphithii</i>	Tufar	
14.	<i>Cephalotaxuscecicodaphne</i>	Saper	Mala giri
15.	<i>Cinnamomumglanduliferum</i>	Khiangzo	Rahu, Gonser(Thingrimchhia)
16.	<i>Dipterocarpmacrocarpus</i>	Thingsen	Hollong
17.	<i>Gmelinaarborea</i>	Thlanvawng	Gomari
18.	<i>Gmelinaoblongifolia</i>	Vawngthla	

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19.	<i>Juglans regia</i>	Khawkherh	Walnut, Akhrot
20.	<i>Micheliadoitso</i>	Zongiau	Champ, Safedchamp
21.	<i>Michelia oblonga</i>	Ngiau	Kothal-sopa, Bor-sopa
22.	<i>Phoebe hainshana</i>	Buleng/Zobul	Bonsum
23.	<i>Podocarpus nerifolia</i>	Tufar/Thlangfar	Gunsi
24.	<i>Shorea robusta</i>	Salthing/Chim	Sal/Chim
25.	<i>Taxus baccata</i>	Khawreng-far	Yew.V
26.	<i>Lagerstroemia speciosa</i>	Thlado	Jarul
27.	<i>Phoebe attenuata</i>	BulTei/Teipui	Bonsum
28.	<i>Toonaciliata</i>	Tei/Teipui	Toon/Poma
29.	<i>Mahonia borealis</i>	Pualeng	Haludsapa
30.	<i>Albizia lebbek</i>	Thingri	Kala-siris
31.	<i>Alseodaphne petiolaris</i>	Bulpui	Makhai
32.	<i>Pinus kesiya</i>	Far	Khasi Pine
33.	<i>Terminalia chebula</i>	Reraw	Myrobalan, Mariraki

B- I Class

34.	<i>Albizia spp.</i>	Thingri chi	
35.	<i>Alseodaphne owdenii</i>	Buan	Jath-undi
36.	<i>Artocarpus heterophyllus</i>	Lamkhuang	Jack-fruit, Kathal
37.	<i>Artocarpus lakoocha</i>	Theitat	Lakooch, Deophal
38.	<i>Bischofia javanica</i>	Khuangthli	Uriam, Bishop wood
39.	<i>Beohmeria rugolosa</i>	Lenlang	Genti
40.	<i>Bridelia squamosa</i>	Thingphaktel	Kasi
41.	<i>Chisocheton paniculatus</i>	Sahatahpui	Bauriphal
42.	<i>Cinnamomum tamala</i>	Hnahrmtui	Tejpata
43.	<i>Dysoxylum binectariferum</i>	Sahatah	Rata
44.	<i>Dysoxylum hamiltonii</i>	Thingsaphu	Gendhili-poma
45.	<i>Dysoxylum procerum</i>	Thingthupui	Lai, Lusuni
46.	<i>Pachylarnax pleiocarpa</i>	Thinglamkhuang	Kathalpatiasopa
47.	<i>Duabangagrandiflora</i>	Zuang	Lampati, Ramdala
48.	<i>Garugapinnata</i>	Bungbutuairam	Thotmela
49.	<i>Terminalia citrina</i>	Reraw	Hilika, Hartaki
50.	<i>Betula alnoides</i>	Hriangpui	Biroh
60.	<i>Betulacylindrostachys</i>	Hriangzau	Saur
61.	<i>Canarium resiniferum</i>	Beraw	Gokuldhup
62.	<i>Palagium polyanthum</i>	Hnaibung	Kuta, Tali
63.	<i>Schimakhasiana</i>	Khiangzo	Dieng-an

B – II Class

All other timber species not included in any other classes.

Special Category

1.	<i>Aquilaria agallocha</i>	Thingrai	Agarwood
2.	<i>Santalum album</i>	Sandal thing	Sandal wood
3.	<i>Pterocarpus santalinus</i>	Sander thingsen	Red Sander

II. SALE RATES / FLOOR PRICE AND ROYALTY RATES FOR VARIOUS FOREST PRODUCE

A. SALE RATES/FLOOR PRICE FOR LOGS & SAWN TIMBER PER CUBIC FOOT/CUBIC METRE:-

i) A – I CATEGORY :

Rate per cft./cu.m for Logs			Rate per cft./cu.m for Sawn Timber	
Girth Class	per cft.	per cu.m	per cft.	per cu.m
Upto 60 cm.	₹ 375/-	₹ 13238/-	₹ 750/-	₹ 26475/-
60 – 90 cm.	₹ 500/-	₹ 17650/-		
90 cm & above	₹ 625/-	₹ 22063/-		

ii) A-II CATEGORY :

Rate per cft./cu.m for Logs			Rate per cft./cu.m for Sawn Timber	
Girth Class	per cft.	per cu.m	per cft.	per cu.m
Below 120 cm.	₹ 175/-	₹ 6178/-	₹ 350/-	₹ 12355/-
Above 120 cm.	₹ 300/-	₹ 10590/-		

iii) B-I CATEGORY:

Rate per cft./cu.m for Logs			Rate per cft./cu.m for Sawn Timber	
Girth Class	per cft.	per cu.m	per cft.	per cu.m
Below 120/cm.	₹ 150/-	₹ 5295/-	₹ 300/-	₹ 10590/-
Above 120/cm.	₹ 275/-	₹ 9708/-		

iv) B-II CATEGORY:

Rate per cft./cu.m for Logs			Rate per cft./cu.m for Sawn Timber	
Girth Class	per cft.	per cu.m	per cft.	per cu.m
Below 120 cm.	₹ 138/-	₹ 4871/-	₹ 275/-	₹ 9708/-
Above 120 cm.	₹ 225/-	₹ 7943/-		

Notes:-

- (i) The rates as above are for scantlings and additional ₹ 25/- per cft. will be levied extra for planks sizes (₹ 875/- per cu.m).
- (ii) Sale rate/floor price of timber in the forest (jungle) as well as in places not connected by motorable road will be less by ₹ 25/- per cft. (₹ 875/- per cu.m).

B. ROYALTY RATES FOR TIMBER PER CUBIC FOOT :-

Class	Royalty Rates
A – I	₹ 187/-
A – II	₹ 88/-
B – I	₹ 75/-
B – II	₹ 69/-

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- (i) The cubic content of the log will be calculated by multiplying the square of the quarter girth taken at the middle of the log multiplied by the length of the log. But for logs above 3.66 metres in length, mid girth will be measured at 1.83 metre from butt end.
- (ii) The above rates are for girth measurement taken over bark. For barked logs and dressed logs, the rates will be ten percent and twenty five percent respectively higher than the rates for logs measured over bark embodied in item 2 above.
- (iii) Rates for sawn timber will be double the above rates given under girth 1.22 metre and over irrespective of girth class of the logs from which the sawn has been converted.
- (iv) Payment at log rates will enable the purchaser to remove slabs obtained on conversion without further payment. Payment on sawn timber rate after conversion in the forests will not enable the purchaser to remove the slabs and royalty on them will be levied at the rate fixed below under clause C.

C. ROYALTY RATES FOR POLES:-

Rate per piece of any length up to four (4)metre or part thereof:

<i>Class</i>	<i>per piece up to 4 Mtr</i>	<i>per piece beyond 4 Mtr</i>
A – I	~ 10/-	~ 3/-
A – II		
B – I	~ 8/-	~ 2/-
B – II		

The above rates are for girth measurement taken over bark at the middle of the pole. For under bark and dressed poles, the rates will be 10% and 25% respectively higher than these rates. Length of poles in fractions of 0.5 metre or more will be taken into the next highest numerical unit length in assessment of royalty.

D. ROYALTY RATES FOR FIREWOOD:-

- i) For removal by 1 ton truck - ~ 500/-
- ii) For removal by 5 ton truck - ~ 1500/-
- iii) For removal otherwise (per stacked cu.m) - ~ 50/-

Firewood is defined as wood under one metre in length and upto 0.60 metre in girth, unsuitable wood of higher dimensions if found, owing to hollowness, crookedness or other defects for sawing into scantling and planks may be removed as firewood after splitting.

E. ROYALTY RATES FOR CHARCOAL:- ~ 50/-per quintal.

F. ROYALTY RATES FOR MINOR FOREST PRODUCE:-

i) Bamboos:

Sl. No.	Name of Species	Royalty Rates	
		Domestic purpose	Commercial purpose
1	<u>Large sized bamboos:-</u> 1. <i>Bambusabalcooa</i> (Vairua) 2. <i>Bambusavulgaris</i> (Vairua) 3. <i>Bambusabamboos</i> (Vairawhlingnei/Rawhling) 4. <i>Babbusanutans</i> (Ankuang) 5. <i>Dendrocalamushamiltonii</i> (Phulrua) 6. <i>Dendrocalamussikkimmensis</i> (Rawmi) 7. <i>Dendrocalamusqanteus</i> (Vairawpuilian) 8. <i>Dendrocalamushookeri</i> (Rawlak/Rawkhauh) 9. <i>Dendrocalamus spp.</i> (Rawpui/Rawchhia) 10. <i>Dendrocalamusbrandisii</i> (Vairua) 11. <i>Dendrocalamusasper</i> (Thailand Rua) 12. <i>Dendrocalamus pallida</i> (Vairua) 13. <i>Dendrocalamusstrictus</i> (Tursing)	~ 2/- per piece	~ 3/- per piece
2	<u>Medium sized bamboos:-</u> 1. <i>Bambusatulda</i> (Rawthing) 2. <i>Bambusalongispiculata</i> (Rawthing) 3. <i>Bambusamizorameana</i> (Talan) 4. <i>Dendrocalamuslongispathus</i> (Rawnal) 5. <i>Gigantochloaalbociliata</i> (Rawthingtia) 6. <i>Schizostachyumdullooa</i> (Rawthla)	~ 1/- per piece	~ 2.50 per piece
3	<u>Small sized bamboos:-</u> 1. <i>Melocanabaccifera</i> (Mautak) 2. <i>Bambusakhasiana</i> (Rawte) 3. <i>Chimonobambusacollusa</i> (Phar) 4. <i>Pseudostachyum polymorphum</i> (Chal) 5. <i>Schizostachyumcapitatam</i> (Rawngal) 6. <i>Melocalamuscompactiflorus</i> (Sairil)	~ 1/- per piece	~ 2/- per piece

All species
by weight
@ ~ 250/-
per MT

ii) Sand, boulders, rocks, etc:

Sl. No.	Name of forest produce	Royalty Rates per cu.m
1	Sand stone including building stones, dimensional stones etc.	~ 60/-
2	Gravel	~ 70/-
3	Ordinary clay	~ 15/-
4	Ordinary clay used for prescribed purposes	~ 70/-
5	Boulders and Shingles	~ 60/-
6	Sand	~ 60/-
7	Ordinary earth (when used for filling leveling in construction or embankments, road, railways, building, etc.)	~ 10/-

Ex-309/2020

- 6 -

- iii) GST at rates prevalent and as applicable will be leviable on payment of royalty for any kind of forest produce.
- iv) All other minor forest produce (MFP) / non-timber forest produce (NTFP) for commercial collection not listed above such as broomstick, beewax, honey, agar, chalmugra, anchiri, lac, rubber, pati, etc. will be charged at 12½ percent "ad valorem" as fixed by the Principal Chief Conservator of Forests, Mizoram from time to time.

Dr. Ch. Muralidhar Rao,
Principal Secretary to the Govt. of Mizoram,
Environment, Forest & Climate Change Department.

Annex 3.1.3 Stakeholders in Bamboo Development in Mizoram

Stakeholder	Activities concerning bamboo development	Relationship with Other Stakeholders
Bamboo Development Board*	- Headed by chief minister of Mizoram. - Members include all the stakeholders in bamboo development	Define policy direction for Mizoram
MFD (MoEFCC)	- Protection and enhancement of the existing forest cover including bamboo inside and outside of the recorded forests - Ensure scientific management of the forests including bamboo as per the working plan prescriptions - Promoting increased regeneration/ cultivation and scientific harvesting of Non-Timber Forest Products (NTFPs) such as bamboo, broom grass, cane etc. inside the recorded forests - Harvest timber and bamboo as per the working plan and supply to market	Support Horticulture Department and Bamboo Mission as required
Horticulture Department (Ministry of Agriculture and Farmers' Welfare)	- Function as the nodal department for anchoring the State Bamboo Mission (SBM) in the state under National Bamboo Mission (NBM) which is to promote bamboo and bamboo products production and value addition - Guide policy and implementation of the mission in the state through the implementation agencies - Release funds received from National counterpart for the implementation of the scheme to state implementation agencies	Act as the nodal Department for the National Bamboo Mission in the state
State Bamboo Mission	- Organize base-line survey and feasibility studies in different parts (District, sub- District, or a group of Districts) to determine the status of bamboo production, its potential and demand, and tailor assistance accordingly. - Promotes production of bamboo and value addition - Support in marketing of the products and strengthen linkage between farmers/FPOs/FPCs/Cooperatives/ SHGs/federated Cooperatives to markets. - Cluster based approach - Organize workshops, seminars and skill development/ training programmes, participation of artisans in exhibitions / trade fairs etc. for all interest groups/ cooperatives/associations as per action plan approved.¹	Implement the planned interventions for bamboo development and coordinate with National Bamboo Mission
Bamboo Development Agency (Department of Commerce and Industry)	- Increase the area under bamboo plantation in the non forest area - Improve post-harvest management through establishment of primary processing units near the source of production, primary treatment and seasoning plants, preservation technologies and market infrastructure. - Promote product development keeping in view market demand, by assisting R&D, entrepreneurship & business models at micro, small and medium levels and feed bigger industry. - Promote skill development, capacity building, awareness generation for development of bamboo sector from production to market demand. - Reduce dependency on import of bamboo and bamboo products by way of improved productivity and suitability	Coordinate with State Bamboo Mission

¹ NBM_Revised_guidelines_2019.

	of domestic raw material for industry, so as to enhance income of the primary producers.	
Forest Research Centre for Bamboo and Rattan (FRC-BR/ ICFRE)/ MoEFCC	• Undertake research on conservation and sustainable utilization of bamboo • Establish germplasm bank of bamboo and canes • Establish bamboo setum and canetum • Develop nursery technology including cultivation practices. • Research on genetic improvement – clonal garden, certification etc. • Develop technology for value addition, edible shoot processing, etc. • Product development including bamboo composites. • Undertake extension activities on bamboo related technical knowledge and technologies to stakeholders. ²	As required
North East Cane and Bamboo Development Council (NECBDC)/ (Under Ministry of Development of North Eastern Region)	• Identify and transfer appropriate manufacturing technology. • Provide technical assistance. • Render specific services such as -laboratory testing and quality assurance. • Focus on generating village-level clusters and micro-processing units to encourage and mobilize SHGs. • Encourage NGOs to venture into the bamboo enterprise building. • Attract investment in the bamboo sector in both medium and small sector enterprises. • Generate awareness in design innovation, new product development, technology infusion and adaptation to the requirement of our country. ³	Coordinate as required

* Further information will be gathered in the 2nd field work.

Source: JICA Survey Team based on various sources

² <https://rfri.icfre.gov.in/forest-research-centre-for%20bamboo&rattan-aizawl>

³ <https://necbdc.in/page/mission>

Annex 3.1.4 List of Bamboo Species and Suitability to Different Agro Climatic Zones of Mizoram

Scientific names	Vernacular names	Altitude Required	Agro Climatic Zones of Mizoram		Administrative District of Mizoram	Availability in North Eastern India
Arundinaria recemosa	Sanu maling(Nepali), Phyum, Miknu (Lepcha), & Pheong, mheem (Bhutia)	2600-3600	1500-Above	Humid Temperate Sub-alpine Zone	- Aizawl (Southeast) - Champa - Serchip (East) - Lunglei (East edge) - Lawngtlai (East edge) - Saiha (East)	Wild and Cultivated
Bambusa multiplex	Chinese bans	600-1200	1000-1500	Humid Subtropical Hill Zone	- Kolasib (South) - Mamit (East) - Aizawl (except Southeast) - Serchip (West and Centre) - Lunglei (Center) - Lawngtlai (East) - Saiha (Centre)	Cultivated
Bambusa nutans	Mala bans(Nepali), Mahlu (Lepcha) & Jiu (Bhutia)	300 – 1600	1000-1500	Humid Subtropical Hill Zone	- Kolasib (South) - Mamit (East) - Aizawl (except Southeast) - Serchip (West and Centre) - Lunglei (Center) - Lawngtlai (East) - Saiha (Centre)	Wild and Cultivated
Bambusa Pallida	Deo bans (Nepali), Pshi, pashipo (Lepcha) and Bongshing (Bhutia)	350-900	200-800	Humid Mild Tropical Hill Zone	- Kolasib (North) - Mamit (West) - Lunglei (West) - Laungtlai (West and Centre) - Saiha (West)	Wild and Cultivated
Bambusa tulda	Sigray bans (Nepali), Paoshiding ying (Lepcha)	400-1500	1000-1500	Humid Subtropical Hill Zone	- Kolasib (South) - Mamit (East) - Aizawl (except Southeast) - Serchip (West and Centre) - Lunglei (Center) - Lawngtlai (East) - Saiha (Centre)	Wild and Cultivated
Bambusa vulgaris var. vittata	Telai bans	300-1500	1000-1500	Humid Subtropical Hill Zone	- Kolasib (South) - Mamit (East) - Aizawl (except Southeast) - Serchip (West and Centre) - Lunglei (Center) - Lawngtlai (East) - Saiha (Centre)	Cultivated
Bambusa vulgaris var. waminii	Lota bans	300-1500	1000-1500	Humid Subtropical Hill Zone	- Kolasib (South) - Mamit (East) - Aizawl (except Southeast) - Serchip (West and Centre) - Lunglei (Center) - Lawngtlai (East) - Saiha (Centre)	Cultivated
Dendrocalamus asper	Sweet bamboo (English)	800-1800	1000-1500	Humid Subtropical Hill Zone	- Kolasib (South) - Mamit (East) - Aizawl (except Southeast) - Serchip (West and Centre) - Lunglei (Center) - Lawngtlai (East) - Saiha (Centre)	Cultivated
Dendrocalamus giganteus	Dhungre bans (Nepali), Giant bamboo (Nepali)	600-1200	1000-1500	Humid Subtropical Hill Zone	- Kolasib (South) - Mamit (East) - Aizawl (except Southeast) - Serchip (West and Centre) - Lunglei (Center) - Lawngtlai (East) - Saiha (Centre)	Cultivated

Scientific names	Vernacular names	Altitude Required	Agro Climatic Zones of Mizoram		Administrative District of Mizoram	Availability in North Eastern India
Dendrocalamus hamiltonii var. hamiltonii	Choya bans, Tama(Nepali), Pao (Lepcha), Pashing (Bhutia)	300-1500	1000-1500	Humid Subtropical Hill Zone	- Kolasib (South) - Mamit (East) - Aizawl (except Southeast) - Serchip (West and Centre) - Lunglei (Center) - Lawngtlai (East) - Saiha (Centre)	Cultivated
Dendrocalamus hamiltonii var. edulis	Guliyo tama bans	300-1500	1000-1500	Humid Subtropical Hill Zone	- Kolasib (South) - Mamit (East) - Aizawl (except Southeast) - Serchip (West and Centre) - Lunglei (Center) - Lawngtlai (East) - Saiha (Centre)	Cultivated
Dendrocalamus hookeri	Tili bans(Nepali), Patu (Lepcha)	900-1800	1000-1500	Humid Subtropical Hill Zone	- Kolasib (South) - Mamit (East) - Aizawl (except Southeast) - Serchip (West and Centre) - Lunglei (Center) - Lawngtlai (East) - Saiha (Centre)	Cultivated
Dendrocalamus longispathus	Rupai (Tripura), Khang (Bengali)	1000	200-800	Humid Mild Tropical Hill Zone	- Kolasib (North) - Mamit (West) - Lunglei (West) - Laungtlai (West and Centre) - Saiha (West)	Cultivated
Dendrocalamus patellaris	Neba bans(Nepali), Pagjiok (Lepcha)	800-1500	1000-1500	Humid Subtropical Hill Zone	- Kolasib (South) - Mamit (East) - Aizawl (except Southeast) - Serchip (West and Centre) - Lunglei (Center) - Lawngtlai (East) - Saiha (Centre)	Wild and Cultivated
Dendrocalamus sikkimensis	Bhalu bans(Nepali), Pagriang (Lepcha)	1000-1800	1000-1500	Humid Subtropical Hill Zone	- Kolasib (South) - Mamit (East) - Aizawl (except Southeast) - Serchip (West and Centre) - Lunglei (Center) - Lawngtlai (East) - Saiha (Centre)	Wild and Cultivated
Dendrocalamus strictus	Latthi bans (Nepali)	300 – 1000	200-800	Humid Mild Tropical Hill Zone	- Kolasib (North) - Mamit (West) - Lunglei (West) - Laungtlai (West and Centre) - Saiha (West)	Wild and Cultivated
Melocanna baccifera	Lahure bans (Nepali)	900-1500	1000-1500	Humid Subtropical Hill Zone	- Kolasib (South) - Mamit (East) - Aizawl (except Southeast) - Serchip (West and Centre) - Lunglei (Center) - Lawngtlai (East) - Saiha (Centre)	Wild and Cultivated
Phyllostachys aurea	Kata bans (Nepali)	600-1200	1000-1500	Humid Subtropical Hill Zone	- Kolasib (South) - Mamit (East) - Aizawl (except Southeast) - Serchip (West and Centre) - Lunglei (Center) - Lawngtlai (East) - Saiha (Centre)	Cultivated
Phyllostachys nigra	Kalo nigalo (Nepali)	800-1400	1000-1500	Humid Subtropical Hill Zone	- Kolasib (South) - Mamit (East) - Aizawl (except Southeast) - Serchip (West and Centre) - Lunglei (Center) - Lawngtlai (East) - Saiha (Centre)	Cultivated

Scientific names	Vernacular names	Altitude Required	Agro Climatic Zones of Mizoram		Administrative District of Mizoram	Availability in North Eastern India
Schizostachyum capitatum	Gobia, Gope (Nepali), Payong (Lepcha)	1000-2400	1500-Above	Humid Temperate Sub-alpine Zone	- Aizawl (Southeast) - Champai - Serchip (East) - Lunglei (East edge) - Lawngtlai (East edge) - Saiha (East)	Wild and Cultivated
Schizostachyum dulloa	Tokre bans (Nepali), Pogslo, Puksalu (Lepcha)	600-1500	1000-1500	Humid Subtropical Hill Zone	- Kolasib (South) - Mamit (East) - Aizawl (except Southeast) - Serchip (West and Centre) - Lunglei (Center) - Lawngtlai (East) - Saiha (Centre)	Wild and Cultivated
Schizostachyum fuchsianum	Palom(Lepcha)	900 – 1600	1000-1500	Humid Subtropical Hill Zone	- Kolasib (South) - Mamit (East) - Aizawl (except Southeast) - Serchip (West and Centre) - Lunglei (Center) - Lawngtlai (East) - Saiha (Centre)	Wild and Cultivated
Schizostachyum polymorphum	Pheling bans (Nepali), Parohoik (Lepcha)	600-1200	1000-1500	Humid Subtropical Hill Zone	- Kolasib (South) - Mamit (East) - Aizawl (except Southeast) - Serchip (West and Centre) - Lunglei (Center) - Lawngtlai (East) - Saiha (Centre)	Wild and Cultivated
Schizostachyum sharmae	Palom(Lepcha)	900-1700	1000-1500	Humid Subtropical Hill Zone	- Kolasib (South) - Mamit (East) - Aizawl (except Southeast) - Serchip (West and Centre) - Lunglei (Center) - Lawngtlai (East) - Saiha (Centre)	Wild and Cultivated
Sinarundinaria hookeriana	Parang, Singhani (Nepali), Prong(Lepcha)	800-2000	1000-1500	Humid Subtropical Hill Zone	- Kolasib (South) - Mamit (East) - Aizawl (except Southeast) - Serchip (West and Centre) - Lunglei (Center) - Lawngtlai (East) - Saiha (Centre)	Wild and Cultivated
Sinarundinaria intermedia	Titay nigalo(Nepali), Parmoik(Lepcha)	1200-3000	1500-Above	Humid Temperate Sub-alpine Zone	- Aizawl (Southeast) - Champai - Serchip (East) - Lunglei (East edge) - Lawngtlai (East edge) - Saiha (East)	Wild and Cultivated
Sinarundinaria maling	Malingo (Nepali), Phum (Bhutia) aand Phuem miknu (Lepcha)	1700-3600	1500-Above	Humid Temperate Sub-alpine Zone	- Aizawl (Southeast) - Champai - Serchip (East) - Lunglei (East edge) - Lawngtlai (East edge) - Saiha (East)	Wild and Cultivated
Sinarundinaria pantlingii	Rani malingo (Nepali)	1800-3000	1500-Above	Humid Temperate Sub-alpine Zone	- Aizawl (Southeast) - Champai - Serchip (East) - Lunglei (East edge) - Lawngtlai (East edge) - Saiha (East)	Wild and Cultivated
Sinarundinaria falconeri	Pummon(Lepcha)	1000-1800	1000-1500	Humid Subtropical Hill Zone	- Kolasib (South) - Mamit (East) - Aizawl (except Southeast) - Serchip (West and Centre) - Lunglei (Center) - Lawngtlai (East) - Saiha (Centre)	Wild and Cultivated

Scientific names	Vernacular names	Altitude Required	Agro Climatic Zones of Mizoram		Administrative District of Mizoram	Availability in North Eastern India
Thamnocalamus aristatus	Rato nigalo (Nepali)	2200-3600	1500-Above	Humid Temperate Sub-alpine Zone	- Aizawl (Southeast) - Champa - Serchip (East) - Lunglei (East edge) - Lawngtlai (East edge) - Saiha (East)	Wild and Cultivated

Remarks: This is an attempt to compile the available species that may be suitable for Mizoram. However, whether further assessment including field tests is required to identify the recommendable species.

Source: Compiled by JICA Survey Team based on the following.

1. The JICA Survey Team. (2015). The study on Development and Management of Land and Water Resources for Sustainable Agriculture in Mizoram in the Republic of India. Final Report. (https://openjicareport.jica.go.jp/pdf/12233136_01.pdf)
2. Tamang, Deo Kumar. et al. (2013). Bamboo diversity, distribution pattern and its uses in Sikkim (India) Himalaya. International Journal of Scientific and Research Publications, Vol 3. (2). Feb 2013. (<https://www.ijsrp.org/research-paper-0213/ijsrp-p14122.pdf>)
3. FAO & INBAR. (2005). Global Forest Resources Assessment 2005. India Country Report on Bamboo Resources. Working Paper 118. Rome. (<https://www.fao.org/3/ah777e/ah777e.pdf>)

Annex 3.1.5. a. Export Data (Bamboo and Rattan) (2017-2021)

Commodity Code	Commodity	2017		2018		2019		2020		2021		CAGR	
		Net Weight (kg)	Trade Value (USD)	Net Weight (kg)	Trade Value (USD)	Net Weight (kg)	Trade Value (USD)	Net Weight (kg)	Trade Value (USD)	Net Weight (kg)	Trade Value (USD)	Net Weight	Trade value
140110	Bamboo used primarily for plaiting	4,232,882	254,846	17,084,234	886,084	6,743,488	389,803	7,419,472	519,135	9,120,061	678,197	46.02	24.51
140120	Rattans used primarily for plaiting	2,020	2,815	3,825	14,192	1,058	5,838	53	129	13	885		
200591	Vegetable preparations; bamboo shoots, prepared or preserved otherwise than by vinegar or acetic acid, not frozen	-	-	3,593	8,575	1,280	2,290	2,520	3,564	586	2,257	3.92	5.89
440210	Wood; charcoal of bamboo (including shell or nut charcoal), whether or not agglomerated	205,285	65,008	111,330	38,518	167,171	36,109	1,286,743	287,339	597,867	85,565	24.03	10.97
440921	parquet flooring), continuously shaped along any edges, ends or faces, whether or not planed, sanded or end-jointed	-	-	8,693	373,965	7,716	252,353	4,656	288,329	3,471	356,064	6.68	23.43
441210	Plywood, veneered panels and similar laminated wood; of bamboo	118,241	187,320	47,922	108,591	-	-	37,084	54,046	264,539	504,883	18.56	22.74
441873	Wood; assembled flooring panels, of bamboo or with at least the top layer (wear layer) of bamboo	13	109	-	-	-	-	200	542	20	196	0.63	2.05
441891	Wood; builders' joinery and carpentry of wood n.e.c. in heading no. 4418, of bamboo	-	-	30	118	-	-	61,401	113,955	5,350	1,133	7.55	4.80
441911	Tableware and kitchenware, of wood; of bamboo, bread boards, chopping boards and similar boards	-	-	107,826	475,442	190,448	767,025	197,441	644,490	-	-	-1.00	-1.00
441912	Tableware and kitchenware, of wood; of bamboo, chopsticks	-	-	-	-	1,875	2,070	2,548	22,185	-	-	-1.00	-1.00
441919	Tableware and kitchenware, of wood; of bamboo, n.e.c. in heading 4419	-	-	-	-	1,805,388	8,145,203	2,072,145	9,805,813	-	-	-1.00	-1.00
442191	Wood; of bamboo, articles n.e.c. in heading no. 4414 to 4420 (excluding clothes hangers)	16,089,222	60,747,683	-	-	13,702,165	57,175,753	9,683,360	43,430,947	-	-		
460121	Plaiting materials, plaits and similar products of plaiting materials; mats, matting and screens, of bamboo	-	-	-	-	7,285	52,593	32,539	96,174	-	-	-1.00	-1.00
460122	Plaiting materials, plaits and similar products of plaiting materials; mats, matting and screens, of rattan	-	-	-	-	398	7,212	1,343	6,372	-	-	-1.00	-1.00
460192	Plaiting materials, plaits and similar products of plaiting materials; (not mats, matting or screens), of bamboo	-	-	3,626	11,480	-	-	315	3,360	902	2,596	4.48	6.14
460193	Plaiting materials, plaits and similar products of plaiting materials; (not mats, matting or screens), of rattan	-	-	294	785	-	-	193	1,108	484	9,421	3.69	8.85
460211	directly to shape from plaiting materials or made up from goods of heading no. 4601	-	-	73,457	453,045	73,193	824,035	30,117	295,552	-	-	-1.00	-1.00
460212	directly to shape from plaiting materials or made up from goods of heading no. 4601	-	-	4,719	58,946	5,459	47,974	18,444	292,619	-	-	-1.00	-1.00
470630	Pulp; of bamboo	1,784	2,864	-	-	147,095	103,016	-	-	1,939	4,604	2.53	5.46
482361	Paper and paperboard; trays, dishes, plates, cups and the like, of bamboo paper or paperboard	304	548	-	-	3,585	10,914	551	1,412	6,358	22,878	7.82	11.22
940152	Seats; of bamboo	-	11,348	-	-	233	5,736	4,377	67,609	-	-	-1.00	
940153	Seats; of rattan	9	100	996	16,518	-	-	183	3,295	-	-		
940382	Furniture; of bamboo	-	-	26,229	122,932	30,137	137,981	103,370	571,645	-	-	-1.00	-1.00
940383	Furniture; of rattan	33	357	7,277	77,254	-	131,091	-	154,728	-	-		
440921	Bamboo, strips, friezes	8,693	373,965	7,716	252,353	4,656	288,329	3,471	356,064	-	-		
200591	Bamboo, shoots, prepared	3,593	8,575	1,280	2,290	2,520	3,564	-	-	-	-		
442191	Articles, bamboo	-	-	13,702,165	57,175,753	9,683,360	43,430,947	13,274,818	69,402,366	-	-	-1.00	-1.00
441891	Builders' joinery and carpentry, of bamboo	30	118	551	1,823	61,401	113,955	5,350	1,133	-	-		
441210	Plywood, veneered, panel	47,922	108,591	-	-	37,084	54,046	264,539	504,883	-	-		
441873	Flooring panels, assembled, of bamboo or with at least the top wear layer of bamboo	-	-	-	-	200	542	20	196	-	-	-1.00	-1.00
440210	Bamboo, charcoal, shell	111,330	38,518	-	-	-	-	597,867	85,565	-	-		
	TOTAL	37,909,420	62,703,041	37,940,309	60,474,305	32,677,248	111,988,508	44,225,194	127,693,637	10,001,590	1,668,679		

Source: International Bamboo and Rattan Organisation (<https://trade.inbar.int:10444/>)

Annex 3.1.5. b. Import Data (Bamboo and Rattan) (2017 - 2021)

Commodity Code	Commodity	2017		2018		2019		2020		2021		CAGR (2017-2021)	
		Net Weight (kg)	Trade Value (USD)	Net Weight (kg)	Trade Value (USD)	Net Weight (kg)	Trade Value (USD)	Net Weight (kg)	Trade Value (USD)	Net Weight (kg)	Trade Value (USD)	Net Weight (kg)	Trade Value
140110	Bamboo used primarily for plaiting	26,303,998	28,683,370	29,845,380	30,739,708	44,020,927	46,743,804	75,668,646	83,992,201	62,529,460	66,898,912	76.6	77.6
140120	Rattans used primarily for plaiting	1,036,997	547,262	887,606	497,787	1,672,658	1,039,330	714,152	606,913	1,098,931	1,175,597	14.8	27.2
200591	Vegetable preparations; bamboo shoots, prepared or preserved otherwise than by vinegar or acetic acid, not frozen	148,626	114,426	176,292	147,731	-	-	53,811	43,233	49,175	60,877		
440210	Wood; charcoal of bamboo (including shell or nut charcoal), whether or not agglomerated	249,322	115,442	419,200	304,845	515,355	484,136	256,838	219,891	67,527,576	570,782	89.6	25.0
440921	Wood; bamboo (including unassembled strips and friezes for parquet flooring), continuously shaped along any edges, ends or faces, whether or not planed, sanded or end-jointed	293,035	799,446	386,820	851,031	205,086	654,416	278,966	992,267	-	-		
441210	Plywood, veneered panels and similar laminated wood; of bamboo	278,078	444,695	246,347	422,389	-	-	-	-	26,253	49,075		
441873	Wood; assembled flooring panels, of bamboo or with at least the top layer (wear layer) of bamboo	125,044	318,425	25,641	18,101	25,747	32,875	-	-	-	-		
441891	Wood; builders' joinery and carpentry of wood n.e.c. in heading no. 4418, of bamboo	143,834	126,228	79,316	105,185	-	-	-	-	-	-		
441911	Tableware and kitchenware, of wood; of bamboo, bread boards, chopping boards and similar boards	-	-	247,228	510,028	-	-	456,605	793,945	-	-	-1.0	-1.0
441912	Tableware and kitchenware, of wood; of bamboo, chopsticks	-	-	-	-	29,271	56,989	9,502	4,680	-	-	-1.0	-1.0
441919	Tableware and kitchenware, of wood; of bamboo, n.e.c. in heading 4419	306,831	1,007,135	-	-	-	-	406,323	622,624	908,271	744,795	26.8	
442191	Wood; of bamboo, articles n.e.c. in heading no. 4414 to 4420 (excluding clothes hangers)	2,928,613	5,709,648	-	-	-	-	3,921,637	6,558,810	3,282,830	4,031,994	23.4	
460121	Plaiting materials, plaits and similar products of plaiting materials; mats, matting and screens, of bamboo	-	-	-	-	138,493	359,571	266,439	390,759	-	-	-1.0	-1.0
460122	Plaiting materials, plaits and similar products of plaiting materials; mats, matting and screens, of rattan	-	-	14,583	80,010	-	-	-	-	-	-	-1.0	-1.0
460192	Plaiting materials, plaits and similar products of plaiting materials; (not mats, matting or screens), of bamboo	-	-	12,160	33,367	-	-	46,745	94,741	26,938	39,881	11.8	13.1
460193	Plaiting materials, plaits and similar products of plaiting materials; (not mats, matting or screens), of rattan	-	-	-	-	-	-	20,216	384,120	41,296	1,007,031	13.3	30.7
460211	Basketwork, wickerwork and other articles; of bamboo, made directly to shape from plaiting materials or made up from goods of heading no. 4601	-	-	-	-	-	-	235,328	537,564	-	-	-1.0	-1.0
460212	Basketwork, wickerwork and other articles; of rattan, made directly to shape from plaiting materials or made up from goods of heading no. 4601	-	-	-	-	-	-	41,953	244,941	-	-	-1.0	-1.0
470630	Pulp; of bamboo	1,336,089	884,714	1,077,210	647,563	629,853	381,480	-	-	978,931	585,634		
482361	Paper and paperboard; trays, dishes, plates, cups and the like, of bamboo paper or paperboard	-	-	1,027	6,019	6,606	29,430	738	2,343	-	-	-1.0	-1.0
940152	Seats; of bamboo	-	8,011	-	-	-	-	860	4,656	-	-	-1.0	
940153	Seats; of rattan	6,624	38,758	6,792	43,765	-	-	4,098	33,540	-	-		
940382	Furniture; of bamboo	39,847	134,384	-	-	50,272	169,847	-	-	-	-		
940383	Furniture; of rattan	21,163	110,383	15,044	88,579	6,325	37,632	726	5,782	-	-		
440921	Bamboo, strips, friezes	386,820	851,031	205,086	654,416	278,966	992,267	1,650,505	1,732,401	-	-		
200591	Bamboo, shoots, prepared	176,292	147,731	19,913	14,229	-	-	49,175	60,877	-	-		
442191	Articles, bamboo	3,005,700	4,604,152	-	-	3,921,637	6,558,810	3,282,830	4,031,994	-	-		
441891	Builders' joinery and carpentry, of bamboo	79,316	105,185	20,728	19,620	24	579	37,817	44,575	-	-		
441210	Plywood, veneered, panel	246,347	422,389	-	-	65,007	98,770	26,253	49,075	-	-		
441873	Flooring panels, assembled, of bamboo or with at least the top wear layer of bamboo	25,641	18,101	25,747	32,875	-	-	-	-	-	-		
440210	Bamboo, charcoal, shell	419,200	304,845	515,355	484,136	256,838	219,891	67,527,576	570,782	-	-		
	TOTAL	68,290,403	76,733,256	79,921,060	83,484,518	52,537,217	58,466,740	218,586,130	170,097,223	136,469,661	75,164,578	89.9	

Source: International Bamboo and Rattan Organisation (<https://trade.inbar.int:10444/>)

Annex 3.1.6 The Mizoram Gazette Notification No: B 28011/19/2021 - FST, the 3rd March, 2022



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NOTIFICATION

No.B.28011/19/2021 - FST, the 3rd March, 2022. In the interest of public service, the Governor of Mizoram is pleased to constitute the Committee to recommend suitable strategies for assessment of carbon stock and trading with the following composition with immediate effect and until further Order.

- | | |
|---|--------------------|
| 1. Additional Principal Chief Conservator of Forests(WP) | - Chairman |
| 2. Conservator of Forests (CC) | - Member |
| 3. Head of Forestry, Environment Deptt. in Mizoram University | - Member |
| 4. Director, Forest Research Centre for Bamboo & Rattan | - Member |
| 5. Deputy Conservator of Forests (FC), PCCF's Office | - Member Secretary |

Jitendra Kumar,
Principal Secretary to the Govt. of Mizoram,
Environment, Forests & Climate Change Department.

Annex 3.3.1 List of indicators, their construction, and rationale for their selection for the all-India state-level vulnerability analysis

Indicators	Construction (year of data in parenthesis)	Dimension	Category	Rationale for selection
Percentage BPL population	Percentage of population living below the poverty line. A person earning less than Rs. 965 per month in urban areas and Rs. 781 in rural areas are the poverty lines (2011)	Sensitivity (Positive)	Socio-economic & Livelihood (General)	People with extremely low incomes, are among the most vulnerable: they have little to no financial capital; so, they have the least capacity to adapt to impacts of climate risks (O'Brien, et. al., 2008)
Income shares from natural resources	Total value output from natural resources, i.e., agriculture, forestry, livestock, and fishery/ GSDP. (2015-16 and 2014-15 respectively with 2011-12 constant price)	Sensitivity (Positive)	Socio-economic & livelihood (General)	Climate variability and change directly affect the productivity of natural resources. Any alteration in the quality and availability of natural resources will have far-reaching implications on resource users and the extensive social and economic systems they support (Marshall, 2011). Higher dependency on natural resources for income generation increases vulnerability.
Share of horticulture in agriculture	Value of output of horticulture/Value of agricultural output (2015-16)	Adaptive Capacity (Negative)	Socio-economic & Livelihood (Agricultural)	Horticulture trees are hardy and more resilient to climate variations compared to agricultural crops. They provide alternate income sources to agriculture. Once established, they are far less sensitive to the impacts of climate risks, particularly rainfall variability and droughts (IHCAP, 2019).
Marginal and small landholdings	Number of marginal and small operational holdings, i.e., up to 2 ha/Total number of operational holdings (2015-16)	Sensitivity (Positive)	Socio-economic & Livelihood (Agricultural)	Marginal and smallholder farmers experience immediate hardship in face of any climatic hazard. They are unable to make adequate decisions about when to sow, what to grow, and how-to time inputs. (Sathyan, et. al., 2018). They also find it difficult to cope with the high food price and the fluctuations in the same.
Yield variability of food grains	Coefficient of Variation, (i.e., Standard Deviation divided by the arithmetic mean) calculated for 10 years of food grain yield data (2005-2016)	Sensitivity (Positive)	Biophysical (Agriculture)	A high variability in crop yields indicates fluctuations in agro-climatic conditions. The agriculture sector is extremely sensitive to climate fluxes, particularly rainfall variability (delayed rainfall, dry spells, drought, extreme rainfall, and floods) and this indicator captures this sensitivity (Davis, et. al., 2019)
Area covered under crop insurance	Crop area insured under PMFBY and RWBICS/ Net sown area (2017-18)	Adaptive Capacity (Negative)	Institution & infrastructure (Agriculture)	Crop insurance helps farming households mitigate losses caused by climate risks. This enhances their adaptive capacity (Swain, 2014).
Area under rainfed agriculture	(Net sown area – Net irrigated area)/ Net sown area (2015-16)	Sensitivity (Positive)	Biophysical (Agriculture)	Rainfed agriculture is highly sensitive to the vagaries of weather. Lack of irrigation indicates a lack of adaptive capacity to mitigate the impacts of climate risks, leading to increased crop loss and reduced income of household's dependent on rainfed agriculture (Rani, et. al., 2011)
Forest area per 1,000 rural population	Area of total forest in km ² per 1,000 rural population (2019)	Adaptive Capacity (Negative)	Biophysical (Forest)	Forests are an important source of alternative livelihood and food through the extraction of non-timber forest products (NTFPs). Forests also provide essential ecosystem services for the sustainable productivity of rural economies and building of adaptive

Indicators	Construction (year of data in parenthesis)	Dimension	Category	Rationale for selection
Women's participation in the workforce	Percentage of women in the overall workforce (2011)	Adaptive Capacity (Negative)	Socioeconomic & livelihood (General)	Women are known to be more sensitive to climate risks. As gender inequality remains a major barrier to human development, women's participation in the labour market is an important indicator of gender equality (HDR, 2019). Regions with more women in gainful employment would signify (some degree of) gender equality, enhanced purchasing power, and independence. Therefore, such working women are likely less vulnerable to climate change
MGNREGA	Average days of employment provided per household under MGNREGA in a year (2014-15 to 2015-16)	Adaptive Capacity (Negative)	Institution & infrastructure (General)	MGNREGA scheme as an alternative source of income helps in building adaptive capacity, particularly in dealing with unforeseen livelihood hazards (Adam, 2014). It acts as a safety net by providing any adult member of a household registered under the scheme with 100 days of wage labour a year and 150 days in case of hazards such as droughts, floods, cyclones, and hail. This provides households with a menial but essential source of additional income to help them tide over the impacts of hazards.
Road and rail density	The total length of surface road and length of rail tracks in km/Total geographical area in sq. km {(2016-17+2018-19) /2019}	Adaptive Capacity (Negative)	Institution & infrastructure (General)	Under extreme weather events, the role of transport becomes crucial (Ebinger and Vandycke, 2015). This indicator focused on accessibility and connectivity, which are essential in regions that are exposed to climate and disaster risks, to allow for relocation & provide support services. It also gave some idea of the overall development of a region, because with better connectivity comes better access to markets, essential services, potential for industrialisation, etc.
The density of health care workers	Total number of health care workers (doctors, dental, nurses, pharma ancillary, and traditional health care workers per 1,00,000 population (2016)	Adaptive Capacity (Negative)	Institution & infrastructure (Health)	The availability of doctors and health care specialists at medical institutions represents the functionality of these institutions. Access to functional health care infrastructure is essential for the overall health and well-being of a community (IHCAP, 2019).
Vector-borne diseases (VBD)	Cases of VBD (dengue, chikungunya, kala-azar, acute encephalitis syndrome, Japanese encephalitis, malaria) per 1,000 population (2018)	Sensitivity (Positive)	Biophysical (Health)	Temperature and rainfall variations can foster higher VBD occurrence (Dhiman, et. al., 2010).
Water-borne diseases (WBD)	Cases of WBD (cholera, typhoid, acute diarrhoea) per 1,000 population (2018)	Sensitivity (Positive)	Biophysical (Health)	Lack of proper drainage, high incidence of open defecation, and frequent occurrence of floods lead to an increase in exposure to waterborne pathogens (Rastogi, 2019)

Source: Anon. 2019-20. Climate Vulnerability Assessment for Adaptation Planning in India Using a Common Framework. IIT Mandi, IIT Guwahati and Indian Institute of Science. DST & SDC Sponsored Project.

Annex 3.3.2 List of indicators, their construction, and rationale for their selection for the district level vulnerability analysis

Indicators	Construction	Dimension	Category (sector in parenthesis)	Rationale for selection
Percentage of households having monthly income of highest earning members less than Rs. 5,000/- in the rural area	Depending on the different parameters, the Census of India categorises households according to their earnings. One category is the percentage of households having a monthly income of the highest-earning member in a rural area of less than Rs. 5000 (2011)	Sensitivity (Positive)	Socio economic & livelihood (General)	Households in this category generally represent the poorest ones. In a bigger household with only one earning member poverty may also prevail, even if he/she earns more than Rs. 5000/-. Yet, this is the best available income-related indicator that may be found at district level in India. People with extremely low incomes are among the most vulnerable for they have little or no financial capital. So, they have the least capacity to adapt to impacts of climate risks (O'Brien, 2008)
Livestock to human ratio	Total number of livestock, equivalence applied/ Population (2019/2011)	Adaptive Capacity (Negative)	Socio economic and livelihood (Agriculture)	Livestock acts as an alternative source of income/ asset. Agricultural loss due to climate events can be compensated by income earned from livestock. It is also an important asset that can be sold in times of need. By helping in compensating losses livestock contributes to the reduction of vulnerability (IHCAP, 2019)
Proportion of marginal and small landholders	Number of marginal and small operational holders (up to 2 hectares)/ Total number of operational landholders (2011-12)	Sensitivity (Positive)	Socio economic and livelihood (Agriculture)	Marginal and smallholder farmers experience immediate hardship in face of any climatic hazard. They are unable to make adequate decisions about when to sow, what to grow, and how-to time inputs. They have a low adaptive capacity (Sathyan, et. al., 2018). They also find it difficult to cope with the high food price of fluctuations (Aryal, et al., 2020)
Women's participation in the workforce	Percentage of women in the overall workforce (2011).	Adaptive Capacity (Negative)	Socio economic and livelihood (General)	Women are known to be more sensitive to climate risks. As gender inequality remains a major barrier to human development, women's participation in the labour market is an important indicator of gender equality (HDR, 2019) That is to say, regions with a more women in gainful employment would signify (some degree of) gender equality, enhanced purchasing power, and independence. Consequently, such working women are likely less vulnerable to climate change
Forest area per 100 rural population	Area of total forest in km2 per 100 rural population (2019/2011)	Adaptive Capacity (Negative)	Biophysical (Forest)	Forests are an important source of alternative livelihood and food through the extraction of NTFPs. Forests also provide essential ecosystem services for the sustainable productivity of rural economies and building of adaptive capacity (IHCAP, 2019).
The area under rainfed agriculture	(Net sown area – Net irrigated area)/Net sown area. (2015-16)	Sensitivity (Positive)	Biophysical (Agriculture)	Rainfed agriculture is highly sensitive to the vagaries of weather. Lack of irrigation indicates a lack of adaptive capacity to mitigate the impacts of climate risks, leading to increased crop loss and reduced income of households dependent on rainfed agriculture (Rani, et. al., 2011)
Proportion of net sown area under horticulture	Net sown area under horticultural/ Net sown area (2017-17)	Adaptive Capacity (Negative)	Socio economic and livelihood (Agricultural)	Horticulture trees are hardy and more resilient to climate variations compared to field crops. They provide alternative income sources to agriculture. Once established, they are far less sensitive to the impacts of climate risks, particularly rainfall variability and droughts (IHCAP, 2019)

Indicators	Construction	Dimension	Category (sector in parenthesis)	Rationale for selection
Yield variability of food grains	Coefficient of Variation (i.e., Standard Deviation/ arithmetic mean) of major food grains over a period (2006-2018)	Sensitivity (Positive)	Biophysical (Agriculture)	A high variability in crop yields indicates fluctuations in agro-climatic conditions. The agriculture sector is xtremely sensitive to climate fluxes, particularly rainfall variability (delayed rainfall, dry spells, drought, extreme rainfall, and floods) and this indicator captures this sensitivity (Davis, et. al., 2019)
Road density	Sum of the length of surface road (in km)/ Total geographical area (in km2). ((2011/2019)	Adaptive Capacity (Negative)	Institution & infrastructure (General)	Under extreme weather events, the role of transport becomes crucial (Ebinger and Vandycke, 2015). This indicator focused on accessibility and connectivity, which are essential in regions that are exposed to climate and disaster risks to allow for relocation and provide support services. It also gave some idea of the overall envelopment of a region, because with better connectivity comes better access to markets, essential services, a potential for industrialisation, etc.
MGNREGA	Average days of employment provided per household under MGNREGA in a year (2018-19)	Adaptive Capacity (Negative)	Institution & infrastructure (General)	MGNREGA as an alternative source of income helps in building adaptive capacity, particularly in dealing with unforeseen hazards (Adam, 2014). It acts as a safety net, by providing any adult member of a household registered under the scheme with 100 days of non-climate sensitive wage labour a year and 150 days in case of hazards such as droughts, floods, cyclones, and hail This provides households with a menial but essential source of additional income to help them tide over the impacts of hazards
Area covered under crop insurance	[Crop area insured under PMFBY) and RWBCIS/ Net sown area] *100 (2019)	Adaptive Capacity (Negative)	Institution & infrastructure (Agriculture)	Crop insurance helps farming households mitigate losses caused by climate risks. This enhances their adaptive capacity (Swain, 2014). The risk and insurance market to promote adaptation to climate change in the agriculture sector is still not fully developed in South-Asian countries (Aryal, et. al., 2020)
Health infrastructure per 1000 population	Total number of functional health centres (Sub centres, PHCs, CHCs, HWCSC, HWC-PHCs, Sub-divisional hospitals, district hospitals) per 1000 population (2019)	Adaptive Capacity (Negative)	Institution & infrastructure (Health)	Access to functional health care infrastructure is essential for the overall health and wellbeing of a community (IHCAP, 2019).
Female literacy rate	(Number of literate women divided by the total number of literate people) *100 (2015-16)	Adaptive Capacity (Negative)	Socio economic and livelihood (General)	The literacy rate has a direct relation to reducing vulnerability. As the number of literate women increases, better ways for livelihood will be adopted (IHCAP, 2019). In a correlation analysis for this assessment, it was also found that female literacy is significantly positively correlated with low infant mortality rate, better sanitation facilities, etc. It has also been checked that the indicator is not correlated with women's participation in the labour force.
% of households with an improved drinking water source	Percentage of households with proper drinking water facility (2015-16)	Adaptive Capacity (Negative)	Institution & infrastructure (Health)	Access to contaminated drinking water enhances the risk of diseases such as cholera, typhoid, and exposure to other waterborne pathogens. Therefore, potable and improved drinking water reduces health vulnerability substantially, particularly of children (Germanwatch, 2019)

Source: Anon. 2019-20. Climate Vulnerability Assessment for Adaptation Planning in India Using a Common Framework. IIT Mandi, IIT Guwahati and Indian Institute of Science. DST & SDC Sponsored Project.

**** CI = Cottage Industry ; NAL = Non-Agricultural Labor ; HW= Household Work ;
SW = Seasonal Worker; STU = Student; CW = Casual Worker; U =Unemployed
V= Vision impairment; H= Hearing impairment; P= Physical disability,
D= Internal Disorder & chronic Disease; I= Intellectual disability; M= Mmental disorder

2. HOUSEHOLD CHARACTERISTICS

2.1 TYPE OF HOUSE (II)

Hut_____ Pacca _____ Kaccha _____ Mix (Pacca & Kaccha) _____ Other_____

Hut: Mud, Thatched Roof; Pacca: Cement wall, Tin roof; Kaccha: Mud wall, Tin roof

2.2 HOUSEHOLD ENERGY USAGE (kum 3 kalta chhunga chawhrual)

2.2.1. In chhung tih en na (lighting)

Materials used	Average Volume Consumed per Week	Unit
Kerosene		
Candle		
Electricity		
Solar Light/ Lamp		
Others (Specify): ()		

2.2.2 Eirawngbawlna (cooking)

Material Used	Average Volume Consumed per Week	Unit
Thingfak (from forest)		
Thingfak (purchased)		
Thlai sengna (buhpawl, etc.)		
Meihawl		
Bawnggek (dung cakes)		
Khawnvar tui		
Electricity		INR
Gas Cylinder		
Others (Specify): ()		

2.2.3 Thlasik laia in tih lum na (Sep – March)

Material Used	Average Volume Consumed per Week	Unit
Thingfak (from forest)		
Thingfak (purchased)		
Meihawl		
Nizung chakna (solar)		
Khawnvartui		
Electricity		INR
Gas Cylinder		
Others (Specify): ()		

2.3. Tui mamawh lakna te

2.3.1 Water for Agriculture

Lakna Hnar	Access Code: 1. Kan hmang 2. Kan hmanglo	Availability Code: 1. Mamawh hunah tui duhtaw a awm 2. Mamawh hunah duh taw a awmlo 3. Tui hnar hi a kang chat	Availability of Changes Over time 1. A changa a hnar a tlem vang te nen, a tlahniam 2. A pung 3. A danglam lo
Tuikhur (Spring)			
Luite (Stream)			
Lui pui (River)			
Ruah Tui khawl			
Tuichhunchhuah			
Tui pump chhuahna			
Not applicable (Rainfed)			

2.3.2. Ranvulh

Lakna hnar (sources)	Access Code: 1. Hman g 2. Hman glo	Availability Code: 1. Mamawh hunah tui duhtaw a awm 2. Mamawh hunah duh taw a awmlo 3. Tui hnar hi a kang chat	Volume Used (Litre per day)	How do you get water? Code: 1. Tanky atangin kan pe 2. Hmeichhia ten an pe thin 3. Mipa ten an pe thin 4. Others (specify in the cell)	Availability of Changes Over time 1. A changa a hnar a tlem vang te nen, a tlahniam 2. A pung 3. A danglam lo
Tuikhur (Spring)					
Luite (Stream)					
Lui pui (River)					
Ruah Tui khawl					
Tuichhunchhuah					
Tui pump chhuahna					
Bulhnaia tui pump					

2.3.3. Ei rawngbawlna nilo chungkaw mamawh a hman

2.3.3.1. Household Usage (Washing clothes, bathing, or any other purposes for hygiene)

Lakna hnar (sources)	Access Code: 1. Hmang 2. Hmanglo	Availability Code: 1. Mamawh hunah tui duhtaw a awm 2. Mamawh hunah duh taw a awmlo 3. Tui hnar hi a kang chat	Volume Used (Litre per day)	How do you get water? Code: 1. Tanky atangin kan pe 2. Hmeichhia ten an pe thin 3. Mipa ten an pe thin 4. Others (specify in the cell)	Availability of Changes Over time 1. A changa a hnar a tlem vang te nen, a tlahniam 2. A pung 3. A danglam lo
Tuikhur (Spring)					
Luite (Stream)					
Lui pui (River)					
Ruah Tui khawl					
Tuichhunchhuah					
Tui pump chhuahna					
Bulhnaia tui pump					
Tui connection (household pipe connection)					

2.3.3.2 Household Usage (Cooking)

Lakna hnar (sources)	Access Code: 1. Hman g 2. Hmanglo	Availability Code: 1. Mamawh hunah tui duhtawk a awm 2. Mamawh hunah duh tawk a awmlo 3. Tui hnar hi a kang chat	Volume Used (Litre per day)	How do you get water? Code: 1. Tanky atangin kan pe 2. Hmeichhia ten an pe thin 3. Mipa ten an pe thin 4. Others (specify in the cell)	Availability of Changes Over time 1. A changa a hnar a tlem vang te nen, a tlahniam 2. A pung 3. A danglam lo
Tuikhur (Spring)					
Luite (Stream)					
Lui pui (River)					
Ruah Tui khawl					
Tuichhunchuah					
Tui pump chhuahna					
Bulhnaia tui pump					
Tui connection (household pipe connection)					

2.4 Chhungkaw rotling thil neih dan (Asset ownership) (Number of Each)

1	Radio		5	Mobile phone	
2	TV		6	Computer	
3	Bicycle		7	Internet connection	
4	Motorcycle		8	Car	

2.5. RAMHNUAI (FOREST) THIL LAK LEH HMAN TANGKAINA

Type of Forest Produce	Source	Usage (Code)	Volume Used per Week	Unit	Vawi engzat nge kum khat ah / thla khat ah hman?
Log (thing, thingzai, etc.)	☐ FD atanga hamthatna ☐ Khaw bul ramhnuai ☐ Mahni chin				Times
Thingfak	☐ Ramhnuai ☐ Chin (cultivated)				Months
Ranchaw	☐ Ramhnuai ☐ Chin (cultivated)				Months
Mau	☐ Ramhnuai ☐ Chin (cultivated)				Months
Mautuai	☐ Ramhnuai ☐ Chin (cultivated)				Months
NTFP Name:	☐ Ramhnuai ☐ Chin (cultivated)				Months
NTFP Name:	☐ Ramhnuai ☐ Chin (cultivated)				Months
	☐ Ramhnuai ☐ Chin (cultivated)				Months
	☐ Ramhnuai ☐ Chin (cultivated)				Months
	☐ Ramhnuai ☐ Chin (cultivated)				Months

Code: 1. For household repair; 2. Making agriculture implements; 3. Making furniture; 4. Heating the House during the winter; 4.1. Cooking (food & animal feed) 5. Process and Sell; 6. Eat at home; 7. Medicinal purpose; 8. Others (Specify in the cell.)

3 RAM NEIH LEH THUNEIHNA NEIH DAN

LAND CATEGORY	Own Land		Rented in Land (Bigha)	Rent Out Land (Bigha)	Encroached Land (Bigha)
	Owner (Code)	Area (Bigha)			
Thlai chinna					
Tuia chawm loh					
Tui a chawm					
Tlanglo neihna					
Total					
Thei chinna (Orchard)					
Ram awl					
Thlai chinna tlakloh					
Chenna ln					
Ramawl/ran tlalna					
Other					

Code: 1. Male Head of the household; 2. Female Head of the Household; 3. Female Spouse; 4. Male Relatives; 5. Female Relatives; 6. Male Child; 7. Female Child; 8. Others: (Specify in the cell.)

4. FOREST THARCHHUAH THIL HRALHNA (Timber/ NTFPs)

4.1 Where do you sell your Log/ Timber, Bamboo and NTFPs mainly?

Hralhna	Hmun/ Hming	Forest thil hralh	Hralh zin dan Code: Please see below.	Chenna in atanga hlat zawng
In/Lo ah				
Chinna hmun/ Farm				
Khawchhunga lakkhawmna				< 5 km ☐ , 5-10 km ☐ , 10-20 km ☐ , > 20 km ☐
Khaw pawna lakkhawmna				< 5 km ☐ , 5-10 km ☐ , 10-20 km ☐ , > 20 km ☐
LAMP or Tribal Marketing Cooperative				< 5 km ☐ , 5-10 km ☐ , 10-20 km ☐ , > 20 km ☐
Forest Corporation Depot				< 5 km ☐ , 5-10 km ☐ , 10-20 km ☐ , > 20 km ☐
Others ()				< 5 km ☐ , 5-10 km ☐ , 10-20 km ☐ , > 20 km ☐
Others ()				< 5 km ☐ , 5-10 km ☐ , 10-20 km ☐ , > 20 km ☐

Code: 1. Regularly, 2. Sometimes, 3. Not applicable

4.2 Tu te nge a leitu? Please indicate the approximate % of produces sold to each buyer.

Trees and NTFPs	Buyer 1		Buyer 2		Buyer 3		Buyer 4		Buyer 5	
	Code	%	Code	%	Code	%	Code	%	Code	%
Mau										
Mautuai										

Code: 1. Farmers' Organisation including Cooperatives; 2. Village Aggregator; 3. Tribal Marketing Cooperatives; 4. Forest Corporation; 5. Consumer (I sell directly in the market or to the individual consumer); 6. Private Processor; 7. Exporter; 8. Others (Specify in the cell.)

4.4 NTFPs I hralh tur te hi a tha leh thalo te I thliar hrang thin em? ☐ Yes ☐ No

Aih tih anih chuan, tel loh chhan

No	Reasons why not start Collective/ Group/ Joint Marketing	Tick where appropriate
1	A hlawkna leh tangkaina ka hrela	
2	Kan thar chhuah te hi an hlu a, midang nena tih pawlh ka duhlo	
3	Buaina neuh neuh harsatna min thlen thei tu a tam mai mai	
4	Hruaitu awmlo/khatiang market group an awmlo	
5	Joint marketing chungchangah hian din emaw, enkawl kawngah idea ka neilo hrim hrim	
6	Pawn lam puihna a awmlo	
<Add other expectation if there is>		

5. HOUSEHOLD INCOME AND EXPENDITURE

5.1 Kum 2022-2023 chhunga sum lakluh (April 2022 – March 2023)

Items	Daily (Rs./day)	Monthly (Rs./month)	Annual Income (Rs/year)
1. Thlai thar hralhna			
2. Thing hralhna (log)			
3. Thingzai hralhna (Species:)			
4. Sales of NTFPs (Type / Unprocessed)			
5. Sales of NTFPs (Type: / Processed)			
6. Sorkar hna, pension, leh occupation dang atanga sum thawh chhuah			
7. A nghetlo a inhlawhfakna			
8. Thingtuah hralhna			
9. Ranchaw hralhna			
10. Ran vulh hralhna			
11. Sangha khawi hralhna			
12. Pangngang khawi			
13. Pangpar chin			
14. Chuktuah huan atanga thlai hralhna			
15. Handicraft atanga sum hmuh (Type)			
16. Mahni sumdawwna			
17. Mi pek leh thawh			
18. Mi ram hawh tima			
19. Bank atanga sum pung (interest)			
20. Other sources ()			
21. Other sources ()			

Note : This question should be answered principally by the housewife or by women and men jointly.

5.2 Chhungkaw sum hman dan kimchang (April 2021 – March 2022)

Items	Month (Rs./month)	Yearly (Rs./ year)
1. Lo neih leh thlai chin kawnga mamawh leina (agriculture inputs)		
2. Ei leh in atan a senso (food)		
1.1 thlai leh thei nilo a, chaw lam chi dang		
1.2 thlai leina		
1.3 thei lam chi leina		
3. Zu (alcohol)		
4. Zuk leh hmuam (biri, pan, etc)		
5. Thingtuah tur leina		
5.1 Thingfak		
5.2 Meihawl		
5.3 Bawngek (cowdung)		
5.4 Khawnvartui		
6. Electric		
7. Tui bill / Tui leina senso		
8. Silh leh fen, leh pheikhawk		
9. Damdawi leh hriselna lam		
10. Zima kaihnawih		
11. In sakna, repair leh thawm thatna		
12. Zin veivahna		
13. Vantlang leh kohhran thil (festivals, rituals, and entertainment)		
14. Leiba rulhna		
15. Ramsa in thil a tichhialt siam that na		
16. Khuarel chhiatna in a tichhialt siam that na		
17. Others (specify:)		
18. Others (specify:)		
19. Total (monthly expenses x 12)		

Note : This question is to be addressed to both men and women in the household.

6. MIHRING LEH RAMSA INKARA HARSATNA

6.1 Ramsa in thil a tih chhiat sak tawh ngai che em?

(1) Savawm (bear)

Particular		A thlen zin dan (April 2021- March 2022)	Eng thla ah nge a thlen zin ber	Chhawmdawlna	
				Pe tu	Pek zat
A thil tichhialt	Lo leh thlai tichhia				
	Thlai chin ei				
	Chenna in tichhia				
	Mihring inhliam				
	Mihring thihna				
	Ranvulh hloh				
	Others ()				
	Others ()				
	Others ()				

(2) Sanghal

Particular		A thlen zin dan (April 2021- March 2022)	Eng thla ah nge a thlen zin ber	Chhawmdawlna	
				Pe tu	Pek zat
A thil tihchhiat	Lo leh thlai tichhia				
	Thlai chin ei				
	Chenna in tichhia				
	Mihring inhliam				
	Mihring thihna				
	Ranvulh hloh				
	Others ()				
	Others ()				
	Others ()				

(3) Sakei

Particular		A thlen zin dan (April 2021- March 2022)	Eng thla ah nge a thlen zin ber	Chhawmdawlna	
				Pe tu	Pek zat
A thil tihchhiat	Lo leh thlai tichhia				
	Thlai chin ei				
	Chenna in tichhia				
	Mihring inhliam				
	Mihring thihna				
	Ranvulh hloh				
	Others ()				
	Others ()				
	Others ()				

(4) Sai

Particular		A thlen zin dan (April 2021- March 2022)	Eng thla ah nge a thlen zin ber	Chhawmdawlna	
				Pe tu	Pek zat
A thil tihchhiat	Lo leh thlai tichhia				
	Thlai chin ei				
	Chenna in tichhia				
	Mihring inhliam				
	Mihring thihna				
	Ranvulh hloh				
	Others ()				
	Others ()				
	Others ()				

(5) Others ()

Particular		A thlen zin dan (April 2021- March 2022)	Eng thla ah nge a thlen zin ber	Chhawmdawlina	
				Pe tu	Pek zat
A thil tichhiat	Lo leh thlai tichhia				
	Thlai chin ei				
	Chenna in tichhia				
	Mihring inhliam				
	Mihring thihna				
	Ranvulh hloh				
	Others ()				
	Others ()				
	Others ()				

(6) Others ()

Particular		A thlen zin dan (April 2021- March 2022)	Eng thla ah nge a thlen zin ber	Chhawmdawlina	
				Pe tu	Pek zat
A thil tichhiat	Lo leh thlai tichhia				
	Thlai chin ei				
	Chenna in tichhia				
	Mihring inhliam				
	Mihring thihna				
	Ranvulh hloh				
	Others ()				
	Others ()				
	Others ()				

6.2 What are the counter measures taken by you and other villagers for wild animal damages?

Type of Animal	Description of counter measures	By whom?

6.3 I ngaihdan in ramsa ten thil an tichhiat sak thin hi tunhnai kum 5 chhung hian a pung em?

☐ Aw

☐ Aih

Aw anih chuan, a pun chhan ni a I hriat min han hrih teh?

7. KHUAREL CHHIATNA CHUNGCHANG

7.1 Tui lian (flood)

7.1.1 Engtiang a zingin nge a thlen?

- ☐ Kum engemaw chen chu kumtin vawi tam tak a thleng ☐ Kum khatah vawi khat ☐ A khat tawkin
☐ Kum 10 ah vawi khat vel ☐ thleng ngailo (If never occurred, please move to Question 7.2)

7.1.2 Tuilian harsatna thlen tham a thlen hnuhnun ber kha engtik nge?

- ☐ Nikum ☐ kum engemaw ti chinah khan ☐ kum 5 aia rei tawh ah khan
☐ kum 10 aia rei tawh ah (Specify: _____)

7.1.3 Chu tuilian chuan enge a tihchhiah?

- ☐ nasa takin thlai chinna hmun a chim ☐ thlai chin te chan nasa
☐ chenna in ti chhia ☐ mihring inhliam ☐ mihring thihna a thlen
☐ ran vulh lai chan

7.1.4 Hengah te hian chhawmdawlina (compensation) I dawn dan?

Type of Loss	Compensation Received	Government Dept.

7.1.5 I ngaihdanin tunhnai kum 5 chhungin tui lian vanga chhiatna hi a pungin I hria em?

- ☐ Aw ☐ Aih

Aw anih chuan, enge a pun chhan ni a I hriat?

7.1.6 Nang leh khawchhung mipuiten tuilian laka huan leh thlai te chhiatna laka invenna atan hma in la thin em?

- ☐ Aw ☐ Aih

Aw anih chuan, chungte chu min han hrih teh (i.e embankment against river, cleaning drainage, etc.)

7.2.Land slide/erosion

7.2.1 Leimin leh lei luanralna a thlen dawn?

- ☐ Kum engemaw chen chu kumtin vawi tam tak a thleng ☐ Kum khatah vawi khat ☐ A khat tawkin
☐ Kum 10 ah vawi khat vel ☐ thleng ngailo (If never occurred, please move to Question 7.3)

7.2.2 Eng tik kumah nge leimin lian tham chhiatna thlen chu a thlen hnuhnun ber?

- ☐ Nikum ☐ kum engemaw ti chinah khan ☐ kum 5 aia rei tawh ah khan
☐ kum 10 aia rei tawh ah (Specify: _____)

7.2.3 Enge a tihchhiat?

- ☐ lei luangral ☐ thlai chhia ☐ chenna in tichhia
☐ mihring inhliam ☐ mihring thihna ☐ ranvulh hloh

7.2.4 Chhawmdawlna dawn dan?

Type of Loss	Compensation Received	Government Dept.

7.2.5 I ngaidanin tunhnai kum 5 chhungin lei min/luangrual hi a pung deuh deuhin I hria em?

☐ Aw ☐ Aih

Aw anih chuan, enge a chhan ni a hriat?

7.2.6 Nang leh khawchhung mi dangten hetiang chhiatna thlen lohna turin hma in la thin em?

☐ Yes ☐ No

Aw anih chuan, eng tiang in nge hma in lak (tree planting, drainage, engineering measures by concrete, etc.)

7.3 Forest Fire

7.3.1 Ramkang thlen zin dan min han hrih teh?

☐ Kum engemaw chen chu kumtin wawi tam tak a thleng ☐ Kum khatah wawi khat ☐ A khat tawkin
☐ Kum 10 ah wawi khat vel ☐ thleng ngailo (If never occurred, please move to Question 7.4)

7.3.2 Engtikah nge ramkang lian tham a thlen hnun ber?

☐ Nikum ☐ kum engemaw ti chinah khan ☐ kum 5 aia rei tawh ah khan
☐ kum 10 aia rei tawh ah (Specify:)

7.3.3 Enge a tih chhiah?

☐ thlai chin chhia ☐ chenna ln chhia
☐ mihring inhliam ☐ mihring thihna ☐ ranvulh hloh

7.3.4 Chhawmdawlna dawn dan?

Type of Loss	Compensation Received	Government Dept.

7.3.5 I ngaidanin tunhnai kum 5 chhungin ramkang hi a pung deuh deuhin I hria em?

☐ Aw ☐ Aih

Aw anih chuan, enge a pun chhan ni ang?

7.3.6 Nang leh I khaw mipui ten ramkang venna a tan hma in la thin em?

☐ Aw ☐ Aih

Aw anih chuan, hmalak dan? (i.e. patrolling during dry season, setting up fire prevention lane, etc.)

7.3.7 Ramkang alo thlenin nang leh I khaw mipui ten engtin nge tireh turin hma in lak thin?

Hmalakna	Tute nge hma la thin?

7.4 Drought

7.4.1 Khawkheng tawrh dan?

- ☐ Kum engemaw chen chu kumtin vawi tam tak a thleng ☐ Kum khatah vawi khat ☐ A khat tawkin
☐ Kum 10 ah vawi khat vel ☐ thleng ngailo (If never occurred, please move to Question 7.5)

7.4.2 Khawkheng lian tham deuh thlen hnunhnun ber kum?

- ☐ Nikum ☐ kum engemaw ti chinah khan ☐ kum 5 aia rei tawh ah khan
☐ kum 10 aia rei tawh ah (Specify: _____)

7.4.3 Enge a tichhiah?

- ☐ thlai chinna te a ro vek ☐ thlai nasa takin a tichhia ☐ Chenna In tichhia
☐ mihring inhliam ☐ mihring thihna ☐ ranvulh thihna

7.4.4 Chhawmdawlna / Zangnadawmna in dawng em?

Type of Loss	Compensation Received	Government Dept.

7.4.5 I ngaihndan in tunhnai kum 5 chungin khawkheng vanga harsatna hi a pungzel in I hria em?

- ☐ Aw ☐ Aih

Aw anih chuan, enge a chhan ni ang?

7.4.6 Nang leh khawchhung miten khawkheng chhiatna laka invenna turin hma in la ngai em?

- ☐ Yes ☐ No

Aw anih chuan, eng hmalakna nge? (i.e. water harvesting structure, irrigation, change crop variety/type, etc.)

7.4.7 Harsatna alo thlenin engtiangin nge hma in lak?

Description of counter measures	By whom?

7.4.8 I ngaihndanin khawkheng hi tun kum 5 chung hian a pung deuh deuhin I hria em?

- ☐ Aw ☐ Aih

Aw anih chuan, enge a chhan ni a I hriat?

7.5 Hail Stone

7.5.1 Thlipui leh rial tla?

- ☐ Kum engemaw chen chu kumtin vawi tam tak a thleng ☐ Kum khatah vawi khat ☐ A khat tawkin
☐ Kum 10 ah vawi khat vel ☐ thleng ngailo (If never occurred, please move to Question 7.7)

7.5.2 Engtikah nge a thlen hnunhnun ber?

- ☐ Nikum ☐ kum engemaw ti chinah khan ☐ kum 5 aia rei tawh ah khan
☐ kum 10 aia rei tawh ah (Specify: _____)

7.5.3 Eng chhiatna nge a thlen?

- ☐ thlai a tichhia ☐ chenna in a tichhia
☐ mihring inhliam ☐ nunna chan ☐ ranvulh hloh

7.5.4 Chhawmdawlina / Zagnadawmna in dawng em?

Type of Loss	Compensation Received	Government Dept.

7.5.5 I ngaihdanin tunhnai kum 5 chhung hian thli leh rial tla hi a pungin I hria em?

- ☐ Aw ☐ Aih

Aw anih chuan, enge a chhan ni ang le?

7.5.6 Thli na tak in thlai te a tihchhiat lohna turin nang leh khawchhung mipui ten hma in la thin em?

- ☐ Yes ☐ No

Aw anih chuan, eng tin nge hma in lak? (protection forest, strong construction, etc.)

7.5.7 Hetiang harsatna alo thlen hian engtin nge hma in lak thin?

Description of counter measures	By whom?

7.6 Earthquake

7.6.1 Lirngching thlen zin dan?

- ☐ Kum engemaw chen chu kumtin vawi tam tak a thleng ☐ Kum khatah vawi khat ☐ A khat tawkin
☐ Kum 10 ah vawi khat vel ☐ thleng ngailo ☐ never (If never occurred, please move to Question 8)

7.6.2 Engtikah nge a thlen hnahnun ber?

- ☐ Nikum ☐ kum engemaw ti chinah khan ☐ kum 5 aia rei tawh ah khan
☐ kum 10 aia rei tawh ah (Specify: _____)

7.6.3 Eng chhiatna nge a thlen?

- ☐ leimin ☐ chirh tawlh nasa ☐ Lo thlai chan ☐ chenna in chhia
☐ mihring inhliam ☐ nunna chan ☐ ranvulh chan

7.6.4 Chhawmdawlina / zangna dawmna in dawng em?

Type of Loss	Compensation Received	Government Dept.

7.6.5 I ngaihdanin tunhnai kum 5 chhung hian lirngching I a thleng zing deuh deuhin I hria em?

- ☐ Aw ☐ Aih

7.6.6 Nang leh khaw chhung mipuiten lirngching laka invenna turin hma in la thin em?

☐ Yes

☐ No

Aw anih chuan, engtin nge hma in lak thin (protection forest, strong construction, etc.)

7.6.7 In khua hian hetiang chhiatna a lo thlen hian engtin nge hma in lak thin?

Description of counter measures	By whom?

8 FARM FORESTRY and SOCIAL FORESTRY

8.1 FARM FORESTRY KALPUI HI I DUH EM

I lo/huan ah thing phun I duh em? ☐ Aw

☐ Aih

Aw anih chuan a chhan min hrilh rawh:

8.2 I lo/huan a thlai thing phun I duh chuan eng thing te nge phun I duh?

8.3 Mahni lo/huan a thing phun chungchanga harsatna?

Farm forestry chungchanga I harsatna thlen lian ber pathum thlang rawn (□).

- | | | |
|----|--------------------------|---|
| 1 | ☐ | Ka duhlo / ka tuipei lo |
| 2 | ☐ | A hralhna chungchang engmah ka hrelo |
| 3 | ☐ | Ka duh a, mahse loneitu dang ten an duhlo |
| 4 | ☐ | Hmanrua duh ang tawk ka neilo |
| 5 | ☐ | Sorkar in min ngaihven tawklo |
| 6 | ☐ | Ka ti mek a lawm |
| 7 | ☐ | Department lam mithiamten min pui tawklo |
| 8 | ☐ | Ka ram neih hi a zim lutuk |
| 9 | ☐ | Ka tluang lo |
| 10 | ☐ | Tui lak tur duhthusam a awmlo |
| 11 | ☐ | Sum ka nei tawklo (No access to credit and subsidy) |
| 12 | ☐ | Other _____ |

8.3 Lo/huana thingphun tura I mamawh?

I mamawh langsar zual pathum tick rawh (✓).

- | | | | | | |
|---|--------------------------|------------------------------------|----|--------------------------|---------------------------------|
| 1 | ☐ | Lokai tu ran (pair) | 10 | ☐ | Pawisa puk tur |
| 2 | ☐ | Ran hmanga bungraw hnuhna | 11 | ☐ | A hralhna chungchang ka hre duh |
| 3 | ☐ | A chung a mi pahnih | 12 | ☐ | A bul hnaiah thlai dahna |
| 4 | ☐ | Electric/Diesel pump | 13 | ☐ | Technical support / trainings |
| 5 | ☐ | Ram zau zawk (and/or Consolidated) | 14 | ☐ | Other _____ |
| 6 | ☐ | Tui lak tam zawk | 15 | ☐ | |
| 7 | ☐ | Tui dahkhawlna tha zawk | 16 | ☐ | |
| 8 | ☐ | Tui pump | | ☐ | |
| 9 | ☐ | Tuichhunchhuah (Dug well) | | ☐ | |

8.4 Social forestry chungchangah hian I tel ve tawh em? ☐ Aw ☐ Aih (Move to Q9.)

8.4.1 Aw anih chuan I telve chuan eng thilah te nge I tel?

8.4.2 Social forestry beneficiary group ah I tel ve em/ JFMC? ☐ Aw ☐ Aih

8.4.3 Aw anih chuan, eng activity te nge in tih thin?

8.4.4 Social forestry activities a in tel ve na ah te eng hamthatna te nge I dawn ve tawh?

Hamthatna	Engtikah nge dawn	Amount/ Volume

9 Forestry chungchang information

9.1 Eng atang te hian nge forestry chungchanga thu thar ber te I hriat thin? (□)
(Multiple answer)

1. ☐ Radio programs
2. ☐ TV program
3. ☐ Forest Ranger
4. ☐ Forest Guard
5. ☐ Agriculture Extension Worker (VAW)
6. ☐ Newspapers, leaflets, other printed material
7. ☐ Midang sawi (other farmer, neighbors, relatives)
8. ☐ Agriculture fairs, farm days, etc.
9. ☐ Mahni experience
10. ☐ NGO
11. ☐ Sumdawngte
12. ☐ Dawr leh bazar hmun
13. ☐ Van Mahotsav
14. ☐ Other _____

10 LO NEIH LEH FORESTRY CHUNGCHANGA HMEICHHIA TE HNATHAWH

10.1 In chungkua ah hmeichhia ram nei an awm em? (□) Aw _____ Aih _____

Lo neih kaihnawih leh thlai hralh kawngah hmeichhia ten eng te nge an tih ve thin? (Multiple answer)

(1) Agriculture Crop

- | | |
|--|---|
| 1 ☐ A phun | 6 ☐ Thlai seng |
| 2 ☐ Hlo thlawh | 7 ☐ Thlai thar te packing |
| 3 ☐ Thlai seng | 8 ☐ Thlai hralhna man tur biak leh hralh |
| 4 ☐ Thlai tihfai/vuak/a si thliar | 9 ☐ Khawchhunga hralh |
| 5 ☐ Tuilak enkawl | 10 ☐ Others _____ |

(2) Thingzai chi - Timber Species (cultivated)

- | | |
|--|---|
| 1 ☐ Phun | 5 ☐ Packing/funkhawm |
| 2 ☐ Hlo thlawh | 6 ☐ Hralhna man tur biak leh hralh |
| 3 ☐ Seng | 7 ☐ Khawchhunga hralh |
| 4 ☐ Tuilak enkawl | 8 ☐ Others _____ |

(3) Mau Chin (cultivated)

- | | |
|---------------------------------|--|
| 1 ☐ Phun | 5 ☐ Pack / funkhawm |
|---------------------------------|--|

- 2 ☐ Hlo thlawh
3 ☐ Seng
4 ☐ Tui pek leh tuilak enkawl

- 6 ☐ Thlai man tur biak leh hralh
7 ☐ Tualchhunga hralh
8 ☐ Others _____

(4) Ramhnuai mau lak leh hralh (Wild harvest)

- 1 ☐ Lak (seng)
2 ☐ Tihfai/a tha leh thlar
3 ☐ Packing/funkhawm
4 ☐ Hralhna man tur biak leh hralh
5 ☐ Khawchhunga hralh

- 6 ☐ Hralh
7 ☐ Others _____
8 ☐ Others _____
9 ☐ Others _____
10 ☐ Others _____

(5) Ramhnuai mautuai (Wild harvest)

- 1 ☐ Seng/lak
2 ☐ Tihfai leh thlar hran
3 ☐ Packing/ Bundling
4 ☐ A man tur chhlar leh hralh
5 ☐ Tualchhunga hralh

- 6 ☐ Lakkhawm
7 ☐ Others _____
8 ☐ Others _____
9 ☐ Others _____
10 ☐ Others _____

(6) NTFP (Chin)

- 1 ☐ Phun
2 ☐ Hlo thlawh
3 ☐ Seng/lak khawm
4 ☐ Tihfai / thlarhran
5 ☐ Tuipak leh tuipakna enkawl

- 6 ☐ Packing/ Bundling
7 ☐ A man tur biak leh hralh
8 ☐ Tualchhunga hralh
9 ☐ Others _____
10 ☐ Others _____

(7) NTFP (Ramhnuai a mi) (Crop:)

- 1 ☐ Lakkhawm/seng
2 ☐ Tihfai / thlar hran
3 ☐ Packing/ Bundling
4 ☐ A man tur biak leh hralh
5 ☐ Tualchhunga hralh

- 6 ☐ Seng
7 ☐ Others _____
8 ☐ Others _____
9 ☐ Others _____
10 ☐ Others _____

10.2 A hnuai mi ah te hian tu in nge thutlukna siam thian? (Please tick.)

(1) Thlai thar chung chang

Issues	Mipa in	Hmeichhia in	An pahnihin
Thlai chin tur thlan			
Hlokahna/chemical hman tur chungchang			
Hralh tur zat			
Hralhna hmun tur			
Hralhna man			
Loan lak leh lakloh thu			

(2) Log/ Timber

Issues	Mipa in	Hmeichhia in	An pahnihin
Thlai chin tur thlan			
Hlokahna/chemical hman tur chungchang			
Hralh tur zat			
Hralhna hmun tur			
Hralhna man			
Loan lak leh lakloh thu			

(3) Bamboo

Issues	Mipa in	Hmeichhia in	An pahnihin
Thlai chin tur thlan			
Hlokahna/chemical hman tur chungchang			
Hralh tur zat			
Hralhna hmun tur			
Hralhna man			
Loan lak leh lakloh thu			

(4) Bamboo shoots

Issues	Mipa in	Hmeichhia in	An pahnihin
--------	---------	--------------	-------------

Thlai chin tur thlan			
Hlokahna/chemical hman tur chungchang			
Hralh tur zat			
Hralhna hmun tur			
Hralhna man			
Loan lak leh lakloh thu			

(5) NTFP (Cultivated:)

Issues	Mipa in	Hmeichhia in	An pahnihin
Thlai chin tur thlan			
Hlokahna/chemical hman tur chungchang			
Hralh tur zat			
Hralhna hmun tur			
Hralhna man			
Loan lak leh lakloh thu			

(6) NTFP (Wild Harvest/ Name of the Produce:)

Issues	Mipa in	Hmeichhia in	An pahnihin
Hralh zat tur			
Hralhna hmun tur			
Hralhna man zat			
Loan lak leh lakloh thu			

10.3 Eng group ah te hian nge in chhungkuuaa hmeichhia an telve?

- ☐ SHG ☐ Farmer Producer Organization/ Company ☐ Agriculture Cooperatives
☐ JFMC ☐ LAMPS ☐ Other _____

10.4 In khuuaa hmeichhia te hi forest kaihnawih hmalakna ah te hian an phur ve em? Aw _____ Aih _____

Aw anih chuan, eng thil ah nge? _____

11. Sik leh Sa Inthlak (Climate change) thu

11.1 Tunhnai kum 20-30 chho vela temperature inthlak danglam dan?

- ☐ Nipuiah a sang ☐ Nipuiah a hniam ☐ Thlasik ah a sang ☐ Thlasikah a hniam
☐ danglamna a awmlo

11.2 Tunhnai kum 20-30 chhunga ruahtui leh hnawna (humidity) danglam dan?

- ☐ Nipuiah ruah a tam ☐ Nipuiah ruah a tlem ☐ Thlasikah ruah a tam ☐ Thlasikah ruah a tlem
☐ Nipuiah ruah a tla nasa (intensive) ☐ Thlasikah ruah a tla nasa (intensive)
☐ Rain tlak dan a mumallo (Please give the most recent example.)
☐ Nipuiah khawkheng a pung ☐ Thlasik ah khawkheng a tam

END

** M= Married ; N = Not Married ; DV= Divorced ; S= Separated ; W= Widow/er
 *** C = Agriculture/Cultivator ; AL= Agricultural Labor ; B= Business ; S= Service ;
 CI = Cottage Industry ; NAL = Non-Agricultural Labor ; HW= Household Work ;
 SW = Seasonal Worker; STU = Student; CW = Casual Worker; U =Unemployed
 **** V= Vision impairment; H= Hearing impairment; P= Physical disability,
 D= Internal Disorder & chronic Disease; I= Intellectual disability; M= Mmental disorder

2. HOUSEHOLD CHARACTERISTICS

2.1 TYPE OF HOUSE (□)

Hut_____ Pacca _____ Kaccha _____ Mix (Pacca & Kaccha) _____ Other_____

Hut: Mud, Thatched Roof; Pacca: Cement wall, Tin roof; Kaccha: Mud wall, Tin roof

2.2 HOUSEHOLD ENERGY USAGE (Please take the average of past 3 years.)

2.2.1 Household Lighting

Materials used	Average Volume Consumed per Week	Unit
Kerosene		
Candle		
Electricity		
Solar Light/ Lamp		
Others (Specify): ()		

2.2.2 Cooking

Material Used	Average Volume Consumed per Week	Unit
Fuelwood (from forest)		
Fuelwood (purchased)		
Crop Residue		
Charcoal		
Dung Cakes		
Kerosene		
Electricity		INR
Gas Cylinder		
Others (Specify): ()		

2.2.3 Heating During Cold Seasons (Sep – March)

Material Used	Average Volume Consumed per Week	Unit
Fuelwood (from forest)		
Fuelwood (purchased)		
Charcoal		
Solar Heating System		
Kerosene		
Electricity		INR
Gas Cylinder		
Others (Specify): ()		

2.3. Access to Productive Water

2.3.1 Water for Agriculture

Type Water Sources	Access Code: 1. Have access 2. Do not have access	Availability Code: 1. Water is available when required. 2. Water gets scarce when required. 3. Water source is dried up.	Availability of Changes Over time 1. Reduced including occasional drying of the source 2. Increased 3. No change
Spring			
Stream			
River			
Rain Water Harvesting			
Dug Well			
Tube Well			
Not applicable (Rainfed)			

2.3.2. Livestock

Type Water Sources	Access Code: 1. Have access 2. Do not have access	Availability Code: 1. Water is available when required. 2. Water gets scarce when required. 3. Water source is dried up.	Volume Used (Litre per day)	How do you get water? Code: 1. Delivered by water tank 2. Women in the family fetches water. 3. Men in the family fetches water. 4. Others (specify in the cell)	Availability of Changes Over time 1. Reduced including occasional drying of the source 2. Increased 3. No change
Spring					
Stream					
River					
Rain Water Harvesting					
Dug Well					
Tube Well					
Nearby water pump					

2.3.3 Domestic Water

2.3.3.1 Household Usage (Washing clothes, bathing, or any other purposes for hygiene)

Type Water Sources	Access Code: 1. Have access 2. Do not have access	Availability Code: 1. Water is available when required. 2. Water gets scarce when required. 3. Water source is dried up.	Volume Used (Litre per day)	How do you get water? Code: 1. Water tank 2. Women in the family fetches water. 3. Men in the family fetches water. 4. Others (specify in the cell)	Availability of Changes Over time 1. Reduced including occasional drying of the source 2. Increased 3. No change
Spring					
Stream					
River					
Rain Water Harvesting					
Dug Well					
Tube Well					
Nearby water pump					
Household pipe connection					

2.3.3.2 Household Usage (Cooking)

Type Water Sources	Access Code: 1. Have access	Availability Code: 1. Water is available when required.	Volume Used (Litre per day)	How do you get water? Code: 1. Water tank	Availability of Changes Over time

	2. Do not have access	2. Water gets scarce when required. 3. Water source is dried up.		2. Women in the family fetches water. 3. Men in the family fetches water. 4. Others (specify in the cell)	1. Reduced including occasional drying of the source 2. Increased 3. No change
Spring					
Stream					
River					
Rain Water Harvesting					
Dug Well					
Tube Well					
Nearby water pump					
Household pipe connection					

2.4 ASSET OWNERSHIP (Number of Each)

1	Radio	
2	TV	
3	Bicycle	
4	Motorcycle	

5	Mobile phone	
6	Computer	
7	Internet connection	
8	Car	

2.5. UTILISATION OF FOREST PRODUCES

Type of Forest Produce	Source	Usage (Code)	Volume Used per Week	Unit	How many times/ months in a year used?
Log	☐ Benefit received from FD ☐ Taken from nearby forest ☐ Cultivated				Times
Fuelwood	☐ Wild ☐ Cultivated				Months
Fodder	☐ Wild ☐ Cultivated				Months
Bamboo	☐ Wild ☐ Cultivated				Months
Bamboo Shoot	☐ Wild ☐ Cultivated				Months
NTFP Name:	☐ Wild ☐ Cultivated				Months
NTFP Name:	☐ Wild ☐ Cultivated				Months
	☐ Wild ☐ Cultivated				Months
	☐ Wild ☐ Cultivated				Months
	☐ Wild ☐ Cultivated				Months

Code: 1. For household repair; 2. Making agriculture implements; 3. Making furniture; 4. Heating the House during the winter; 4.1. Cooking (food & animal feed) 5. Process and Sell; 6. Eat at home; 7. Medicinal purpose; 8. Others (Specify in the cell.)

3 LAND HOLDING AND LAND TENURE

LAND CATEGORY	Own Land		Rented in Land (Bigha)	Rent Out Land (Bigha)	Encroached Land (Bigha)
	Owner (Code)	Area (Bigha)			
Area under Cultivation					
Non-Irrigated					
Irrigated					
Area under Shifting Cultivation					
Total					
Orchard					
Fallow Land					
Uncultivable Agriculture Land					
Residential					
Pasture/Grazing Land					
Other					

Code: 1. Male Head of the household; 2. Female Head of the Household; 3. Female Spouse; 4. Male Relatives; 5. Female Relatives; 6. Male Child; 7. Female Child; 8. Others: (Specify in the cell.)

4. MARKETING (Timber/ NTFPs)

4.1 Where do you sell your Log/ Timber, Bamboo and NTFPs mainly?

Type of the Market	Location/ Name	Forest Produces Sold	Frequency Code: Please see below.	Distance from you house
At Home/ Farm Gate				
At the Crop Field/ Farm				
Collection Point in the village				< 5 km ☐ , 5-10 km ☐ , 10-20 km ☐ , > 20 km ☐
Collection point outside the village				< 5 km ☐ , 5-10 km ☐ , 10-20 km ☐ , > 20 km ☐
LAMP or Tribal Marketing Cooperative				< 5 km ☐ , 5-10 km ☐ , 10-20 km ☐ , > 20 km ☐
Forest Corporation Depot				< 5 km ☐ , 5-10 km ☐ , 10-20 km ☐ , > 20 km ☐
Others ()				< 5 km ☐ , 5-10 km ☐ , 10-20 km ☐ , > 20 km ☐
Others ()				< 5 km ☐ , 5-10 km ☐ , 10-20 km ☐ , > 20 km ☐

Code: 1. Regularly, 2. Sometimes, 3. Not applicable

4.2 Who are the main buyers of your produces? Please indicate the approximate % of produces sold to each buyer.

Trees and NTFPs	Buyer 1		Buyer 2		Buyer 3		Buyer 4		Buyer 5	
	Code	%	Code	%	Code	%	Code	%	Code	%
Bamboo										
Bamboo shoots										

Code: 1. Farmers' Organisation including Cooperatives; 2. Village Aggregator; 3. Tribal Marketing Cooperatives; 4. Forest Corporation; 5. Consumer (I sell directly in the market or to the individual consumer); 6. Private Processor; 7. Exporter; 8. Others (Specify in the cell.)

No	Reasons why not start Collective/ Group/ Joint Marketing	Tick where appropriate
1	No benefit/profit from joint marketing (no difference from individual marketing)	
2	Want to keep high quality of products without mixing with the products from other members	
3	Many troubles in managing conflicting interests among group members	
4	No leadership/No joint marketing group in the community	
5	No idea how to organize and manage a joint marketing	
6	No external support	
	<Add other expectation if there is>	

5. HOUSEHOLD INCOME AND EXPENDITURE

5.1 Income from other sources in Year 2022-2023 (April 2022 – March 2023)

Items	Daily (Rs./day)	Monthly (Rs./month)	Annual Income (Rs/year)
1. Sales of the agriculture produces			
2. Sales of Log			
3. Sales of Timber (Species:)			
4. Sales of NTFPs (Type / Unprocessed)			
5. Sales of NTFPs (Type: / Processed)			
6. Salary from other occupation such as government employee, driver, factory worker, pensions, etc.			
7. Wages for casual work			
8. Sale of fuelwood			
9. Sale of fodder			
10. Sale of livestock products			
11. Earnings from fish culture			
12. Earnings from sericulture			
13. Earnings from floriculture			
14. Earnings from home garden			
15. Earnings from handicrafts (Type)			
16. Earnings from own business			
17. Receipt of gifts and remittances			
18. Rent of agriculture land or other real estate			
19. Interest earned from money loan and bank deposits			
20. Other sources ()			
21. Other sources ()			

Note : This question should be answered principally by the housewife or by women and men jointly.

5.2 Breakdown of living expenses by month or by (April 2021 – March 2022)

Items	Month (Rs./month)	Yearly (Rs./ year)
1. Agriculture inputs (fertilisers, insecticides, planting materials and etc.)		
2. Food		
1.1 Food items other than fruits and vegetables		
1.2 Vegetables		
1.3 Fruits		
3. Alcohol		
4. Tobacco & cigarettes (biri, pan, etc)		
5. Fuel for Household Use		
5.1 Fuelwood		
5.2 Charcoal		
5.3 Cow dung		
5.4 Kerosene		
6. Electricity for Household		
7. Water charge		
8. Clothing & foot wear		
9. Medical		
10. Education		
11. Construction, repairs and furnishing for dwelling unit		
12. Travel and transport		
13. Social (festivals, rituals, and entertainment)		
14. Loan repayment		
15. Expenditure to recover from the damage by wildlife		
16. Expenditure to recover from the damage by natural disaster		
17. Others (specify:)		
18. Others (specify:)		
19. Total (monthly expenses x 12)		

Note : This question is to be addressed to both men and women in the household.

6. HUMAN AND WILDLIFE CONFLICT

6.1 Have you experienced any damages caused by wild animal?

(1) Bear

Particular	Indicate the Frequency in a Year (April 2021-March 2022)	Indicate the Frequently Occurring Month of the Year	Compensation	
			Paid By	Amount Paid per claim
Damage caused	Agriculture Crop stumped/ encroached.			
	Agriculture Crops eaten			
	House Breakage			
	Human Injuries			
	Human Death			
	Loss of Livestock			
	Others ()			
	Others ()			
	Others ()			

(2) Wild boar

Particular		Indicate the Frequency in a Year (April 2021-March 2022)	Indicate the Frequently Occurring Month of the Year	Compensation	
				Paid By	Amount Paid per claim
Damage caused	Agriculture Crop stumped/ encroached.				
	Agriculture Crops eaten				
	House Breakage				
	Human Injuries				
	Human Death				
	Loss of Livestock				
	Others ()				
	Others ()				
	Others ()				

(3) Tiger

Particular		Indicate the Frequency in a Year (April 2021-March 2022)	Indicate the Frequently Occurring Month of the Year	Compensation	
				Paid By	Amount Paid per claim
Damage caused	Agriculture Crop stumped/ encroached.				
	Agriculture Crops eaten				
	House Breakage				
	Human Injuries				
	Human Death				
	Loss of Livestock				
	Others ()				
	Others ()				
	Others ()				

(4) Elephant

Particular		Indicate the Frequency in a Year (April 2021-March 2022)	Indicate the Frequently Occurring Month of the Year	Compensation	
				Paid By	Amount Paid per claim
Damage caused	Agriculture Crop stumped/ encroached.				
	Agriculture Crops eaten				
	House Breakage				
	Human Injuries				
	Human Death				
	Loss of Livestock				
	Others ()				
	Others ()				
	Others ()				

(5) Others ()

Particular		Indicate the Frequency in a Year (April 2021-March 2022)	Indicate the Frequently Occurring Month of the Year	Compensation	
				Paid By	Amount Paid per claim
Damage caused	Agriculture Crop stumped/ encroached.				
	Agriculture Crops eaten				
	House Breakage				
	Human Injuries				
	Human Death				
	Loss of Livestock				
	Others ()				
	Others ()				
	Others ()				

(6) Others ()

Particular		Indicate the Frequency in a Year (April 2021-March 2022)	Indicate the Frequently Occurring Month of the Year	Compensation	
				Paid By	Amount Paid per claim
Damage caused	Agriculture Crop stumped/ encroached.				
	Agriculture Crops eaten				
	House Breakage				
	Human Injuries				
	Human Death				
	Loss of Livestock				
	Others ()				
	Others ()				
	Others ()				

6.2 What are the counter measures taken by you and other villagers for wild animal damages?

Type of Animal	Description of counter measures	By whom?

6.3 In your view, has the frequency of occurrence of damages caused by the wild animal increased over the past 5 years?

☐ Yes

☐ No

If Yes, what are the causes for such increase?

7. NATURAL DISASTER

7.1 Flood

7.1.1 Flooding

7.1.1 How often flooding occurs?

- ☐ multiple numbers of incidences in the past consecutive years ☐ once a year ☐ once in a few years
☐ once in ten years ☐ never (If never occurred, please move to Question 7.2)

7.1.2 When was the last major flooding and damage?

- ☐ Last year ☐ A few years ago ☐ More than 5 years ago
☐ more than 10 years ago (Specify: _____)

7.1.3 What were the damages?

- ☐ Inundation/ water logging on the agriculture land ☐ Loss of agriculture crops
☐ Damage to house ☐ Human Injuries ☐ Human Death
☐ Loss of Livestock

7.1.4 Have you received any compensation for the loss?

Type of Loss	Compensation Received	Government Dept.

7.1.5 In your view, has the frequency of occurrence of flood increased over the past 5 years?

- ☐ Yes ☐ No

If Yes, in your view what could be the causes for increased incidences?

7.1.6 Do you or others in your village take the preventive measures against flooding for protecting agricultural lands?

- ☐ Yes ☐ No

If yes, Please explain the measures (i.e embankment against river, cleaning drainage, etc.)

7.2.Land slide/erosion

7.2.1 How often land slide/erosion occurs?

- ☐ multiple numbers of incidences in the past consecutive years ☐ once a year ☐ once in a few years
☐ once in ten years ☐ never (If never occurred, please move to Question 7.3)

7.2.2 When was the last major land slide/erosion and damage?

- ☐ Last year ☐ A few years ago ☐ More than 5 years ago
☐ more than 10 years ago (Specify: _____)

7.2.3 What was the damages?

- ☐ Siltation ☐ Loss of agriculture crops ☐ Damage to house
☐ Human injuries ☐ Human Death ☐ Loss of Livestock

7.2.4 Have you received any compensation for the loss?

Type of Loss	Compensation Received	Government Dept.

7.2.5 In your view, the frequency of occurrence of landslide/ erosion has increased over the past 5 years?

☐ Yes ☐ No

If Yes, in your view what could be the causes for increased incidences?

7.2.6 Do you or others in your village take the preventive measures against land slide/erosion for protecting agricultural lands?

☐ Yes ☐ No

If yes, Please explain the measures (tree planting, drainage, engineering measures by concrete, etc.)

7.3 Forest Fire

7.3.1 How often forest fires occurs?

☐ multiple numbers of incidences in the past consecutive years ☐ once a year ☐ once in a few years
☐ once in ten years ☐ never (If never occurred, please move to Question 7.4)

7.3.2 When was the last major Forest Fire and damage?

☐ Last year ☐ A few years ago ☐ More than 5 years ago
☐ more than 10 years ago (Specify:)

7.3.3 What was the damages?

☐ Loss of agriculture crops ☐ Damage to house
☐ Human injuries ☐ Human Death ☐ Loss of Livestock

7.3.4 Have you received any compensation for the loss?

Type of Loss	Compensation Received	Government Dept.

7.3.5 In your view, has the frequency of occurrence of Forest Fire increased over the past 5 years?

☐ Yes ☐ No

If Yes, in your view what could be the causes for increased incidences?

7.3.6 Do you or others in your village take the preventive measures against Forest Fire?

☐ Yes ☐ No

If yes, Please explain the measures taken? (i.e. patrolling during dry season, setting up fire prevention lane, etc.)

7.3.7 What are the counter measures taken by you and other villagers?

Description of counter measures	By whom?

7.4 Drought

7.4.1 How often Drought occurs?

- ☐ multiple numbers of incidences in the past consecutive years
 ☐ once a year
 ☐ once in a few years
☐ once in ten years
 ☐ never (If never occurred, please move to Question 7.5)

7.4.2 When was the last major Drought and damage?

- ☐ Last year
 ☐ A few years ago
 ☐ More than 5 years ago
☐ more than 10 years ago (Specify:)

7.4.3 What were the damages?

- ☐ Drying up on the agriculture land
 ☐ Loss of agriculture crops
 ☐ Damage to house
☐ Human injuries
 ☐ Human Death
 ☐ Loss of Livestock

7.4.4 Have you received any compensation for the loss?

Type of Loss	Compensation Received	Government Dept.

7.4.5 In your view, the frequency of occurrence of flooding is increasing over the past 5 years?

- ☐ Yes
 ☐ No

If Yes, in your view what could be the causes for increased incidences?

7.4.6 Do you or others in your village take the preventive measures against Drought for protecting agricultural lands?

- ☐ Yes
 ☐ No

If yes, Please explain the measures taken? (i.e. water harvesting structure, irrigation, change crop variety/type, etc.)

7.4.7 What are the counter measures taken by you and other villagers?

Description of counter measures	By whom?

7.4.8 In your view, the frequency of occurrence of Drought is increasing over the past 5 years?

- ☐ Yes
 ☐ No

If Yes, in your view, what could be the reasons for such increase?

7.5 Hail Stone

7.5.1 How often does the Strong Wind occur?

- ☐ multiple numbers of incidences in the past consecutive years
 ☐ once a year
 ☐ once in a few years
☐ once in ten years
 ☐ never (If never occurred, please move to Question 7.7)

7.5.2 When was the last major cycle?

- ☐ Last year ☐ A few years ago ☐ More than 5 years ago
☐ more than 10 years ago (Specify: _____)

7.5.3 What were the damages?

- ☐ Loss of agriculture crops ☐ Damage to house
☐ Human injuries ☐ Human Death ☐ Loss of Livestock

7.5.4 Have you received any compensation for the loss?

Type of Loss	Compensation Received	Government Dept.

7.5.5 In your view, has the frequency of occurrence of Strong wind increased over the past 5 years?

- ☐ Yes ☐ No

If Yes, in your view what could be the causes for increased incidences?

7.5.6 Do you or others in your village take the preventive measures against Strong wind for protecting agricultural lands?

- ☐ Yes ☐ No

IF yes, Please explain the measures (protection forest, strong construction, etc.)

7.5.7 What are the counter measures taken by you and other villagers?

Description of counter measures	By whom?

7.6 Earthquake

7.6.1 How often does the Earthquake occur?

- ☐ multiple numbers of floods in the past consecutive years ☐ once a year ☐ once in a few years
☐ once in ten years ☐ never (If never occurred, please move to Question 8)

7.6.2 When was the last major cycle?

- ☐ Last year ☐ A few years ago ☐ More than 5 years ago
☐ more than 10 years ago (Specify: _____)

7.6.3 What were the damages?

- ☐ Landslides ☐ Mud flood ☐ Loss of agriculture crops ☐ Damage to house
☐ Human injuries ☐ Human Death ☐ Loss of Livestock

7.6.4 Have you received any compensation for the loss?

Type of Loss	Compensation Received	Government Dept.

7.6.5 In your view, has the frequency of occurrence of Earthquake increased over the past 5 years?

- ☐ Yes ☐ No

7.6.6 Do you or others in your village take the preventive measures against Strong wind for protecting agricultural

lands?

☐ Yes

☐ No

IF yes, Please explain the measures (protection forest, strong construction, etc.)

--

7.6.7 What are the counter measures taken by you and other villagers?

Description of counter measures	By whom?

8 FARM FORESTRY and SOCIAL FORESTRY

8.1 INTEREST IN FARM FORESTRY

Are you interested in growing tree in your farm?

☐ Yes

☐ No

If Yes, please tell us the reasons:

--

8.2 If you are interested in growing tree in your farm, what are the species and varieties you wish to grow?

--

8.3 What are the hindering factor for the farm forestry?

Please select the three (3) important obstacles / reasons (□).

- | | | |
|----|--------------------------|--|
| 1 | ☐ | Not willing to do it |
| 2 | ☐ | Lack of market information |
| 3 | ☐ | I want to do but other farmers do not agree to do it. |
| 4 | ☐ | Lack of materials and equipment |
| 5 | ☐ | Lack of Government concern |
| 6 | ☐ | I am in the process of doing it. |
| 7 | ☐ | Extension officer does not give me any assistance |
| 8 | ☐ | Size of land (Too small) |
| 9 | ☐ | Bad luck |
| 10 | ☐ | Lack of enough irrigation water |
| 11 | ☐ | Lack of enough capital (No access to credit and subsidy) |
| 12 | ☐ | Other _____ |

8.3 What do you require to start farm forestry?

Please select the three (3) most important needs (✓).

- | | | | | | | |
|---|--------------------------|---------------------------------|--|----|--------------------------|-------------------------------|
| 1 | ☐ | Bullock (pair) | | 10 | ☐ | More credit |
| 2 | ☐ | Bullock cart | | 11 | ☐ | Market information |
| 3 | ☐ | Bullock (Pair) and Cart | | 12 | ☐ | Storage facilities near by |
| 4 | ☐ | Diesel or Electric Pump | | 13 | ☐ | Technical support / trainings |
| 5 | ☐ | More land (and/or Consolidated) | | 14 | ☐ | Other _____ |
| 6 | ☐ | More irrigation water | | 15 | ☐ | |
| 7 | ☐ | Pond or Reservoir | | 16 | ☐ | |
| 8 | ☐ | Deep tube well | | | | |
| 9 | ☐ | Shallow well (Dug well) | | | | |

8.4 Have you taken part in Social Forestry? ☐ Yes ☐ No (Move to Q9.)

8.4.1 What are the social forestry activities you participated?

8.4.2 Do you belong to a beneficiary group/ JFMC? ☐ Yes ☐ No

8.4.3 What are the activities of beneficiary group/ JFMC?

8.4.4 What are the benefits you received from social forestry?

Type of Benefits	When benefit received	Amount/ Volume

9 Access to Information on Forestry

9.1 What are your means of getting the latest information on forestry ? (□)

(Multiple answer)

1. ☐ Radio programs
2. ☐ TV program
3. ☐ Forest Ranger
4. ☐ Forest Guard
5. ☐ Agriculture Extension Worker (VAW)
6. ☐ Newspapers, leaflets, other printed material
7. ☐ Word of mouth (other farmer, neighbors, relatives)
8. ☐ Agriculture fairs, farm days, etc.
9. ☐ Own experience
10. ☐ NGO
11. ☐ Traders
12. ☐ Shop
13. ☐ Van Mahotsav
14. ☐ Other _____

10 ROLE OF WOMEN IN AFRICULTURE AND FORESTRY

10.1 Do women in this HH own any agriculture land? (□) Yes____ No____

What farming and marketing activities are mainly/ usually done by women/girls? (Multiple answer)

(1) Agriculture Crop

- | | |
|---|---|
| 1 ☐ Planting | 6 ☐ Harvesting |
| 2 ☐ Weeding | 7 ☐ Packing/ Bundling |
| 3 ☐ Harvesting | 8 ☐ Negotiating price when selling |
| 4 ☐ Threshing / Winnowing / Cleaning | 9 ☐ Selling in the local market |
| 5 ☐ Irrigation Water Management | 10 ☐ Others _____ |

(2) Timber Species (cultivated)

- | | |
|--|---|
| 1 ☐ Planting | 5 ☐ Packing/ Bundling |
| 2 ☐ Weeding | 6 ☐ Negotiating price when selling |
| 3 ☐ Harvesting | 7 ☐ Selling in the local market |
| 4 ☐ Irrigation Water Management | 8 ☐ Others _____ |

(3) Bamboo (cultivated)

- 1 ☐ Planting
2 ☐ Weeding
3 ☐ Harvesting
4 ☐ Irrigation Water Management

- 5 ☐ Packing/ Bundling
6 ☐ Negotiating price when selling
7 ☐ Selling in the local market
8 ☐ Others _____

(4) Bamboo (Wild harvest)

- 1 ☐ Harvesting
2 ☐ Cleaning/ Grading
3 ☐ Packing/ Bundling
4 ☐ Negotiating price when selling
5 ☐ Selling in the local market

- 6 ☐ Harvesting
7 ☐ Others _____
8 ☐ Others _____
9 ☐ Others _____
10 ☐ Others _____

(5) Bamboo shoots (Wild harvest)

- 1 ☐ Harvesting
2 ☐ Cleaning/ Grading
3 ☐ Packing/ Bundling
4 ☐ Negotiating price when selling
5 ☐ Selling in the local market

- 6 ☐ Harvesting
7 ☐ Others _____
8 ☐ Others _____
9 ☐ Others _____
10 ☐ Others _____

(6) NTFP (Cultivated)

- 1 ☐ Planting
2 ☐ Weeding
3 ☐ Harvesting
4 ☐ Cleaning/ Grading
5 ☐ Irrigation Water Management

- 6 ☐ Packing/ Bundling
7 ☐ Negotiating price when selling
8 ☐ Selling in the local market
9 ☐ Others _____
10 ☐ Others _____

(7) NTFP (Wild Harvest) (Crop:)

- 1 ☐ Harvesting
2 ☐ Cleaning/ Grading
3 ☐ Packing/ Bundling
4 ☐ Negotiating price when selling
5 ☐ Selling in the local market

- 6 ☐ Harvesting
7 ☐ Others _____
8 ☐ Others _____
9 ☐ Others _____
10 ☐ Others _____

10.2 Who makes decision on farming in your family? (Please tick.)

(1) Agriculture Produce

Issues	Mostly Men only	Mostly Women only	Mostly jointly men and women
Which crops to grow			
Which pesticides/ chemicals to use			
What volumes to sell			
Where to sell			
What prices			
Whether to take loan			

(2) Log/ Timber

Issues	Mostly Men only	Mostly Women only	Mostly jointly men and women
Which crops to grow			
Which pesticides/ chemicals to use			
What volumes to sell			
Where to sell			
What prices			
Whether to take loan			

(3) Bamboo

Issues	Mostly Men only	Mostly Women only	Mostly jointly men and women
Which crops to grow			
Which pesticides/ chemicals to use			
What volumes to sell			
Where to sell			
What prices			
Whether to take loan			

(4) Bamboo shoots

Issues	Mostly Men only	Mostly Women only	Mostly jointly men and women
--------	-----------------	-------------------	------------------------------

Which crops to grow			
Which pesticides/ chemicals to use			
What volumes to sell			
Where to sell			
What prices			
Whether to take loan			

(5) NTFP (Cultivated:)

Issues	Mostly Men only	Mostly Women only	Mostly jointly men and women
Which crops to grow			
Which pesticides/ chemicals to use			
What volumes to sell			
Where to sell			
What prices			
Whether to take loan			

(6) NTFP (Wild Harvest/ Name of the Produce:)

Issues	Mostly Men only	Mostly Women only	Mostly jointly men and women
What volumes to sell			
Where to sell			
What prices			
Whether to take loan			

10.3 What types of groups do women in your family belong to?

- ☐ SHG ☐ Farmer Producer Organization/ Company ☐ Agriculture Cooperatives
☐ JFMC ☐ LAMPS ☐ Other _____

10.4 Are women in the village interested in forest related activities? Yes ____ No ____

If Yes, what kind of activity ? _____

11. Climate change

11.1 How has the temperature changed over the past 20 – 30 years?

- ☐ Higher in summer ☐ Lower in summer ☐ Higher in winter ☐ Lower in winter
☐ No Change

11.2 How has the rainfall pattern and humidity changed over the past 20 – 30 years?

- ☐ More rain in summer ☐ Less rain in summer ☐ More rain in winter ☐ Less rain in winter
☐ More intensive rain in summer ☐ More intensive rain in winter
☐ Rain in odd time (Please give the most recent example.)
☐ More drought in summer ☐ More drought in winter

END

Annex 6.3.1 Data Table

1. Profile of the Survey Households

1.1 No of Sample Households

District	Division	Counts			%		
		FHH	MHH	Total	FHH	MHH	Total
Lawngtlai	Chhintuipui W	3	12	15	20	80	100
Mamit	Kawrtlah	6	9	15	40	60	100
Saitual	Aizawl WL		15	15	0	100	100
Serchiip	Thenzawl	3	12	15	20	80	100
	Total	12	48	60	20	80	100

1.2 Population

District	Division	FHH			MHH			Total		
		Female	Male	Total	Female	Male	Total	Female	Male	Total
Lawngtlai	Chhintuipui W	7	7	14	36	42	78	43	49	92
Mamit	Kawrtlah	16	11	27	26	21	47	42	32	74
Saitual	Aizawl WL			0	32	49	81	32	49	81
Serchiip	Thenzawl	7	10	17	34	25	59	41	35	76
	Total	30	28	58	128	137	265	158	165	323

1.3 Bank Account

District	Division	No of HH in the Survey			Counts									%		
		FHH	MHH	Total	FHH			MHH			Total			% of Total No of HH		
					Do not have	Have	Total	Do not have	Have	Total	Do not have	Have	Total	Do not have	Have	Total
Lawngtlai	Chhintuipui W	3	12	15		3	3	1	11	11	1	14	14	6.7	93.3	100.0
Mamit	Kawrtlah	6	9	15	1	5	6	1	8	8	2	13	14	13.3	86.7	100.0
Saitual	Aizawl WL		15	15			0		15	15	0	15	15	0.0	100.0	100.0
Serchiip	Thenzawl	3	12	15		3	3		12	12	0	15	15	0.0	100.0	100.0
	Total	12	48	60	1	11	12		46	46	1	57	58	1.7	95.0	96.7

1.4 Religion

District	Division	Christianity			%		
		FHH	MHH	Total	FHH	MHH	Total
Lawngtlai	Chhintuipui W	3	12	15	20	80	100
Mamit	Kawrtlah	6	9	15	40	60	100
Saitual	Aizawl WL		15	15	0	100	100
Serchiip	Thenzawl	3	12	15	20	80	100
	Total	12	48	60	20	80	100

1.5. Education

a. Counts of Responses

District	Division	No of HH in the Survey			FHH							
		FHH	MHH	Total	Adult Literate	Graduate	Higher Secondary	Non Literate	Primary	Secondary	Upper Primary	Total
Lawngtlai	Chhintuipui W	3	12	15			1				2	3
Mamit	Kawrtlah	6	9	15		1			1	1	2	5
Saitual	Aizawl WL		15	15								0
Serchiip	Thenzawl	3	12	15	2				1			3
	Total	12	48	60	2	1	1	0	2	1	4	11

District	Division	No of HH in the Survey			MHH							
		FHH	MHH	Total	Adult Literate	Graduate	Higher Secondary	Non Literate	Primary	Secondary	Upper Primary	Total
Lawngtlai	Chhintuipui W	3	12	15			1		2	7	1	12
Mamit	Kawrtlah	6	9	15	1			1		4	3	9
Saitual	Aizawl WL		15	15		1			3	8	3	15
Serchiip	Thenzawl	3	12	15	1			2	2	4	3	12
	Total	12	48	60	2	1	1	4	7	23	10	48

District	Division	No of HH in the Survey			Total							
		FHH	MHH	Total	Adult Literate	Graduate	Higher Secondary	Non Literate	Primary	Secondary	Upper Primary	Total
Lawngtlai	Chhintuipui W	3	12	15	0	0	2	1	2	7	3	15
Mamit	Kawrtlah	6	9	15	1	1	0	1	1	5	5	14
Saitual	Aizawl WL		15	15	0	1	0	0	3	8	3	15
Serchiip	Thenzawl	3	12	15	3	0	0	2	3	4	3	15
	Total	12	48	60	4	2	2	4	9	24	14	59

b. Total %

District	Division	No of HH in the Survey			Total							
		FHH	MHH	Total	Adult Literate	Graduate	Higher Secondary	Non Literate	Primary	Secondary	Upper Primary	Total
Lawngtlai	Chhaintupui W	3	12	15	0.0	0.0	13.3	6.7	13.3	46.7	20.0	100.0
Mamit	Kawrtah	6	9	15	6.7	6.7	0.0	6.7	6.7	33.3	33.3	93.3
Saitual	Aizawl WL		15	15	0.0	6.7	0.0	0.0	20.0	53.3	20.0	100.0
Serchiip	Thenzawl	3	12	15	20.0	0.0	0.0	13.3	20.0	26.7	20.0	100.0
Total		12	48	60	6.7	3.3	3.3	6.7	15.0	40.0	23.3	98.3

1.6 Migration

District	Division	No of HH in the Survey			Counts		Total
		FHH	MHH	Total	FHH	MHH	
Lawngtlai	Chhaintupui W	3	12	15	3	12	15
Mamit	Kawrtah	6	9	15	6	9	15
Saitual	Aizawl WL		15	15		15	15
Serchiip	Thenzawl	3	12	15	3	12	15
Total		12	48	60	12	48	60

1.7 Entitlement

District	Division	No of HH in the Survey			Counts								Total		
		FHH	MHH	Total	FHH				MHH				Total		
					MGNREGA	Old Age Pension	Anupama Yojna	Total	MGNREGA	Old Age Pension	Anupama Yojna	Total	MGNREGA	Old Age Pension	Anupama Yojna
Lawngtlai	Chhaintupui W	3	12	15	3			3	12	2		14	15	2	0
Mamit	Kawrtah	6	9	15	5			5	9	1		10	14	1	0
Saitual	Aizawl WL		15	15				0	13			13	13	0	0
Serchiip	Thenzawl	3	12	15	3	1		4	12			12	15	1	0
Total		12	48	60	11	1	0	12	46	3	0	49	57	4	0

District	Division	No of HH in the Survey			%								Total		
		FHH	MHH	Total	FHH				MHH				Total		
					MGNREGA	Old Age Pension	Anupama Yojna	Total	MGNREGA	Old Age Pension	Anupama Yojna	Total	MGNREGA	Old Age Pension	Anupama Yojna
Lawngtlai	Chhaintupui W	3	12	15	100.0	0.0	0.0	100.0	100.0	16.7	0.0	116.7	100.0	13.3	0.0
Mamit	Kawrtah	6	9	15	83.3	0.0	0.0	83.3	100.0	11.1	0.0	111.1	93.3	6.7	0.0
Saitual	Aizawl WL		15	15					86.7	0.0	0.0	86.7	86.7	0.0	0.0
Serchiip	Thenzawl	3	12	15	100.0	33.3	0.0	133.3	100.0	0.0	0.0	100.0	100.0	6.7	0.0
Total		12	48	60	91.7	8.3	0.0	100.0	95.8	6.3	0.0	102.1	95.0	6.7	0.0

1.8 Ration Card

District	Division	No of HH in the Survey			Counts								Total			
		FHH	MHH	Total	FHH				MHH				Total			
					APL	PHH	AAY	Total	APL	PHH	AAY	Total	APL	PHH	AAY	Total
Lawngtlai	Chhaintupui W	3	12	15	1	2		3	1	10	1	12	1	10	1	12
Mamit	Kawrtah	6	9	15	2	3	1	6	3	4	2	9	3	4	2	9
Saitual	Aizawl WL		15	15					3	11		14	3	11		14
Serchiip	Thenzawl	3	12	15	1	2		3	2	8	2	12	2	8	2	12
Total		12	48	60	4	7	1	12	9	33	5	47	9	33	5	47

District	Division	No of HH in the Survey			%								Total			
		FHH	MHH	Total	FHH				MHH				Total			
					APL	PHH	AAY	Total	APL	PHH	AAY	Total	APL	PHH	AAY	Total
Lawngtlai	Chhaintupui W	3	12	15	33.3	66.7	0.0	100.0	8.3	83.3	8.3	100.0	6.7	66.7	6.7	80.0
Mamit	Kawrtah	6	9	15	33.3	50.0	16.7	100.0	33.3	44.4	22.2	100.0	20.0	26.7	13.3	60.0
Saitual	Aizawl WL		15	15					20.0	73.3	0.0	93.3	20.0	73.3	0.0	93.3
Serchiip	Thenzawl	3	12	15	33.3	66.7	0.0	100.0	16.7	66.7	16.7	100.0	13.3	53.3	13.3	80.0
Total		12	48	60	33.3	58.3	8.3	100.0	18.8	68.8	10.4	97.9	15.0	55.0	8.3	78.3

1.9 Social Stratum

		No of HH in the Survey			FHH		MHH	
District	Division	FHH	MHH	Total	Scheduled Tribe	Scheduled Tribe	Total	
Lawngtlai	Chhaintupui W	3	12	15	3	12	15	
Mamit	Kawrtah	6	9	15	6	9	15	
Saitual	Aizawl WL		15	15		15	15	
Serchiip	Thenzawl	3	12	15	3	12	15	
Total		12	48	60	12	48	60	

1.10 Name of Community

District	Division	No of HH in the Survey			FHH		MHH	
		FHH	MHH	Total	Mizo	Mizo	Total	Total
Lawngtlai	Chhaintupui W	3	12	15	3	12	15	15
Mamit	Kawrtah	6	9	15	6	9	15	15
Saitual	Aizawl WL		15	15		15	15	15
Serchhip	Thenzawl	3	12	15	3	12	15	15
Total		12	48	60	12	48	60	60

2. Income Sources

2.1 HH Primary Source of Income (Multiple Responses)

		No of HH in the Survey			FHH												
District	Division	FHH	MHH	Total	Paddy Cultivation	Other cereal cultivation	pulses cultivation	Vegetable Cultivation	Fruits Cultivation	Spices/ Herbs Cultivation	Sericulture	Floriculture	Cattle Breeding	Dairy	Poultry Farming	Piggery	Total
Lawngtlai	Chhaintupui W	3	12	15				2							2	1	5
Mamit	Kawrtah	6	9	15													0
Saitual	Aizawl WL		15	15													0
Serchhip	Thenzawl	3	12	15	2			1									3
	Total	12	48	60	2	0	0	3	0	0	0	0	0	0	2	1	8

					MHH												
District	Division	FHH	MHH	Total	Paddy Cultivation	Other cereal cultivation	pulses cultivation	Vegetable Cultivation	Fruits Cultivation	Spices/ Herbs Cultivation	Sericulture	Floriculture	Cattle Breeding	Dairy	Poultry Farming	Piggery	Total
Lawngtlai	Chhaintupui W	3	12	15				6	1						1		9
Mamit	Kawrtah	6	9	15					1								1
Saitual	Aizawl WL		15	15	1			6		8					2		5
Serchhip	Thenzawl	3	12	15	8			5	1	3							19
Total		12	48	60	9	0	0	17	3	11	0	0	0	0	3		51

District	Division	No of HH in the Survey			Total												
		FHH	MHH	Total	Paddy Cultivation	Other cereal cultivation	pulses cultivation	Vegetable Cultivation	Fruits Cultivation	Spices/ Herbs Cultivation	Sericulture	Floriculture	Cattle Breeding	Dairy	Poultry Farming	Piggery	Total
Lawngtlai	Chhaintupui W	3	12	15	0	0	0	8	1	0	0	0	0	0	3	2	14
Mamit	Kawrtah	6	9	15	0	0	0	0	1	0	0	0	0	0	0	0	1
Saitual	Aizawl WL		15	15	1	0	0	6	0	8	0	0	0	0	2	5	22
Serchhip	Thenzawl	3	12	15	10	0	0	6	1	3	0	0	0	0	0	2	22
	Total	12	48	60	11	0	0	20	3	11	0	0	0	0	5	9	59

2.2 HH Secondary Source of Income

		No of HH in the Survey			FHH												
District	Division	FHH	MHH	Total	Paddy Cultivation	Other cereal cultivation	pulses cultivation	Vegetable Cultivation	Fruits Cultivation	Spices/ Herbs Cultivation	Sericulture	Floriculture	Cattle Breeding	Dairy	Poultry Farming	Piggery	Total
Lawngtlai	Chhmittupui W	3	12	15				2							2	1	5
Mamit	Kawrtah	6	9	15													0
Saitual	Aizawl WL		15	15													0
Serchhip	Thenzawl	3	12	15	2			1									3
	Total	12	48	60	2	0	0	3	0	0	0	0	0	0	2	1	8

		No of HH in the Survey			MHH												
District	Division	FHH	MHH	Total	Paddy Cultivation	Other cereal cultivation	pulses cultivation	Vegetable Cultivation	Fruits Cultivation	Spices/ Herbs Cultivation	Sericulture	Floriculture	Cattle Breeding	Dairy	Poultry Farming	Piggery	Total
Lawngtlai	Chhaintupui W	3	12	15				6	1						1	1	9
Mamit	Kawrtah	6	9	15					1								1
Saitual	Aizawl WL		15	15	1			6		8					2	5	22
Serchhip	Thenzawl	3	12	15	8			5	1	3						2	19
	Total	12	48	60	9	0	0	17	3	11	0	0	0	0	3	8	51

		Counts															
		No of HH in the Survey			Total												
District	Division	FHH	MHH	Total	Paddy Cultivation	Other cereal cultivation	pulses cultivation	Vegetable Cultivation	Fruits Cultivation	Spices/ Herbs Cultivation	Sericulture	Floriculture	Cattle Breeding	Dairy	Poultry Farming	Piggery	Total
Lawngtlai	Chhmitupui W	3	12	15	0	0	0	8	1	0	0	0	0	0	3	2	14
Mamit	Kawrtah	6	9	15	0	0	0	0	1	0	0	0	0	0	0	0	1
Saitual	Aizawl WL		15	15	1	0	0	6	0	8	0	0	0	0	2	5	22
Serchhip	Thenzawl	3	12	15	10	0	0	6	1	3	0	0	0	0	0	2	22
Total		12	48	60	11	0	0	20	3	11	0	0	0	0	5	9	59

Others:

		No of HH in the Survey			FHH			MHH			Total		
District	Division	FHH	MHH	Total	Arecanut	Palm oil	Total	Arecanut	Palm Oil	Total	Arecanut	Palm Oil	Total
Lawngtlai	Chhintuipui W	3	12	15			0	0	0	0	0	0	0
Mamit	Kawrtah	6	9	15	5		5	8	1	9	13	1	14
Saitual	Aizawl WL		15	15			0			0	0	0	0
Serchhip	Thenzawl	3	12	15			0			0	0	0	0
Total		12	48	60	5	0	5	8	1	9	13	1	14

3. Disability

		No of HH in the Survey			Counts		Total
District	Division	FHH	MHH	Total	FHH	MHH	
						Hearing Impairment	
Lawngtlai	Chhintuipui W	3	12	15			0
Mamit	Kawrtah	6	9	15		1	1
Saitual	Aizawl WL		15	15			0
Serchhip	Thenzawl	3	12	15			0
Total		12	48	60	0	1	1

4. Group Membership

(1) Counts (Multiple Responses)

		No of HH in the Survey			FHH							MHH						
District	Division	FHH	MHH	Total	VFDC	EDC	FPC/ FPO	SHG	Agriculture Cooperative	Others	Total	VFDC	EDC	FPC/ FPO	SHG	Agriculture Cooperative	Others	Total
Lawngtlai	Chhintuipui W	3	12	15				3			3				5	1		6
Mamit	Kawrtah	6	9	15			3	3			6			8	5	2		15
Saitual	Aizawl WL		15	15							0			7	6		7	13
Serchhip	Thenzawl	3	12	15	2		2	3		1	8	4		7	12			23
Total		12	48	60	2	0	5	9	0	1	17	4	0	22	28	3	7	57

		No of HH in the Survey			Total						
District	Division	FHH	MHH	Total	VFDC	EDC	FPC/ FPO	SHG	Agriculture Cooperative	Others	Total
Lawngtlai	Chhintuipui W	3	12	15	0	0	0	8	1	0	9
Mamit	Kawrtah	6	9	15	0	0	11	8	2	0	21
Saitual	Aizawl WL		15	15	0	0	7	6	0	7	13
Serchhip	Thenzawl	3	12	15	6	0	9	15	0	1	31
Total		12	48	60	6	0	27	37	3	8	74

(2) %

		No of HH in the Survey			FHH							MHH						
District	Division	FHH	MHH	Total	VFDC	EDC	FPC/ FPO	SHG	Agriculture Cooperative	Others	Total	VFDC	EDC	FPC/ FPO	SHG	Agriculture Cooperative	Others	Total
Lawngtlai	Chhintuipui W	3	12	15	0.0	0.0	0.0	100.0	0.0	0.0		0.0	0.0	0.0	41.7	8.3	0.0	
Mamit	Kawrtah	6	9	15	0.0	0.0	50.0	50.0	0.0	0.0		0.0	0.0	88.9	55.6	22.2	0.0	
Saitual	Aizawl WL		15	15								0.0	0.0	46.7	40.0	0.0	46.7	
Serchhip	Thenzawl	3	12	15	66.7	0.0	66.7	100.0	0.0	33.3		33.3	0.0	58.3	100.0	0.0	0.0	
Total		12	48	60	16.7	0.0	41.7	75.0	0.0	8.3		8.3	0.0	45.8	58.3	6.3	14.6	

		No of HH in the Survey			Total						
District	Division	FHH	MHH	Total	VFDC	EDC	FPC/ FPO	SHG	Agriculture Cooperative	Others	Total
Lawngtlai	Chhintuipui W	3	12	15	0.0	0.0	0.0	53.3	6.7	0.0	
Mamit	Kawrtah	6	9	15	0.0	0.0	73.3	53.3	13.3	0.0	
Saitual	Aizawl WL		15	15	0.0	0.0	46.7	40.0	0.0	46.7	
Serchhip	Thenzawl	3	12	15	40.0	0.0	60.0	100.0	0.0	6.7	
Total		12	48	60	10.0	0.0	45.0	61.7	5.0	13.3	

Other Membership (Counts)

		No of HH in the Survey			FHH		MHH		Total
District	Division	FHH	MHH	Total	Focus	Total	Focus Committee	Total	
Lawngtlai	Chhintuipui W	3	12	15		0		0	0
Mamit	Kawrtah	6	9	15		0		0	0

Saitual	Aizawl WL		15	15		0	7	7	7
Serchiip	Thenzawl	3	12	15	1	1		0	1
	Total	12	48	60	1	1	7	7	8

5. Household Economy
5.1 Household Income

		No of HH in the Survey			FHH											
District	Division	FHH	MHH	Total	Agriculture products	Log	Timber	NTFP (unprocessed)	NTFP (Processed)	Salary from other occupation	Wages of casual workers	Fuelwood	Fodder	Livestock products	Fish culture	Floriculture
Lawngtlai	Chhimitupui W	3	12	15	25,000					1,080,000				140,000	30,000	
Mamit	Kawrtihah	6	9	15	1,178,000					1,080,000	121,000			18,000	6,000	
Saitual	Aizawl WL		15	15												
Serchiip	Thenzawl	3	12	15	270,000					132,000	140,000			24,000		
Total		12	48	60	1,473,000	0	0	0	0	2,292,000	261,000	0	0	182,000	36,000	0

		No of HH in the Survey			MHH											
District	Division	FHH	MHH	Total	Agriculture products	Log	Timber	NTFP (unprocessed)	NTFP (Processed)	Salary from other occupation	Wages of casual workers	Fuelwood	Fodder	Livestock products	Fish culture	Floriculture
Lawngtlai	Chhinitupui W	3	12	15	272,000			61,000	5,000	1,566,000	382,000					
Mamit	Kawrtihah	6	9	15	1,570,000			10,000	3,510	372,000	146,000				30,000	
Saitual	Aizawl WL		15	15	1,045,000			12,000	5,000	2,265,000	56,000				390,000	
Serchiip	Thenzawl	3	12	15	1,045,000				14,000	619,200	390,000	3,500			239,000	
Total		12	48	60	3,932,000	0	0	83,000	27,510	4,822,200	974,000	3,500	0	659,000	0	0

		No of HH in the Survey			Total											
District	Division	FHH	MHH	Total	Agriculture products	Log	Timber	NTFP (unprocessed)	NTFP (Processed)	Salary from other occupation	Wages of casual workers	Fuelwood	Fodder	Livestock products	Fish culture	Floriculture
Lawngtlai	Chhimitupui WL	3	12	15	297,000	0	0	61,000	5,000	2,646,000	382,000	0	0	140,000	30,000	0
Mamit	Kawrtihah	6	9	15	2,748,000	0	0	10,000	3,510	1,452,000	267,000	0	0	48,000	6,000	0
Saitual	Aizawl WL		15	15	1,045,000	0	0	12,000	5,000	2,265,000	56,000	0	0	390,000	0	0
Serchiip	Thenzawl	3	12	15	1,315,000	0	0	0	14,000	751,200	530,000	3,500	0	263,000	0	0
	Total	12	48	60	5,405,000	0	0	83,000	27,510	7,114,200	1,235,000	3,500	0	841,000	36,000	0

No of HH in the Survey					Average			Min			Max		
District	Division	FHH	MHH	Total	FHH	MHH	Total	FHH	MHH	Total	FHH	MHH	Total
Lawngtlai	Chhimitupui W	3	12	15	501,367	268,300	314,913	100,000	63,300	63,300	1,143,300	785,300	1,143,300
Mamit	Kawrtihah	6	9	15	478,467	294,134	367,867	126,300	36,810	36,810	1,103,300	623,300	1,103,300
Saitual	Aizawl WL		15	15	273,393	273,393	273,393		63,300	63,300		1,128,300	1,128,300
Serchiip	Thenzawl	3	12	15	241,300	270,775	264,880	119,300	104,300	104,300	310,300	523,300	523,300
	Total	12	48	60	424,900	275,354	305,264	100,000	36,810	36,810	1,143,300	1,128,300	1,143,300

5.2 Expenditure

		No of HH in the Survey			FHH											
District	Division	FHH	MHH	Total	Agriculture inputs	Food items excl. fruits & veg.	Food - Vegetables	Food - Fruits	Alcohol	Tobacco & cigarettes	Fuelwood	Cow dung	Charcoal	Kerosene	Electricity	Clothing & footwear
Lawngtlai	Chhimitupui W	3	12	15		108,000	61,200			102,000					9,600	104,000
Mamit	Kawrtihah	6	9	15	213,000	36,000	368,000	24,000		90,600	21,600				35,280	85,000
Saitual	Aizawl WL		15	15												
Serchiip	Thenzawl	3	12	15	65,000	108,000	48,000			57,600	4,500				12,840	38,000
	Total	12	48	60	278,000	252,000	477,200	24,000	0	250,200	26,100	0	0	0	57,720	227,000

		No of HH in the Survey			MHH											
District	Division	FHH	MHH	Total	Agriculture inputs	Food items excl. fruits & veg.	Food - Vegetables	Food - Fruits	Alcohol	Tobacco & cigarettes	Fuelwood	Cow dung	Charcoal	Kerosene	Electricity	Clothing & footwear
Lawngtlai	Chhinitupui W	3	12	15	45,000	488,000	271,400	5,400		421,800	58,000		3,000		23,400	163,000
Mamit	Kawrtihah	6	9	15	727,900	396,000	78,000		12,000	216,540	2,100				66,360	154,000
Saitual	Aizawl WL		15	15	43,500	441,000	199,400	19,900	60,000	398,400	7,400				62,400	184,000
Serchiip	Thenzawl	3	12	15	108,000	198,000	246,000	6,000	36,500	249,400	7,200				60,360	234,000
	Total	12	48	60	924,400	1,523,000	794,800	31,300	108,500	1,286,140	74,700	0	3,000	0	212,520	735,000

		No of HH in the Survey			Total											
District	Division	FHH	MHH	Total	Agriculture inputs	Food items excl. fruits & veg	Food - Vegetables	Food - Fruits	Alcohol	Tobacco & cigarettes	Fuelwood	Cow dung	Charcoal	Kerosene	Electricity	Clothing & footwear
Lawngtlai	Chhintuipui W	3	12	15	45,000	596,000	332,600	5,400	0	523,800	58,000	0	3,000	0	33,000	267,000
Mamit	Kawrtah	6	9	15	940,900	432,000	446,000	24,000	12,000	307,140	23,700	0	0	0	101,640	239,000
Saitual	Aizawl WL		15	15	43,500	441,000	199,400	19,900	60,000	398,400	7,400	0	0	0	62,400	184,000
Serchhip	Thenzawl	3	12	15	173,000	306,000	294,000	6,000	36,500	307,000	11,700	0	0	0	73,200	272,000
	Total	12	48	60	1,202,400	1,775,000	1,272,000	55,300	108,500	1,536,340	100,800	0	3,000	0	270,240	962,000

		No of HH in the Survey			Average			Min			Max		
District	Division	FHH	MHH	Total	FHH	MHH	Total	FHH	MHH	Total	FHH	MHH	Total
Lawngtlai	Chhintuipui W	3	12	15	476,920	248,268	293,999	99,800	86,500	86,500	1,012,960	668,800	1,012,960
Mamit	Kawrtah	6	9	15	384,917	542,687	479,579	113,980	93,796	93,796	699,000	2,572,400	2,572,400
Saitual	Aizawl WL		15	15		198,089	198,089		44,700	44,700		385,000	385,000
Serchhip	Thenzawl	3	12	15	345,247	229,489	252,641	179,340	90,910	90,910	589,200	790,200	790,200
	Total	12	48	60	398,000	283,096	306,077	99,800	44,700	44,700	1,012,960	2,572,400	2,572,400

6. Household Amenity
6.1 Structure

		No of HH in the Survey			FHH						MHH					
District	Division	FHH	MHH	Total	Hut	Pacca	Kaccha	Mix	Other	Total	Hut	Pacca	Kaccha	Mix	Other	Total
Lawngtlai	Chhintuipui W	3	12	15			2		1	3		3	6	2	1	12
Mamit	Kawrtah	6	9	15		1	5			6		3	4	2		9
Saitual	Aizawl WL		15	15						0		4	4	1	6	15
Serchhip	Thenzawl	3	12	15			3			3			12			12
	Total	12	48	60	0	1	10	0	1	12	0	10	26	5	7	48

* Hut: Mud; Pacca: Cement wall & tin roof; Kaccha: Mud wall & tin roof

6.2 Household Assets
a) No of Households Owning Different Types of Assets (Multiple Responses)

		No of HH in the Survey			FHH								
District	Division	FHH	MHH	Total	Radio	TV	Bicycle	Motorcycle	Mobile Phone	Computer	Internet Connecti	Car	Total
Lawngtlai	Chhintuipui W	3	12	15		2	1		1	3	1		6
Mamit	Kawrtah	6	9	15		5		2	6			1	14
Saitual	Aizawl WL		15	15									0
Serchhip	Thenzawl	3	12	15		1		3	3	1		1	9
	Total	12	48	60	0	8	1	6	12	2	0	2	31

	No of HH in the Survey			MHH									
Division	FHH	MHH	Total	Radio	TV	Bicycle	Motorcycle	Mobile Phone	Computer	Internet Connecti	Car	Total	
Chhintuipui W	3	12	15		6	1	5	12	1			2	
Kawrtah	6	9	15		8	1	7	9	1	1	2	2	
Aizawl WL		15	15		15	1	10	15	2	1	4	4	
Thenzawl	3	12	15	2	7		11	12			1	3	
Total	12	48	60	2	36	3	33	48	4	2	7	13	

		No of HH in the Survey			Total								
District	Division	FHH	MHH	Total	Radio	TV	Bicycle	Motorcycle	Mobile Phone	Computer	Internet Connecti	Car	Total
Lawngtlai	Chhintuipui W	3	12	15	0	8	2	6	15	2	0	0	33
Mamit	Kawrtah	6	9	15	0	13	1	9	15	1	1	3	43
Saitual	Aizawl WL		15	15	0	15	1	10	15	2	1	4	48
Serchhip	Thenzawl	3	12	15	2	8	0	14	15	1	0	2	42
	Total	12	48	60	2	44	4	39	60	6	2	9	166

b) Average No of Assets Owned per Household

		No of HH in the Survey			FHH								MHH		
District	Division	FHH	MHH	Total	Radio	TV	Bicycle	Motorcycle	Mobile Phone	Computer	Internet Connecti	Car	Radio	TV	Bicycle
Lawngtlai	Chhintuipui W	3	12	15		1.0	1.0	2.0	3.0	1.0				1.0	1.0
Mamit	Kawrtah	6	9	15		1.0		1.5	3.0			1.0		1.1	3.0
Saitual	Aizawl WL		15	15										1.0	2.0
Serchhip	Thenzawl	3	12	15		1.0		1.3	4.0	1.0		1.0	1.0	1.0	1.0
	Total	12	48	60		1.0	1.0	1.5	3.3	1.0		1.0	1.0	1.0	2.0

District	Division	No of HH in the Survey			Total							
		FHH	MHH	Total	Radio	TV	Bicycle	Motorcycle	Mobile Phone	Computer	Internet Connecti	Car
Lawngtlai	Chhaintupui W	3	12	15		1.0	1.0	1.3	3.5	1.0		
Mamit	Kawrtah	6	9	15		1.1	3.0	1.2	3.5	1.0	1.0	1.7
Saitual	Aizawl WL		15	15		1.0	2.0	1.5	4.4	1.0	4.0	1.0
Serchiip	Thenzawl	3	12	15	1.0	1.0		1.3	2.9	1.0		1.0
Total		12	48	60	1.0	1.0	1.8	1.3	3.6	1.0	2.5	1.2

7. Household Energy (Weekly Consumption)

7.1 Lighting

a. Common energy source

District	Division	No of HH in the Survey			FHH					MHH				
		FHH	MHH	Total	Kerosene	Candle	Electricity	Solar Light/ Lamp	Others	Total	Kerosene	Candle	Electricity	Solar Light/ Lamp
Lawngtlai	Chhaintupui W	3	12	15			3			3			12	
Mamit	Kawrtah	6	9	15			6	3		9			9	3
Saitual	Aizawl WL		15	15			0			0		2	15	2
Serchiip	Thenzawl	3	12	15			3			3			12	3
Total		12	48	60	0	0	12	3	0	15	0	2	48	8

b. Average Weekly Consumption Unit: Watts

District	Division	No of HH in the Survey			FHH					MHH				
		FHH	MHH	Total	Kerosene	Candle	Electricity	Solar Light/ Lamp	Others	Kerosene	Candle	Electricity	Solar Light/ Lamp	Others
Lawngtlai	Chhaintupui W	3	12	15			66.7					44.7		
Mamit	Kawrtah	6	9	15			97.6	116.7				122.7	156.0	
Saitual	Aizawl WL		15	15								113.9	71.0	
Serchiip	Thenzawl	3	12	15			89.2					66.5	79.0	
Total		12	48	60			87.8	116.7				86.4	98.7	

* No valid data for candle.

7.2 Cooking

a. Common energy source (Multiple Responses)

District	Division	No of HH in the Survey			FHH							
		FHH	MHH	Total	elwood (from forest)	elwood (purchased)	Crop residue	Charcoal	Dung cakes	Kerosene	Electricity	Gas Cylinder
Lawngtlai	Chhaintupui W	3	12	15	2	1					3	
Mamit	Kawrtah	6	9	15	4	1					6	
Saitual	Aizawl WL		15	15								
Serchiip	Thenzawl	3	12	15	2	1					3	
Total		12	48	60	8	2	0	0	0	0	12	0

District	Division	No of HH in the Survey			MHH							
		FHH	MHH	Total	elwood (from forest)	elwood (purchased)	Crop residue	Charcoal	Dung cakes	Kerosene	Electricity	Gas Cylinder
Lawngtlai	Chhaintupui W	3	12	15	9	1					11	
Mamit	Kawrtah	6	9	15	4						1	9
Saitual	Aizawl WL		15	15	13	2					2	12
Serchiip	Thenzawl	3	12	15	12							12
Total		12	48	60	38	3	0	0	0	0	3	44

District	Division	No of HH in the Survey			Total							
		FHH	MHH	Total	elwood (from forest)	elwood (purchased)	Crop residue	Charcoal	Dung cakes	Kerosene	Electricity	Gas Cylinder
Lawngtlai	Chhaintupui W	3	12	15	11	1	0	0	0	0	0	14
Mamit	Kawrtah	6	9	15	8	1	0	0	0	0	1	15
Saitual	Aizawl WL		15	15	13	2	0	0	0	0	2	12
Serchiip	Thenzawl	3	12	15	14	1	0	0	0	0	0	15
Total		12	48	60	46	5	0	0	0	0	3	56

b. Average Weekly Consumption

District	Division	No of HH in the Survey			FHH							
		FHH	MHH	Total	elwood (from forest)	elwood (purchased)	Crop residue	Charcoal	Dung cakes	Kerosene	Electricity in kWh	Gas Cylinder in kg
Lawngtlai	Chhaintupui W	3	12	15	43.8							3.8
Mamit	Kawrtah	6	9	15	10.3	5.0						0.2
Saitual	Aizawl WL		15	15								
Serchiip	Thenzawl	3	12	15	60.0	25.0						2.9
Total		12	48	60	31.1	15.0						1.8

		No of HH in the Survey			MHH								
District	Division	FHH	MHH	Total	ood (from forest)	ood (purchased)	Crop residue	Charcoal	Dung cakes	Kerosene	Electricity in INR	Gas Cylinder in Kg	Others
Lawngtlai	Chhintuipui W	3	12	15	30.2	49.0						3.4	
Mamit	Kawrtah	6	9	15	67.5						1000.0	2.6	
Saitual	Aizawl WL		15	15	53.1	20.5					2000.0	1.5	
Serchiip	Thenzawl	3	12	15	26.1							2.4	
Total		12	48	60	40.7	30.0					1666.7	2.5	

		No of HH in the Survey			Total								
District	Division	FHH	MHH	Total	ood (from forest)	ood (purchased)	Crop residue	Charcoal	Dung cakes	Kerosene	Electricity in INR	Gas Cylinder in Kg	Others
Lawngtlai	Chhintuipui W	3	12	15	32.6	49.0						3.5	
Mamit	Kawrtah	6	9	15	38.9	5.0					1000.0	1.7	
Saitual	Aizawl WL		15	15	53.1	20.5					2000.0	1.5	
Serchiip	Thenzawl	3	12	15	30.9	25.0						2.5	
Total		12	48	60	39.0	24.0					1666.7	2.3	

7.3 Heating in Cold Season

a. Common energy source (Multiple Responses)

		No of HH in the Survey			FHH								
District	Division	FHH	MHH	Total	elwood (from forest)	elwood (purchased)	Charcoal	olar Heating Syste	Kerosene	Electricity	Gas Cylinder	Others	Total
Lawngtlai	Chhintuipui W	3	12	15	2								2
Mamit	Kawrtah	6	9	15	5		1			2			8
Saitual	Aizawl WL		15	15									0
Serchiip	Thenzawl	3	12	15	3								3
Total		12	48	60	10	0	1	0	0	2	0	0	13

		No of HH in the Survey			MHH								
District	Division	FHH	MHH	Total	elwood (from forest)	elwood (purchased)	Charcoal	olar Heating Syste	Kerosene	Electricity	Gas Cylinder	Others	Total
Lawngtlai	Chhintuipui W	3	12	15	10	1	1						12
Mamit	Kawrtah	6	9	15	4					2			6
Saitual	Aizawl WL		15	15	10	2	1			2	1		16
Serchiip	Thenzawl	3	12	15	12					1			13
Total		12	48	60	36	3	2	0	0	5	1	0	47

		No of HH in the Survey			Total								
District	Division	FHH	MHH	Total	elwood (from forest)	elwood (purchased)	Charcoal	olar Heating Syste	Kerosene	Electricity	Gas Cylinder	Others	Total
Lawngtlai	Chhintuipui W	3	12	15	12	1	1	0	0	0	0	0	14
Mamit	Kawrtah	6	9	15	9	0	1	0	0	4	0	0	14
Saitual	Aizawl WL		15	15	10	2	1	0	0	2	1	0	16
Serchiip	Thenzawl	3	12	15	15	0	0	0	0	1	0	0	16
Total		12	48	60	46	3	3	0	0	7	1	0	60

b. Average Weekly Consumption

		No of HH in the Survey			FHH								
District	Division	FHH	MHH	Total	ood (from forest)	ood (purchased)	Charcoal in kg	Heating System in	Kerosene	Electricity in watt	Gas Cylinder in kg	Others	
Lawngtlai	Chhintuipui W	3	12	15	87.5								
Mamit	Kawrtah	6	9	15	27.0		0.3			650.0			
Saitual	Aizawl WL		15	15									
Serchiip	Thenzawl	3	12	15	88.3								
Total		12	48	60	57.5		0.3			650.0			

		No of HH in the Survey			MHH								
District	Division	FHH	MHH	Total	ood (from forest)	ood (purchased)	Charcoal in kg	Heating System in	Kerosene	Electricity in watt	Gas Cylinder in kg	Others	
Lawngtlai	Chhintuipui W	3	12	15	37.8	21.0	5.0						
Mamit	Kawrtah	6	9	15	95.0					610.0			
Saitual	Aizawl WL		15	15	34.4	8.5	7.0			1040.0	2.0		
Serchiip	Thenzawl	3	12	15	47.3					220.0			
Total		12	48	60	46.4	12.7	6.0			704.0	2.0		

District	Division	No of HH in the Survey			Total											
		FHH	MHH	Total	Food (from forest)	Food (purchased)	Charcoal in kg	Heating System in	Kerosene	Electricity in watt	Gas Cylinder in kg	Others				
Lawngtlai	Chhaintupui W	3	12	15	46.1	21.0	5.0									
Mamit	Kawrtah	6	9	15	57.2		0.3			630.0						
Saitual	Aizawl WL		15	15	34.4	8.5	7.0			1040.0	2.0					
Serchiip	Thenzawl	3	12	15	55.5					220.0						
	Total	12	48	60	48.8	12.7	4.1			688.6	2.0					

8. Water for Agriculture

8.1 Access to various sources (Multiple Responses)

District	Division	No of HH in the Survey			FHH							Total
		FHH	MHH	Total	Spring	Stream	River	in Water Harvest	Dug Well	Tube Well	Rainfed	
Lawngtlai	Chhaintupui W	3	12	15							2	2
Mamit	Kawrtah	6	9	15		2					5	7
Saitual	Aizawl WL		15	15								0
Serchiip	Thenzawl	3	12	15				1				1
	Total	12	48	60	0	2	0	1	0	0	7	10

District	Division	No of HH in the Survey			MHH							Total
		FHH	MHH	Total	Spring	Stream	River	in Water Harvest	Dug Well	Tube Well	Rainfed	
Lawngtlai	Chhaintupui W	3	12	15		2					9	11
Mamit	Kawrtah	6	9	15	1	2					2	5
Saitual	Aizawl WL		15	15	4			3		1	8	16
Serchiip	Thenzawl	3	12	15		3		5			2	10
	Total	12	48	60	5	7	0	8	0	1	21	42

District	Division	No of HH in the Survey			Total							Total
		FHH	MHH	Total	Spring	Stream	River	in Water Harvest	Dug Well	Tube Well	Rainfed	
Lawngtlai	Chhaintupui W	3	12	15	0	2	0	0	0	0	11	13
Mamit	Kawrtah	6	9	15	1	4	0	0	0	0	7	12
Saitual	Aizawl WL		15	15	4	0	0	3	0	1	8	16
Serchiip	Thenzawl	3	12	15	0	3	0	6	0	0	2	11
	Total	12	48	60	5	9	0	9	0	1	28	52

8.2 Availability of Water at Various Sources

a) Spring

District	Division	No of HH in the Survey			FHH				MHH				Total			
		FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhaintupui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15				0		1		1	0	1	0	1
Saitual	Aizawl WL		15	15				0		4		4	0	4	0	4
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	5	0	5	0	5	0	5

b) Stream

District	Division	No of HH in the Survey			FHH				MHH				Total			
		FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhaintupui W	3	12	15				0	2			2	2	0	0	2
Mamit	Kawrtah	6	9	15	1	1		2	1	1		2	2	2	0	4
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0	1	2		3	1	2	0	3
	Total	12	48	60	1	1	0	2	4	3	0	7	5	4	0	9

c) River

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0

d) Rain Water Harvesting

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0		2	1	3	0	2	1	3
Serchiip	Thenzawl	3	12	15	1			1	2	3	3	5	3	3	0	6
	Total	12	48	60	1	0	0	1	2	5	1	8	3	5	1	9

e) Dug well

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0

f) Tube well

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0		1		1	0	1	0	1
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	1	0	1	0	1	0	1

g) Rainfed

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhintuipui W	3	12	15		2		2	3	6		9	3	8	0	11
Mamit	Kawrtah	6	9	15	5			5		2		7	5	2	0	7
Saitual	Aizawl WL		15	15				0	1	7		8	1	7	0	8
Serchiip	Thenzawl	3	12	15				0	1	1		2	1	1	0	2
	Total	12	48	60	5	2	0	7	5	16	0	21	10	18	0	28

f) Tube Well

District	Division	No of HH in the Survey			FHH			MHH			Total		
		FHH	MHH	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source
Lawngtlai	Chhaintupui W	3	12	15				0				0	0
Mamit	Kawrtah	6	9	15				0				0	0
Saitual	Aizawl WL		15	15				0	1			1	0
Serchiip	Thenzawl	3	12	15				0				0	0
Total		12	48	60	0	0	0	0	1	0	0	1	0

g) Rainfed

District	Division	No of HH in the Survey			FHH			MHH			Total		
		FHH	MHH	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source
Lawngtlai	Chhaintupui W	3	12	15			2	2	6	1	2	9	6
Mamit	Kawrtah	6	9	15	5			5	2			2	7
Saitual	Aizawl WL		15	15				0	8			8	8
Serchiip	Thenzawl	3	12	15				0	2			2	2
Total		12	48	60	5	0	2	7	18	1	2	21	23

9. Water for Livestock

9.1 Access to various sources (Multiple Responses)

District	Division	No of HH in the Survey			FHH								Total
		FHH	MHH	Total	Spring	Stream	River	in Water Harvest	Dug Well	Tube Well	earby Water Pun	Rainfed	Pipe Connection
Lawngtlai	Chhaintupui W	3	12	15									3
Mamit	Kawrtah	6	9	15					1				1
Saitual	Aizawl WL		15	15									0
Serchiip	Thenzawl	3	12	15							2		2
Total		12	48	60	0	0	0	1	0	0	2	0	3

District	Division	No of HH in the Survey			MHH								Total
		FHH	MHH	Total	Spring	Stream	River	in Water Harvest	Dug Well	Tube Well	earby Water Pun	Rainfed	Pipe Connection
Lawngtlai	Chhaintupui W	3	12	15								1	1
Mamit	Kawrtah	6	9	15				3			1		4
Saitual	Aizawl WL		15	15						12			12
Serchiip	Thenzawl	3	12	15				1			8		9
Total		12	48	60	0	0	0	4	0	12	9	1	26

District	Division	No of HH in the Survey			Total								Total
		FHH	MHH	Total	Spring	Stream	River	in Water Harvest	Dug Well	Tube Well	earby Water Pun	Rainfed	Pipe Connection
Lawngtlai	Chhaintupui W	3	12	15	0	0	0	0	0	0	0	1	3
Mamit	Kawrtah	6	9	15	0	0	0	4	0	0	1	0	5
Saitual	Aizawl WL		15	15	0	0	0	0	0	12	0	0	12
Serchiip	Thenzawl	3	12	15	0	0	0	1	0	0	10	0	11
Total		12	48	60	0	0	0	5	0	12	11	1	32

9.2 Availability of Water at Various Sources

a) Spring

District	Division	No of HH in the Survey			FHH				MHH				Total			
		FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhaintupui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
Total		12	48	60	0	0	0	0	0	0	0	0	0	0	0	0

b) Stream

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchhip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0

c) River

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchhip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0

d) Rain Water Harvesting

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15	1			1		3		3	1	3	0	4
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchhip	Thenzawl	3	12	15				0	1			1	1	0	0	1
	Total	12	48	60	1	0	0	1	1	3	0	4	2	3	0	5

e) Dug well

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchhip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0

f) Tube well

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0	11	2		13	11	2	0	13
Serchhip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	0	0	11	2	0	13	11	2	0	13

g) Nearby Water Pump

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15				0	1			1	1	0	0	1
Saitual	Aizawl WL		15	15				0				0	0	0	0	0

Serchiip	Thenzawl	3	12	15	1	1	2	6	2	8	7	3	0	10
Total		12	48	60	1	1	0	2	7	2	0	9	8	11

h) Rainfed

District	Division	No of HH in the Survey			FHH				MHH				Total			
		FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhintuipui W	3	12	15				0	1			1	1	0	0	1
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
Total		12	48	60	0	0	0	0	1	0	0	1	1	0	0	1

j) Pipe connection

District	Division	No of HH in the Survey			FHH				MHH				Total			
		FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhintuipui W	3	12	15	3			3	12			12	15	0	0	15
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0	5			5	5	0	0	5
Total		12	48	60	3	0	0	3	17	0	0	17	20	0	0	20

9.3 Changes of Water Availability in Different Types of Sources Over the Period of Time

a) Spring

District	Division	No of HH in the Survey			FHH				MHH				Total			
		FHH	MHH	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
Total		12	48	60	0	0	0	0	0	0	0	0	0	0	0	0

b) Stream

District	Division	No of HH in the Survey			FHH				MHH				Total			
		FHH	MHH	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
Total		12	48	60	0	0	0	0	0	0	0	0	0	0	0	0

c) River

District	Division	No of HH in the Survey			FHH				MHH				Total			
		FHH	MHH	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
Total		12	48	60	0	0	0	0	0	0	0	0	0	0	0	0

d) Rain Water Harvesting

		No of HH in the Survey			FHH			MHH			Total		
District	Division	FHH	MHH	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source
Lawngtlai	Chhintuipui W	3	12	15				0				0	0
Mamit	Kawrtah	6	9	15	1			1	3			3	4
Saitual	Aizawl WL		15	15				0				0	0
Serchiip	Thenzawl	3	12	15				0		1		1	0
	Total	12	48	60	1	0	0	1	3	0	1	4	4

e) Dug well

		No of HH in the Survey			FHH			MHH			Total		
District	Division	FHH	MHH	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source
Lawngtlai	Chhintuipui W	3	12	15				0				0	0
Mamit	Kawrtah	6	9	15				0				0	0
Saitual	Aizawl WL		15	15				0				0	0
Serchiip	Thenzawl	3	12	15				0				0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0

f) Tube Well

		No of HH in the Survey			FHH			MHH			Total		
District	Division	FHH	MHH	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source
Lawngtlai	Chhintuipui W	3	12	15				0				0	0
Mamit	Kawrtah	6	9	15				0				0	0
Saitual	Aizawl WL		15	15				0	6		6	12	6
Serchiip	Thenzawl	3	12	15				0				0	0
	Total	12	48	60	0	0	0	0	6	0	6	12	6

g) Nearby Water Pump

		No of HH in the Survey			FHH			MHH			Total		
District	Division	FHH	MHH	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source
Lawngtlai	Chhintuipui W	3	12	15				0				0	0
Mamit	Kawrtah	6	9	15				0	1			1	0
Saitual	Aizawl WL		15	15				0				0	0
Serchiip	Thenzawl	3	12	15	1		1	2	5	1	2	8	6
	Total	12	48	60	1	0	1	2	6	1	2	9	7

h) Rainfed

		No of HH in the Survey			FHH			MHH			Total		
District	Division	FHH	MHH	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source
Lawngtlai	Chhintuipui W	3	12	15				0	1			1	1
Mamit	Kawrtah	6	9	15				0				0	0
Saitual	Aizawl WL		15	15				0				0	0
Serchiip	Thenzawl	3	12	15				0				0	0
	Total	12	48	60	0	0	0	0	1	0	0	1	1

i) Pipe connection

		No of HH in the Survey			FHH			MHH			Total					
District	Division	FHH	MHH	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total
Lawngtlai	Chhintupui W	3	12	15		1	2	3	1	1	10	12	1	2	12	15
Mamit	Kawrtihah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchipp	Thenzawl	3	12	15				0				0	0	0	0	0
Total		12	48	60	0	1	2	3	1	1	10	12	1	2	12	15

9.4 How do you collect water?

a) Spring

		No of HH in the Survey			FHH					MHH					Total				
District	Division	FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total
Lawngtlai	Chhittupui W	3	12	15					0					0	0	0	0	0	0
Mamit	Kawrtihah	6	9	15					0					0	0	0	0	0	0
Saitual	Aizawl WL		15	15					0					0	0	0	0	0	0
Serchiip	Thenzawl	3	12	15					0					0	0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

b) Stream

		No of HH in the Survey			FHH					MHH					Total				
		FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total
District	Division	FHH	MHH	Total															
Lawngtlai	Chhaintupui W	3	12	15					0					0	0	0	0	0	0
Mamit	Kawrtihah	6	9	15					0					0	0	0	0	0	0
Saitual	Aizawl WL		15	15					0					0	0	0	0	0	0
Serchiip	Thenzawl	3	12	15					0					0	0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

c) River

		No of HH in the Survey			FHH					MHH					Total				
District	Division	FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total
Lawngtlai	Chhmittupui W	3	12	15					0					0	0	0	0	0	0
Mamit	Kawrtihah	6	9	15					0					0	0	0	0	0	0
Saitual	Aizawl WL		15	15					0					0	0	0	0	0	0
Serchiip	Thenzawl	3	12	15					0					0	0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

d) Rain Water Harvesting

		No of HH in the Survey			FHH					MHH					Total				
District	Division	FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total
Lawngtlai	Chhingtupui W	3	12	15					0					0	0	0	0	0	0
Mamit	Kawrtihah	6	9	15				1	1	2			1	3	2	0	0	2	4
Saitual	Aizawl WL		15	15					0					0	0	0	0	0	0
Serchiip	Thenzawl	3	12	15					0					0	0	0	0	0	0
	Total	12	48	60	0	0	0	1	1	2	0	0	1	3	2	0	0	2	4

e) Dug well

		No of HH in the Survey			FHH					MHH					Total				
District	Division	FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total
Lawngtlai	Chhintuipui W	3	12	15					0					0	0	0	0	0	0
Mamit	Kawrtah	6	9	15					0					0	0	0	0	0	0
Saitual	Aizawl WL		15	15					0					0	0	0	0	0	0
Serchiip	Thenzawl	3	12	15					0					0	0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

f) Tube well

		No of HH in the Survey			FHH					MHH					Total				
District	Division	FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total
Lawngtlai	Chhintuipui W	3	12	15					0					0	0	0	0	0	0
Mamit	Kawrtah	6	9	15					0					0	0	0	0	0	0
Saitual	Aizawl WL		15	15					0		1	1	13	15	0	1	1	13	15
Serchiip	Thenzawl	3	12	15					0					0	0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	1	1	13	15	0	1	1	13	15

g) Nearby Water Pump

		No of HH in the Survey			FHH					MHH					Total				
District	Division	FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total
Lawngtlai	Chhintuipui W	3	12	15					0					0	0	0	0	0	0
Mamit	Kawrtah	6	9	15					0	1				1	1	0	0	0	1
Saitual	Aizawl WL		15	15					0					0	0	0	0	0	0
Serchiip	Thenzawl	3	12	15	1			1	2	5			3	8	6	0	0	4	10
	Total	12	48	60	1	0	0	1	2	6	0	0	3	9	7	0	0	4	11

h) Rainfed

		No of HH in the Survey			FHH					MHH					Total				
District	Division	FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total
Lawngtlai	Chhintuipui W	3	12	15					0					0	0	0	0	0	0
Mamit	Kawrtah	6	9	15					0					0	0	0	0	0	0
Saitual	Aizawl WL		15	15					0					0	0	0	0	0	0
Serchiip	Thenzawl	3	12	15					0					0	0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

j) Pipe connection

		No of HH in the Survey			FHH					MHH					Total				
District	Division	FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total
Lawngtlai	Chhintuipui W	3	12	15	3				3	7		1	1	9	10	0	1	1	12
Mamit	Kawrtah	6	9	15					0					0	0	0	0	0	0
Saitual	Aizawl WL		15	15					0					0	0	0	0	0	0
Serchiip	Thenzawl	3	12	15					0					0	0	0	0	0	0
	Total	12	48	60	3	0	0	0	3	7	0	1	1	9	10	0	1	1	12

9.5 Water Requirement for Livestock (Litre per Day)

		No of HH in the Survey			FHH					MHH					Total			
District	Division	FHH	MHH	Total	Rain Water Harvesting	Tube Well	Nearby Water Pump	Pipe Connection		Rain Water Harvesting	Tube Well	Nearby Water Pump	Pipe Connection		Rain Water Harvesting	Tube Well	Nearby Water Pump	Pipe Connection
Lawngtlai	Chhintuipui W	3	12	15				17.3					50.6					43.9
Mamit	Kawrtah	6	9	15	15.0					20.0		15.0			18.8		15.0	
Saitual	Aizawl WL		15	15							24.7					24.7		
Serchiip	Thenzawl	3	12	15			25.0			40.0		40.0			40.0		37.0	
Total		12	48	60	15.0	50.0	25.0	17.3		25.0	24.7	37.2	50.6		23.0	24.7	35.0	43.9

10. Water for Household Usage (Washing clothes, bathing, or any other purposes for hygiene)

10.1 Access (Multiple Responses)

		No of HH in the Survey			FHH									
District	Division	FHH	MHH	Total	Spring	Stream	River	Rain Water Harvesting	Dug Well	Tube Well	Nearby Water Pump	Household Pipe Connection	Total	
Lawngtlai	Chhintuipui W	3	12	15								3	3	
Mamit	Kawrtah	6	9	15	2		1	1	4	1	1	6	17	
Saitual	Aizawl WL		15	15					1			3	4	
Serchiip	Thenzawl	3	12	15					1			3	4	
Total		12	48	60	2	1	1	5	1	1	1	12	24	

		No of HH in the Survey			MHH									
District	Division	FHH	MHH	Total	Spring	Stream	River	Rain Water Harvesting	Dug Well	Tube Well	Nearby Water Pump	Household Pipe Connection	Total	
Lawngtlai	Chhintuipui W	3	12	15					2			12	14	
Mamit	Kawrtah	6	9	15				1				9	10	
Saitual	Aizawl WL		15	15						15			15	
Serchiip	Thenzawl	3	12	15			1	6				12	19	
Total		12	48	60	0	1	0	7	2	15	0	33	58	

		No of HH in the Survey			Total									
District	Division	FHH	MHH	Total	Spring	Stream	River	Rain Water Harvesting	Dug Well	Tube Well	Nearby Water Pump	Household Pipe Connection	Total	
Lawngtlai	Chhintuipui W	3	12	15	0	0	0	0	2	0	0	15	17	
Mamit	Kawrtah	6	9	15	2	1	1	5	1	1	1	15	27	
Saitual	Aizawl WL		15	15	0	0	0	0	0	15	0	0	15	
Serchiip	Thenzawl	3	12	15	0	1	0	7	0	0	0	15	23	
Total		12	48	60	2	2	1	12	3	16	1	45	82	

10.2 Availability of Water at Various Sources

a) Spring

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15	1			1				0	1	0	0	1
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
Total		12	48	60	1	0	0	1	0	0	0	0	1	0	0	1

b) Stream

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0	1			1	1	0	0	1
Total		12	48	60	0	0	0	0	1	0	0	1	1	0	0	1

c) River

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhaintupui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtlah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0

d) Rain Water Harvesting

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhaintupui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtlah	6	9	15	1	6		7		2		2	1	8	0	9
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15	1			1	2	8		10	3	8	0	11
	Total	12	48	60	2	6	0	8	2	10	0	12	4	16	0	20

e) Dug well

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhaintupui W	3	12	15				0	1	1		2	1	1	0	2
Mamit	Kawrtlah	6	9	15		1		1				0	0	1	0	1
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	1	0	1	1	1	0	2	1	2	0	3

f) Tube well

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhaintupui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtlah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0	15			15	15	0	0	15
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	0	0	15	0	0	15	15	0	0	15

g) Nearby Water Pump

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhaintupui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtlah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0

b) Pipe connection

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhintuipui W	3	12	15	3			3	11	1		12	14	1	0	15
Mamit	Kawrtlah	6	9	15	1	5		6	2	7		9	3	12	0	15
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15	1	2		3	5	7		12	6	9	0	15
	Total	12	48	60	5	7	0	12	18	15	0	33	23	22	0	45

10.3 Changes of Availability Over the Period of Time

a) Spring

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtlah	6	9	15	1			1				0	1	0	0	1
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	1	0	0	1	0	0	0	0	1	0	0	1

b) Stream

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtlah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0

c) River

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtlah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0

d) Rain Water Harvesting

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtlah	6	9	15	4			4	1			1	5	0	0	5
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15	1			1	6			6	7	0	0	7
	Total	12	48	60	5	0	0	5	7	0	0	7	12	0	0	12

e) Dug well

		No of HH in the Survey			FHH			MHH			Total					
District	Division	FHH	MHH	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total
Lawngtlai	Chhintuipui W	3	12	15				0	2			2	2	0	0	2
Mamit	Kawrtah	6	9	15	1			1				0	1	0	0	1
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchip	Thenzawl	3	12	15				0				0	0	0	0	0
Total		12	48	60	1	0	0	1	2	0	0	2	3	0	0	3

f) Tube Well

		No of HH in the Survey			FHH			MHH			Total					
					Reduced including occasional drying of the source			Reduced including occasional drying of the source			Reduced including occasional drying of the source					
District	Division	FHH	MHH	Total		Increased	No Change	Total		Increased	No Change	Total		Increased	No Change	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0	7		8	15	7	0	8	15
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	0	0	7	0	8	15	7	0	8	15

g) Nearby Water Pump

		No of HH in the Survey			FHH			MHH			Total					
					Reduced including occasional drying of the source			Reduced including occasional drying of the source			Reduced including occasional drying of the source					
District	Division	FHH	MHH	Total		Increased	No Change	Total		Increased	No Change	Total		Increased	No Change	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0

h) Pipe connection

		No of HH in the Survey			FHH			MHH			Total					
					Reduced including occasional drying of the source			Reduced including occasional drying of the source			Reduced including occasional drying of the source					
District	Division	FHH	MHH	Total		Increased	No Change	Total		Increased	No Change	Total		Increased	No Change	Total
Lawngtlai	Chhintuipui W	3	12	15		1	2	3	1	1	10	12	1	2	12	15
Mamit	Kawrtah	6	9	15	6			6	8		1	9	14	0	1	15
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15	3			3	9	3		12	12	3	0	15
	Total	12	48	60	9	1	2	12	18	4	11	33	27	5	13	45

10.4 How do you collect water?

a) Spring

		No of HH in the Survey			FHH				MHH				Total	
District	Division	FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Delivered by Water Tank	Women in the family fetches water.
Lawngtlai	Chhintuipui W	3	12	15					0				0	0
Mamit	Kawrtah	6	9	15		1			1				0	1
Saitual	Aizawl WL		15	15					0				0	0
Serchiip	Thenzawl	3	12	15					0				0	0
	Total	12	48	60	0	1	0	0	1	0	0	0	0	1

b) Stream

		No of HH in the Survey			FHH					MHH					Total	
District	Division	FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.
Lawngtlai	Chhinitupui W	3	12	15					0					0		0
Mamit	Kawrtah	6	9	15					0					0		0
Saitual	Aizawl WL		15	15					0					0		0
Serchiip	Thenzawl	3	12	15					0					0		0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0

c) River

		No of HH in the Survey			FHH					MHH					Total	
District	Division	FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.
Lawngtlai	Chhinitupui W	3	12	15					0					0		0
Mamit	Kawrtah	6	9	15					0					0		0
Saitual	Aizawl WL		15	15					0					0		0
Serchiip	Thenzawl	3	12	15					0					0		0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0

d) Rain Water Harvesting

		No of HH in the Survey			FHH					MHH					Total	
District	Division	FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.
Lawngtlai	Chhinitupui W	3	12	15					0					0		0
Mamit	Kawrtah	6	9	15	4			1	5					0		4
Saitual	Aizawl WL		15	15					0					0		0
Serchiip	Thenzawl	3	12	15	1				1					0		1
	Total	12	48	60	5	0	0	1	6	0	0	0	0	0	5	0

e) Dug well

		No of HH in the Survey			FHH					MHH					Total	
District	Division	FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.
Lawngtlai	Chhinitupui W	3	12	15					0	1	1		2	4	1	1
Mamit	Kawrtah	6	9	15	1				1					0	1	0
Saitual	Aizawl WL		15	15					0					0	0	0
Serchiip	Thenzawl	3	12	15					0					0	0	0
	Total	12	48	60	1	0	0	0	1	1	1	0	2	4	2	1

f) Tube well

		No of HH in the Survey			FHH					MHH					Total	
District	Division	FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.
Lawngtlai	Chhinitupui W	3	12	15					0					0		0
Mamit	Kawrtah	6	9	15					0					0		0
Saitual	Aizawl WL		15	15					0		1		1	13	15	0
Serchiip	Thenzawl	3	12	15					0					0		0
	Total	12	48	60	0	0	0	0	0	0	1	1	13	15	0	1

g) Nearby Water Pump

		No of HH in the Survey			FHH					MHH					Total	
District	Division	FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.
Lawngtlai	Chhinitupui W	3	12	15					0					0		0
Mamit	Kawrtah	6	9	15					0					0		0
Saitual	Aizawl WL		15	15					0					0		0

Serchiip	Thenzawl	3	12	15					0						0	0	0
Total		12	48	60	0	0	0	0	0	0	0	0	0	0	0	0	0

h) Pipe connection

		No of HH in the Survey			FHH					MHH					Total	
District	Division	FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Household Connection	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Household Connection	Total	Delivered by Water Tank	Women in the family fetches water.
Lawngtlai	Chhintuipui W	3	12	15	3				3	12			5	17	15	0
Mamit	Kawrtah	6	9	15	4			2	6	9				9	13	0
Saitual	Aizawl WL		15	15					0					0	0	0
Serchiip	Thenzawl	3	12	15	2			1	3	7			5	12	9	0
Total		12	48	60	9	0	0	3	12	28	0	0	10	38	37	0

10.4 Water Requirement (Litres per Day)

		No of HH in the Survey			FHH						MHH						Total						
District	Division	FHH	MHH	Total	Spring	Stream	Rainwater Harvesting	Dug Well	Tube Well	Pipe connection	Spring	Stream	Rainwater Harvesting	Dug Well	Tube Well	Pipe connection	Spring	Stream	Rainwater Harvesting	Dug Well	Tube Well	Pipe connection	
Lawngtlai	Chhintuipui W	3	12	15						233.3				22.5			179.6			22.5			190.3
Mamit	Kawrtah	6	9	15	40.0		105.0	200.0		136.7			120.0				193.9	40.0		108.0	200.0		171.0
Saitual	Aizawl WL		15	15											96.7							96.7	
Serchhip	Thenzawl	3	12	15			240.0			146.7		50.0	143.3				153.3		50.0	157.1			152.0
	Total	12	48	60	40.0		132.0	200.0		163.3		50.0	140.0	22.5	96.7	173.9	40.0	50.0	136.7	81.7	96.7	171.1	

11. Water for Household Usage (Cooking)

11.1 Access (Multiple Responses)

		No of HH in the Survey			FHH									
District	Division	FHH	MHH	Total	Spring	Stream	River	in Water Harvest	Dug Well	Tube Well	earby Water P	Household Pipe Conne	Total	
Lawngtlai	Chhintuipui W	3	12	15								3	3	
Mamit	Kawrtah	6	9	15	1				5			6	12	
Saitual	Aizawl WL		15	15								0	0	
Serchiip	Thenzawl	3	12	15								3	3	
Total		12	48	60	1	0	0	0	5	0	0	0	18	

		No of HH in the Survey			MHH									
District	Division	FHH	MHH	Total	Spring	Stream	River	in Water Harvest	Dug Well	Tube Well	earby Water P	Household Pipe Conne	Total	
Lawngtlai	Chhintuipui W	3	12	15								12	12	
Mamit	Kawrtah	6	9	15					1			9	10	
Saitual	Aizawl WL		15	15						15			15	
Serchiip	Thenzawl	3	12	15					2			12	14	
Total		12	48	60	0	0	0	0	3	0	15	0	33	51

		No of HH in the Survey			Total									
District	Division	FHH	MHH	Total	Spring	Stream	River	in Water Harvest	Dug Well	Tube Well	earby Water P	Household Pipe Conne	Total	
Lawngtlai	Chhintuipui W	3	12	15	0	0	0	0	0	0	0	15	15	
Mamit	Kawrtah	6	9	15	1	0	0	0	6	0	0	15	22	
Saitual	Aizawl WL		15	15	0	0	0	0	0	15	0	0	15	
Serchiip	Thenzawl	3	12	15	0	0	0	0	2	0	0	15	17	
Total		12	48	60	1	0	0	0	8	0	15	0	69	

11.2 Availability of Water at Various Sources

a) Spring

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15	1			1				0	1	0	0	1
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	1	0	0	1	0	0	0	0	1	0	0	1

b) Stream

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0

c) River

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0

d) Rain Water Harvesting

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15	4	1		5	1			1	5	1	0	6
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0	2			2	2	0	0	2
	Total	12	48	60	4	1	0	5	3	0	0	3	7	1	0	8

e) Dug well

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0

f) Tube well

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0	15			15	15	0	0	15
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	0	0	15	0	0	15	15	0	0	15

g) Nearby Water Pump

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0

h) Pipe connection

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total	Water is available when required.	Water gets scarce when required.	Water source is dried up.	Total
Lawngtlai	Chhintuipui W	3	12	15	3			3	11	1		12	14	1	0	15
Mamit	Kawrtah	6	9	15		1		6	4	5		9	9	6	0	15
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15	1	2		3	9	3		12	10	5	0	15
	Total	12	48	60	9	3	0	12	24	9	0	33	33	12	0	45

21.3 Changes of Availability Over the Period of Time

a) Spring

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15	1			1				0	1	0	0	1
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	1	0	0	1	0	0	0	0	1	0	0	1

b) Stream

		No of HH in the Survey			FHH				MHH				Total			
District	Division	FHH	MHH	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0

c) River

		No of HH in the Survey			FHH			MHH			Total				
					Reduced including occasional drying of the source			Reduced including occasional drying of the source			Reduced including occasional drying of the source				
District	Division	FHH	MHH	Total		Increased	No Change	Total		Increased	No Change	Total	Increased	No Change	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0
Mamit	Kawrtah	6	9	15				0				0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0
Serchhip	Thenzawl	3	12	15				0				0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0

d) Rain Water Harvesting

		No of HH in the Survey			FHH			MHH			Total			
					Reduced including occasional drying of the source			Reduced including occasional drying of the source			Reduced including occasional drying of the source			
District	Division	FHH	MHH	Total		Increased	No Change	Total	Increased	No Change	Total	Increased	No Change	Total
Lawngtlai	Chhintuipui W	3	12	15				0			0	0	0	0
Mamit	Kawrtah	6	9	15	3	2		5	1		1	4	2	0
Saitual	Aizawl WL		15	15				0			0	0	0	0
Serchhip	Thenzawl	3	12	15				0	1	1	2	1	1	0
	Total	12	48	60	3	2	0	5	2	1	3	5	3	0

e) Dug well

		No of HH in the Survey			FHH			MHH			Total				
					Reduced including occasional drying of the source			Reduced including occasional drying of the source			Reduced including occasional drying of the source				
District	Division	FHH	MHH	Total		Increased	No Change	Total		Increased	No Change	Total	Increased	No Change	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0
Mamit	Kawrtah	6	9	15				0				0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0
Serchhip	Thenzawl	3	12	15				0				0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0

f) Tube Well

		No of HH in the Survey			FHH			MHH			Total			
					Reduced including occasional drying of the source			Reduced including occasional drying of the source			Reduced including occasional drying of the source			
District	Division	FHH	MHH	Total		Increased	No Change	Total	Increased	No Change	Total	Increased	No Change	Total
Lawngtlai	Chhintuipui W	3	12	15				0			0	0	0	0
Mamit	Kawrtah	6	9	15				0			0	0	0	0
Saitual	Aizawl WL		15	15				0	8		6	14	8	0
Serchhip	Thenzawl	3	12	15				0			0	0	0	0
	Total	12	48	60	0	0	0	0	8	0	6	14	8	0

g) Nearby Water Pump

		No of HH in the Survey			FHH			MHH			Total				
					Reduced including occasional drying of the source			Reduced including occasional drying of the source			Reduced including occasional drying of the source				
District	Division	FHH	MHH	Total		Increased	No Change	Total		Increased	No Change	Total	Increased	No Change	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0	0	0	0
Mamit	Kawrtah	6	9	15				0				0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0
Serchhip	Thenzawl	3	12	15				0				0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0

b) Pipe connection

		No of HH in the Survey			FHH			MHH			Total					
District	Division	FHH	MHH	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total	Reduced including occasional drying of the source	Increased	No Change	Total
Lawngtlai	Chhaintupui W	3	12	15			1	2	3	1	8	12	3	1	9	1
Mamit	Kawrtihah	6	9	15	6		3	3	5		3	8	11	3	3	1
Saitual	Aizawl WL		15	15							0	0	0	0	0	
Serchipp	Thenzawl	3	12	15	3	2		1	7	2	3	12	10	4	3	1
	Total	12	48	60	9	5	1	6	15	3	14	32	24	8	15	4

11.3 How do you collect water?

a) Spring

		No of HH in the Survey			FHH					MHH					Total				
District	Division	FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Household Connection	Total
Lawngtlai	Chhittupui W	3	12	15					0					0	0	0	0	0	0
Mamit	Kawrtihah	6	9	15		1			1					0	0	1	0	0	1
Saitual	Aizawl WL		15	15					0					0	0	0	0	0	0
Serchiip	Thenzawl	3	12	15					0					0	0	0	0	0	0
	Total	12	48	60	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1

b) Stream

		No of HH in the Survey			FHH					MHH					Total				
District	Division	FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Household Connection	Total
Lawngtlai	Chhittupui W	3	12	15					0					0	0	0	0	0	0
Mamit	Kawrtihah	6	9	15					0					0	0	0	0	0	0
Saitual	Aizawl WL		15	15					0					0	0	0	0	0	0
Serchiip	Thenzawl	3	12	15					0					0	0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

c) River

		No of HH in the Survey			FHH					MHH					Total				
District	Division	FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Household Connection	Total
Lawngtlai	Chhmittupui W	3	12	15					0					0	0	0	0	0	0
Mamit	Kawrtihah	6	9	15					0					0	0	0	0	0	0
Saitual	Aizawl WL		15	15					0					0	0	0	0	0	0
Serchiip	Thenzawl	3	12	15					0					0	0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

d) Rain Water Harvesting

		No of HH in the Survey			FHH					MHH					Total				
District	Division	FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Household Connection	Total
Lawngtlai	Chhingtupui W	3	12	15					0					0	0	0	0	0	0
Mamit	Kawrtihah	6	9	15	5				5	1				1	6	0	0	0	6
Saitual	Aizawl WL		15	15					0					0	0	0	0	0	0
Serchiip	Thenzawl	3	12	15					0	2				2	2	0	0	0	2
	Total	12	48	60	5	0	0	0	5	3	0	0	0	3	8	0	0	0	8

e) Dug well

		No of HH in the Survey			FHH					MHH					Total				
District	Division	FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Household Connection	Total
Lawngtlai	Chhintuipui W	3	12	15					0					0	0	0	0	0	0
Mamit	Kawrtah	6	9	15					0					0	0	0	0	0	0
Saitual	Aizawl WL		15	15					0					0	0	0	0	0	0
Serchiip	Thenzawl	3	12	15					0					0	0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

f) Tube well

		No of HH in the Survey			FHH					MHH					Total				
District	Division	FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Household Connection	Total
Lawngtlai	Chhintuipui W	3	12	15					0					0	0	0	0	0	0
Mamit	Kawrtah	6	9	15					0					0	0	0	0	0	0
Saitual	Aizawl WL		15	15					0	3	1		9	13	3	1	0	9	13
Serchiip	Thenzawl	3	12	15					0					0	0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	3	1	0	9	13	3	1	0	9	13

g) Nearby Water Pump

		No of HH in the Survey			FHH					MHH					Total				
District	Division	FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Both men and women collect.	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Household Connection	Total
Lawngtlai	Chhintuipui W	3	12	15					0					0	0	0	0	0	0
Mamit	Kawrtah	6	9	15					0					0	0	0	0	0	0
Saitual	Aizawl WL		15	15					0					0	0	0	0	0	0
Serchiip	Thenzawl	3	12	15					0					0	0	0	0	0	0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

h) Pipe connection

		No of HH in the Survey			FHH					MHH					Total				
District	Division	FHH	MHH	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Household Connection	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Household Connection	Total	Delivered by Water Tank	Women in the family fetches water.	Men in the family fetches water.	Household Connection	Total
Lawngtlai	Chhintuipui W	3	12	15	3				3	11			5	16	14	0	0	5	19
Mamit	Kawrtah	6	9	15	6				6	9				15	15	0	0	0	15
Saitual	Aizawl WL		15	15					0					0	0	0	0	0	0
Serchiip	Thenzawl	3	12	15	2			1	3	7			5	12	9	0	0	6	15
	Total	12	48	60	11	0	0	1	12	27	0	0	10	37	38	0	0	11	49

11.4 Water Requirement (Litre per Day)

		No of HH in the Survey			FHH			MHH			Total		
District	Division	FHH	MHH	Total	Spring	Rainwater Harvesting	Pipe Connection	Spring	Rainwater Harvesting	Pipe Connection	Spring	Rainwater Harvesting	Pipe Connection
Lawngtlai	Chhintuipui W	3	12	15			130.0			59.2			73.3
Mamit	Kawrtah	6	9	15	10.0	44.0	50.0		40.0	65.0	10.0	43.3	59.0
Saitual	Aizawl WL		15	15									
Serchiip	Thenzawl	3	12	15			51.7		50.0	51.3		50.0	51.3
	Total	12	48	60	10.0	44.0	70.4		46.7	57.9	10.0	45.0	61.2

12. Utilisation of Forest Products

12.1 Types of Forest Products Used

		No of HH in the Survey			NTFPs (Counts of Responses)											
District	Division	FHH	MHH	Total	Aidu	Anhnah	Anpangthuam	Baiging (Alocasia fornicata)	Behlawi (Pea)	Bekang (Soya Bean)	Bete	Brinjal	Chakawk	Chingit (Cape Yellow Wood)	Chingit (Cape Yellow Wood)	Hruizik
Lawngtlai	Chhmitupui W	3	12	15	3	2										
Mamit	Kawrtah	6	9	15	5		1	2								
Saitual	Aizawl WL		15	15	8								1			
Serchiip	Thenzawl	3	12	15	6			3	1	1	1	1		1	3	
	Total	12	48	60	22	2	1	5	1	1	1	1	2	1	3	

		No of HH in the Survey			NTFPs (Counts of Responses)					
District	Division	FHH	MHH	Total	Teak	Thingthupui (Dysoxylum procerrum)	Thingtuah	Tumbu (Mustard Flower)	Zawngtah (Stink Bean)	Total
Lawngtlai	Chhiantupui W	3	12	15		6	13	7	4	76
Mamit	Kawrtah	6	9	15	1		11	4	1	63
Saitual	Aizawl WL		15	15		4	15	9	4	97
Serchiip	Thenzawl	3	12	15		3	15	5		98
	Total	12	48	60	1	13	54	25	9	334

12.2 From where

		No of HH in the Survey			Aidu					Chingit (Cape Yellow Wood)				
District	Division	FHH	MHH	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total
Lawngtlai	Chhaintupui W	3	12	15	3				3					0
Mamit	Kawrtah	6	9	15	5				5					0
Saitual	Aizawl WL		15	15	6		2		8					0
Serchiip	Thenzawl	3	12	15	5		1		6		1	3		4
	Total	12	48	60	19	0	3	0	22	0	1	3	0	4

		No of HH in the Survey			Kawhtebel					Anhnah				
District	Division	FHH	MHH	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total
Lawngtlai	Chhaintupui W	3	12	15					0	2				2
Mamit	Kawrtah	6	9	15	1				1					0
Saitual	Aizawl WL		15	15					0					0
Serchiip	Thenzawl	3	12	15					0					0
	Total	12	48	60	1	0	0	0	1	2	0	0	0	2

		No of HH in the Survey			Anpangthuam					Baiging (Alocasia forficata)				
District	Division	FHH	MHH	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total
Lawngtlai	Chhaintupui W	3	12	15					0					0
Mamit	Kawrtah	6	9	15	1				3		1	1		2
Saitual	Aizawl WL		15	15					0					0
Serchiip	Thenzawl	3	12	15					0	2		1		3
	Total	12	48	60	1	0	0	0	1	2	1	2	0	5

		No of HH in the Survey			Pa					Phuihnam (East Indian Glory Bower)				
District	Division	FHH	MHH	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total
Lawngtlai	Chhaintupui W	3	12	15					0	3		1		4
Mamit	Kawrtah	6	9	15		2	1		3		4			4
Saitual	Aizawl WL		15	15					0					0
Serchiip	Thenzawl	3	12	15					0					0
	Total	12	48	60	2	0	1	0	3	3	5	0	0	8

		No of HH in the Survey			Behlawi (Pea)					Bekang (Soya Bean)				
District	Division	FHH	MHH	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total
Lawngtlai	Chhintuipui W	3	12	15					0					0
Mamit	Kawrtah	6	9	15					0					0
Saitual	Aizawl WL		15	15					0					0
Serchiip	Thenzawl	3	12	15		1			1		1			1
	Total	12	48	60	0	1	0	0	1	0	1	0	0	1

		No of HH in the Survey			Bete					Brinjal				
District	Division	FHH	MHH	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total
Lawngtlai	Chhintuipui W	3	12	15					0					0
Mamit	Kawrtah	6	9	15					0					0
Saitual	Aizawl WL		15	15					0					0
Serchiip	Thenzawl	3	12	15		1			1		1			1
	Total	12	48	60	0	1	0	0	1	0	1	0	0	1

		No of HH in the Survey			Chakawk					Pelh				
District	Division	FHH	MHH	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total
Lawngtlai	Chhintuipui W	3	12	15					0					0
Mamit	Kawrtah	6	9	15					0					0
Saitual	Aizawl WL		15	15	1				1					0
Serchiip	Thenzawl	3	12	15	1				1	1				1
	Total	12	48	60	2	0	0	0	2	1	0	0	0	1

		No of HH in the Survey			Hruizik					Kawhtebel				
District	Division	FHH	MHH	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total
Lawngtlai	Chhintuipui W	3	12	15					0					0
Mamit	Kawrtah	6	9	15					0	1	2			3
Saitual	Aizawl WL		15	15					0	5		2		7
Serchiip	Thenzawl	3	12	15	7			1	8	3				3
	Total	12	48	60	7	0	1	0	8	9	2	2	0	13

		No of HH in the Survey			Khanghu (Climbing Wattle) (Climbing Wattle) (Climbing Wattle)					Lemon				
District	Division	FHH	MHH	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total
Lawngtlai	Chhintuipui W	3	12	15	5				5					0
Mamit	Kawrtah	6	9	15					0		1			1
Saitual	Aizawl WL		15	15			3		3					0
Serchiip	Thenzawl	3	12	15	1		1		2					0
	Total	12	48	60	6	0	4	0	10	0	1	0	0	1

		No of HH in the Survey			Log					Maian (Pumpkin Leaf)				
District	Division	FHH	MHH	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total
Lawngtlai	Chhintuipui W	3	12	15				2	2					0
Mamit	Kawrtah	6	9	15		1			1		1			1
Saitual	Aizawl WL		15	15	2	2			4					0
Serchiip	Thenzawl	3	12	15				12	12					0
	Total	12	48	60	2	3	0	14	19	0	1	0	0	1

		No of HH in the Survey			Maitamawk					Mau				
District	Division	FHH	MHH	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total
Lawngtlai	Chhintuipui W	3	12	15				2	2	8				8
Mamit	Kawrtah	6	9	15		1			1	12				12
Saitual	Aizawl WL		15	15					0	20				20
Serchiip	Thenzawl	3	12	15				12	12	7				7
	Total	12	48	60	0	1	0	14	15	47	0	0	0	47

		No of HH in the Survey			Mautual (Bamboo Shoot)					Mustard				
District	Division	FHH	MHH	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total
Lawngtlai	Chhaintupui W	3	12	15	11				11					0
Mamit	Kawrtlah	6	9	15	10	1			11					0
Saitual	Aizawl WL		15	15			1		16					0
Serchiip	Thenzawl	3	12	15	14				14		1			1
	Total	12	48	60	50	1	1	0	52	0	1	0	0	1

		No of HH in the Survey			Pumpkin Leaves					Ranchaw				
District	Division	FHH	MHH	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total
Lawngtlai	Chhaintupui W	3	12	15					0	11				11
Mamit	Kawrtlah	6	9	15					0					0
Saitual	Aizawl WL		15	15					0	5	1			6
Serchiip	Thenzawl	3	12	15		1			1	7				7
	Total	12	48	60	0	1	0	0	1	23	1	0	0	24

		No of HH in the Survey			Sawthing					Teak				
District	Division	FHH	MHH	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total
Lawngtlai	Chhaintupui W	3	12	15					0					0
Mamit	Kawrtlah	6	9	15					0				1	1
Saitual	Aizawl WL		15	15					0					0
Serchiip	Thenzawl	3	12	15		1			1					0
	Total	12	48	60	0	1	0	0	1	0	0	0	1	1

		No of HH in the Survey			Thingthupui (Dysoxylum procerum)					Thingtuah				
District	Division	FHH	MHH	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total
Lawngtlai	Chhaintupui W	3	12	15	5	1			6	13				13
Mamit	Kawrtlah	6	9	15					0	11				11
Saitual	Aizawl WL		15	15	2		2		4	11	1	3		15
Serchiip	Thenzawl	3	12	15	2		1		3	10	3		2	15
	Total	12	48	60	9	1	3	0	13	45	4	3	2	54

		No of HH in the Survey			Tumbu (Mustard Flower)					Zawngtah (Stink Bean)				
District	Division	FHH	MHH	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total	Wild	Cultivated	Wild & Cultivated	Benefit from FD	Total
Lawngtlai	Chhaintupui W	3	12	15	7				7	3	1			4
Mamit	Kawrtlah	6	9	15	4				4		1			1
Saitual	Aizawl WL		15	15	9				9	2		2		4
Serchiip	Thenzawl	3	12	15	4	1			5					0
	Total	12	48	60	24	1	0	0	25	5	2	2	0	9

12.3 Usage of Forest Produces

		No of HH in the Survey			Aidu									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhaintupui W	3	12	15						3				3
Mamit	Kawrtlah	6	9	15						5				5
Saitual	Aizawl WL		15	15						8				8
Serchiip	Thenzawl	3	12	15						6				6
	Total	12	48	60	0	0	0	0	0	22	0	0		22

		No of HH in the Survey			Chingit (Cape Yellow Wood)									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhaintupui W	3	12	15										0
Mamit	Kawrtlah	6	9	15										0
Saitual	Aizawl WL		15	15										0
Serchiip	Thenzawl	3	12	15					1	3				3
	Total	12	48	60	0	0	0	0	1	3	0	0		3

No of HH in the Survey					Kawhtebel									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintoipui W	3	12	15										0
Mamit	Kawrtah	6	9	15					2	2				2
Saitual	Aizawl WL		15	15						7				7
Serchiip	Thenzawl	3	12	15						4				4
Total		12	48	60	0	0	0	0	2	13	0	0		13

No of HH in the Survey					Anhnah									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintoipui W	3	12	15						2				2
Mamit	Kawrtah	6	9	15										0
Saitual	Aizawl WL		15	15										0
Serchiip	Thenzawl	3	12	15										0
Total		12	48	60	0	0	0	0	0	2	0	0		2

No of HH in the Survey					Anpangthum									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintoipui W	3	12	15										0
Mamit	Kawrtah	6	9	15						1				1
Saitual	Aizawl WL		15	15										0
Serchiip	Thenzawl	3	12	15										0
Total		12	48	60	0	0	0	0	0	1	0	0		1

No of HH in the Survey					Baiging (Alocasia fornicata)									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintoipui W	3	12	15										0
Mamit	Kawrtah	6	9	15					1	1				1
Saitual	Aizawl WL		15	15										0
Serchiip	Thenzawl	3	12	15					2	1				1
Total		12	48	60	0	0	0	0	3	2	0	0		2

No of HH in the Survey					Pa									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintoipui W	3	12	15										0
Mamit	Kawrtah	6	9	15						3				3
Saitual	Aizawl WL		15	15										0
Serchiip	Thenzawl	3	12	15										0
Total		12	48	60	0	0	0	0	0	3	0	0		3

No of HH in the Survey					Phuihnam (East Indian Glory Bower)									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintoipui W	3	12	15						4				4
Mamit	Kawrtah	6	9	15					1	3				3
Saitual	Aizawl WL		15	15										0
Serchiip	Thenzawl	3	12	15										0
Total		12	48	60	0	0	0	0	1	7	0	0		7

No of HH in the Survey					Behlawi (Pea)									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintoipui W	3	12	15										0
Mamit	Kawrtah	6	9	15										0
Saitual	Aizawl WL		15	15										0

Serchiip	Thenzawl	3	12	15						1						1
Total		12	48	60	0	0	0	0	0	1	0	0				1

		No of HH in the Survey			Bekang (Soya Bean)									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintuipui W	3	12	15										
Mamit	Kawrtah	6	9	15										
Saitual	Aizawl WL		15	15										
Serchiip	Thenzawl	3	12	15					1					
Total		12	48	60	0	0	0	0	1	0	0	0		0

		No of HH in the Survey			Bete									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintuipui W	3	12	15										
Mamit	Kawrtah	6	9	15										
Saitual	Aizawl WL		15	15										
Serchiip	Thenzawl	3	12	15					1					
Total		12	48	60	0	0	0	0	1	0	0	0		0

		No of HH in the Survey			Brinjal									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintuipui W	3	12	15										
Mamit	Kawrtah	6	9	15										
Saitual	Aizawl WL		15	15										
Serchiip	Thenzawl	3	12	15						1				
Total		12	48	60	0	0	0	0	0	1	1	0	0	1

		No of HH in the Survey			Chakawk									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintuipui W	3	12	15										
Mamit	Kawrtah	6	9	15										
Saitual	Aizawl WL		15	15						1				
Serchiip	Thenzawl	3	12	15						1				
Total		12	48	60	0	0	0	0	0	2	0	0		

		No of HH in the Survey			Pelh									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintuipui W	3	12	15										
Mamit	Kawrtah	6	9	15										
Saitual	Aizawl WL		15	15										
Serchiip	Thenzawl	3	12	15						1				
Total		12	48	60	0	0	0	0	0	1	0	0		

		No of HH in the Survey			Hruizik									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintuipui W	3	12	15										
Mamit	Kawrtah	6	9	15										
Saitual	Aizawl WL		15	15										
Serchiip	Thenzawl	3	12	15						8				
Total		12	48	60	0	0	0	0	0	8	0	0		8

No of HH in the Survey					Khanghu (Climbing Wattle) (Climbing Wattle) (Climbing Wattle)									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Eat at home	Medicinal purpose	Others		Total
Lawngtlai	Chhintuipui W	3	12	15						5				5
Mamit	Kawrtah	6	9	15										0
Saitual	Aizawl WL		15	15					1	2				2
Serchiip	Thenzawl	3	12	15						2				2
Total		12	48	60	0	0	0	0	1	9	0	0		9

No of HH in the Survey					Lemon									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintuipui W	3	12	15										0
Mamit	Kawrtah	6	9	15						1				1
Saitual	Aizawl WL		15	15										0
Serchiip	Thenzawl	3	12	15										0
Total		12	48	60	0	0	0	0	0	1	0	0		1

No of HH in the Survey					Log									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintuipui W	3	12	15	2									0
Mamit	Kawrtah	6	9	15	1									0
Saitual	Aizawl WL		15	15	3		1							0
Serchiip	Thenzawl	3	12	15	5		6					1		1
Total		12	48	60	11	0	7	0	0	0	0	1		1

No of HH in the Survey					Maian (Pumpkin Leaf)									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintuipui W	3	12	15										0
Mamit	Kawrtah	6	9	15						1				1
Saitual	Aizawl WL		15	15										0
Serchiip	Thenzawl	3	12	15										0
Total		12	48	60	0	0	0	0	0	1	0	0		1

No of HH in the Survey					Maitamtaw									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintuipui W	3	12	15										0
Mamit	Kawrtah	6	9	15						1				1
Saitual	Aizawl WL		15	15										0
Serchiip	Thenzawl	3	12	15										0
Total		12	48	60	0	0	0	0	0	1	0	0		1

No of HH in the Survey					Mau									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintuipui W	3	12	15	2	2		1		2		1		3
Mamit	Kawrtah	6	9	15	8		1			1		1		2
Saitual	Aizawl WL		15	15	6	6	5	1		1		2		2
Serchiip	Thenzawl	3	12	15	1		5					1		1
Total		12	48	60	17	8	11	3	0	3	0	5		8

No of HH in the Survey					Mautai									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintuipui W	3	12	15					1	10				10
Mamit	Kawrtah	6	9	15					1	10				10
Saitual	Aizawl WL		15	15					2	14				14

Serchiip	Thenzawl	3	12	15						14				14
Total		12	48	60	0	0	0	0	4	48	0	0		48

		No of HH in the Survey			Mustard									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintuipui W	3	12	15										0
Mamit	Kawrtah	6	9	15										0
Saitual	Aizawl WL		15	15										0
Serchiip	Thenzawl	3	12	15						1				1
Total		12	48	60	0	0	0	0	0	1	0	0		1

		No of HH in the Survey			Pumpkin Leaves									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintuipui W	3	12	15										0
Mamit	Kawrtah	6	9	15										0
Saitual	Aizawl WL		15	15										0
Serchiip	Thenzawl	3	12	15						1				1
Total		12	48	60	0	0	0	0	0	1	0	0		1

		No of HH in the Survey			Ranchaw									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintuipui W	3	12	15						10		1		11
Mamit	Kawrtah	6	9	15										0
Saitual	Aizawl WL		15	15	1					4		1		5
Serchiip	Thenzawl	3	12	15				4				3		3
Total		12	48	60	1	0	0	4	0	14	0	5		19

		No of HH in the Survey			Sawthing									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintuipui W	3	12	15										0
Mamit	Kawrtah	6	9	15										0
Saitual	Aizawl WL		15	15										0
Serchiip	Thenzawl	3	12	15								1		1
Total		12	48	60	0	0	0	0	0	0	0	1		1

		No of HH in the Survey			Teak									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintuipui W	3	12	15										0
Mamit	Kawrtah	6	9	15					1					0
Saitual	Aizawl WL		15	15										0
Serchiip	Thenzawl	3	12	15										0
Total		12	48	60	0	0	0	0	1	0	0	0		0

		No of HH in the Survey			Thingthupui (Dysoxylum procerum)									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintuipui W	3	12	15						6				6
Mamit	Kawrtah	6	9	15						4				0
Saitual	Aizawl WL		15	15						4				4
Serchiip	Thenzawl	3	12	15						3				3
Total		12	48	60	0	0	0	0	0	13	0	0		13

		No of HH in the Survey			Thingtuh									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintuipui W	3	12	15						13				13
Mamit	Kawrtuhah	6	9	15				7		4				4
Saitual	Aizawl WL		15	15						15				15
Serchiip	Thenzawl	3	12	15				8		7				7
Total		12	48	60		0	0	15	0	39	0			39

		No of HH in the Survey			Tumbu (Mustard Flower)									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintuipui W	3	12	15						7				7
Mamit	Kawrtuhah	6	9	15						4				4
Saitual	Aizawl WL		15	15						9				9
Serchiip	Thenzawl	3	12	15						5				5
Total		12	48	60		0	0	0	0	25	0			25

		No of HH in the Survey			Zawngtah (Stink Bean)									
District	Division	FHH	MHH	Total	Household Repair	Making Agriculture Implements	Making furniture	Heating the House during winter	Process and sell	Home Consumption	Medicinal purpose	Others		Total
Lawngtlai	Chhintuipui W	3	12	15						4				4
Mamit	Kawrtuhah	6	9	15						1				1
Saitual	Aizawl WL		15	15					2	2				2
Serchiip	Thenzawl	3	12	15										0
Total		12	48	60		0	0	0	2	7	0			7

22.4 Volume Used per Week (Average) in Kg

		No of HH in the Survey											
District	Division	FHH	MHH	Total	Aidu	Anhnah	Baiging (Alocasia fornicata)	Behlawi (Pea)	Bekang (Soya Bean)	Bete	Brinjal	Chakawk	Chingit (Cap Yellow Wood)
Lawngtlai	Chhintuipui W	3	12	15	1.0	1.3							
Mamit	Kawrtuhah	6	9	15									
Saitual	Aizawl WL		15	15	0.6								0.1
Serchiip	Thenzawl	3	12	15	0.9		6.5	0.1	0.1	0.1	0.1		5.1
	Total	12	48	60	0.8	1.3	6.5	0.1	0.1	0.1	0.1	0.1	5.1

		No of HH in the Survey												
District	Division	FHH	MHH	Total	Hruizik	Kawhtebel	Khanghu (Climbing Wattle)	Lemon	Log	Maian (Pumpkin Leaf)	Maitamtaw	Mau	Mautuai (Bamboo Shoot)	Mustard
Lawngtlai	Chhintuipui W	3	12	15			4.5		3750.0			61.3	23.3	
Mamit	Kawrtuhah	6	9	15								20.0		
Saitual	Aizawl WL		15	15		0.7	6.8		41.3			11.3	9.4	
Serchiip	Thenzawl	3	12	15	0.2	0.1	0.4		13.4			57.3	1.2	0.1
Total		12	48	60	0.2	0.6	4.8		434.8			31.6	10.3	0.1

		No of HH in the Survey											
District	Division	FHH	MHH	Total	Phuihnam (East Indian Glory Bower)	Pumpkin leave	Ranchaw	Sawththing	Teak	Thingthupui (Dysoxylum procerum)	Thingtuh	Tumbu (Mustard Flower)	Zawngtah (Stink Bean)
Lawngtlai	Chhintuipui W	3	12	15	5.4		60.5			5.8	113.7	2.6	4.4
Mamit	Kawrtuhah	6	9	15							10.0		
Saitual	Aizawl WL		15	15			5.3			2.7	63.8	0.6	16.3
Serchiip	Thenzawl	3	12	15		0.1	32.7	50.0		0.3	137.5	0.2	
Total		12	48	60	5.4	0.1	38.6	50.0		3.9	101.7	1.2	10.3

12.4 Availability of Forest Produces by the Number of Months in a Year

No of HH in the Survey														
District	Division	FHH	MHH	Total	Aidu	Anhnah	Anpangthum	Baiging (Alocasia fornicata)	Bekang (Soya Bean)	Bete	Brinjal	Chakawk	Chingit (Cape Yellow Wood)	Hruizik
Lawngtlai	Chhimiupui W	3	12	15	3.0	12.0								
Mamit	Kawrtah	6	9	15	3.0		2.0							
Saitual	Aizawl WL		15	15	2.8							2.0		
Serchhip	Thenzawl	3	12	15	1.4			2.0	3.0	3.0	3.0		2.0	1.7
Total		12	48	60	2.5	12.0	2.0	2.0	3.0	3.0	3.0	2.0	2.0	1.7

No of HH in the Survey														
District	Division	FHH	MHH	Total	Kawhtebel	Khanghu (Climbing Wattle)	Lemon	Log	Maian (Pumpkin Leaf)	Maitamtaw	Mau	Mautuai (Bamboo Shoot)	Mustard	Pa
Lawngtlai	Chhimiupui W	3	12	15		4.3					4.8	4.4		
Mamit	Kawrtah	6	9	15	2.0		2.0		1.0	3.0	3.4	2.6		4.0
Saitual	Aizawl WL		15	15	2.1	3.7					8.0	2.8		
Serchhip	Thenzawl	3	12	15	1.7	3.0		0.3			2.7	1.8	2.0	
Total		12	48	60	2.0	3.9	2.0	0.3	1.0	3.0	5.5	2.8	2.0	4.0

No of HH in the Survey														
District	Division	FHH	MHH	Total	Phuihnam (East Indian Glory Bower)	Pumpkin leave	Ranchaw	Sawththing	Teak	Thingthupui (Dysoxylum procerrum)	Thingtuah	Tumbu (Mustard Flower)	Zawngtah (Stink Bean)	Total
Lawngtlai	Chhimiupui W	3	12	15			12.0			4.5	9.9	12.0	3.0	7.9
Mamit	Kawrtah	6	9	15	2.5						7.1	12.0	3.0	4.3
Saitual	Aizawl WL		15	15			12.0			2.5	6.9	12.0	4.0	6.1
Serchhip	Thenzawl	3	12	15		3.0	12.0	2.0		2.0	7.8	9.8		4.6
Total		12	48	60	2.5	3.0	12.0	2.0		3.4	7.9	11.6	3.7	5.7

13. Land Holding and Land Tenure

13.1 Land Ownership

1) Non Irrigated Land

No of HH in the Survey					FHH			MHH			Total		
District	Division	FHH	MHH	Total	Male Head of Household	Female Head of Household	Total	Male Head of Household	Female Head of Household	Total	Male Head of Household	Female Head of Household	Total
Lawngtlai	Chhimiupui W	3	12	15			0	3		3	3	0	3
Mamit	Kawrtah	6	9	15	2		2	1		1	3	0	3
Saitual	Aizawl WL		15	15			0	5		5	5	0	5
Serchhip	Thenzawl	3	12	15	2	1	3	10	2	12	12	3	15
Total		12	48	60	4	1	5	19	2	21	23	3	26

2) Irrigated Land

No Data

3) Shifting Cultivation

No of HH in the Survey					FHH			MHH			Total		
District	Division	FHH	MHH	Total	Male Head of Household	(Community Land)	Total	Male Head of Household	(Community Land)	Total	Male Head of Household	(Community Land)	Total
Lawngtlai	Chhimiupui W	3	12	15		2	2		5	5	0	7	7
Mamit	Kawrtah	6	9	15	1		1		0	1	1	0	1
Saitual	Aizawl WL		15	15			0	1	12	13	1	12	13
Serchhip	Thenzawl	3	12	15		1	1		5	5	0	6	6
Total		12	48	60	1	3	4	1	22	23	2	25	27

*Community Land is taken as land Rented-In in the later section.

4) Orchard

No of HH in the Survey					FHH			MHH			Total		
District	Division	FHH	MHH	Total	Male Head of Household	Female Head of Household	Total	Male Head of Household	Female Head of Household	Total	Male Head of Household	Female Head of Household	Total
Lawngtlai	Chhimiupui W	3	12	15		1	1	2		2	2	1	3
Mamit	Kawrtah	6	9	15			0	1		1	1	0	1
Saitual	Aizawl WL		15	15			0	6		6	6	0	6
Serchhip	Thenzawl	3	12	15	2		2	3		3	5	0	5

	Total	12	48	60	2	1	3	12	0	12	14	1	15
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5) Fallow Land

District	Division	No of HH in the Survey			FHH			MHH			Total		
		FHH	MHH	Total	Male Head of Household	Female Head of Household	Total	Male Head of Household	Female Head of Household	Total	Male Head of Household	Female Head of Household	Total
Lawngtlai	Chhingtupui W	3	12	15			0	2		2	2	0	2
Mamit	Kawrtah	6	9	15	1	1	2	4		4	5	1	6
Saitual	Aizawl WL		15	15			0			0	0	0	0
Serchiip	Thenzawl	3	12	15	1		1	4		4	5	0	5
	Total	12	48	60	2	1	3	10	0	10	12	1	13

6) Uncultivable Agriculture Land

District	Division	No of HH in the Survey			FHH			MHH			Total		
		FHH	MHH	Total	Male Head of Household	Female Head of Household	Total	Male Head of Household	Female Head of Household	Total	Male Head of Household	Female Head of Household	Total
Lawngtlai	Chhingtupui W	3	12	15	1		1	5		5	6	0	6
Mamit	Kawrtah	6	9	15			0	1		1	1	0	1
Saitual	Aizawl WL		15	15			0	3		3	3	0	3
Serchiip	Thenzawl	3	12	15			0			0	0	0	0
	Total	12	48	60	1	0	1	9	0	9	10	0	10

7) Residential Area

District	Division	No of HH in the Survey			FHH			MHH			Total		
		FHH	MHH	Total	Male Head of Household	Female Head of Household	Total	Male Head of Household	Female Head of Household	Total	Male Head of Household	Female Head of Household	Total
Lawngtlai	Chhingtupui W	3	12	15	1	1	2	9		9	10	1	11
Mamit	Kawrtah	6	9	15	1	5	6	9		9	10	5	15
Saitual	Aizawl WL		15	15			0	12		12	12	0	12
Serchiip	Thenzawl	3	12	15	3		3	12		12	15	0	15
	Total	12	48	60	5	6	11	42	0	42	47	6	53

8) Pasture/ Grazing Land

No Data

9) Others (Unspecified)

District	Division	No of HH in the Survey			FHH			MHH			Total		
		FHH	MHH	Total	Male Head of Household	Female Head of Household	Total	Male Head of Household	Female Head of Household	Total	Male Head of Household	Female Head of Household	Total
Lawngtlai	Chhingtupui W	3	12	15			0			0	0	0	0
Mamit	Kawrtah	6	9	15			0	1		1	1	0	1
Saitual	Aizawl WL		15	15			0			0	0	0	0
Serchiip	Thenzawl	3	12	15			0	1		1	1	0	1
	Total	12	48	60	0	0	0	2	0	2	2	0	2

13.2 Land Holding in Bigha (1 Bigha = 0.25 ha)

1) Non Irrigated

District	Division	No of HH in the Survey			FHH			MHH			Total		
		FHH	MHH	Total	Min	Max	Average	Min	Max	Average	Min	Max	Average
Lawngtlai	Chhingtupui W	3	12	15				7.9	8.0	7.9	7.9	8.0	7.9
Mamit	Kawrtah	6	9	15	14.4	16.0	15.2	16.0	16.0	16.0	14.4	16.0	15.5
Saitual	Aizawl WL		15	15				3.2	9.6	6.2	3.2	9.6	6.2
Serchiip	Thenzawl	3	12	15	3.2	32.0	15.5	3.2	104.0	24.8	3.2	104.0	22.9
	Total	12	48	60	3.2	32.0	15.4	3.2	104.0	17.6	3.2	104.0	17.1

2) Irrigated

No Data

3) Area Under Shifting Cultivation

District	Division	No of HH in the Survey			FHH			MHH			Total		
		FHH	MHH	Total	Min	Max	Average	Min	Max	Average	Min	Max	Average
Lawngtlai	Chhintuipui W	3	12	15									
Mamit	Kawrtah	6	9	15	1.6	1.6	1.6				1.6	1.6	1.6
Saitual	Aizawl WL		15	15									
Serchiip	Thenzawl	3	12	15									
	Total	12	48	60	1.6	1.6	1.6				1.6	1.6	1.6

4) Orchard

District	Division	No of HH in the Survey			FHH			MHH			Total		
		FHH	MHH	Total	Min	Max	Average	Min	Max	Average	Min	Max	Average
Lawngtlai	Chhintuipui W	3	12	15	0.3	0.3	0.3	4.0	4.0	4.0	0.3	4.0	2.8
Mamit	Kawrtah	6	9	15				1.6	1.6	1.6	1.6	1.6	1.6
Saitual	Aizawl WL		15	15				1.6	3.2	2.1	1.6	3.2	2.1
Serchiip	Thenzawl	3	12	15	0.8	1.6	1.2	1.6	8.0	4.3	0.8	8.0	3.0
	Total	12	48	60	0.3	1.6	0.9	1.6	8.0	3.0	0.3	8.0	2.5

5) Fallow Land

District	Division	No of HH in the Survey			FHH			MHH			Total		
		FHH	MHH	Total	Min	Max	Average	Min	Max	Average	Min	Max	Average
Lawngtlai	Chhintuipui W	3	12	15				8.0	8.0	8.0	8.0	8.0	8.0
Mamit	Kawrtah	6	9	15	4.8	4.8	4.8	0.8	48.0	22.2	0.8	48.0	16.4
Saitual	Aizawl WL		15	15									
Serchiip	Thenzawl	3	12	15	4.8	4.8	4.8	1.6	4.8	3.6	1.6	4.8	3.8
	Total	12	48	60	4.8	4.8	4.8	0.8	48.0	11.9	0.8	48.0	10.3

6) Uncultivable Agriculture Land

District	Division	No of HH in the Survey			FHH			MHH			Total		
		FHH	MHH	Total	Min	Max	Average	Min	Max	Average	Min	Max	Average
Lawngtlai	Chhintuipui W	3	12	15	12.0	12.0	12.0	0.4	4.7	3.2	0.4	12.0	4.4
Mamit	Kawrtah	6	9	15				16.0	16.0	16.0	16.0	16.0	16.0
Saitual	Aizawl WL		15	15				0.8	3.5	1.9	0.8	3.5	1.9
Serchiip	Thenzawl	3	12	15									
	Total	12	48	60	12.0	12.0	12.0	0.4	16.0	3.7	0.4	16.0	4.4

7) Residential Area

District	Division	No of HH in the Survey			FHH			MHH			Total		
		FHH	MHH	Total	Min	Max	Average	Min	Max	Average	Min	Max	Average
Lawngtlai	Chhintuipui W	3	12	15	0.5	0.5	0.5	0.2	1.1	0.5	0.2	1.1	0.5
Mamit	Kawrtah	6	9	15	0.0	0.2	0.1	0.2	0.8	0.4	0.0	0.8	0.3
Saitual	Aizawl WL		15	15				0.4	0.8	0.7	0.4	0.8	0.7
Serchiip	Thenzawl	3	12	15	0.0	0.1	0.0	0.0	0.2	0.1	0.0	0.2	0.1
	Total	12	48	60	0.0	0.5	0.2	0.0	1.1	0.4	0.0	1.1	0.4

8) Pasture / Grazing Land

No Data

9) Other Type of Land (Unspecified)

District	Division	No of HH in the Survey			FHH			MHH			Total		
		FHH	MHH	Total	Min	Max	Average	Min	Max	Average	Min	Max	Average
Lawngtlai	Chhintuipui W	3	12	15									
Mamit	Kawrtah	6	9	15				16.0	16.0	16.0	16.0	16.0	16.0
Saitual	Aizawl WL		15	15									
Serchiip	Thenzawl	3	12	15				3.2	3.2	3.2	3.2	3.2	3.2
	Total	12	48	60				3.2	16.0	9.6	3.2	16.0	9.6

13.3 No of HHs Renting in and Renting out

1) Non Irrigated
No Data

2) Irrigated
No Data

3) Shifting Cultivation

District	Division	No of HH in the Survey			FHH			MHH			Total		
		FHH	MHH	Total	Renting In	Renting Out	Encroached	Renting In	Renting Out	Encroached	Renting In	Renting Out	Encroached
Lawngtlai	Chhintuipui W	3	12	15	2			5			7	0	0
Mamit	Kawrtah	6	9	15							0	0	0
Saitual	Aizawl WL		15	15				13			13	0	0
Serchhip	Thenzawl	3	12	15	1			6			7	0	0
	Total	12	48	60	3	0	0	24	0	0	27	0	0

*No of Renting In Households are using Community Land for Jhum

4) Orchard

District	Division	No of HH in the Survey			FHH			MHH			Total		
		FHH	MHH	Total	Renting In	Renting Out	Encroached	Renting In	Renting Out	Encroached	Renting In	Renting Out	Encroached
Lawngtlai	Chhintuipui W	3	12	15	2						2	0	0
Mamit	Kawrtah	6	9	15							0	0	0
Saitual	Aizawl WL		15	15				2			2	0	0
Serchhip	Thenzawl	3	12	15	1						1	0	0
	Total	12	48	60	3	0	0	2	0	0	5	0	0

5) Fallow Land

No Data

6) Uncultivable Agriculture Land

No Data

7) Residential Area

District	Division	No of HH in the Survey			FHH			MHH			Total		
		FHH	MHH	Total	Renting In	Renting Out	Encroached	Renting In	Renting Out	Encroached	Renting In	Renting Out	Encroached
Lawngtlai	Chhintuipui W	3	12	15							0	0	0
Mamit	Kawrtah	6	9	15							0	0	0
Saitual	Aizawl WL		15	15				2			2	0	0
Serchhip	Thenzawl	3	12	15							0	0	0
	Total	12	48	60	0	0	0	2	0	0	2	0	0

8) Pasture/ Grazing Land

No Data

13.4 Average Area under Rented In, Rented Out, Encroached

1) Shifting Cultivation (Rent In)

District	Division	No of HH in the Survey			FHH			MHH			Total		
		FHH	MHH	Total	Min	Max	Average	Min	Max	Average	Min	Max	Average
Lawngtlai	Chhintuipui W	3	12	15	4.0	9.0	6.5	4.0	12.0	7.6	4.0	12.0	7.3
Mamit	Kawrtah	6	9	15									
Saitual	Aizawl WL		15	15				0.8	4.8	2.4	0.8	4.8	2.4
Serchhip	Thenzawl	3	12	15	3.2	3.2	3.2	0.8	27.2	5.6	0.8	27.2	5.3
	Total	12	48	60	3.2	9.0	5.4	0.8	27.2	4.3	0.8	27.2	4.4

2) Orchard

District	Division	No of HH in the Survey			FHH			MHH			Total		
		FHH	MHH	Total	Min	Max	Average	Min	Max	Average	Min	Max	Average
Lawngtlai	Chhintuipui W	3	12	15									
Mamit	Kawrtah	6	9	15									
Saitual	Aizawl WL		15	15				4.8			4.8		
Serchhip	Thenzawl	3	12	15									
	Total	12	48	60				4.8			4.8		

3) Residential Area

District	Division	No of HH in the Survey			FHH			MHH			Total		
		FHH	MHH	Total	Min	Max	Average	Min	Max	Average	Min	Max	Average
Lawngtlai	Chhintuipui W	3	12	15									
Mamit	Kawrtah	6	9	15									
Saitual	Aizawl WL		15	15					1.2	1.3	1.2	1.2	1.3
Serchiip	Thenzawl	3	12	15									
	Total	12	48	60					1.2	1.3	1.2	1.2	1.3

14. Marketing (Timber/ NTFPs)

14.1 Selling at home

1) Type of Forest Produces

District	Division	No of HH in the Survey			Areacanut	Kawhtebe (Snowflake Aralia)	Bamboo shoot	Bekang (Fermented Soya Bean)	Chilli	Ginger	Behlawi (Pea)	Khanghu (Climbing Wattle)	Maian leh Ankasa (Wild Pumpkin leaf)	Mautuai (Bamboo Shoot)	Orange	Total
		FHH	MHH	Total												
Lawngtlai	Chhintuipui W	3	12	15			1						1			2
Mamit	Kawrtah	6	9	15	8	1										9
Saitual	Aizawl WL		15	15								1		1		2
Serchiip	Thenzawl	3	12	15				1	4	8	1				1	15
	Total	12	48	60	8	1	1	1	4	8	1	1	1	1	1	28

2) Frequency

District	Division	No of HH in the Survey			Areacanut				Kawhtebe (Snowflake Aralia)							
		FHH	MHH	Total	Regularly	Sometimes	Not Applicable	Total	Regularly	Sometimes	Not Applicable	Total				
Lawngtlai	Chhintuipui W	3	12	15				0				0				
Mamit	Kawrtah	6	9	15	3			8	1			1				
Saitual	Aizawl WL		15	15				0				0				
Serchiip	Thenzawl	3	12	15				0				0				
	Total	12	48	60	3	0	5	8	1	0	0	1				

District	Division	No of HH in the Survey			Bekang (Fermented Soy Beans)				Behlawi (Pea)				Chilli			
		FHH	MHH	Total	Regularly	Sometimes	Not Applicable	Total	Regularly	Sometimes	Not Applicable	Total	Regularly	Sometimes	Not Applicable	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0				0
Mamit	Kawrtah	6	9	15				0				0				0
Saitual	Aizawl WL		15	15				0				0				0
Serchiip	Thenzawl	3	12	15		1		1		1		1		4		4
	Total	12	48	60	0	1	0	1	0	1	0	1	0	4	0	4

District	Division	No of HH in the Survey			Ginger				Khanghu (Climbing Wattle)				Maian leh Ankasa (Wild Pumpkin leaf)			
		FHH	MHH	Total	Regularly	Sometimes	Not Applicable	Total	Regularly	Sometimes	Not Applicable	Total	Regularly	Sometimes	Not Applicable	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0		1		1
Mamit	Kawrtah	6	9	15				0				0				0
Saitual	Aizawl WL		15	15				0		1		1				0
Serchiip	Thenzawl	3	12	15		7		7				0				0
	Total	12	48	60	0	7	0	7	0	1	0	1	0	1	0	1

District	Division	No of HH in the Survey			Mautuai (Bamboo Shoot)				Orange							
		FHH	MHH	Total	Regularly	Sometimes	Not Applicable	Total	Regularly	Sometimes	Not Applicable	Total	Regularly	Sometimes	Not Applicable	Total
Lawngtlai	Chhintuipui W	3	12	15	1			1				0				0
Mamit	Kawrtah	6	9	15				0				0				0
Saitual	Aizawl WL		15	15			1	1				0				0
Serchiip	Thenzawl	3	12	15				0	1			1				0
	Total	12	48	60	1	1	0	2	1	0	0	1	0	0	0	0

14.2 At the Crop Field

1) Type of Forest Produces

District	Division	No of HH in the Survey			Teak	Arecanut	Hmarcha (Chilli)	Sawththing (Ginger)	Total							
		FHH	MHH	Total												
Lawngtlai	Chhintuipui W	3	12	15					0							
Mamit	Kawrtah	6	9	15	1	5			6							
Saitual	Aizawl WL		15	15					0							
Serchhip	Thenzawl	3	12	15			1	1	2							
Total		12	48	60	1	5	1	1	8							

2) Frequency

District	Division	No of HH in the Survey			Teak				Arecanut				Hmarcha (Chilli)			
		FHH	MHH	Total	Regularly	Sometimes	Not Applicable	Total	Regularly	Sometimes	Not Applicable	Total	Regularly	Sometimes	Not Applicable	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0				0
Mamit	Kawrtah	6	9	15			1	1	5			5				0
Saitual	Aizawl WL		15	15				0				0				0
Serchhip	Thenzawl	3	12	15				0				0		1		1
Total		12	48	60	0	1	0	1	5	0	0	5	0	1	0	1

District	Division	No of HH in the Survey			Sawththing (Ginger)											
		FHH	MHH	Total	Regularly	Sometimes	Not Applicable	Total								
Lawngtlai	Chhintuipui W	3	12	15				0								
Mamit	Kawrtah	6	9	15				0								
Saitual	Aizawl WL		15	15				0								
Serchhip	Thenzawl	3	12	15			1	1								
Total		12	48	60	0	1	0	1								

3) Distance from own house

District	Division	No of HH in the Survey			Teak				Arecanut					
		FHH	MHH	Total	<5km	5-10 km	10-20 km	>20km	Total	<5km	5-10 km	10-20 km	>20km	Total
Lawngtlai	Chhintuipui W	3	12	15					0					0
Mamit	Kawrtah	6	9	15	1				1	5				5
Saitual	Aizawl WL		15	15					0					0
Serchhip	Thenzawl	3	12	15					0					0
Total		12	48	60	1	0	0	0	1	5	0	0	0	5

District	Division	No of HH in the Survey			Hmarcha (Chilli)				Sawththing (Ginger)					
		FHH	MHH	Total	<5km	5-10 km	10-20 km	>20km	Total	<5km	5-10 km	10-20 km	>20km	Total
Lawngtlai	Chhintuipui W	3	12	15					0					0
Mamit	Kawrtah	6	9	15					0					0
Saitual	Aizawl WL		15	15					0					0
Serchhip	Thenzawl	3	12	15			1		1					0
Total		12	48	60	0	0	1	0	1	0	0	0	0	0

* sawththing: No Data

14.3 Collection point in the village

1) Type of Forest Produces

District	Division	No of HH in the Survey			Mautuai (Bamboo Shoot)	Khanghu (Climbing Wattle)	Thingthupui (Dysoxylum procerrum)	Rawtuai (Bamboo Shoot)	Zawngtah (Stink Bean)	Phuihnam (East Indian Glory Bower)	Tumbu (Mustard Flower)	Total				
		FHH	MHH	Total												
Lawngtlai	Chhintuipui W	3	12	15	1	2	2		1	1	1	8				
Mamit	Kawrtah	6	9	15								0				
Saitual	Aizawl WL		15	15	2	1		1	2			6				
Serchhip	Thenzawl	3	12	15								0				
Total		12	48	60	3	3	2	1	3	1	1	14				

2) Frequency

		No of HH in the Survey			Mautuai (Bamboo Shoot)				Khanghu (Climbing Wattle)				Thingthupui (Dysoxylum procerum)			
District	Division	FHH	MHH	Total	Regularly	Sometimes	Not Applicable	Total	Regularly	Sometimes	Not Applicable	Total	Regularly	Sometimes	Not Applicable	Total
Lawngtlai	Chhintuipui W	3	12	15			1	1		1		1	2	1		1
Mamit	Kawrtah	6	9	15				0				0				
Saitual	Aizawl WL		15	15			1	1		1		1				
Serchip	Thenzawl	3	12	15		1		1				0				
Total		12	48	60	0		2	3	0	2	1	3	1	0		1

District	Division	No of HH in the Survey			Rautuai				Zawngtah (Stink Bean)				Phuihnam (East Indian Glory Bower)			
		FHH	MHH	Total	Regularly	Sometimes	Not Applicable	Total	Regularly	Sometimes	Not Applicable	Total	Regularly	Sometimes	Not Applicable	Total
Lawngtlai	Chhintuipui W	3	12	15				0		1		1				1
Mamit	Kawrtah	6	9	15				0				0				0
Saitual	Aizawl WL		15	15			1	1		1	1	2				0
Serchiip	Thenzawl	3	12	15				0				0				0
	Total	12	48	60	0	0	1	1	1	1	1	3	0	1	0	1

District	Division	No of HH in the Survey			Tumbu (Mustard Flower)			
		FHH	MHH	Total	Regularly	Sometimes	Not Applicable	Total
Lawngtlai	Chhintuipui W	3	12	15		1		1
Mamit	Kawrtah	6	9	15				0
Saitual	Aizawl WL		15	15				0
Serchiip	Thenzawl	3	12	15				0
	Total	12	48	60	1	0	0	1

3) Distance from own house

District	Division	No of HH in the Survey			Mautuai (Bamboo Shoot)				Khanghu (Climbing Wattle)					
		FHH	MHH	Total	<5km	5-10 km	10-20 km	>20km	Total	<5km	5-10 km	10-20 km	>20km	Total
Lawngtlai	Chhintuipui W	3	12	15	1				1	2				2
Mamit	Kawrtah	6	9	15					0					0
Saitual	Aizawl WL		15	15	2				2	1				1
Serchiip	Thenzawl	3	12	15					0					0
	Total	12	48	60	3	0	0	0	3	3	0	0	0	3

District	Division	No of HH in the Survey			Thingthupui (Dysoxylum procerum)				Rautuai					
		FHH	MHH	Total	<5km	5-10 km	10-20 km	>20km	Total	<5km	5-10 km	10-20 km	>20km	Total
Lawngtlai	Chhintuipui W	3	12	15	2				2					0
Mamit	Kawrtah	6	9	15					0					0
Saitual	Aizawl WL		15	15					0	1				1
Serchiip	Thenzawl	3	12	15					0					0
	Total	12	48	60	2	0	0	0	2	1	0	0	0	1

District	Division	No of HH in the Survey			Zawngtah (Stink Bean)				Phuihnam (East Indian Glory Bower)					
		FHH	MHH	Total	<5km	5-10 km	10-20 km	>20km	Total	<5km	5-10 km	10-20 km	>20km	Total
Lawngtlai	Chhintuipui W	3	12	15	1				1	1				1
Mamit	Kawrtah	6	9	15					0					0
Saitual	Aizawl WL		15	15	2				2					0
Serchiip	Thenzawl	3	12	15					0					0
	Total	12	48	60	3	0	0	0	3	1	0	0	0	1

		No of HH in the Survey			Tumbu (Mustard Flower)				
District	Division	FHH	MHH	Total	<5km	5-10 km	10-20 km	>20km	Total
Lawngtlai	Chhintuipui W	3	12	15	1				1
Mamit	Kawrtah	6	9	15					0
Saitual	Aizawl WL		15	15					0
Serchiip	Thenzawl	3	12	15					0
	Total	12	48	60	1	0	0	0	1

14.4 Collection point outside the village

1) Type of Forest Produces

District	Division	No of HH in the Survey			Baiging (Alocasia forficata)	Chingit (Cape Yellow Wood)	Mautuai (Bamboo Shoot)	Khangu (Climbing Wattle)	Thingthupui (Dysoxylum procerrum)	Phuihnang (East Indian Glory Bower)	Zawngtah (Stink Bean)	Total				
		FHH	MHH	Total												
Lawngtlai	Chhintuipui W	3	12	15			1	2	1	1	1	6				
Mamit	Kawrtah	6	9	15								0				
Saitual	Aizawl WL		15	15								0				
Serchiip	Thenzawl	3	12	15	2	1						3				
	Total	12	48	60	2	1	1	2	1	1	1	9				

2) Frequency

District	Division	No of HH in the Survey			Baiging (Alocasia forficata)				Chingit (Cape Yellow Wood)				Mautuai (Bamboo Shoot)			
		FHH	MHH	Total	Regularly	Sometimes	Not Applicable	Total	Regularly	Sometimes	Not Applicable	Total	Regularly	Sometimes	Not Applicable	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0			1	1
Mamit	Kawrtah	6	9	15				0				0				0
Saitual	Aizawl WL		15	15				0				0				0
Serchiip	Thenzawl	3	12	15				1			1	1				0
	Total	12	48	60	0	1	0	1	0		1	1	0	0	1	1

District	Division	No of HH in the Survey			Khangu (Climbing Wattle)			Thingthupui (Dysoxylum procerrum)			Phuihnang (East Indian Glory Bower)		
		FHH	MHH	Total	Regularly	Sometimes	Not Applicable	Regularly	Sometimes	Not Applicable	Regularly	Sometimes	Not Applicable
Lawngtlai	Chhintuipui W	3	12	15		1	1	2		1	1	1	1
Mamit	Kawrtah	6	9	15			0						0
Saitual	Aizawl WL		15	15			0						0
Serchiip	Thenzawl	3	12	15			0						0
	Total	12	48	60	0	1	1	2	0	0	1	1	1

District	Division	No of HH in the Survey			Zawngtah (Stink Bean)			
		FHH	MHH	Total	Regularly	Sometimes	Not Applicable	Total
Lawngtlai	Chhintuipui W	3	12	15		1		1
Mamit	Kawrtah	6	9	15				0
Saitual	Aizawl WL		15	15				0
Serchiip	Thenzawl	3	12	15				0
	Total	12	48	60	0	1	0	1

3) Distance from own house

District	Division	No of HH in the Survey			Baiging (Alocasia forficata)				Chingit (Cape Yellow Wood)					
		FHH	MHH	Total	<5km	5-10 km	10-20 km	>20km	<5km	5-10 km	10-20 km	>20km		
Lawngtlai	Chhintuipui W	3	12	15					0				0	
Mamit	Kawrtah	6	9	15					0				0	
Saitual	Aizawl WL		15	15					0				0	
Serchiip	Thenzawl	3	12	15			2		2		1		1	
	Total	12	48	60	0		2	0	2	0	1	0	1	

District	Division	No of HH in the Survey			Mautuai (Bamboo Shoot)				Khangu (Climbing Wattle)					
		FHH	MHH	Total	<5km	5-10 km	10-20 km	>20km	<5km	5-10 km	10-20 km	>20km		
Lawngtlai	Chhintuipui W	3	12	15				1					2	
Mamit	Kawrtah	6	9	15									0	
Saitual	Aizawl WL		15	15									0	
Serchiip	Thenzawl	3	12	15									0	
	Total	12	48	60	0	0	0	1	1	0	0	0	2	

District	Division	No of HH in the Survey			Thingthupui (Dysoxylum procerrum)				Phuihnang (East Indian Glory Bower)					
		FHH	MHH	Total	<5km	5-10 km	10-20 km	>20km	<5km	5-10 km	10-20 km	>20km		
Lawngtlai	Chhintuipui W	3	12	15				1					1	
Mamit	Kawrtah	6	9	15									0	
Saitual	Aizawl WL		15	15									0	
Serchiip	Thenzawl	3	12	15									0	
	Total	12	48	60	0	0	0	1	1	0	0	0	1	

District	Division	No of HH in the Survey			Zawngtah (Stink Bean)				
		FHH	MHH	Total	<5km	5-10 km	10-20 km	>20km	Total
Lawngtlai	Chhintuipui W	3	12	15				1	1
Mamit	Kawrtah	6	9	15					0
Saitual	Aizawl WL		15	15					0
Serchhip	Thenzawl	3	12	15					0
	Total	12	48	60	0	0	0	1	1

14.5 LAMP or Tribal Marketing Cooperative

1) Type of Forest Produces

No Data

2) Frequency

No Data

3) Distance from own house

No Data

24.6 Forest Corporation Depot

1) Type of Forest Produces

No Data

2) Frequency

No Data

3) Distance from own house

No Data

15. Buyers of the Produces and % share of Volume Sold

15.1 Buyer 1

1) Type of Buyers

District	Division	No of HH in the Survey			Ankasa (Toothache Plant)							
		FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others
Lawngtlai	Chhintuipui W	3	12	15							1	
Mamit	Kawrtah	6	9	15								
Saitual	Aizawl WL		15	15								
Serchhip	Thenzawl	3	12	15								
	Total	12	48	60	0	0	0	0	0	0	1	0

District	Division	No of HH in the Survey			Areacnut							
		FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others
Lawngtlai	Chhintuipui W	3	12	15								
Mamit	Kawrtah	6	9	15							6	6
Saitual	Aizawl WL		15	15								
Serchhip	Thenzawl	3	12	15								
	Total	12	48	60	0	0	0	0	0	0	6	6

District	Division	No of HH in the Survey			Baiging (Alocasia fornicata)							
		FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others
Lawngtlai	Chhintuipui W	3	12	15								
Mamit	Kawrtah	6	9	15							6	6
Saitual	Aizawl WL		15	15								
Serchhip	Thenzawl	3	12	15					2			2
	Total	12	48	60	0	0	0	0	2	0	6	6

		No of HH in the Survey			Bamboo Shoot								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhintuipui W	3	12	15			1			3			4
Mamit	Kawrtah	6	9	15					2			1	3
Saitual	Aizawl WL		15	15			2						2
Serchiip	Thenzawl	3	12	15						1			1
Total		12	48	60	0	3	0	0	5	1	0	1	10

		No of HH in the Survey			Behlawi (Pea)								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhintuipui W	3	12	15									0
Mamit	Kawrtah	6	9	15									0
Saitual	Aizawl WL		15	15									0
Serchiip	Thenzawl	3	12	15								1	1
Total		12	48	60	0	0	0	0	0	0	0	1	1

		No of HH in the Survey			Bekang (Soya Bean)								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhintuipui W	3	12	15									
Mamit	Kawrtah	6	9	15									
Saitual	Aizawl WL		15	15									
Serchiip	Thenzawl	3	12	15								1	
Total		12	48	60	0	0	0	0	0	0	0	1	1

		No of HH in the Survey			Chilli								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhintuipui W	3	12	15									0
Mamit	Kawrtah	6	9	15									0
Saitual	Aizawl WL		15	15									0
Serchiip	Thenzawl	3	12	15								4	4
	Total	12	48	60	0	0	0	0	0	0	0	4	4

		No of HH in the Survey			Chingit (Cape Yellow Wood)								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhintuipui W	3	12	15									0
Mamit	Kawrtah	6	9	15									0
Saitual	Aizawl WL		15	15									0
Serchiip	Thenzawl	3	12	15					1				1
Total		12	48	60	0	0	0	0	1	0	0	0	1

		No of HH in the Survey			Ginger								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhintuipui W	3	12	15									0
Mamit	Kawrtihah	6	9	15									0
Saitual	Aizawl WL		15	15									0
Serchiip	Thenzawl	3	12	15								6	6
Total		12	48	60	0	0	0	0	0	0	0	6	6

		No of HH in the Survey			Kawrtel (Snowflake Aralia)								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhintuipui W	3	12	15									
Mamit	Kawrtihah	6	9	15						1			
Saitual	Aizawl WL		15	15									

Serchiip	Thenzawl	3	12	15										0
Total		12	48	60	0	0	0	0	1	0	0	0	0	1

		No of HH in the Survey			Khanghu (Climbing Wattle)								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhintuipui W	3	12	15									0
Mamit	Kawrtah	6	9	15			2						2
Saitual	Aizawl WL		15	15									0
Serchiip	Thenzawl	3	12	15			1						1
Total		12	48	60	0	3	0	0	0	0	0	0	3

		No of HH in the Survey			Maian (Pumpkin Leaf)								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhintuipui W	3	12	15								1	1
Mamit	Kawrtah	6	9	15									0
Saitual	Aizawl WL		15	15									0
Serchiip	Thenzawl	3	12	15									0
Total		12	48	60	0	0	0	0	0	0	0	1	1

		No of HH in the Survey			Orange								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhintuipui W	3	12	15									0
Mamit	Kawrtah	6	9	15									0
Saitual	Aizawl WL		15	15									0
Serchiip	Thenzawl	3	12	15								1	1
Total		12	48	60	0	0	0	0	0	0	0	1	1

		No of HH in the Survey			Phuihnam (East Indian Glory Bower)								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhintuipui W	3	12	15			1						1
Mamit	Kawrtah	6	9	15									0
Saitual	Aizawl WL		15	15									0
Serchiip	Thenzawl	3	12	15									0
Total		12	48	60	0	1	0	0	0	0	0	0	1

		No of HH in the Survey			Teak								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhintuipui W	3	12	15									0
Mamit	Kawrtah	6	9	15						1			1
Saitual	Aizawl WL		15	15									0
Serchiip	Thenzawl	3	12	15									0
Total		12	48	60	0	0	0	0	0	1	0	0	1

		No of HH in the Survey			Thingthupui (Dysoxylum procerum)								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhintuipui W	3	12	15			1			1			2
Mamit	Kawrtah	6	9	15									0
Saitual	Aizawl WL		15	15									0
Serchiip	Thenzawl	3	12	15									0
Total		12	48	60	0	1	0	0	0	1	0	0	2

		No of HH in the Survey			Tumbu (Mustard Flower)								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhintoipui W	3	12	15					1				
Mamit	Kawrtah	6	9	15									
Saitual	Aizawl WL		15	15									
Serchiip	Thenzawl	3	12	15									
Total		12	48	60	0	0	0	0	1	0	0	0	0

		No of HH in the Survey			Zawngtah (Stink Bean)								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhintoipui W	3	12	15					1				
Mamit	Kawrtah	6	9	15									
Saitual	Aizawl WL		15	15			2						
Serchiip	Thenzawl	3	12	15									
	Total	12	48	60	0	2	0	0	1	0	0	0	0

2) Volume % sold to the 1st Buyer (Average)

		No of HH in the Survey											
District	Division	FHH	MHH	Total	Ankasa (Toothache Plant)	Arecanut	Baiging (Alocasia fornicata)	Bamboo Shoot	Behlawi (Pea)	Bekang (Soya Bean)	Chilli	Chingit (Cape Yellow Wood)	Ginger
Lawngtlai	Chhintoipui W	3	12	15	100.0			90.0					
Mamit	Kawrtah	6	9	15		100.0		56.7					
Saitual	Aizawl WL		15	15				95.0					
Serchiip	Thenzawl	3	12	15			80.0	95.0	100.0	100.0	100.0	80.0	100.0
	Total	12	48	60	100.0	100.0		81.5	100.0	100.0	100.0	80.0	100.0

		No of HH in the Survey											
District	Division	FHH	MHH	Total	Kawrtabel (Snowflake Aralia)	Khanghu (Climbing Wattle)	Maian (Pumpkin Leaf)	Orange	Phuihnam (East Indian Glory Bower)	Teak	Thingthupui (Dysoxylum procerrum)	Tumbu (Mustard Flower)	Zawngtah (Stink Bean)
Lawngtlai	Chhintoipui W	3	12	15		65.0	100.0		50.0		90.0	100.0	80.0
Mamit	Kawrtah	6	9	15	50.0					100.0			
Saitual	Aizawl WL		15	15		80.0							95.0
Serchiip	Thenzawl	3	12	15				100.0					
Total		12	48	60	50.0	70.0	100.0	100.0	50.0	100.0	90.0	100.0	90.0

15.2 Buyer 2

1) Type of Buyers

		No of HH in the Survey			Ankasa (Toothache Plant)								
		FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
District	Division												
Lawngtlai	Chhintoipui W	3	12	15									
Mamit	Kawrtah	6	9	15									
Saitual	Aizawl WL		15	15									
Serchiip	Thenzawl	3	12	15									
	Total	12	48	60	0	0	0	0	0	0	0	0	0

		No of HH in the Survey			Arecanut								
		FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
District	Division												
Lawngtlai	Chhintoipui W	3	12	15									
Mamit	Kawrtah	6	9	15									
Saitual	Aizawl WL		15	15									
Serchiip	Thenzawl	3	12	15									
	Total	12	48	60	0	0	0	0	0	0	0	0	0

		No of HH in the Survey			Baiging (Alocasia formicata)								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhmtupui W	3	12	15									
Mamit	Kawrtah	6	9	15									
Saitual	Aizawl WL		15	15									
Serchhip	Thenzawl	3	12	15					2				
Total		12	48	60	0	0	0	0	2	0	0	0	0

		No of HH in the Survey			Bamboo Shoot								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhmtupui W	3	12	15			1			1			
Mamit	Kawrtah	6	9	15									
Saitual	Aizawl WL		15	15						1			
Serchhip	Thenzawl	3	12	15								1	
	Total	12	48	60	0	1	0	0	2	0	0	1	

		No of HH in the Survey			Behlawi (Pea)								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhaintupui W	3	12	15									
Mamit	Kawrtah	6	9	15									
Saitual	Aizawl WL		15	15									
Serchhip	Thenzawl	3	12	15									
	Total	12	48	60	0	0	0	0	0	0	0	0	0

		No of HH in the Survey			Bekang (Soya Bean)								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhaintupui W	3	12	15									
Mamit	Kawrtah	6	9	15									
Saitual	Aizawl WL		15	15									
Serchhip	Thenzawl	3	12	15									
Total		12	48	60	0	0	0	0	0	0	0	0	0

		No of HH in the Survey			Chilli								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhaintupui W	3	12	15									
Mamit	Kawrtah	6	9	15									
Saitual	Aizawl WL		15	15									
Serchhip	Thenzawl	3	12	15									
Total		12	48	60	0	0	0	0	0	0	0	0	0

		No of HH in the Survey			Chingit (Cape Yellow Wood)								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhaintupui W	3	12	15									
Mamit	Kawrtah	6	9	15									
Saitual	Aizawl WL		15	15									
Serchhip	Thenzawl	3	12	15									
Total		12	48	60	0	0	0	0	0	0	0	0	0

		No of HH in the Survey			Ginger								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhaintupui W	3	12	15									
Mamit	Kawrtihah	6	9	15									
Saitual	Aizawl WL		15	15									

Serchiip	Thenzawl	3	12	15											0
Total		12	48	60	0	0	0	0	0	0	0	0	0	0	0

		No of HH in the Survey			Kawrtebel (Snowflake Aralia)										
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total		
Lawngtlai	Chhintuipui W	3	12	15										0	
Mamit	Kawrtah	6	9	15										0	
Saitual	Aizawl WL		15	15										0	
Serchiip	Thenzawl	3	12	15										0	
Total		12	48	60	0	0	0	0	0	0	0	0	0	0	

		No of HH in the Survey			Khanghu (Climbing Wattle)										
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total		
Lawngtlai	Chhintuipui W	3	12	15						2				2	
Mamit	Kawrtah	6	9	15										0	
Saitual	Aizawl WL		15	15						1				1	
Serchiip	Thenzawl	3	12	15			1							1	
Total		12	48	60	0		1	0	0	3	0	0	0	4	

		No of HH in the Survey			Maian (Pumpkin Leaf)										
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total		
Lawngtlai	Chhintuipui W	3	12	15								1		1	
Mamit	Kawrtah	6	9	15										0	
Saitual	Aizawl WL		15	15										0	
Serchiip	Thenzawl	3	12	15										0	
Total		12	48	60	0	0	0	0	0	0	0	1	0	1	

		No of HH in the Survey			Orange										
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total		
Lawngtlai	Chhintuipui W	3	12	15										0	
Mamit	Kawrtah	6	9	15										0	
Saitual	Aizawl WL		15	15										0	
Serchiip	Thenzawl	3	12	15									1	1	
Total		12	48	60	0	0	0	0	0	0	0	0	1	1	

		No of HH in the Survey			Phuihnam (East Indian Glory Bower)										
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total		
Lawngtlai	Chhintuipui W	3	12	15						1				1	
Mamit	Kawrtah	6	9	15										0	
Saitual	Aizawl WL		15	15										0	
Serchiip	Thenzawl	3	12	15										0	
Total		12	48	60	0	0	0	0	0	1	0	0	0	1	

		No of HH in the Survey			Teak										
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total		
Lawngtlai	Chhintuipui W	3	12	15										0	
Mamit	Kawrtah	6	9	15										0	
Saitual	Aizawl WL		15	15										0	
Serchiip	Thenzawl	3	12	15										0	
Total		12	48	60	0	0	0	0	0	0	0	0	0	0	

		No of HH in the Survey			Thingthupui (Dysoxylum procerum)								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhintuipui W	3	12	15					1				
Mamit	Kawrtah	6	9	15									
Saitual	Aizawl WL		15	15									
Serchhip	Thenzawl	3	12	15									
	Total	12	48	60	0	0	0	0	1	0	0	0	0

		No of HH in the Survey			Tumbu (Mustard Flower)								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhintuipui W	3	12	15									
Mamit	Kawrtah	6	9	15									
Saitual	Aizawl WL		15	15									
Serchhip	Thenzawl	3	12	15									
	Total	12	48	60	0	0	0	0	0	0	0	0	0

		No of HH in the Survey			Zawngtah (Stink Bean)								
District	Division	FHH	MHH	Total	Farmers' Organisations/ Cooperatives	Village Aggregator	Tribal Marketing Cooperatives	Forest Corporation	Consumer	Private Processor	Exporter	Others	Total
Lawngtlai	Chhintuipui W	3	12	15			1						
Mamit	Kawrtah	6	9	15									
Saitual	Aizawl WL		15	15						1			
Serchhip	Thenzawl	3	12	15									
	Total	12	48	60	0	1	0	0	1	0	0	0	0

2) Volume % sold to the 2nd Buyer (Average)

		No of HH in the Survey											
District	Division	FHH	MHH	Total	Ankasa (Toothache Plant)	Arecanut	Baiging (Alocasia fornicata)	Bamboo Shoot	Behlawi (Pea)	Bekang (Soya Bean)	Chilli	Chingit (Cape Yellow Wood)	Ginger
Lawngtlai	Chhintuipui W	3	12	15				20.0					
Mamit	Kawrtah	6	9	15									
Saitual	Aizawl WL		15	15				10.0					
Serchhip	Thenzawl	3	12	15				5.0					
	Total	12	48	60				13.8					

		No of HH in the Survey											
District	Division	FHH	MHH	Total	Kawrtabel (Snowflake Aralia)	Khanghu (Climbing Wattle) (Climbing Wattle) (Climbing Wattle)	Maian (Pumpkin Leaf)	Orange	Phuihnang (East Indian Glory Bower)	Teak	Thingthupui (Dysoxylum procerum)	Tumbu (Mustard Flower)	Zawngtah (Stink Bean)
Lawngtlai	Chhintuipui W	3	12	15		25.0			30.0		20.0		20.0
Mamit	Kawrtah	6	9	15									
Saitual	Aizawl WL		15	15		20.0							10.0
Serchhip	Thenzawl	3	12	15									
	Total	12	48	60		23.3			30.0		20.0		15.0

16. Sorting and Grading & Reasons for not doing it

1) Sort and Grade

		No of HH in the Survey			FHH			MHH			MHH		
District	Division	FHH	MHH	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total
Lawngtlai	Chhintuipui W	3	12	15	1	2	3	2	10	12	3	12	15
Mamit	Kawrtah	6	9	15		6	6	1	8	9	1	14	15
Saitual	Aizawl WL		15	15		0	0	1	14	15	1	14	15
Serchhip	Thenzawl	3	12	15		3	3	2	10	12	2	13	15
	Total	12	48	60	1	11	12	6	42	48	7	53	60

2) Reasons for not doing it

District	Division	No of HH in the Survey			Do not know the need of it	No need for it (Home consumption Only)	Total
		FHH	MHH	Total			
Lawngtlai	Chhintuipui W	3	12	15	5	7	12
Mamit	Kawrtlah	6	9	15	13	1	14
Saitual	Aizawl WL		15	15		14	14
Serchiip	Thenzawl	3	12	15	9	4	13
	Total	12	48	60	27	26	53

17. Sources of Market Information for Timber, Bamboo and NTFPs

1) Timber

District	Division	FHH	MHH	Total	FHH								Forest Rangers/ C	Others*	Total
					Other Farmer	VFDC	Farmers' Organ	Internet	Traders	Newspaper	Radio				
Lawngtlai	Chhintuipui W	3	12	15	2								3		5
Mamit	Kawrtlah	6	9	15											0
Saitual	Aizawl WL		15	15											0
Serchiip	Thenzawl	3	12	15											0
	Total	12	48	60	2	0	0	0	0	0	0	0	3	0	5

* Others: Village Council, Young Mizo Association

District	Division	FHH	MHH	Total	MHH								Forest Rangers/ C	Others*	Total
					Other Farmer	VFDC	Farmers' Organ	Internet	Traders	Newspaper	Radio				
Lawngtlai	Chhintuipui W	3	12	15	4								7		11
Mamit	Kawrtlah	6	9	15											0
Saitual	Aizawl WL		15	15	7	2		1			8		8	10	36
Serchiip	Thenzawl	3	12	15					2						2
	Total	12	48	60	11	2	0	1	2	8	0	15	10		49

* Others: Village Council, Young Mizo Association

District	Division	FHH	MHH	Total	Total								Forest Rangers/ C	Others*	Total
					Other Farmer	VFDC	Farmers' Organ	Internet	Traders	Newspaper	Radio				
Lawngtlai	Chhintuipui W	3	12	15	6	0	0	0	0	0	0	10	0	0	16
Mamit	Kawrtlah	6	9	15	0	0	0	0	0	0	0	0	0	0	0
Saitual	Aizawl WL		15	15	7	2	0	1	0	8	0	8	10		36
Serchiip	Thenzawl	3	12	15	0	0	0	0	2	0	0	0	0	0	2
	Total	12	48	60	13	2	0	1	2	8	0	18	10		54

* Others: Village Council, Young Mizo Association

2) NTFPs

District	Division	FHH	MHH	Total	FHH								Forest Rangers/ C	Others*	Total
					Other Farmer	VFDC	Farmers' Organ	Internet	Traders	Newspaper	Radio				
Lawngtlai	Chhintuipui W	3	12	15	2								3		5
Mamit	Kawrtlah	6	9	15			4								4
Saitual	Aizawl WL		15	15											0
Serchiip	Thenzawl	3	12	15					1						1
	Total	12	48	60	2	0	4	0	1	0	0	3	0		10

District	Division	FHH	MHH	Total	MHH								Forest Rangers/ C	Others	Total
					Other Farmer	VFDC	Farmers' Organ	Internet	Traders	Newspaper	Radio				
Lawngtlai	Chhintuipui W	3	12	15	6				3				7	1	17
Mamit	Kawrtlah	6	9	15	3		2								5
Saitual	Aizawl WL		15	15	6	1		1		5		8	8		29
Serchiip	Thenzawl	3	12	15	1				1			1			3
	Total	12	48	60	16	1	2	1	4	5	0	16	9		54

*Others: TV& Relatives

District	Division	FHH	MHH	Total	Total								Forest Rangers/ C	Others*	Total
					Other Farmer	VFDC	Farmers' Organ	Internet	Traders	Newspaper	Radio				
Lawngtlai	Chhintuipui W	3	12	15	8	0	0	0	3	0	0	10	1		22
Mamit	Kawrtlah	6	9	15	3	0	6	0	0	0	0	0	0	0	9
Saitual	Aizawl WL		15	15	6	1	0	1	0	5	0	8	8		29
Serchiip	Thenzawl	3	12	15	1	0	0	0	2	0	0	1	0	0	4
	Total	12	48	60	18	1	6	1	5	5	0	19	9		64

*Others: TV& Relatives

18. Difficulties in Selling Produces

1) Log/ Timber

					FHH									
District	Division	FHH	MHH	Total	Not getting good price	Market Too far	Cannot carry the produces, too heavy	Do not know where to sell	Small volume to sell	Low quality	Total			
Lawngtlai	Chhimitupui W	3	12	15								0		
Mamit	Kawrtah	6	9	15								0		
Saitual	Aizawl WL		15	15								0		
Serchhip	Thenzawl	3	12	15								0		
	Total	12	48	60	0	0	0	0	0	0	0	0		

					MHH									
District	Division	FHH	MHH	Total	Not getting good price	Market Too far	Cannot carry the produces, too heavy	Do not know where to sell	Small volume to sell	Low quality	Total			
Lawngtlai	Chhimitupui W	3	12	15							0			
Mamit	Kawrtah	6	9	15	1						1			
Saitual	Aizawl WL		15	15							0			
Serchhip	Thenzawl	3	12	15		1			1		2			
	Total	12	48	60	1	1	0	0	1	0	3			

					Total												
District	Division	FHH	MHH	Total	Not getting good price	Market Too far	Cannot carry the produces, too heavy	Do not know where to sell	Small volume to sell	Low quality	Total						
Lawngtlai	Chhinitupui W	3	12	15	0	0	0	0	0	0	0						
Mamit	Kawrtah	6	9	15	1	0	0	0	0	0	0						
Saitual	Aizawl WL		15	15	0	0	0	0	0	0	0						
Serchhip	Thenzawl	3	12	15	0	1	0	0	1	0	2						
	Total	12	48	60	1	1	0	0	1	0	3						

2) Bamboo

					FHH									
District	Division	FHH	MHH	Total	Not getting good price	Market Too far	Cannot carry the produces, too heavy	Do not know where to sell	Small volume to sell	Low quality	Total			
Lawngtlai	Chhimitupui W	3	12	15							0			
Mamit	Kawrtah	6	9	15							0			
Saitual	Aizawl WL		15	15							0			
Serchhip	Thenzawl	3	12	15							0			
	Total	12	48	60	0	0	0	0	0	0	0			

					MHH									
District	Division	FHH	MHH	Total	Not getting good price	Market Too far	Cannot carry the produces, too heavy	Do not know where to sell	Small volume to sell	Low quality	Total			
Lawngtlai	Chhimitupui W	3	12	15							0			
Mamit	Kawrtah	6	9	15							0			
Saitual	Aizawl WL		15	15							0			
Serchhip	Thenzawl	3	12	15		1					1			
Total		12	48	60	0	1	0	0	0	0	1			

					Total												
District	Division	FHH	MHH	Total	Not getting good price	Market Too far	Cannot carry the produces, too heavy	Do not know where to sell	Small volume to sell	Low quality	Total						
Lawngtlai	Chhimitupui W	3	12	15	0	0	0	0	0	0	0						
Mamit	Kawrtah	6	9	15	0	0	0	0	0	0	0						
Saitual	Aizawl WL		15	15	0	0	0	0	0	0	0						
Serchhip	Thenzawl	3	12	15	0	1	0	0	0	0	1						
	Total	12	48	60	0	1	0	0	0	0	1						

3) NTFPs

FHH													
District	Division	FHH	MHH	Total	Not getting good price	Market Too far	Cannot carry the produces, too heavy	Do not know where to sell	Small volume to sell	Low quality	Total		
Lawngtlai	Chhintuipui W	3	12	15							0		
Mamit	Kawrtah	6	9	15	4						4		
Saitual	Aizawl WL		15	15							0		
Serchiip	Thenzawl	3	12	15	1	1					2		
	Total	12	48	60	5	1	0	0	0	0	6		

MHH													
District	Division	FHH	MHH	Total	Not getting good price	Market Too far	Cannot carry the produces, too heavy	Do not know where to sell	Small volume to sell	Low quality	Total		
Lawngtlai	Chhintuipui W	3	12	15	2	3			1		6		
Mamit	Kawrtah	6	9	15	7						7		
Saitual	Aizawl WL		15	15	1						1		
Serchiip	Thenzawl	3	12	15	8	9	1		5	1	24		
	Total	12	48	60	18	12	1	0	6	1	38		

Total													
District	Division	FHH	MHH	Total	Not getting good price	Market Too far	Cannot carry the produces, too heavy	Do not know where to sell	Small volume to sell	Low quality	Total		
Lawngtlai	Chhintuipui W	3	12	15	2	3	0	0	1	0	6		
Mamit	Kawrtah	6	9	15	11	0	0	0	0	0	11		
Saitual	Aizawl WL		15	15	1	0	0	0	0	0	1		
Serchiip	Thenzawl	3	12	15	9	10	1	0	5	1	26		
	Total	12	48	60	23	13	1	0	6	1	44		

19. Requirements to start cultivation/ harvesting forest produces

19.1 Tree Cultivation

1) Preferred Species

FHH															
District	Division	FHH	MHH	Total	Areca nut	Fir	Herbse (Mesua ferrea)	Ngiau (Michelia oblonga)	Oranges	Paulonia tree	Banana	Teak	Tei (Toon)	Agarwiid	Gomari
Lawngtlai	Chhintuipui W	3	12	15	1										
Mamit	Kawrtah	6	9	15	4										
Saitual	Aizawl WL		15	15											
Serchiip	Thenzawl	3	12	15				1					1		1
	Total	12	48	60	5	0	0	1	0	0	0	0	1	0	1

MHH															
District	Division	FHH	MHH	Total	Areca nut	Fir	Herbse (Mesua ferrea)	Ngiau (Michelia oblonga)	Oranges	Paulonia tree	Banana	Teak	Tei (Toon)	Agarwiid	Gomari
Lawngtlai	Chhintuipui W	3	12	15	2			5	1		1			1	
Mamit	Kawrtah	6	9	15	1			1							
Saitual	Aizawl WL		15	15	2	1	1	2	2	2		5			
Serchiip	Thenzawl	3	12	15				1					3		
	Total	12	48	60	5	1	1	9	3	2	1	5	3	1	0

Total															
District	Division	FHH	MHH	Total	Areca nut	Fir	Herbse (Mesua ferrea)	Ngiau (Michelia oblonga)	Oranges	Paulonia tree	Banana	Teak	Tei (Toon)	Agarwiid	Gomari
Lawngtlai	Chhintuipui W	3	12	15	3	0	0	5	2	0	1	0	0	1	0
Mamit	Kawrtah	6	9	15	5	0	0	1	0	0	0	0	0	0	0
Saitual	Aizawl WL		15	15	2	1	1	2	2	2	0	5	0	0	0
Serchiip	Thenzawl	3	12	15	0	0	0	2	0	0	0	0	4	0	1
	Total	12	48	60	10	1	1	10	3	2	1	5	4	1	1

2) Requirements

FHH															
District	Division	FHH	MHH	Total	Better road connection	Credit facility/ Finance	Fertilizer	Water/ Irrigation/ Water Tank	Equipment	Land	Quality seed	Scientific input for soil humidity	Seedlings	Market	Total
Lawngtlai	Chhintuipui W	3	12	15		1							1		2
Mamit	Kawrtah	6	9	15										4	4
Saitual	Aizawl WL		15	15											0
Serchiip	Thenzawl	3	12	15											0
	Total	12	48	60	0	1	0	0	0	0	0	0	1	4	6

MHH															
District	Division	FHH	MHH	Total	Better road connection	Credit facility/ Finance	Fertilizer	Water/ Irrigation/ Water Tank	Equipment	Land	Quality seed	Scientific input for soil humidity	Seedlings	Market	Total
Lawngtlai	Chhintuipui W	3	12	15	1	1	2	3	1	2	2				12
Mamit	Kawrtah	6	9	15								1			1
Saitual	Aizawl WL		15	15		2		2		5			10		19
Serchiip	Thenzawl	3	12	15				1					2		3
	Total	12	48	60	1	3	2		1	7	2	1	12		29

Total															
District	Division	FHH	MHH	Total	Better road connection	Credit facility/ Finance	Fertilizer	Water/ Irrigation/ Water Tank	Equipment	Land	Quality seed	Scientific input for soil humidity	Seedlings	Market	Total
Lawngtlai	Chhintuipui W	3	12	15	1	2	2	3	1	2	2	0	1	0	14
Mamit	Kawrtah	6	9	15	0	0	0	0	0	0	0	1	0	4	5
Saitual	Aizawl WL		15	15	0	2	0	2	0	5	0	0	10	0	19
Serchiip	Thenzawl	3	12	15	0	0	0	1	0	0	0	0	2	0	3
	Total	12	48	60	1	4	2	0	1	7	2	1	13	4	35

19.2 Bamboo Cultivation

1) Preferred Species

FHH								
District	Division	FHH	MHH	Total	Foreign variety	Local Bamboo	Rawnal (Schizostachyum fuchsianum)	Zoramthanga mau (Chief Minister's Bamboo)
Lawngtlai	Chhintuipui W	3	12	15				
Mamit	Kawrtah	6	9	15				
Saitual	Aizawl WL		15	15				
Serchiip	Thenzawl	3	12	15				
	Total	12	48	60	0	0	0	0

MHH								
District	Division	FHH	MHH	Total	Foreign variety	Local Bamboo	Rawnal (Schizostachyum fuchsianum)	Zoramthanga mau (Chief Minister's Bamboo)
Lawngtlai	Chhintuipui W	3	12	15			3	1
Mamit	Kawrtah	6	9	15				
Saitual	Aizawl WL		15	15	1	5	4	1
Serchiip	Thenzawl	3	12	15				
	Total	12	48	60	1	5	7	2

Total								
District	Division	FHH	MHH	Total	Foreign variety	Local Bamboo	Rawnal (Schizostachyum fuchsianum)	Zoramthanga mau (Chief Minister's Bamboo)
Lawngtlai	Chhintuipui W	3	12	15		0	3	1
Mamit	Kawrtah	6	9	15		0	0	0
Saitual	Aizawl WL		15	15	1	5	4	1
Serchiip	Thenzawl	3	12	15		0	0	0
	Total	12	48	60	1	5	7	2

2) Requirements

FHH															
District	Division	FHH	MHH	Total	Better road connection	Credit facility/ Finance	Fertilizer	Water/ Irrigation/ Water Tank	Equipment	Land	Quality seed	Scientific input for soil humidity	Seedlings	Manure	Total
Lawngtlai	Chhintuipui W	3	12	15											0
Mamit	Kawrtah	6	9	15											0
Saitual	Aizawl WL		15	15											0
Serchiip	Thenzawl	3	12	15											0
	Total	12	48	60	0	0	0	0	0	0	0	0	0	0	0

MHH															
District	Division	FHH	MHH	Total	Better road connection	Credit facility/ Finance	Fertilizer	Water/ Irrigation/ Water Tank	Equipment	Land	Quality seed	Scientific input for soil humidity	Seedlings	Manure	Total
Lawngtlai	Chhintuipui W	3	12	15		1				2				1	3
Mamit	Kawrtah	6	9	15											0
Saitual	Aizawl WL		15	15						2					2
Serchiip	Thenzawl	3	12	15						2	6		2		10
	Total	12	48	60	0	1	0		0	6	6	0	2		15

Total															
District	Division	FHH	MHH	Total	Better road connection	Credit facility/ Finance	Fertilizer	Water/ Irrigation/ Water Tank	Equipment	Land	Quality seed	Scientific input for soil humidity	Seedlings	Manure	Total
Lawngtlai	Chhintuipui W	3	12	15	0	1	0	0	0	2	0	0	0	1	3
Mamit	Kawrtah	6	9	15	0	0	0	0	0	0	0	0	0	0	0
Saitual	Aizawl WL		15	15	0	0	0	0	0	2	0	0	0	0	2
Serchiip	Thenzawl	3	12	15	0	0	0	0	0	2	6	0	2	0	10
	Total	12	48	60	0	1	0	0	0	6	6	0	2	0	15

19.3 NTFP Cultivation

1) Preferred Species

FHH																
District	Division	FHH	MHH	Total	Areca nut	Avocado	Banana	Chilly	Chingit (Cape Yellow Wood)	Ginger	Hruipui (Palm)	Kawhtebel (Snowflake Aralia)	Khanghu (Climbing Wattle)	Maian (Pumpkin Leaf)	Phuibnam (East Indian Glory Bower)	
Lawngtlai	Chhintuipui W	3	12	15						1						
Mamit	Kawrtah	6	9	15	1											
Saitual	Aizawl WL		15	15												
Serchiip	Thenzawl	3	12	15												
	Total	12	48	60	1	0	0	0	0	1	0	0	0	0	0	0

MHH																
District	Division	FHH	MHH	Total	Areca nut	Avocado	Banana	Chilly	Chingit (Cape Yellow Wood)	Ginger	Hruipui (Palm)	Kawhtebel (Snowflake Aralia)	Khanghu (Climbing Wattle)	Maian (Pumpkin Leaf)	Phuibnam (East Indian Glory Bower)	
Lawngtlai	Chhintuipui W	3	12	15		1	1			1				4	1	1
Mamit	Kawrtah	6	9	15	1		1									
Saitual	Aizawl WL		15	15				1		2	1	3	1			
Serchiip	Thenzawl	3	12	15												
	Total	12	48	60	1	1	2	1	1	2	1	3	5	1	1	1

Total																
District	Division	FHH	MHH	Total	Areca nut	Avocado	Banana	Chilly	Chingit (Cape Yellow Wood)	Ginger	Hruipui (Palm)	Kawhtebel (Snowflake Aralia)	Khanghu (Climbing Wattle)	Maian (Pumpkin Leaf)	Phuibnam (East Indian Glory Bower)	
Lawngtlai	Chhintuipui W	3	12	15	0	1	1	0	0	2	0	0	0	4	1	1
Mamit	Kawrtah	6	9	15	2	0	1	0	0	0	0	0	0	0	0	0
Saitual	Aizawl WL		15	15	0	0	0	1	0	2	1	3	1	0	0	0
Serchiip	Thenzawl	3	12	15	0	0	0	0	0	0	0	0	0	0	0	0
	Total	12	48	60	2	1	2	1	1	2	1	3	5	1	1	1

2) Requirements

FHH																
District	Division	FHH	MHH	Total	Better road connection	Credit facility/ Finance	Fertilizer	Water/ Irrigation/ Water Tank	Equipment	Land	Quality seed	Scientific input for soil humidity	Seedlings	Manure	Marketing	Plant protection
Lawngtlai	Chhintuipui W	3	12	15							1					
Mamit	Kawrtah	6	9	15											1	
Saitual	Aizawl WL		15	15												1
Serchiip	Thenzawl	3	12	15												
	Total	12	48	60	0	0	0	0	0	0	1	0	0	0		1

MHH																
District	Division	FHH	MHH	Total	Better road connection	Credit facility/ Finance	Fertilizer	Water/ Irrigation/ Water Tank	Equipment	Land	Quality seed	Scientific input for soil humidity	Seedlings	Manure	Marketing	Plant protection
Lawngtlai	Chhintuipui W	3	12	15			2	4		1	3					
Mamit	Kawrtah	6	9	15				1							1	
Saitual	Aizawl WL		15	15		1		2		4	5					1
Serchiip	Thenzawl	3	12	15												
	Total	12	48	60	0	1	2	7	0	5	8	0	0	0	1	1

Total																
District	Division	FHH	MHH	Total	Better road connection	Credit facility/ Finance	Fertilizer	Water/ Irrigation/ Water Tank	Equipment	Land	Quality seed	Scientific input for soil humidity	Seedlings	Manure	Marketing	Plant protection
Lawngtlai	Chhintuipui W	3	12	15	0	0	2	4	0	1	4	0	0	0		
Mamit	Kawrtah	6	9	15	0	0	0	1	0	0	0	0	0	0		
Saitual	Aizawl WL		15	15	0	1	0	2	0	4	5	0	0	0		1
Serchiip	Thenzawl	3	12	15	0	0	0	0	0	0	0	0	0	0		
	Total	12	48	60	0	1	2	7	0	5	9	0	0	0		1

19.4 Wild Harvest

1) Preferred Species

FHH									
District	Division	FHH	MHH	Total	Thingthupui (Dysoxylum procerum)	Hruizik (Palm)	Kawlthai (Psidium guajava L./ Guava)	Khanghu (Climbing Wattle)	Zawngtah (Stink Bean)
Lawngtlai	Chhintuipui W	3	12	15	1				
Mamit	Kawrtah	6	9	15					
Saitual	Aizawl WL		15	15					
Serchiip	Thenzawl	3	12	15					
	Total	12	48	60	1	0	0	0	0

MHH									
District	Division	FHH	MHH	Total	Thingthupui (Dysoxylum procerum)	Hruizik (Palm)	Kawlthai (Psidium guajava L./ Guava)	Khanghu (Climbing Wattle)	Zawngtah (Stink Bean)
Lawngtlai	Chhintuipui W	3	12	15		1	1		1
Mamit	Kawrtah	6	9	15					0
Saitual	Aizawl WL		15	15				3	3
Serchiip	Thenzawl	3	12	15					0
	Total	12	48	60	1	1	3	1	6

Total									
District	Division	FHH	MHH	Total	Thingthupui (Dysoxylum procerum)	Hruizik (Palm)	Kawlthai (Psidium guajava L./ Guava)	Khanghu (Climbing Wattle)	Zawngtah (Stink Bean)
Lawngtlai	Chhintuipui W	3	12	15	1	1	1	0	1
Mamit	Kawrtah	6	9	15	0	0	0	0	0
Saitual	Aizawl WL		15	15	0	0	0	3	3
Serchiip	Thenzawl	3	12	15	0	0	0	0	0
	Total	12	48	60	2	1	3	1	6

2) Requirements

District	Division	FHH	MHH	Total	Credit facility/ Finance		
					FHH	MHH	Total
Lawngtlai	Chhintuipui W	3	12	15	1	2	3
Mamit	Kawrtah	6	9	15			0
Saitual	Aizawl WL		15	15		2	2
Serchhip	Thenzawl	3	12	15			0
	Total	12	48	60	1	4	5

20. Does VFDC help you in selling produces to get good price?

District	Division	FHH	MHH	Total	FHH			MHH			Total		
					Yes	No	Total	Yes	No	Total	Yes	No	Total
Lawngtlai	Chhintuipui W	3	12	15		3	3		12	12	0	15	15
Mamit	Kawrtah	6	9	15		4	4		6	6	0	10	10
Saitual	Aizawl WL		15	15			0		9	9	0	9	9
Serchhip	Thenzawl	3	12	15		3	3		12	12	0	15	15
	Total	12	48	60	0	10	10	0	39	39	0	49	49

21. Group Marketing of timber, bamboo or NTFPs

21.1 Experience in participation in collective marketing

District	Division	FHH	MHH	Total	FHH			MHH			Total		
					Yes	No	Total	Yes	No	Total	Yes	No	Total
Lawngtlai	Chhintuipui W	3	12	15		3	3		12	12	0	15	15
Mamit	Kawrtah	6	9	15		6	6	2	7	9	2	13	15
Saitual	Aizawl WL		15	15			0	2	9	11	2	9	11
Serchhip	Thenzawl	3	12	15	2	1	3	6	6	12	8	7	15
	Total	12	48	60	2	10	12	10	34	44	12	44	56

22.2 Advantages

a. High selling price due to increased bargaining power

District	Division	FHH	MHH	Total	FHH			MHH			Total		
					Expected	Fulfilled	Total	Expected	Fulfilled	Total	Expected	Fulfilled	Total
Lawngtlai	Chhintuipui W	3	12	15			0			0	0	0	0
Mamit	Kawrtah	6	9	15			0	1	1	2	1	1	2
Saitual	Aizawl WL		15	15			0	1	1	2	1	1	2
Serchhip	Thenzawl	3	12	15		1	1		3	3	0	4	4
	Total	12	48	60	0	1	1	2	5	7	2	6	8

b. Increased knowledge/ skill about farming, post harvest, and marketing practice

District	Division	FHH	MHH	Total	FHH			MHH			Total		
					Expected	Fulfilled	Total	Expected	Fulfilled	Total	Expected	Fulfilled	Total
Lawngtlai	Chhintuipui W	3	12	15			0			0	0	0	0
Mamit	Kawrtah	6	9	15			0	1		1	1	0	1
Saitual	Aizawl WL		15	15			0	1		1	1	0	1
Serchhip	Thenzawl	3	12	15		1	1	1	2	3	1	3	4
	Total	12	48	60	0	1	1	3	2	5	3	3	6

c. Saving transportation cost

District	Division	FHH	MHH	Total	FHH			MHH			Total		
					Expected	Fulfilled	Total	Expected	Fulfilled	Total	Expected	Fulfilled	Total
Lawngtlai	Chhintuipui W	3	12	15			0			0	0	0	0
Mamit	Kawrtah	6	9	15			0			0	0	0	0
Saitual	Aizawl WL		15	15			0	1	1	2	1	1	2
Serchhip	Thenzawl	3	12	15		1	1	1	2	3	1	3	4
	Total	12	48	60	0	1	1	2	3	5	2	4	6

d. Easy access to equipment, machinery and facilities for farming, post harvest handling and marketing

District	Division	FHH	MHH	Total	FHH			MHH			Total		
					Expected	Fulfilled	Total	Expected	Fulfilled	Total	Expected	Fulfilled	Total
Lawngtlai	Chhintuipui W	3	12	15			0			0	0	0	0
Mamit	Kawrtah	6	9	15			0			0	0	0	0
Saitual	Aizawl WL		15	15			0		1	1	0	1	1
Serchiip	Thenzawl	3	12	15			0			0	0	0	0
	Total	12	48	60	0	0	0	0	1	1	0	1	1

e. Easy access to market information

District	Division	FHH	MHH	Total	FHH			MHH			Total		
					Expected	Fulfilled	Total	Expected	Fulfilled	Total	Expected	Fulfilled	Total
Lawngtlai	Chhintuipui W	3	12	15			0			0	0	0	0
Mamit	Kawrtah	6	9	15			0	1	1	2	1	1	2
Saitual	Aizawl WL		15	15			0	1	1	2	1	1	2
Serchiip	Thenzawl	3	12	15	1	1	2	2	3	5	3	4	7
	Total	12	48	60	1	1	2	4	5	9	5	6	11

f. Easy access to loan/ credit

District	Division	FHH	MHH	Total	FHH			MHH			Total		
					Expected	Fulfilled	Total	Expected	Fulfilled	Total	Expected	Fulfilled	Total
Lawngtlai	Chhintuipui W	3	12	15			0			0	0	0	0
Mamit	Kawrtah	6	9	15			0			0	0	0	0
Saitual	Aizawl WL		15	15			0	1	1	1	1	0	1
Serchiip	Thenzawl	3	12	15	1		1	1	1	2	2	1	3
	Total	12	48	60	1	0	1	2	1	3	3	1	4

g. External support (from Government, NGO, etc.) to improve farming, post harvest marketing and marketing practice

District	Division	FHH	MHH	Total	FHH			MHH			Total		
					Expected	Fulfilled	Total	Expected	Fulfilled	Total	Expected	Fulfilled	Total
Lawngtlai	Chhintuipui W	3	12	15			0			0	0	0	0
Mamit	Kawrtah	6	9	15			0			0	0	0	0
Saitual	Aizawl WL		15	15			0	1		1	1	0	1
Serchiip	Thenzawl	3	12	15	1		1	1		1	2	0	2
	Total	12	48	60	1	0	1	2	0	2	3	0	3

22.3 Reasons for not participating group based marketing

District	Division	FHH	MHH	Total	FHH							Total
					No benefit/ profit from joint marketing (no difference from individual marketing)	Want to keep high quality of products without mixing with the products from other members	Many troubles in managing conflicting interests among group members	No leadership/ No joint marketing group in the community	No idea how to organise and manage a joint marketing	No external support	Others*	
Lawngtlai	Chhintuipui W	3	12	15				3				12
Mamit	Kawrtah	6	9	15	2							9
Saitual	Aizawl WL		15	15								8
Serchiip	Thenzawl	3	12	15					1			6
	Total	12	48	60	2	0	0	3	1	0	0	35

District	Division	FHH	MHH	Total	MHH							Total
					No benefit/ profit from joint marketing (no difference from individual marketing)	Want to keep high quality of products without mixing with the products from other members	Many troubles in managing conflicting interests among group members	No leadership/ No joint marketing group in the community	No idea how to organise and manage a joint marketing	No external support	Others*	
Lawngtlai	Chhintuipui W	3	12	15				12				12
Mamit	Kawrtah	6	9	15	3				5		1	9
Saitual	Aizawl WL		15	15	1						7	8

Serchiip	Thenzawl	3	12	15					1		5	6
Total		12	48	60	4	0	0	12	6	0	13	35

District	Division	FHH	MHH	Total	Total							
					No benefit/ profit from joint marketing (no difference from individual marketing)	Want to keep high quality of products without mixing with the products from other members	Many troubles in managing conflicting interests among group members	No leadership/ No joint marketing group in the community	No idea how to organise and manage a joint marketing	No external support	Others*	Total
Lawngtlai	Chhintuipui W	3	12	15	0	0	0	15	0	0	0	24
Mamit	Kawrtah	6	9	15	5	0	0	0	5	0	1	18
Saitual	Aizawl WL		15	15	1	0	0	0	0	0	7	16
Serchiip	Thenzawl	3	12	15	0	0	0	0	2	0	5	12
Total		12	48	60	6	0	0	15	7	0	13	70

*Other Reasons (Disaggregated)

Other Reasons (Disaggregated)					FHH												
District	Division	FHH	MHH	Total	Do not see the need of it	It is not new so not included	Not yet time for harvest	Still in the process of doing it	Commitment	Do not know about collective marketing	No selling	No selling of NTFPs, Bamboo, Timber	No specific reason	Small Volume	Still in the process of doing it	There is joint effort in sale of their produce, but no forest product	Total
Lawngtlai	Chhintuipui W	3	12	15													0
Mamit	Kawrtah	6	9	15	1	1	1	1									4
Saitual	Aizawl WL		15	15													0
Serchiip	Thenzawl	3	12	15													0
	Total	12	48	60	1	1	1	1	0	0	0	0	0	0	0	0	4

					MHH												
District	Division	FHH	MHH	Total	Do not see the need of it	It is not new so not included	Not yet time for harvest	Still in the process of doing it	Commitment	Do not know about collective marketing	No selling	No selling of NTFPs, Bamboo, Timber	No specific reason	Small Volume	Still in the process of doing it	There is joint effort in sale of their produce, but no forest product	Total
Lawngtlai	Chhintuipui W	3	12	15													0
Mamit	Kawrtah	6	9	15											1		1
Saitual	Aizawl WL		15	15						1	4	1				1	7
Serchip	Thenzawl	3	12	15					1				1	3			5
Total		12	48	60	0	0	0	0	1	1	4	1	1	3	1	1	13

					FHH												
District	Division	FHH	MHH	Total	Do not see the need of it	It is not new so not included	Not yet time for harvest	Still in the process of doing it	Commitment	Do not know about collective marketing	No selling	No selling of NTFPs, Bamboo, Timber	No specific reason	Small Volume	Still in the process of doing it	There is joint effort in sale of their produce, but no forest product	Total
Lawngtlai	Chhintuipui W	3	12	15	0	0	0	0	0	0	0	0	0	0	0	0	0
Mamit	Kawrtah	6	9	15	1	1	1	1	0	0	0	0	0	0	1	0	5
Saitual	Aizawl WL		15	15	0	0	0	0	0	1	4	1	0	0	0	1	7
Serchiip	Thenzawl	3	12	15	0	0	0	0	1	0	0	0	1	3	0	0	5
	Total	12	48	60	1	1	1	1	1	1	4	1	1	3	1	1	17

23. Human Wildlife Conflict

23.1 Type of Animals Causing Problems

District	Division	FHH	MHH	Total	Bear	Birds	Chepa (Northern Tree shrew)	Locust	Porcupine	Rat	Bui (Short Tailed Mole)	Sahram (Small clawed Otter)	Serow	Squirrel	Thlangdar (Stink Bug)	Wild Boar	Total
Lawngtlai	Chhintuipui W	3	12	15		1				2		1					5
Mamit	Kawrtah	6	9	15	3		1			9	1			10			33
Saitual	Aizawl WL		15	15		1				1				1			4
Serchiip	Thenzawl	3	12	15					1	4			1		3		10
Total		12	48	60	3	2	1	1	1	15	1	1	1	11	3		52

23.2 Damage caused

Types of Animals	Agriculture crop stumped/encroached	Agriculture crops eaten	Total
Bear	2	1	3
Birds		2	2
Chepa (Northern Tree shrew)		1	1
Locust	1		1
Porcupine	1		1
Rat	3	12	15
Bui (Short Tailed Mole)		1	1
Squirrel		2	2
Sahram (Small clawed Otter)		1	1
Serow	1	1	2
Squirrel	2	7	9
Thlangdar (Stink bug)	2	1	3
Wild Boar	4	8	12
Total	16	37	53

23.3 Frequency

District	Division	FHH	MHH	Total	Agriculture crop stumped/ encroached					
					Once	Twice	Thrice	Four Times	Regularly	Total
Lawngtlai	Chhintuipui W	3	12	15	1					1
Mamit	Kawrtlah	6	9	15	3	3	2			8
Saitual	Aizawl WL		15	15	1					1
Serchhip	Thenzawl	3	12	15	2	1				3
Total		12	48	60	7	4	2	0	0	13

District	Division	FHH	MHH	Total	Agriculture crop eaten					
					Once	Twice	Thrice	Four Times	Regularly	Total
Lawngtlai	Chhintuipui W	3	12	15	1	2				3
Mamit	Kawrtlah	6	9	15	2	4	5	1	7	19
Saitual	Aizawl WL		15	15						0
Serchhip	Thenzawl	3	12	15	4	1	2			7
Total		12	48	60	7	7	7	1	7	29

23.4 Frequency occurring months

Types of Animals	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Bear											2		2
Birds										1	1		2
Chepa											1		1
Locust													0
Porcupine	2	1	1	1		1	1	1	1	1	2	5	22
Rat	1	1	1	1		1	1	1	1	1	1	1	12
Bui	2	2	2	2		2	2	2	2	2	2	2	24
Squirrel													0
Sahram	1												1
Serow	1	1	1	1		1	1	1	1	1	1	1	17
Squirrel												1	1
Stink bug													0
Wild Boar	4	2	2	2		2	2	2	5	6	8	4	41
Total	11	7	7	7	7	7	7	7	10	11	15	18	123

23.5 Compensation paid by - NO DATA

23.6 Amount of Compensation

Types of Animals	Claimed but not paid	Total
Bear		
Birds	1	1
Chepa (Northern Tree shrew)		
Locust		
Porcupine		
Rat	1	1
Bui (Short Tailed Mole)		
Squirrel		
Sahram (Small clawed Otter)		
Serow		
Squirrel		
Thlangdar (Stink bug)		
Wild Boar		
Total	2	2

23.7 Counter measures taken

Types of Animals	Gun	Killing	Making sound	Poison	Scarecrow	Trap	Weeding	Total
Bear								0
Birds			1		1			2
Chepa (Northern Tree shrew)		1						1
Locust								0
Porcupine						1		1
Rat		2				7	2	11
Bui (Short Tailed Mole)								0
Squirrel				1				1
Sahram (Small clawed Otter)							1	1
Serow								0
Squirrel		4				2	2	8
Thlangdar (Stink bug)								0
Wild Boar	2							2
Total	2	7	1	1	1	11	4	27

23.8 Counter measures taken by whom

	self	Total
Bear	2	2
Birds	2	2
Chepa	1	1
Locust		
Porcupine	1	1
Rat	12	12
Bui		
Squirrel	1	1
Sahram	1	1
Serow		
Squirrel	8	8
Stink bug		
Thlangdar		
Wild Boar	3	3
Total	31	31

24 Natural Disaster
24.1 Flood
1) How often it occurs

					FHH					MHH						
					Multiple numbers of incidences in the past consecutive years	Once a year	Once in a few years	Once in ten years	Never	Total	Multiple numbers of incidences in the past consecutive years	Once a year	Once in a few years	Once in ten years	Never	Total
District	Division	FHH	MHH	Total												
Lawngtlai	Chhintuipui W	3	12	15					3	3					7	7
Mamit	Kawrtah	6	9	15						0						0
Saitual	Aizawl WL		15	15						0					8	8
Serchiip	Thenzawl	3	12	15						0						0
	Total	12	48	60					3	3					15	15

					Total					
District	Division	FHH	MHH	Total	Multiple numbers of incidences in the past consecutive years	Once a year	Once in a few years	Once in ten years	Never	Total
Lawngtlai	Chhintuipui W	3	12	15	0	0	0	0	10	10
Mamit	Kawrtah	6	9	15	0	0	0	0	0	0
Saitual	Aizawl WL		15	15	0	0	0	0	8	8
Serchiip	Thenzawl	3	12	15	0	0	0	0	0	0
	Total	12	48	60	0	0	0	0	18	18

- 2) When was the last major flooding and damage - NO DATA
- 3) What were the damages of flood - NO DATA
- 4) Flood - Compensation received - NO DATA
- 5) Flood Compensation - Government Department - NO DATA
- 6) Occurrence of flood - Yes or No - NO DATA
- 7) Occurrence of flood - if yes, causes - NO DATA
- 8) Flood Preventive measure - Yes or No - NO DATA

24.2 Landslide/ erosion
1) How often it occurs

					FHH						MHH					
District	Division	FHH	MHH	Total	Multiple numbers of incidences in the past consecutive years	Once a year	Once in a few years	Once in ten years	Never	Total	Multiple numbers of incidences in the past consecutive years	Once a year	Once in a few years	Once in ten years	Never	Total
Lawngtlai	Chhintuipui W	3	12	15						3						7
Mamit	Kawrtihah	6	9	15		1				1						0
Saitual	Aizawl WL		15	15						0					8	8
Serchiip	Thenzawl	3	12	15						0						0
	Total	12	48	60	0	1	0	0	3	4					15	15

					Total					
District	Division	FHH	MHH	Total	Multiple numbers of incidences in the past consecutive years	Once a year	Once in a few years	Once in ten years	Never	Total
Lawngtlai	Chhintuipui W	3	12	15	0	0	0	0	10	10
Mamit	Kawrtah	6	9	15	0	1	0	0	0	1
Saitual	Aizawl WL		15	15	0	0	0	0	8	8
Serchiip	Thenzawl	3	12	15	0	0	0	0	0	0
	Total	12	48	60	0	1	0	0	18	19

2) When was the last major landslide and damage

District	Division	FHH	MHH	Total	FHH					MHH				
					Last year	A few years ago	More than 5 years ago	More than 10 years ago	Total	Last year	A few years ago	More than 5 years ago	More than 10 years ago	Total
Lawngtlai	Chhintuipui W	3	12	15					0					
Mamit	Kawrtah	6	9	15		1			1					
Saitual	Aizawl WL		15	15					0					
Serchiip	Thenzawl	3	12	15					0					
Total		12	48	60	0	1	0	0	1					

Total										
District	Division	FHH	MHH	Total	Last year	A few years ago	More than 5 years ago	More than 10 years ago	Total	
Lawngtlai	Chhintuipui W	3	12	15	0	0	0	0	0	
Mamit	Kawrtah	6	9	15	0	1	0	0	1	
Saitual	Aizawl WL		15	15	0		0	0	0	
Serchiip	Thenzawl	3	12	15	0	0	0	0	0	
Total		12	48	60	0	1	0	0	1	

3) What were the damages of landslide

District	Division	FHH	MHH	Total	FHH						
					Siltation	Loss of agriculture crops	Damage of house	Human injuries	Human Death	Loss of livestock	Total
Lawngtlai	Chhintuipui W	3	12	15							0
Mamit	Kawrtah	6	9	15		1					1
Saitual	Aizawl WL		15	15							0
Serchiip	Thenzawl	3	12	15							0
Total		12	48	60	0	1	0	0	0	0	1

District	Division	FHH	MHH	Total	MHH						
					Siltation	Loss of agriculture crops	Damage of house	Human injuries	Human Death	Loss of livestock	Total
Lawngtlai	Chhintuipui W	3	12	15							
Mamit	Kawrtah	6	9	15							
Saitual	Aizawl WL		15	15							
Serchiip	Thenzawl	3	12	15							
Total		12	48	60							

District	Division	FHH	MHH	Total	Total						
					Siltation	Loss of agriculture crops	Damage of house	Human injuries	Human Death	Loss of livestock	Total
Lawngtlai	Chhintuipui W	3	12	15	0	0	0	0	0	0	0
Mamit	Kawrtah	6	9	15	0	1	0	0	0	0	1
Saitual	Aizawl WL		15	15	0	0	0	0	0	0	0
Serchiip	Thenzawl	3	12	15	0	0	0	0	0	0	0
Total		12	48	60	0	1	0	0	0	0	1

4) Landslide - Any Compensation - Type of loss

District	Division	FHH			Damages on Arccanut		Total
		Female	Male	Total	FHH	MHH	
Lawngtlai	Chhintuipui W	3	12	15			0
Mamit	Kawrtah	6	9	15	1		1
Saitual	Aizawl WL		15	15			0
Serchiip	Thenzawl	3	12	15			0
Total		12	48	60	1		1

5) Landslide - Any compensation received - NO DATA

6) Landslide - Any Compensation - Government Department - NO DATA

7) Frequency of occurrence of landslide in the past 5 years - Yes (Increased) or No (No change)

District	Division	FHH			FHH			MHH			Total		
		Female	Male	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total
Lawngtlai	Chhintupui W	3	12	15			0			0	0	0	0
Mamit	Kawrtah	6	9	15	1		1			1	0	0	1
Saitual	Aizawl WL		15	15			0			0	0	0	0
Serchhip	Thenzawl	3	12	15			0			0	0	0	0
	Total	12	48	60	1		1			1	0	0	1

8) Perceived cause of landslide/ erosion

District	Division	FHH			Natural Cause		Total
		Female	Male	Total	FHH	MHH	
Lawngtlai	Chhintupui W	3	12	15			0
Mamit	Kawrtah	6	9	15	1		1
Saitual	Aizawl WL		15	15			0
Serchhip	Thenzawl	3	12	15			0
	Total	12	48	60	1		1

9) Preventive measures against landslides - Yes or No - NO DATA

10) Preventive measures against landslides - if yes, causes - NO DATA

24.3. Forest fire -

1) How often

					FHH						MHH					
District	Division	FHH	MHH	Total	Multiple numbers of incidences in the past consecutive years	Once a year	Once in a few years	Once in ten years	Never	Total	Multiple numbers of incidences in the past consecutive years	Once a year	Once in a few years	Once in ten years	Never	Total
Lawngtlai	Chhintupui W	3	12	15			3			3	1	2	4			7
Mamit	Kawrtah	6	9	15		1		1		2		1	2			3
Saitual	Aizawl WL		15	15						0					8	8
Serchhip	Thenzawl	3	12	15						0			2			2
	Total	12	48	60	0	1	3	1	0	5	1	3	8	0	8	20

District	Division	FHH	MHH	Total	Total					
					Multiple numbers of incidences in the past consecutive years	Once a year	Once in a few years	Once in ten years	Never	Total
Lawngtlai	Chhintupui W	3	12	15	1	2	7	0	0	10
Mamit	Kawrtah	6	9	15	0	2	2	1	0	5
Saitual	Aizawl WL		15	15	0	0	0	0	8	8
Serchhip	Thenzawl	3	12	15	0	0	2	0	0	2
	Total	12	48	60	1	4	11	1	8	25

2) When was the last forest fire and damage

District	Division	FHH	MHH	Total	FHH					MHH				
					Last year	A few years ago	More than 5 years ago	More than 10 years ago	Total	Last year	A few years ago	More than 5 years ago	More than 10 years ago	Total
Lawngtlai	Chhintupui W	3	12	15	3				3	6		1		7
Mamit	Kawrtah	6	9	15	1		1		2		3			3
Saitual	Aizawl WL		15	15					0					0
Serchhip	Thenzawl	3	12	15					0		2			2
	Total	12	48	60	4	0	1	0	5	6	5	1	0	12

Total									
District	Division	FHH	MHH	Total	Last year	A few years ago	More than 5 years ago	More than 10 years ago	Total
Lawngtlai	Chhintuipui W	3	12	15	9	0	1	0	10
Mamit	Kawrtah	6	9	15	1	3	1	0	5
Saitual	Aizawl WL		15	15	0	0	0	0	0
Serchiip	Thenzawl	3	12	15	0	2	0	0	2
	Total	12	48	60	10	5	2	0	17

3) What were the damages of forest fire

					FHH					MHH						
District	Division	FHH	MHH	Total	Loss of agriculture crops	Damage to house	Human injuries	Human Death	Loss of Livestock	Total	Loss of agriculture crops	Damage to house	Human injuries	Human Death	Loss of Livestock	Total
Lawngtlai	Chhintuipui W	3	12	15	3					3	7					7
Mamit	Kawrtah	6	9	15	2					2	3					3
Saitual	Aizawl WL		15	15						0						0
Serchiip	Thenzawl	3	12	15						0	2					2
	Total	12	48	60	5	0	0	0	0	5	12	0	0	0	0	12

					Total					
District	Division	FHH	MHH	Total	Loss of agriculture crops	Damage to house	Human injuries	Human Death	Loss of Livestock	Total
Lawngtlai	Chhintuipui W	3	12	15	10	0	0	0	0	10
Mamit	Kawrtah	6	9	15	5	0	0	0	0	5
Saitual	Aizawl WL		15	15	0	0	0	0	0	0
Serchiip	Thenzawl	3	12	15	2	0	0	0	0	2
	Total	12	48	60	17	0	0	0	0	17

4) Forest fire - Any Compensation- type of loss

					Counts		Total	
					FHH	MHH		
District	Division	FHH	MHH	Total	Areca nut	Orange		
Lawngtlai	Chhintuipui W	3	12	15			1	1
Mamit	Kawrtah	6	9	15		1		1
Saitual	Aizawl WL		15	15				0
Serchiip	Thenzawl	3	12	15				0
	Total	12	48	60	1	1		2

5) Forest Fire - Any Compensation - Compensation Received

					Not Received		Total
					FHH	MHH	
District	Division	FHH	MHH	Total			
Lawngtlai	Chhintuipui W	3	12	15		1	1
Mamit	Kawrtah	6	9	15			0
Saitual	Aizawl WL		15	15			0
Serchiip	Thenzawl	3	12	15			0
	Total	12	48	60	0	1	1

6) Forest Fire - Any Compensation - Government Department - NO DATA

7) Occurrence of forest fire in the past 5 years - Yes or No

					FHH			MHH			Total		
District	Division	FHH	MHH	Total	Yes	No	Total	Yes	No	Total	Yes	No	Total
Lawngtlai	Chhintuipui W	3	12	15	1	2	3	3	4	7	4	6	10
Mamit	Kawrtah	6	9	15	2		2	1	2	3	3	2	5
Saitual	Aizawl WL		15	15			0			0	0	0	0
Serchiip	Thenzawl	3	12	15			0		1	1	0	1	1
	Total	12	48	60	3	2	5	4	7	11	7	9	16

8) Occurrence of forest fire in the past 5 years - if yes, causes

District	Division	FHH	MHH	Total	FHH			Total	MHH			Total
					Carelessness	cultivation of jhum in practise and an extended dry season			Carelessness	cultivation of jhum in practise and an extended dry season		
Lawngtlai	Chhintuipui W	3	12	15	1			1	1		2	3
Mamit	Kawrtlah	6	9	15	2			2	1			1
Saitual	Aizawl WL		15	15								0
Serchiip	Thenzawl	3	12	15								0
Total		12	48	60	3	0		3	2	2		4

District	Division	FHH	MHH	Total	Total			Total
					Carelessness	cultivation of jhum in practise and an extended dry season		
Lawngtlai	Chhintuipui W	3	12	15	2	2		4
Mamit	Kawrtlah	6	9	15	3	0		3
Saitual	Aizawl WL		15	15	0	0		0
Serchiip	Thenzawl	3	12	15	0	0		0
Total		12	48	60	5	2		7

9) Preventive measures against forest fire - Yes or No

District	Division	FHH	MHH	Total	FHH			MHH			Total		
					Yes	No	Total	Yes	No	Total	Yes	No	Total
Lawngtlai	Chhintuipui W	3	12	15	3		3	7		7	10	0	10
Mamit	Kawrtlah	6	9	15	2		2	2	1	3	4	1	5
Saitual	Aizawl WL		15	15						0	0	0	0
Serchiip	Thenzawl	3	12	15				1		1	0	1	1
Total		12	48	60	5	0	5	9	2	11	14	2	16

10. Preventive measures against forest fire - if yes, explain

					FHH					MHH						
					Creation of Fire lines to prevent spreading of jhum fire to forest	information dissemination by village authority	Joint effort of the VC, YLA/YMA and Forest Department for awareness and fire prevention	VC and YLA frequently announce the need to prevent forest fire by public awareness programme/announcement	YMA makes public announce on fire prevention	Total	Creation of Fire lines to prevent spreading of jhum fire to forest	information dissemination by village authority	Joint effort of the VC, YLA/YMA and Forest Department for awareness and fire prevention	VC and YLA frequently announce the need to prevent forest fire by public awareness programme/announcement	YMA makes public announce on fire prevention	Total
District	Division	FHH	MHH	Total												
Lawngtlai	Chhintuipui W	3	12	15			1	2		3	2		4	1		
Mamit	Kawrtlah	6	9	15		2				2		1				1
Saitual	Aizawl WL		15	15						0						
Serchiip	Thenzawl	3	12	15						0						
Total		12	48	60		2	1	2		5	2	1	4	1		1

District	Division	FHH	MHH	Total	Total					
					Creation of Fire lines to prevent spreading of jhum fire to forest	information dissemination by village authority	Joint effort of the VC, YLA/YMA and Forest Department for awareness and fire prevention	VC and YLA frequently announce the need to prevent forest fire by public awareness programme/announcement	YMA makes public announce on fire prevention	Total
Lawngtlai	Chhintuipui W	3	12	15	2	0	5	3	0	10
Mamit	Kawrtlah	6	9	15	0	3	0	0	1	4
Saitual	Aizawl WL		15	15	0	0	0	0	0	0
Serchiip	Thenzawl	3	12	15	0	0	0	0	0	0
Total		12	48	60	2	3	5	3	1	14

24.4 Drought

1) How often it occurs

					FHH						MHH					
					Multiple numbers of incidences in the past consecutive years	Once a year	Once in a few years	Once in ten years	Never	Total	Multiple numbers of incidences in the past consecutive years	Once a year	Once in a few years	Once in ten years	Never	Total
District	Division	FHH	MHH	Total												
Lawngtlai	Chhintuipui W	3	12	15					3	3					12	12
Mamit	Kawrtah	6	9	15					6	6					9	9
Saitual	Aizawl WL		15	15						0					15	15
Serchhip	Thenzawl	3	12	15					3	3					12	12
	Total	12	48	60					12	12					48	48

Total										
District	Division	FHH	MHH	Total	Multiple numbers of incidences in the past consecutive years	Once a year	Once in a few years	Once in ten years	Never	Total
Lawngtlai	Chhintuipui W	3	12	15	0	0	0	0	15	15
Mamit	Kawrtah	6	9	15	0	0	0	0	15	15
Saitual	Aizawl WL		15	15	0	0	0	0	15	15
Serchhip	Thenzawl	3	12	15	0	0	0	0	15	15
	Total	12	48	60	0	0	0	0	60	60

2) When was the last major drought and damage - NO DATA

3) What were the damage - NO DATA

4) Drought - Any Compensation - Type of loss - NO DATA

5) Drought - Any Compensation Received - NO DATA

6) Drought - Any Compensation - Government Department - NO DATA

7) Increased of flooding in the past 5 years - Yes or No - NO DATA

8) Increased of flooding in the past 5 years - if yes, causes - NO DATA

9) Preventive measures against drought - Yes or No - NO DATA

10) Preventive measures against drought - If yes, explain - NO DATA

11) Increased in drought in the past 5 years - Yes or No - NO DATA

12) Increased in drought in the past 5 years - if yes, explain - NO DATA

24.5 Hailstorm (Strong Wind)

1) How often it occurs

					FHH					MHH						
					Multiple numbers of incidences in the past consecutive years	Once a year	Once in a few years	Once in ten years	Never	Total	Multiple numbers of incidences in the past consecutive years	Once a year	Once in a few years	Once in ten years	Never	Total
District	Division	FHH	MHH	Total												
Lawngtlai	Chhintuipui W	3	12	15					3	3	1		4		7	12
Mamit	Kawrtah	6	9	15		6				6		7	2			9
Saitual	Aizawl WL		15	15						0		1			14	15
Serchhip	Thenzawl	3	12	15		1	2			3		3	8	1		12
	Total	12	48	60	0	7	2	0	3	12	1	11	14	1	21	48

Total										
District	Division	FHH	MHH	Total	Multiple numbers of incidences in the past consecutive years	Once a year	Once in a few years	Once in ten years	Never	Total
Lawngtlai	Chhintuipui W	3	12	15	1	0	4	0	10	15
Mamit	Kawrtah	6	9	15	0	13	2	0	0	15
Saitual	Aizawl WL		15	15	0	1	0	0	14	15
Serchhip	Thenzawl	3	12	15	0	4	10	1	0	15
	Total	12	48	60	1	18	16	1	24	60

2) When was the last major hailstorm and damage

FHH											MHH				
District	Division	FHH	MHH	Total	Last year	A few years ago	More than 5 years ago	More than 10 years ago	Total		Last year	A few years ago	More than 5 years ago	More than 10 years ago	Total
Lawngtlai	Chhintuipui W	3	12	15			3		3		1	4	7		12
Mamit	Kawrtah	6	9	15	1	5			6		2	7			9
Saitual	Aizawl WL		15	15					0		1		14		15
Serchhip	Thenzawl	3	12	15		1	2		3		3	8	1		12
	Total	12	48	60	1	6	5	0	12		7	19	22	0	48

Total										
District	Division	FHH	MHH	Total	Last year	A few years ago	More than 5 years ago	More than 10 years ago	Total	
Lawngtlai	Chhintuipui W	3	12	15	1	4	10	0	15	
Mamit	Kawrtah	6	9	15	3	12	0	0	15	
Saitual	Aizawl WL		15	15	1	0	14	0	15	
Serchhip	Thenzawl	3	12	15	3	9	3	0	15	
	Total	12	48	60	8	25	27	0	60	

3) What were the damages of hailstorm

					FHH						MHH					
District	Division	FHH	MHH	Total	Loss of agriculture crops	Damage to house	Human injuries	Human Death	Loss of Livestock	Total	Loss of agriculture crops	Damage to house	Human injuries	Human Death	Loss of Livestock	Total
Lawngtlai	Chhintuipui W	3	12	15						0	1					
Mamit	Kawrtah	6	9	15	1	1			4	6	1					7
Saitual	Aizawl WL		15	15						0	1					
Serchhip	Thenzawl	3	12	15						0						1
	Total	12	48	60	1	1	0	0	4	6	3	0	0	0	8	11

Total										
District	Division	FHH	MHH	Total	Loss of agriculture crops	Damage to house	Human injuries	Human Death	Loss of Livestock	Total
Lawngtlai	Chhintuipui W	3	12	15	1	0	0	0	0	1
Mamit	Kawrtah	6	9	15	2	1	0	0	11	14
Saitual	Aizawl WL		15	15	1	0	0	0	0	1
Serchhip	Thenzawl	3	12	15	0	0	0	0	1	1
	Total	12	48	60	4	1	0	0	12	17

4) Hailstorm - Any Compensation - Type of loss

Blown							
District	Division	FHH	MHH	Total	FHH	MHH	Total
Lawngtlai	Chhintuipui W	3	12	15			0
Mamit	Kawrtah	6	9	15			0
Saitual	Aizawl WL		15	15		1	1
Serchhip	Thenzawl	3	12	15			0

Total	12	48	60	0	1	1
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5) Hailstorm - Any Compensation - Compensation received

GI roofing sheet							
District	Division	FHH	MHH	Total	FHH	MHH	Total
Lawngtlai	Chhintuipui W	3	12	15			0
Mamit	Kawrthah	6	9	15	3	2	5
Saitual	Aizawl WL		15	15			0
Serchiip	Thenzawl	3	12	15		1	1
Total		12	48	60	3	3	6

6) Hailstorm - Any Compensation - Government Department

FHH												
MHH												
District	Division	FHH	MHH	Total	Govt. through VC	MLA	Not received	Total	Govt. through VC	MLA	Not Received	Total
Lawngtlai	Chhintuipui W	3	12	15				0				0
Mamit	Kawrthah	6	9	15	3		1	4	2			2
Saitual	Aizawl WL		15	15				0				0
Serchiip	Thenzawl	3	12	15				0		1		1
Total		12	48	60	3		1	4	2	1		3

Total							
District	Division	FHH	MHH	Total	Govt. through VC	MLA	Not received
Lawngtlai	Chhintuipui W	3	12	15	0	0	0
Mamit	Kawrthah	6	9	15	5	0	1
Saitual	Aizawl WL		15	15	0	0	0
Serchiip	Thenzawl	3	12	15	0	1	1
Total		12	48	60	5	1	1

7) Frequency of hailstorm increased - Yes or No

FHH												
MHH												
Total												
District	Division	FHH	MHH	Total	No	Yes	Total	No	Yes	Total	No	Yes
Lawngtlai	Chhintuipui W	3	12	15			0			1	0	1
Mamit	Kawrthah	6	9	15	3	3	6	4	4	8	7	7
Saitual	Aizawl WL		15	15			0	1		1	1	0
Serchiip	Thenzawl	3	12	15			0	1		1	1	0
Total		12	48	60	3	3	6	6	5	11	9	8

8) Frequency of hailstorm increased - if yes, causes

FHH												
MHH												
Total												
District	Division	FHH	MHH	Total	Do not know	Natural Calamity	Total	Do not know	Natural Calamity	Total	Do not know	Natural Calamity
Lawngtlai	Chhintuipui W	3	12	15			0	1		1	0	0
Mamit	Kawrthah	6	9	15	1	1	2	1	1	2	2	3
Saitual	Aizawl WL		15	15			0			0	0	0
Serchiip	Thenzawl	3	12	15			0			0	0	0
Total		12	48	60	1	1	2	2	1	3	2	3

9) Preventive measures against strong wind - Yes or No

FHH												
MHH												
Total												
District	Division	FHH	MHH	Total	No	Yes	Total	No	Yes	Total	No	Yes
Lawngtlai	Chhintuipui W	3	12	15			0		1	1	1	0
Mamit	Kawrthah	6	9	15	3		3	7		7	10	0
Saitual	Aizawl WL		15	15			0		1	1	1	0
Serchiip	Thenzawl	3	12	15			0	1		1	1	0
Total		12	48	60	3	0	3	10	0	10	13	0

10) Preventive measures against strong wind - if yes, causes - NO DATA

24.6. Earthquake -
1) How often it occurs

					FHH					MHH						
District	Division	FHH	MHH	Total	Multiple numbers of incidences in the past consecutive years	Once a year	Once in a few years	Once in ten years	Never	Total	Multiple numbers of incidences in the past consecutive years	Once a year	Once in a few years	Once in ten years	Never	Total
Lawngtlai	Chhaintupui W	3	12	15					3	3					7	7
Mamit	Kawrtbah	6	9	15		3	1			4		3	1			4
Saitual	Aizawl WL		15	15						0					8	8
Serchhip	Thenzawl	3	12	15						0						0
	Total	12	48	60	0	3	1	0	3	7	0	3	1	0	15	19

District	Division	FHH	MHH	Total	Multiple numbers of incidences in the past consecutive years	Total				
						Once a year	Once in a few years	Once in ten years	Never	Total
Lawngtlai	Chhintoipui W	3	12	15	0	0	0	0	10	10
Mamit	Kawrtihah	6	9	15	0	6	2	0	0	8
Saitual	Aizawl WL		15	15	0	0	0	0	8	8
Serchhip	Thenzawl	3	12	15	0	0	0	0	0	0
	Total	12	48	60	0	6	2	0	18	26

2) When was the last major earthquake and damage

District	Division	FHH	MHH	Total	FHH					MHH					
					Last year	A few years ago	More than 5 years ago	More than 10 years ago	Total	Last year	A few years ago	More than 5 years ago	More than 10 years ago	Total	
Lawngtlai	Chhaintupui W	3	12	15					0					0	0
Mamit	Kawrtah	6	9	15	1				1	1				1	2
Saitual	Aizawl WL		15	15					0					0	0
Serchhip	Thenzawl	3	12	15					0					0	0
	Total	12	48	60	1	0	0	0	1	1	0	0	0	1	2

District	Division	FHH	MHH	Total	Total				
					Last year	A few years ago	More than 5 years ago	More than 10 years ago	Total
Lawngtlai	Chhaintupui W	3	12	15	0	0	0	0	0
Mamit	Kawrtah	6	9	15	2	0	0	0	2
Saitual	Aizawl WL		15	15	0	0	0	0	0
Serchhip	Thenzawl	3	12	15	0	0	0	0	0
	Total	12	48	60	2	0	0	0	2

3) What were the damages of earthquake - NO DATA

4) Earthquake compensation - Type of Loss - NO DATA

5) Earthquake compensation - Compensation received - NO DATA

6) Earthquake compensation - Government Department - NO DATA

7) Increased Earthquake in the past 5 years, if yes, causes - NO DATA

8) Preventive measures against strong wind for agriculture land - Yes or No - NO DATA

9) Preventive measures against strong wind for agriculture land - if Yes, explain - NO DATA

25. Farm Forestry and social Forestry

25.1 Interest in farm forestry

District	Division	FHH			MHH			Total		
		Yes	No	Total	Yes	No	Total	Yes	No	Total
Lawngtlai	Chhintuipui W	3	12	15	1	2	3	4	8	12
Mamit	Kawrthah	6	9	15	6		6	3	9	12
Saitual	Aizawl WL		15	15			0	6	9	15
Serchiip	Thenzawl	3	12	15	3		3	8	4	12
Total		12	48	60	10	2	12	24	24	48

25.2 Interest in farm forestry

					FHH											
District	Division	FHH	MHH	Total	Aesthetic delight	Cooler environment	Better environment	Economic benefits	I like dense forest	Improve Soil fertility	For future generation	Response to Climate Change	Timber	Conservation of Flora and Fauna	Total	
Lawngtlai	Chhintuipui W	3	12	15	2				1							
Mamit	Kawrthah	6	9	15					3					1		
Saitual	Aizawl WL		15	15												
Serchiip	Thenzawl	3	12	15								2				
Total		12	48	60	2	0	0	0	4	0	0	0	2	1	0	

					MHH												
District	Division	FHH	MHH	Total	Aesthetic delight	Cooler environment	Better environment	Economic benefits	I like dense forest	Improve Soil fertility	For future generation	Response to Climate Change	Timber	Conservation of Flora and Fauna	Total		
Lawngtlai	Chhintuipui W	3	12	15	1	2	2		1						6		
Mamit	Kawrthah	6	9	15				2	1	2	2				8		
Saitual	Aizawl WL		15	15	3			1	4		2				10		
Serchip	Thenzawl	3	12	15						1	4	1	1		7		
Total		12	48	60	4	2	3	7	1	5	6	1	1	1	31		

					Total											
District	Division	FHH	MHH	Total	Aesthetic delight	Cooler environment	Better environment	Economic benefits	I like dense forest	Improve Soil fertility	For future generation	Response to Climate Change	Timber	Conservation of Flora and Fauna	Total	
Lawngtlai	Chhintuipui W	3	12	15	3	2	2	2	2	0	0	0	0	0	0	
Mamit	Kawrthah	6	9	15	0	0	0	0	5	1	2	2	0	1	1	
Saitual	Aizawl WL		15	15	3	0	0	1	4	0	2	0	0	0	1	
Serchip	Thenzawl	3	12	15	0	0	0	0	0	1	4	3	1	0	0	
Total		12	48	60	6	2	3	3	11	1	5	6	3	2	1	

25.3 If you are interested in growing, species

					FHH																		
District	Division	FHH	MHH	Total	Areacanut	Banana	Ngiau (Michelia oblonga)	Oranges	Paulonia (Princess Tree)	Rihnim (Ficus benjamina)	Teak	Tei (Toona ciliate)	Char (Terminalia myriocarpa)	Zuang (Duabanga grandiflora)	Thingdawl (Tetrameles nudiflora R.Br.)	Lamkhuang (Jackfruit)	Thlanvawng (Gmelina arborea)	Zawngtah (Stink bean)	Thingthupui (Dysoxylum procerrum)	Trees that can grow fast	No specific spices, but any that birds pollinate well	Every species and varieties which can be cultivated in farmland	Total
Lawngtlai	Chhintuipui W	3	12	15	1							1					1						3
Mamit	Kawrthah	6	9	15	4			1				1						3					9
Saitual	Aizawl WL		15	15																			0
Serchiip	Thenzawl	3	12	15				2			1	2	1				1		1				8
	Total	12	48	60	5	0	3	0	0	0	1	4	1	0	0	0	2	3	1	0	0	0	20

					MHH																			
District	Division	FHH	MHH	Total	Arecanut	Banana	Ngiau (Michelia oblonga)	Oranges	Paulonia (Princess Tree)	Rihnim (Ficus benjamina)	Teak	Tei (Toona ciliate)	Char (Terminalia myriocarpa)	Zuang (Duabanga grandiflora)	Thingdawl (Tetrameles nudiflora R.Br.)	Lamkhuang (Jackfruit)	Thlanvawng (Gmelina arborea)	Zawngtah (Stink bean)	Thingthupui (Dysoxylum procerum)	Trees that can grow fast	No specific spices, but any that birds pollinate well	Every species and varieties which can be cultivated in farmland	Total	
Lawngtlai	Chhintuipui W	3	12	15	1	1	3	1			1												7	14
Mamit	Kawrtah	6	9	15	1		2			1			1				1	2		1			8	17
Saitual	Aizawl WL		15	15			2	1	2		3										1		8	17
Serchiip	Thenzawl	3	12	15			2					3	2	1	1	1	1	2					13	26
Total		12	48	60	2	1	9	2	2	1	4	3	3	1	1	1	1	2	4	0	1	1	36	74

					Total																			
District	Division	FHH	MHH	Total	Arecanut	Banana	Ngiau (Michelia oblonga)	Oranges	Paulonia (Princess Tree)	Rihnim (Ficus benjamina)	Teak	Tei (Toona ciliate)	Char (Terminalia myriocarpa)	Zuang (Duabanga grandiflora)	Thingdawl (Tetrameles nudiflora R.Br.)	Lamkhuang (Jackfruit)	Thlanvawng (Gmelina arborea)	Zawngtah (Stink bean)	Thingthupui (Dysoxylum procerrum)	Trees that can grow fast	No specific spices, but any that birds pollinate well	Every species and varieties which can be cultivated in farmland	Total	
Lawngtlai	Chhintuipui W	3	12	15	2	1	3	1	0	0	1	1	0	0	0	0	0	1	0	0	0	0	7	17
Mamit	Kawrtah	6	9	15	5	0	3	0	0	0	1	0	1	1	0	0	0	1	5	0	1	0	8	26
Saitual	Aizawl WL		15	15	0	0	2	1	2	0	3	0	0	0	0	0	0	0	0	0	0	1	8	17
Serchiip	Thenzawl	3	12	15	0	0	4	0	0	0	1	5	3	1	1	1	2	2	1	0	0	0	13	34
Total		12	48	60	7	1	12	2	2	1	5	7	4	1	1	1	4	7	1	1	1	36	94	

25.4 Hinder factors for farm forestry

					FHH												
District	Division	FHH	MHH	Total	Not willing	Lack of market information	I want to do but other farmers do not agree	Lack of materials and equipment's	Lack of government concern	I am in the process of doing it	extension officers does not give me any assistance	size of land is too small	bad luck	Lack of enough irrigation water	Lack of enough capital	other	Total
Lawngtlai	Chhintuipui W	3	12	15	2										1	1	5
Mamit	Kawrtah	6	9	15		2		1	4	2		3	2		1	2	17
Saitual	Aizawl WL		15	15													0
Serchiip	Thenzawl	3	12	15						1							1
Total		12	48	60	2	2	0	1	4	3	0	3	2	1	2	3	23

					MHH												
District	Division	FHH	MHH	Total	Not willing	Lack of market information	I want to do but other farmers do not agree	Lack of materials and equipment's	Lack of government concern	I am in the process of doing it	extension officers does not give me any assistance	size of land is too small	bad luck	Lack of enough irrigation water	Lack of enough capital	other	Total
Lawngtlai	Chhintuipui W	3	12	15	9			1		1		2		1	5	6	26
Mamit	Kawrtihah	6	9	15	1				3	5		2	2				14
Saitual	Aizawl WL		15	15	10	1		4				8		10	5	4	42
Serchiip	Thenzawl	3	12	15	2			1		5		1	1				10
Total		12	48	60	22	1	0	6	3	11	0	13	4	15	11	6	92

					Total												
District	Division	FHH	MHH	Total	Not willing	Lack of market information	I want to do but other farmers do not agree	Lack of materials and equipment's	Lack of government concern	I am in the process of doing it	extension officers does not give me any assistance	size of land is too small	bad luck	Lack of enough irrigation water	Lack of enough capital	other	Total
Lawngtlai	Chhintuipui W	3	12	15	11	0	0	1	0	1	0	2	1	6	7	2	31
Mamit	Kawrtah	6	9	15	1	2	0	1	7	7	0	5	4	0	1	3	31
Saitual	Aizawl WL		15	15	10	1	0	4	0	0	0	8	0	10	5	4	42
Serchiip	Thenzawl	3	12	15	2	0	0	1	0	6	0	1	1	0	0	0	11
Total		12	48	60	24	3	0	7	7	14	0	16	6	16	13	9	115

25.5 What is needed to start farm forestry

FHH																			
District	Division	FHH	MHH	Total	Bullock (paired)	Bullock cart	Bullock (pair) and Cart	Diesel or Electric pump	More land (and/or Consolidated)	More irrigation water	Pond or reservoir	Deep tube well	Shallow well	More credit	Market information	Storage facilities near by	Technical support/ trainings	other	Total
Lawngtlai	Chhaintuipui W	3	12	15						1				1			1		3
Mamit	Kawrtah	6	9	15					2			1		4	3	1	3	1	15
Saitual	Aizawl WL		15	15															0
Serchhip	Thenzawl	3	12	15					1	1	1			2					5
Total		12	48	60	0	0	0	0	3	2	1	1	0	7	3	1	4	1	23

MHH																			
District	Division	FHH	MHH	Total	Bullock (paired)	Bullock cart	Bullock (pair) and Cart	Diesel or Electric pump	More land (and/or Consolidated)	More irrigation water	Pond or reservoir	Deep tube well	Shallow well	More credit	Market information	Storage facilities near by	Technical support/ trainings	other	Total
Lawngtlai	Chhaintuipui W	3	12	15					2	7	4			10			5	1	29
Mamit	Kawrtah	6	9	15				1	2	4	5			3	1			2	18
Saitual	Aizawl WL		15	15			1		11	13	4	1	2	8	1		5	1	47
Serchhip	Thenzawl	3	12	15					1			1		1			1	2	6
Total		12	48	60	0	1	0	1	16	24	14	1	2	22	2	0	11	6	100

Total																			
District	Division	FHH	MHH	Total	Bullock (paired)	Bullock cart	Bullock (pair) and Cart	Diesel or Electric pump	More land (and/or Consolidated)	More irrigation water	Pond or reservoir	Deep tube well	Shallow well	More credit	Market information	Storage facilities near by	Technical support/ trainings	other	Total
Lawngtlai	Chhaintuipui W	3	12	15	0	0	0	0	2	8	4	0	0	11	0	0	6	1	32
Mamit	Kawrtah	6	9	15	0	0	0	1	4	4	5	1	0	7	4	1	3	3	33
Saitual	Aizawl WL		15	15	0		0	0	11	13	4	1	2	8	1	0	5	1	47
Serchhip	Thenzawl	3	12	15	0	0	0	0	2	1	2	0	0	3	0	0	1	2	11
Total		12	48	60	0	1	0	1	19	26	15	2	2	29	5	1	15	7	123

25.6 Taken part in social forestry - yes or no

		FHH			MHH			Total		
District	Division	FHH	MHH	Total	Yes	No	Total	Yes	No	Total
Lawngtlai	Chhaintuipui W	3	12	15	3		3	11	1	12
Mamit	Kawrtah	6	9	15	3	3	6	7	9	14
Saitual	Aizawl WL		15	15			0	12	3	15
Serchhip	Thenzawl	3	12	15	3		3	12	15	0
Total		12	48	60	9	3	12	42	6	48

25.7 Taken part in social forestry - if yes, what are the social forestry activities participated

		FHH									
District	Division	FHH	MHH	Total	Church Plantation	YLA Tree plantation	Roadside plantation	Village Council (VC)	VFDC	Forest Department	YMA
Lawngtlai	Chhaintuipui W	3	12	15		3	2	3			
Mamit	Kawrtah	6	9	15							1
Saitual	Aizawl WL		15	15							
Serchhip	Thenzawl	3	12	15					2	1	1
Total		12	48	60	0	3	2	5	2	1	1

		MHH									
District	Division	FHH	MHH	Total	Church Plantation	YLA Tree plantation	Roadside plantation	Village Council (VC)	VFDC	Forest Department	YMA
Lawngtlai	Chhaintuipui W	3	12	15	4	3	7	6			1
Mamit	Kawrtah	6	9	15						7	2
Saitual	Aizawl WL		15	15						14	
Serchhip	Thenzawl	3	12	15				3	10	7	6
Total		12	48	60	4	3	7	9	10	7	27

		Total									
District	Division	FHH	MHH	Total	Church Plantation	YLA Tree plantation	Roadside plantation	Village Council (VC)	VFDC	Forest Department	YMA
Lawngtlai	Chhaintuipui W	3	12	15	4	6	9	9	0	0	0
Mamit	Kawrtah	6	9	15	0	0	0	0	0	0	7
Saitual	Aizawl WL		15	15	0	0	0	0	0	0	14
Serchhip	Thenzawl	3	12	15	0	0	0	5	12	8	7
Total		12	48	60	4	6	9	14	12	8	28

25.8 Beneficiary Group Participation - Yes or No

District	Division	FHH	MHH	Total	FHH			MHH			Total		
					Yes	No	Total	Yes	No	Total	Yes	No	Total
Lawngtlai	Chhintuipui W	3	12	15	1	2	3		12	12	1	14	15
Mamit	Kawrtah	6	9	15		6	6		9	9	0	15	15
Saitual	Aizawl WL		15	15			0	4	11	15	4	11	15
Serchiip	Thenzawl	3	12	15	2	1	3	3	9	12	5	10	15
Total		12	48	60	3	9	12	7	41	48	10	50	60

25.9 Beneficiary Group - What are the activities

District	Division	FHH	MHH	Total	FHH						Total
					Afforestation/ Plantation	Awareness	Employment	Preparation	Maintenance	Monitoring	
Lawngtlai	Chhintuipui W	3	12	15	1						1
Mamit	Kawrtah	6	9	15							0
Saitual	Aizawl WL		15	15							0
Serchiip	Thenzawl	3	12	15	2				1	1	4
Total		12	48	60	3				1	1	5

District	Division	FHH	MHH	Total	MHH						Total
					Afforestation/ Plantation	Awareness	Employment	Preparation	Maintenance	Monitoring	
Lawngtlai	Chhintuipui W	3	12	15							0
Mamit	Kawrtah	6	9	15							0
Saitual	Aizawl WL		15	15	4	3					7
Serchiip	Thenzawl	3	12	15	2		2	1		1	6
Total		12	48	60	6	3	2				11

District	Division	FHH	MHH	Total	Total						Total
					Afforestation/ Plantation	Awareness	Employment	Preparation	Maintenance	Monitoring	
Lawngtlai	Chhintuipui W	3	12	15	1	0	0	0	0	0	1
Mamit	Kawrtah	6	9	15	0	0	0	0	0	0	0
Saitual	Aizawl WL		15	15	4	3	0	0	0	0	7
Serchiip	Thenzawl	3	12	15	4	0	2	1	1	2	10
Total		12	48	60	9	3	2	0	1	1	16

25.10 Beneficiary Group 1 - what are the benefits received?

District	Division	FHH	MHH	Total	FHH				MHH			
					Cash	Gas Cylinder	Pressure Cooker	Gas stove	Cash	Gas Cylinder	Pressure cooker	Gas stove
Lawngtlai	Chhintuipui W	3	12	15		1	1		2			0
Mamit	Kawrtah	6	9	15				0				0
Saitual	Aizawl WL		15	15				0		4		4
Serchiip	Thenzawl	3	12	15	2			2	3			3
Total		12	48	60	2	1	1	0	4	3	4	4

District	Division	FHH	MHH	Total	Total				
					Cash	Gas Cylinder	Pressure Cooker	Gas stove	Total
Lawngtlai	Chhintuipui W	3	12	15	0	1	1	0	2
Mamit	Kawrtah	6	9	15	0	0	0	0	0
Saitual	Aizawl WL		15	15	0	4	0	4	8
Serchiip	Thenzawl	3	12	15	5	0	0	0	5
Total		12	48	60	5	5	1	4	15

25.11 Beneficiary Group 2 - When?

District	Division	FHH	MHH	Total	FHH						MHH					
					2005	2006	2007	2020	2022	Total	2005	2006	2007	2020	2022	Total
Lawngtlai	Chhintuipui W	3	12	15			1			1						0
Mamit	Kawrtah	6	9	15						0						0
Saitual	Aizawl WL		15	15	1	1	1			0	1	1	1			3
Serchiip	Thenzawl	3	12	15				2		2				3		3
Total		12	48	60	1	1	2	2	1	3	1	1	1	3		6

25.12 Beneficiary Group 3 - Average amount received from Social Forestry

District	Division	FHH	MHH	Total	FHH	MHH	Total
Lawngtlai	Chhintuipui W	3	12	15	4,000		4,000
Mamit	Kawrtihah	6	9	15			
Saitual	Aizawl WL		15	15		3,875	3,875
Serchiip	Thenzawl	3	12	15	45,000	63,333	56,000
	Total	12	48	60	31,333	29,357	29,950

26. Access to information on Forestry

					FHH														
District	Division	FHH	MHH	Total	Radio programs	TV program	Forest Ranger	Forest Guard	Agriculture Extension Worker	Newspaper, leaflets, other printed material	Word of mouth (other farmer, neighbours, relatives)	Agriculture fairs, farm days, etc.	Own experience	NGO	Traders	Shop	Van Mahotsav	Other	Total
Lawngtlai	Chhintuipui W	3	12	15			1	2						3				3	9
Mamit	Kawrtihah	6	9	15		5				2			2	1				1	11
Saitual	Aizawl WL		15	15															0
Serchiip	Thenzawl	3	12	15		1	1	2			1			2					7
	Total	12	48	60	0	6	2	4	0	2	1	0	2	6	0	0	0	4	27

					MHH															
District	Division	FHH	MHH	Total	Radio programs	TV program	Forest Ranger	Forest Guard	Agriculture Extension Worker	Newspaper, leaflets, other printed material	Word of mouth (other farmer, neighbours, relatives)	Agriculture fairs, farm days, etc.	Own experience	NGO	Traders	Shop	Van Mahotsav	Other	Total	
Lawngtlai	Chhintuipui W	3	12	15		5	6	5		1	1			12					8	38
Mamit	Kawrtihah	6	9	15		7	2			2	1		1	6					1	20
Saitual	Aizawl WL		15	15	2	14	4	1		8	10	2	6	7	1					55
Serchip	Thenzawl	3	12	15		3	10	7						8					2	30
	Total	12	48	60	2	29	22	13	0	11	12	2	7	33	1	0	0	0	11	143

					Total															
District	Division	FHH	MHH	Total	Radio programs	TV program	Forest Ranger	Forest Guard	Agriculture Extension Worker	Newspaper, leaflets, other printed material	Word of mouth (other farmer, neighbours, relatives)	Agriculture fairs, farm days, etc.	Own experience	NGO	Traders	Shop	Van Mahotsav	Other	Total	
Lawngtlai	Chhintuipui W	3	12	15	0	5	7	7	0	1	1	0	0	15	0	0	0	0	11	47
Mamit	Kawrtihah	6	9	15	0	12	2	0	0	4	1	0	3	7	0	0	0	0	2	31
Saitual	Aizawl WL		15	15	2	14	4	1	0	8	10	2	6	7	1	0	0	0	0	55
Serchiip	Thenzawl	3	12	15	0	4	11	9	0	0	1	0	0	10	0	0	0	0	2	37
	Total	12	48	60	2	35	24	17	0	13	13	2	9	39	1	0	0	0	15	170

27. Role of women in Agriculture and Forestry

27.1 Women owns land

		FHH			MHH			Total		
District	Division	FHH	MHH	Total	Yes	No	Total	Yes	No	Total
Lawngtlai	Chhintuipui W	3	12	15	1	2	3	12	1	14
Mamit	Kawrtihah	6	9	15	4	2	6	8	9	15
Saitual	Aizawl WL		15	15		0	0	14	15	15
Serchiip	Thenzawl	3	12	15	1	2	3	10	12	15
	Total	12	48	60	6	6	12	44	48	60

27.2 Work Mostly Done by Women

1) Agriculture Crop

					FHH										
District	Division	FHH	MHH	Total	Planting	Weeding	Harvesting	Threshing/ winnowing/ Cleaning	Irrigation Water Management	Harvesting	Packing/ Bunding	Negotiating price when selling	Selling in the local market	Others	Total
Lawngtlai	Chhintuipui WL	3	12	15		2					1	1	1		
Mamit	Kawrtihah	6	9	15	5	5	1		5	1	1	2	1		22
Saitual	Aizawl WL		15	15											0
Serchiip	Thenzawl	3	12	15	3	3	2		3	1					13
	Total	12	48	60	8	10	3	8	2	2	2	3	2	0	40

MHH															
District	Division	FHH	MHH	Total	Planting	Weeding	Harvesting	Threshing/ winnowing/ Cleaning	Irrigation Water Management	Harvesting	Packing/ Bundling	Negotiating price when selling	Selling in the local market	Others	Total
Lawngtlai	Chhintuipui W	3	12	15	3	7	8	1			3	3	5		30
Mamit	Kawrtah	6	9	15	9	7	4	8		1		1	1		31
Saitual	Aizawl WL		15	15	12	12	8	11	4	7	9	4	13		80
Serchiip	Thenzawl	3	12	15	12	11	12	11	5	5	3				59
	Total	12	48	60	36	37	32	31	9	13	15	8	19	0	200

Total															
District	Division	FHH	MHH	Total	Planting	Weeding	Harvesting	Threshing/ winnowing/ Cleaning	Irrigation Water Management	Harvesting	Packing/ Bundling	Negotiating price when selling	Selling in the local market	Others	Total
Lawngtlai	Chhintuipui W	3	12	15	3	9	8	1	0	0	4	4	6	0	35
Mamit	Kawrtah	6	9	15	14	12	5	13	1	2	1	3	2	0	53
Saitual	Aizawl WL		15	15	12	12	8	11	4	7	9	4	13	0	80
Serchiip	Thenzawl	3	12	15	15	14	14	14	6	6	3	0	0	0	72
	Total	12	48	60	44	47	35	39	11	15	17	11	21	0	240

2) Timber
No Data

3) Bamboo (Cultivated)

FHH										
District	Division	FHH	MHH	Total	Harvesting	Cleaning/ Grading	Packing/ Bundling	Negotiating price when selling	Selling in the local market	Others
Lawngtlai	Chhintuipui W	3	12	15	1					1
Mamit	Kawrtah	6	9	15	1	1	1			3
Saitual	Aizawl WL		15	15						0
Serchiip	Thenzawl	3	12	15						0
	Total	12	48	60	2	1	1	0	0	4

MHH										
District	Division	FHH	MHH	Total	Harvesting	Cleaning/ Grading	Packing/ Bundling	Negotiating price when selling	Selling in the local market	Others
Lawngtlai	Chhintuipui W	3	12	15	3					3
Mamit	Kawrtah	6	9	15	1	1	1			3
Saitual	Aizawl WL		15	15	1		1		1	3
Serchiip	Thenzawl	3	12	15						0
	Total	12	48	60	5	1	2	0	1	9

Total										
District	Division	FHH	MHH	Total	Harvesting	Cleaning/ Grading	Packing/ Bundling	Negotiating price when selling	Selling in the local market	Others
Lawngtlai	Chhintuipui W	3	12	15	4	0	0	0	0	4
Mamit	Kawrtah	6	9	15	2	2	2	0	0	6
Saitual	Aizawl WL		15	15	1	0	1	0	1	3
Serchiip	Thenzawl	3	12	15	0	0	0	0	0	0
	Total	12	48	60	7	2	3	0	1	13

4) Bamboo shoots (wild)

FHH										
District	Division	FHH	MHH	Total	Harvesting	Cleaning/ Grading	Packing/ Bundling	Negotiating price when selling	Selling in the local market	Others
Lawngtlai	Chhintuipui W	3	12	15	1	1	1	1	1	5
Mamit	Kawrtah	6	9	15	3	1	1			5
Saitual	Aizawl WL		15	15						0
Serchiip	Thenzawl	3	12	15						0
	Total	12	48	60	4	2	2	1	1	10

MHH											
District	Division	FHH	MHH	Total	Harvesting	Cleaning/ Grading	Packing/ Bundling	Negotiating price when selling	Selling in the local market	Others	Total
Lawngtlai	Chhintuipui W	3	12	15	2				1		3
Mamit	Kawrtah	6	9	15	2	1	1				4
Saitual	Aizawl WL		15	15	2				1		3
Serchiip	Thenzawl	3	12	15							0
	Total	12	48	60	6	1	1	0	2	0	10

Total											
District	Division	FHH	MHH	Total	Harvesting	Cleaning/ Grading	Packing/ Bundling	Negotiating price when selling	Selling in the local market	Others	Total
Lawngtlai	Chhintuipui W	3	12	15	3	1	1	1	2	0	8
Mamit	Kawrtah	6	9	15	5	2	2	0	0	0	9
Saitual	Aizawl WL		15	15	2	0	0	0	1	0	3
Serchiip	Thenzawl	3	12	15	0	0	0	0	0	0	0
	Total	12	48	60	10	3	3	1	3	0	20

5) NTFP (Cultivated)
No Data

6) NTFP (Wild)

FHH											
District	Division	FHH	MHH	Total	Harvesting	Cleaning/ Grading	Packing/ Bundling	Negotiating price when selling	Selling in the local market	Others	Total
Lawngtlai	Chhintuipui W	3	12	15	2	1	1				4
Mamit	Kawrtah	6	9	15							0
Saitual	Aizawl WL		15	15							0
Serchiip	Thenzawl	3	12	15							0
	Total	12	48	60	4	2	2	1	1	0	10

MHH											
District	Division	FHH	MHH	Total	Harvesting	Cleaning/ Grading	Packing/ Bundling	Negotiating price when selling	Selling in the local market	Others	Total
Lawngtlai	Chhintuipui W	3	12	15	2						2
Mamit	Kawrtah	6	9	15							0
Saitual	Aizawl WL		15	15	2				1		3
Serchiip	Thenzawl	3	12	15							0
	Total	12	48	60	6	1	1	0	2	0	10

Total											
District	Division	FHH	MHH	Total	Harvesting	Cleaning/ Grading	Packing/ Bundling	Negotiating price when selling	Selling in the local market	Others	Total
Lawngtlai	Chhintuipui W	3	12	15	4	1	1	0	0	0	6
Mamit	Kawrtah	6	9	15	0	0	0	0	0	0	0
Saitual	Aizawl WL		15	15	2	0	0	0	1	0	3
Serchiip	Thenzawl	3	12	15	0	0	0	0	0	0	0
	Total	12	48	60	10	3	3	1	3	0	20

27.3 Decision Making

1) Agriculture Produce

a. Agriculture Produce - Which crop to grow

Total															
FHH				MHH				Total				Total			
District	Division	FHH	MHH	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women
Lawngtlai	Chhintuipui W	3	12	15	2		1	3	8	1	3	12	10	1	4
Mamit	Kawrtah	6	9	15	1	4	1	6	3		6	9	4	4	7
Saitual	Aizawl WL		15	15				0	5	1	7	13		1	7
Serchiip	Thenzawl	3	12	15	1		2	3	9	1	2	12	10	1	4
	Total	12	48	60	4	4	4	12	25	3	18	46	29	7	22

b. Agriculture Produce - Which pesticide/ chemicals to use

District	Division	FHH	MHH	Total	FHH				MHH				Total			
					Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total
Lawngtlai	Chhaintupui W	3	12	15	2		1	3	8	1	3	12	10	1	4	15
Mamit	Kawrtah	6	9	15	1	4	1	6	3		6	9	4	4	7	15
Saitual	Aizawl WL		15	15				0	5	1	7	13	5	1	7	13
Serchiip	Thenzawl	3	12	15	1		2	3	9	1	2	12	10	1	4	15
	Total	12	48	60	4	4	4	12	25	3	18	46	29	7	22	58

c. Agriculture Produce - what volume to sell

District	Division	FHH	MHH	Total	FHH				MHH				Total			
					Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total
	Total	12	48	60	4	4	4	12	26	3	17	46	30	7	21	58

d. Agriculture Produce - Where to sell

District	Division	FHH	MHH	Total	FHH				MHH				Total			
					Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total
Lawngtlai	Chhaintupui W	3	12	15	2		1	3	8	1	3	12	10	1	4	15
Mamit	Kawrtah	6	9	15	1	4	1	6	3		6	9	4	4	7	15
Saitual	Aizawl WL		15	15				0	5	1	7	13	5	1	7	13
Serchiip	Thenzawl	3	12	15	1		2	3	9	1	2	12	10	1	4	15
	Total	12	48	60	4	4	4	12	25	3	18	46	29	7	22	58

e. Agriculture Produce - What Prices

District	Division	FHH	MHH	Total	FHH				MHH				Total			
					Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total
Lawngtlai	Chhaintupui W	3	12	15	2		1	3	8	1	3	12	10	1	4	15
Mamit	Kawrtah	6	9	15	1	4	1	6	4		5	9	5	4	6	15
Saitual	Aizawl WL		15	15				0	5	1	7	13	5	1	7	13
Serchiip	Thenzawl	3	12	15	1		2	3	9	1	2	12	10	1	4	15
	Total	12	48	60	4	4	4	12	26	3	17	46	30	7	21	58

f. Agriculture Produce - Whether to take loan

District	Division	FHH	MHH	Total	FHH				MHH				Total			
					Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total
Lawngtlai	Chhaintupui W	3	12	15	2		1	3	8	1	2	11	10	1	3	14
Mamit	Kawrtah	6	9	15	1	4	1	6	3		6	9	4	4	7	15
Saitual	Aizawl WL		15	15				0	2		4	6	2	0	4	6
Serchiip	Thenzawl	3	12	15	1		2	3	9	1	2	12	10	1	4	15
	Total	12	48	60	4	4	4	12	22	2	14	38	26	6	18	50

2) Timber

a. Timber - Which crops to grow

District	Division	FHH	MHH	Total	FHH				MHH				Total			
					Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total
Lawngtlai	Chhaintupui W	3	12	15								0	0	0	0	0
Mamit	Kawrtah	6	9	15					1			1	1	0	0	1
Saitual	Aizawl WL		15	15								0	0	0	0	0
Serchiip	Thenzawl	3	12	15								0	0	0	0	0
	Total	12	48	60					1			1	1	0	0	1

b. Timber - which pesticide/ chemicals to use

		FHH				MHH				Total						
District	Division	FHH	MHH	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total
Lawngtlai	Chhmitupui W	3	12	15								0	0	0	0	0
Mamit	Kawrtah	6	9	15					1			1	1	0	0	0
Saitual	Aizawl W.L		15	15								0	0	0	0	0
Serchhip	Thenzawl	3	12	15								0	0	0	0	0
	Total	12	48	60					1			1	1	0	0	0

c. Timber - What volume to use

					FHH				MHH				Total			
District	Division	FHH	MHH	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total
Lawngtlai	Chhinitupui W	3	12	15								0	0	0	0	
Mamit	Kawrtah	6	9	15					1			1	1	0	0	
Saitual	Aizawl WL		15	15								0	0	0	0	
Serchhip	Thenzawl	3	12	15								0	0	0	0	
	Total	12	48	60					1			1	1	0	0	

d. Where to sell

		FHH				MHH				Total						
District	Division	FHH	MHH	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total
Lawngtlai	Chhmitupui W	3	12	15								0	0	0	0	0
Mamit	Kawrtah	6	9	15					1			1	1	0	0	0
Saitual	Aizawl W.L		15	15								0	0	0	0	0
Serchhip	Thenzawl	3	12	15								0	0	0	0	0
	Total	12	48	60					1			1	1	0	0	0

e. Timber - What prices

		FHH				MHH				Total						
District	Division	FHH	MHH	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total
Lawngtlai	Chhinitupui W	3	12	15								0	0	0	0	
Mamit	Kawrtah	6	9	15					1			1	1	0	0	
Saitual	Aizawl WL		15	15								0	0	0	0	
Serchhip	Thenzawl	3	12	15								0	0	0	0	
	Total	12	48	60					1			1	1	0	0	

f. Timber - Whether to take loan

					FHH				MHH				Total			
District	Division	FHH	MHH	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total
Lawngtlai	Chhaintupui W	3	12	15				0				0	0	0	0	0
Mamit	Kawrtah	6	9	15		1		1	1			1	1	1	0	2
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchhip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	1	0	1	1			1	1	1	0	2

3) Bamboo
a. Bamboo - Which crops to grow
No Data

b. Bamboo - Which pesticide/ chemicals to use
No Data

c. Bamboo - What volumes to sell

District	Division	FHH	MHH	Total	FHH				MHH				Total			
					Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total
Lawngtlai	Chhaintupui W	3	12	15			1	1			1	1	0	0	2	2
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	1	1	0	0	1	1	0	0	2	2

d. Bamboo - Where to sell
No Data

e. Bamboo - What prices
No Data

f. Bamboo - Whether to take loan
No Data

4) Bamboo Shoot
a. Bamboo shoot - Which crops to grow

District	Division	FHH	MHH	Total	FHH				MHH				Total			
					Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total
Lawngtlai	Chhaintupui W	3	12	15			1	1			1	1	0	0	2	2
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	1	1	0	0	1	1	0	0	2	2

b. Bamboo shoot - which pesticide/ chemicals to use

District	Division	FHH	MHH	Total	FHH				MHH				Total			
					Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total
Lawngtlai	Chhaintupui W	3	12	15			1	1			1	1	0	0	2	2
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	1	1	0	0	1	1	0	0	2	2

c. Bamboo shoot - What volume to sell

District	Division	FHH	MHH	Total	FHH				MHH				Total			
					Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total
Lawngtlai	Chhaintupui W	3	12	15			1	1			1	1	0	0	2	2
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchiip	Thenzawl	3	12	15				0				0	0	0	0	0
	Total	12	48	60	0	0	1	1	0	0	1	1	0	0	2	2

d. Bamboo shoot- Where to sell

District	Division	FHH	MHH	Total	FHH				MHH				Total			
					Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total
Lawngtlai	Chhaintupui W	3	12	15			1	1			1	1	0	0	2	2
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0

Serchhip	Thenzawl	3	12	15				0				0	0	0	0	0	0
Total		12	48	60	0	0	1	1	0	0	1	1	0	0	0	2	2

e. Bamboo shoot - Which prices

		FHH							MHH				Total			
District	Division	FHH	MHH	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total
Lawngtlai	Chhintuipui W	3	12	15			1	1			1	1	0	0	2	2
Mamit	Kawrtah	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchhip	Thenzawl	3	12	15				0				0	0	0	0	0
Total		12	48	60	0	0	1	1	0	0	1	1	0	0	2	2

f. Bamboo shoot - whether to take loan

		FHH				MHH				Total						
District	Division	FHH	MHH	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total
Lawngtlai	Chhintuipui W	3	12	15			1	1			1	1	0	0	2	2
Mamit	Kawrtahai	6	9	15				0				0	0	0	0	0
Saitual	Aizawl WL		15	15				0				0	0	0	0	0
Serchhip	Thenzawl	3	12	15				0				0	0	0	0	0
Total		12	48	60	0	0	1	1	0	0	1	1	0	0	2	2

5) NTFP (Cultivated)

a. NTFP (cultivated) - which crops to grow

No Data

b. NTFP (cultivated) - Which pesticide/ chemicals to use

No Data

c. NTFP (cultivated) - what volumes to sell

No Data

d. NTFP (cultivated) - Where to sell

No Data

e. NTFP (cultivated) - what prices

No Data

f. NTFP (cultivated) - whether to take loan

No Data

6) NTFP (wild)

a. NTFP (wild) - What volumes to sell

a. NTFP (wild) - What volumes to sell

		FHH				MHH				Total						
District	Division	FHH	MHH	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total
Lawngtlai	Chhintuipui W	3	12	15						1	1	2	0	1	1	2
Mamit	Kawrtah	6	9	15					1		1	2	1	0	1	2
Saitual	Aizawl WL		15	15						1	1	1	0	0	1	1
Serchhip	Thenzawl	3	12	15								0	0	0	0	0
	Total	12	48	60					1	1	3	5	1	1	3	5

b. NTFP (wild) - Where to sell

		FHH							MHH				Total			
District	Division	FHH	MHH	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total
Lawngtlai	Chhintuipui W	3	12	15						1	1	2	0	1	1	2
Mamit	Kawrtah	6	9	15					1	1		2	1	1	0	2
Saitual	Aizawl WL		15	15							1	1	0	0	1	1
Serchhip	Thenzawl	3	12	15								0	0	0	0	0
Total		12	48	60					1	2	2	5	1	2	2	5

c. NTFP (wild) - what prices

c. NTFP (wild) - what prices					FHH				MHH				Total			
District	Division	FHH	MHH	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total
Lawngtlai	Chhintuipui W	3	12	15						1	1	2	0	1	1	2
Mamit	Kawrtah	6	9	15					1		1	2	1	0	1	2
Saitual	Aizawl WL		15	15							1	1	0	0	1	1
Serchiip	Thenzawl	3	12	15								0	0	0	0	0
	Total	12	48	60					1	1	3	5	1	1	3	5

d. NTFP (wild) - whether to take loan

					FHH				MHH				Total			
District	Division	FHH	MHH	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total	Mostly men only	Mostly women only	Mostly jointly men and women	Total
Lawngtlai	Chhintuipui W	3	12	15						2	3	5	0	2	3	5
Mamit	Kawrtihah	6	9	15					1			1	1	0	0	1
Saitual	Aizawl WL		15	15							3	3	0	0	3	3
Serchiip	Thenzawl	3	12	15								0	0	0	0	0
	Total	12	48	60					1	2	6	9	1	2	6	9

27.4 Women's group membership

District	Division	FHH				FHH					
		FHH	MHH	Total	SHG	FPO	Agriculture Cooperatives	VFDC	LAMPS	Other	Total
Lawngtlai	Chhintuipui W	3	12	15	3						3
Mamit	Kawrtah	6	9	15	3	3					6
Saitual	Aizawl WL		15	15							0
Serchiip	Thenzawl	3	12	15	3	1					4
Total		12	48	60	9	4	0	0	0	0	13

District	Division	MHH				MHH					
		FHH	MHH	Total	SHG	FPO	Agriculture Cooperatives	VFDC	LAMPS	Other	Total
Lawngtlai	Chhintuipui W	3	12	15	4						4
Mamit	Kawrtah	6	9	15	5	7	1				13
Saitual	Aizawl WL		15	15	9	3					12
Serchiip	Thenzawl	3	12	15	12	4		1			17
Total		12	48	60	30	14	1	1	0	0	46

District	Division	Total				Total					
		FHH	MHH	Total	SHG	FPO	Agriculture Cooperatives	VFDC	LAMPS	Other	Total
Lawngtlai	Chhintuipui W	3	12	15	7	0	0	0	0	0	7
Mamit	Kawrtah	6	9	15	8	10	1	0	0	0	19
Saitual	Aizawl WL		15	15	9	3	0	0	0	0	12
Serchiip	Thenzawl	3	12	15	15	5	0	1	0	0	21
Total		12	48	60	39	18	1	1	0	0	59

27.5 Women's interest in forest

District	Division	FHH				MHH				Total			
		FHH	MHH	Total	No	Yes	Total	No	Yes	Total	No	Yes	Total
Lawngtlai	Chhintuipui W	3	12	15	1	2	3	5	6	11	5	6	11
Mamit	Kawrtah	6	9	15	6		6	4	4	8	4	4	8
Saitual	Aizawl WL		15	15			0	4	11	15	4	11	15
Serchiip	Thenzawl	3	12	15		3	3	2	10	12	2	10	12
Total		12	48	60	7	5	12	15	31	46	15	31	46

27.6 Women interest in forest activities - if yes, kind of activities

FHH															
District	Division	FHH	MHH	Total	Better cultivation practices and more species	Cleaning and pruning of trees	Conserving water sources	Cultivation	Protection/ Conservation	Harvest	Sustainable Use of Forest resources	Plantation	Protecting Wildlife	Roadside plantation	Total
Lawngtlai	Chhintuipui W	3	12	15					1	2					3
Mamit	Kawrtah	6	9	15											0
Saitual	Aizawl WL		15	15											0
Serchhip	Thenzawl	3	12	15					1			3			4
	Total	12	48	60	0	0	0	0	2	2	0	3	0	0	7

MHH															
District	Division	FHH	MHH	Total	Better cultivation practices and more species	Cleaning and pruning of trees	Conserving water sources	Cultivation	Protection/ Conservation	Harvest	Sustainable Use of Forest resources	Plantation	Protecting Wildlife	Roadside plantation	Total
Lawngtlai	Chhintuipui W	3	12	15					3	4		1			8
Mamit	Kawrtah	6	9	15			1					1	1	1	4
Saitual	Aizawl WL		15	15	1			4	4		2				11
Serchhip	Thenzawl	3	12	15		1	1		4			8			14
	Total	12	48	60	1	1	2	4	11	4	2	10	1	1	37

Total															
District	Division	FHH	MHH	Total	Better cultivation practices and more species	Cleaning and pruning of trees	Conserving water sources	Cultivation	Protection/ Conservation	Harvest	Sustainable Use of Forest resources	Plantation	Protecting Wildlife	Roadside plantation	Total
Lawngtlai	Chhintuipui W	3	12	15	0	0	0	0	4	6	0	1	0	0	11
Mamit	Kawrtah	6	9	15	0	0	1	0	0	0	0	1	1	1	4
Saitual	Aizawl WL		15	15	1	0	0	4	4	0	2	0	0	0	11
Serchhip	Thenzawl	3	12	15	0	1	1	0	5	0	0	11	0	0	18
	Total	12	48	60	1	1	2	4	13	6	2	13	1	1	44

28. Climate Change

28.1 Temperature Change in Summer and Winter

District	Division	FHH	MHH	Total	Higher in Summer	Lower in Summer	Higher in Winter	Lower in Winter	No change
Lawngtlai	Chhintuipui W	3	12	15	15			10	
Mamit	Kawrtah	6	9	15	15		1	12	1
Saitual	Aizawl WL		15	15	12	4	7	2	
Serchhip	Thenzawl	3	12	15	14			10	
	Total	12	48	60	56	4	8	34	1

28.2 Rainfall and Humidity

District	Division	FHH	MHH	Total	More rain in Summer	Less rain in summer	More rain in Winter	Less rain in winter	More intensive rain in summer	More intensive rain in winter	Rain in odd time	More drought in summer	More drought in winter
Lawngtlai	Chhintuipui W	3	12	15		9	5			3	9	3	
Mamit	Kawrtah	6	9	15		13		7			2	2	1
Saitual	Aizawl WL		15	15	1	10	4	1			4		
Serchhip	Thenzawl	3	12	15		12	1	1			2	4	1
	Total	12	48	60	1	44	10	9	0	3	17	9	2

Annex 6.4.1 Objectives and Services of SHGs, FPOs and PACS in the survey Area

Divisin, Name	Group	Objectives of forming a group	Arrangements to encourage women to participate	Services provided by the organization to the members	Advantages of forming a group?
Aizawl WL					
Lungdawh		To help women generate income and benefits for the family.	Make other women aware of SHG by interacting with them and introducing their functioning and program.	Offers credit to members for household activities like poultry farming, piggery, etc.	Creates good cooperation among members and helps women raise their voices and opinions.
Lungdi Lui		Encouraging women's participation in family and society	1. Arrange meetings among women. 2. Visit women capable of registering to the society and talk to them about the SHG. 3. Organize awareness and training programme.	Offers credit to members for household activities like poultry farming, piggery, etc.	Creates good cooperation among members, and they are able to help each other
Khuailui		Empowering women's status and enhancing their capabilities in family and society	1. Arranging meetings among women. 2. Visit women who were capable of registering to the society and talk about the SHG. 3. Organise awareness and training program	Offers credit to members for household activities like poultry farming, piggery, etc.	Helps women, especially members of the group to have good cooperate and enhances the availability of credit
Kawartha					
Kumtluang SHG		Upliftment of the status of women	Women in the village are invited to join the group and they are told the advantage of taking part in the group	Giving small credit/loan to the members	Pooling of resources and utilising it for meaningful purposes
Ruthi SHG		Self-development	All women are invited to join the group	Loan	Borrowed saving
Lianchhiari SHG		To overcome obstacles to self-development through coordinated action	No arrangement has been undertaken	Micro credit to group members	Pooling of resources and energy for meaningful purposes
Chhitsuipui WL					
Senhri SHG		For income opportunities for the family and to help those struggling with income generation	No separate arrangement, and the group has no plans to accept new members.	Micro-loan facilities to group members for small businesses (petty trade/grocery shops, agri marketing, etc.)	Members could start new businesses or expand existing ones.
Jehova Jire SHG		To create income-generating opportunities together	Everyone is invited to join the group, but no specific initiatives are undertaken.	Loan facilities to be given to the members for income-generating activities	Easier to take loans when capital is needed, which is hard to get as individual
Thenzawl					
Zotui		Income generation among group members	Every woman is invited to join the group	Giving small credit/loans to the members, group savings	Women have better access to microcredit and saving
Herding		Income generation for women and increasing financial management skill	Every woman is invited to join the group	Giving small credit/loans to the members, group savings	Women have better access to microcredit and saving
Farmers' Organisation					
Aizawl WL, Lenchim Thlai Thar		To increase the bargaining power of the farmers so as to regulate	Two executive positions on the Committee were reserved for women in 2022. But no women in the	Regulation of price and market, regulate payment system so that to	Marketing of other produces as a group which ensures transparency and

Divisin, Name	Group	Objectives of forming a group	Arrangements to encourage women to participate	Services provided by the organization to the members	Advantages of forming a group?
Association		prices and market for sellers and cultivators	executive body in 2023. Reported that they would be included later this year.	ensure no deferred payment and debt in the transaction.	efficiency in a transaction at a better price
Kawarthah, Association	Kuhva	To protect the interest of the arecanut farmers	No arrangement	Give assistance to members affected by disasters, condolence given when family member died	It ensures uniform rate to sell arecanut, protect it from theft
Chhimtuipui Phawngpui (PACS)	WL, Ltd	To assist the farmers in availing more credit, loans, and savings.	Organized training and meetings 5-10 times, including Gram Sabha	Credit is extended to producers for agricultural and non-agricultural activities. Accepting deposits from seven SHGs and local churches	Operating as a financial institution to expand farmers' access to credit facilities while facilitating villagers' savings deposits.
Thenzawl, Farmer	FOCUS	To encourage a sustainable farming system	No arrangement has been made	Encourage sustainable farming practices in shifting cultivation (log bunding, soil conservation, etc.)	Better awareness of sustainable farming by the people

Source: JICA Survey Team based on Subcontract Survey

Annex 6.4.2 Revenue and Expenditure of the SHGs and Farmers' Organisations

Revenue and Expenditure of the SHGs and Farmers' Organisations

(1) Revenue and Expenditure

Village/ SHG name	Revenue (INR)			Expenditure (INR)		
	2021-22	2020-21	2019-20	2021-22	2020-21	2019-20
Aizawl WL						
Lungdawh	3000	----	----	----	----	----
Lungdi Lui	2500	----	----	----	----	----
Khuailui	6000	----	----	----	----	----
Kumtluang SHG	22300	13400	6320	1200	600	500
Ruthi SHG	34000	22000	10400	1600	1200	500
Lianchiari SHG	27020	18000	8200	1800	800	600
Chhituipui WL						
Senhri SHG	13360	13360	13360	1000	1000	1000
Jehova Jire SHG	5200	5200	5200	1100	1100	1100
Thenzawl						
Zotui	62500	41100	32500	250	250	250
Herding	70240	52410	24641	250	250	550
Farmers' Organisations						
Aizawl WL Lenchim	5000	5000	5000	5000	5000	5000
Kawrthah, Rengdil	37340	33540	27920	----	3800	5620
Chhimtuipui WL, S. Lungpher	8199217	4288153	8008517	7455168	2860631	4727142
Thenzawl Vanchengte	20000	10000	10000	12000	8000	7000

Source: JICA survey team based on subcontract survey

(2) Loan

Village/ SHG name	Loan (INR)		
	2021-22	2020-21	2019-20
Aizawl WL			
Lungdawh	22000	----	----
Lungdi Lui	22000	----	----
Khuailui	200000	----	----
Kwarthah			
Kumtluang SHG	8000	5000	2000
Ruthi SHG	10000	8000	5000
Lianchiari SHG	10000	4000	2000
Chhituipui WL			
Senhri SHG	300000	200000	130000
Jehova Jire SHG	320000	220000	120000
Thenzawl			
Zotui	50000	30000	30000
Herding	50000	15699	17591
Farmers' Organisations			

Village/ SHG name	Loan (INR)		
	2021-22	2020-21	2019-20
Aizawl WL Lenchim	----	----	----
Kawrthah, Rengdil	----	----	----
Chhimtuipui WL, S. Lungpher	3872138	1655100	2022697
Thenzawl, Vanchengte			

Annex 6.5.1 Daily Time Table

Village	Men	Time	Women
Lenchim	Wake up. Morning tea, rest Breakfast. Work. Work. Work. Home from Work. Home from Work. Dinner. Watching tv/church/ committee/visiting other Bedtime.	5:00–6:00 am 5:00–7:00 am 7:00–8:00 am 8:00 am–12:00 pm 12:00–1:00 pm 1:00–3:00 pm 3:00–5:00 pm 3:30 pm 5:00–7:00 pm 5:30–10:00 pm 9:00–10:00 pm	Wake up. Prepare breakfast and fetch water. Breakfast, cleaning up. Housework/ taking care of children/work. Lunch. Housework/ taking care of children/work. Home from work/Prepare dinner Prepare dinner. Dinner, clean-up. Leftover housework, church, TV, rest, Committee. Bedtime.
Rengdil	----- Wake up, feeding pig Breakfast Sending off children to school Off to work Lunch. Return from Work Dinner. Bedtime. Watching tv/church/ committee / visiting other	4:30–5:00 am 5:00–8:00 am 8:00–9:00 am 8:00 am 9:00–9:30 am 12:00–1:00 pm 4:00–5:00 pm 4:30–6:30 pm 8:00–10:00 pm 7:00–10:00 pm	Wake-up time, sweeping, washing Prepare breakfast, teach children Breakfast, cleaning up. Cleaning/housework Off to work Lunch. Return from work/Preparing dinner Dinner, cleaning dishes Bedtime. Watching TV/church/rest/doing chores
S. Lungpher	----- Wake up, have morning tea, rest, sharpen tools, feed livestock Breakfast. Work. Lunch. Work. Home from Work. Dinner. Rest/ visit friends/church services/ participation in NGOs committees, etc Bedtime.	5:30–6:30 am 6:30–7:30 am 8:00–9:00 am 8:30 am–12:00 pm 12:00 –1:00 pm 1:00–3:00 pm 3:00–4:00 pm 5:00–6:00 pm 5:00–10:00 pm 9:30–11:00 pm	Wake up, housework Prepare breakfast and laundry. Breakfast, cleaning up. Housework/Work. Lunch. Housework/ taking care of children/work. Home from work / Prepare dinner. Dinner, cleaning dishes Rest/ visit friends/church service/housework Bedtime.
Vanchengte	----- Wake up, visiting friend Having breakfast Prepare to go to work/ leisure Going for Work Return from Work Dinner/rest/phone time Socialize/rest/church/visit other Bedtime	5:30–6:00 am 6:00–6:30 am 8:00 am 8:30 am 9:00 am 4:30 pm 5:00–5:30 pm 6:30–9:30 pm 9:00 pm	Wake up, attend morning church prayer, prepare breakfast, washing clothes Feeding pig/livestock Having breakfast Cleaning dishes Going for Work Return from work / Preparing dinner Dinner, cleaning dishes, cooking animal feed rest/TV/Church Bed time

Annex 6.6.1 Contribution of NGOs in Forest Conservations in the survey Area

Village	Roles & Practices in tree plantation	Initiatives taken by the organization in protection of forest	Any other good practices to forest protection
Aizawl WL, Lenchim (YMA)	- Maintenance of YMA Park in the village. - Organized planting events 3 times in the last 5 years. - Planting trees to commemorate Annual YMA Day - Organizing voluntary works in the village to plant trees on the roadside to Tlungvel and Keifang.	- YMA Newsletter publishes information and awareness about forest plantation. - Announcement is made through the public information system operated by YMA on important information about protection of forests. - If some forest resources are stolen, YMA volunteers to detect and issue fines to the thief/ thieves. - YMA prohibited excessive cutting of green trees in the forest for fuelwood. - Log/ timber is not allowed to be cut down for other villages.	- YMA also makes sure to protect the wildlife in the forest. Wildlife is not to be harmed, birds should not be hunted during mating season. - They also take shifts volunteering to protect the river and its banks during breeding seasons of fish - The members of YMA noted that their biggest challenge was the stealing of forest resources including wildlife by people from other villages, and it was hard for them to volunteer regularly for duty.
Kwarthah, Rengdil (YMA)	The Young Mizo Association Rengdil Village Branch actively took part in tree plantation and protection. There is a community tree plantation organized by YMA every year.	The YMA through information Mic make the villagers aware of the importance of the protection of the forest. The YMA formed firefighting squad to respond forest fire in the village.	The YMA Rengdil village branch formed a firefighting squad which is on call for forest or house fires. The squad plays a significant role in fire prevention.
Thenzawl, Vanchengte (YMA)	Before VFDC was formed YMA was the main stakeholders in tree plantation and protection of forest	Public awareness on the need to protect the natural forest is made by the organization, and the villagers are encouraged not to harm wildlife and request to the villagers not to kill wild animal are made several times through public information mic.	Organizing awareness programme, prevention of logging in the village area by outsiders.
Chhitsuipui WL, S. Lungpher (YLA)	- They have plantation activities as community service (hnatlang) every year where they also check on and maintain existing trees in the YLA park. - They called for community works for roadside plantations from time to time. - They also work with the Forest Department to plant more trees in the surrounding areas.	- Protection against forest fires through regular awareness and information from the village crier (tlangau). Forest fire is their biggest problem when it comes to forest protection. - Mei kawng sah (creation of fire lines to stop the fire from jhum burning from entering into the forest) - The organization prohibit felling of trees in its protected forest areas. - They detect and issue fines as punishment to those caught stealing forest resources. - Trees and bamboos within the Forest Department's area are also protected by the organization, so the Forest Department works closely with YLA in protection efforts.	- They protect the riverbanks, the use of poison and dynamos is forbidden, and perpetrators are punished. The fish in the river are protected, and volunteers go on duty for days at a time when fish are reproducing (spawning, releasing of the eggs & sperms). - Some people in the village donate their private vehicles for use even when they cannot go on duty or attend community service activities for forest protection. - Although they do all this work, they remarked that it was hard to prevent all wrongdoings as all duties go on a volunteer basis with no monetary benefits.

Source: JICA Survey Team based on Subcontract Survey

*Preparatory Survey on The Project for Biodiversity Conservation and Forest Enrichment in Mizoram
Final Report (Advanced version)*

Annex 7.3.1 Sample of Success Indicators

Objective	Weight	Actions	Action Weight	Success Indicators	Unit	Weight
[1] Restoration of degraded forests/ wastelands by artificial regeneration and improvement in quality of existing forest	15	[1.1] Raising of seedlings	4	[1.1.1] Seedlings raised in nurseries	Nos.	2
				[1.1.2] Survival rate of seedlings planted	%	2
		[1.2] Plantation on degraded forests (AR) under National Afforestation Programme	3	[1.2.1] Extent of area afforested	Ha.	3
		[1.3] Forest areas enriched with (ANR) under National Afforestation Programme	2	[1.3.1] Extent of existing forest enriched.	Ha.	2
		[1.4] Maintenance of older plantations under NAP	2	[1.4.1] Weeding and vacancy filling	Ha.	2
		[1.5] Involvement of stakeholders in improving forest cover under the umbrella of Joint Forest Management (JFM)	4	[1.5.1] VFDCs/ EDCs involved in afforestation	Nos.	2
				[1.5.2] Training and other capacity building activity given to various stakeholders under JFM	Nos.	2
[2] Effective implementation of various schemes under State Plan and Centrally sponsored afforestation, cultivation of NTFP such as bamboos and medicinal plants for livelihood support to the local people	10	[2.1] Afforestation with tree species	4	[2.1.1] Extent of the forests covered	Ha.	2
				[2.1.2] Weeding and vacancy filling	Ha.	2
		[2.2] Afforestation with bamboo species	5	[2.2.1] Extent of area afforested inside forest area	Ha.	2
				[2.2.2] Extent of older plantation maintained	Ha.	1
				[2.2.3] Enrichment of bamboo area outside forest	Ha.	1
				[2.2.4] VFDCs involved in afforestation activity under NBM	Nos.	1
		[2.3] Forest areas covered with medicinal plants	1	[2.3.1] Medicinal plantation maintained	Ha.	1
[3] Protection of forests from fire, encroachment and other biotic interferences.	6	[3.1] Creation of fire line	2	[3.1.1] Length created	Km.	2
		[3.2] Maintenance of fire line	1	[3.2.1] Length maintained	Km.	1
		[3.3] Engagement of firewatchers	1	[3.3.1] Labourers engaged	Nos.	1
		[3.4] Patrolling in forest areas	2	[3.4.1] Ranges covered by Protection Division	Nos.	2
[4] Strengthening of infrastructure, Research and Extension support for effective management of forests.	8	[4.1] Construction of Residential and office buildings	2	[4.1.1] Buildings constructed	Nos.	2
		[4.2] Publication of Booklets/Pamphlets	2	[4.2.1] Publications made	Nos.	2
		[4.3] Training to various stakeholders.	4	[4.3.1] Training to forest officers	Nos.	2
				[4.3.2] Training to Local community/VFDC Members	Nos.	2
[5] Sustainable management of the forests with people's participation	8	[5.1] Preparation of working plans	3	[5.1.1] Divisions to cover	Nos.	3
		[5.2] Implementation of Working Plans	3	[5.2.1] No of divisions implementing Working Plans	Nos.	3
		[5.3] Value addition to forest produce	2	[5.3.1] Setting up and strengthening of value addition center	Nos.	2
[6] Development of Fauna in the State by preservation of existing wildlife by providing healthy habitats	11	[6.1] Habitat improvement and implementation of Wildlife Management/Conservation Plan	3	[6.1.1] Implementation of WL Management/Conservation Plan	Nos.	1.5
				[6.1.2] Additional Division covered	Nos.	1
				[6.1.3] Implementation of effective Anti-poaching scheme	Date	0.5
		[6.2] Plantation of fruit bearing species	2	[6.2.1] Seedlings planted	Nos.	2
		[6.3] Construction of watch towers, check gates to check poaching	2	[6.3.1] No of watch tower constructed	Nos.	1
				[6.3.2] No of check gate constructed	Nos.	1
		[6.4] Provision of water	1	[6.4.1] No. of water tanky constructed	Nos.	1
		[6.5] Community involvement in wildlife protection	2	[6.5.1] Communities involved	Nos.	1
[7] Promotion of eco-tourism through development of potential sites and Collaboration with other Departments/Agencies.	3	[7.1] Identification of sites for promotion of eco-tourism	1	[7.1.1] Potential sites to be identified	Nos.	1
		[7.2] Preparation of plan for development of eco-tourism	1.5	[7.2.1] Master Plan to be prepared	Date	1.5
		[7.3] Linkage of Environment & Forest Department with other line Departments/Agencies/Institutes	0.5	[7.3.1] Collaboration with other line Departments viz. Tourism, R & D and other Land based departments etc.	Date	0.5
[8] Addressing key concerns related to climate change through effective adaptation and mitigation efforts and Monitoring and Evaluation of such activities	5	[8.1] Implementation of Green India Mission	1	[8.1.1] Increase in Forest and Tree cover	Ha.	1
		[8.2] Implementation of externally aided projects on capacity building and infrastructure development	2	[8.2.1] Number of externally aided project implement	Nos.	1
				[8.2.2] Number of buildings constructed	Nos.	1
		[8.3] Meeting of senior forest officers	1	[8.3.1] Meetings held	Nos.	1
[9] Efficient use of IT, improved internal efficiency/responsiveness/service delivery in the department	8	[9.2] Digitization and generation of maps through GIS	2	[9.1.1] Strengthening of GIS Cell	Nos.	2
			4	[9.2.1] Range boundaries digitized	Nos.	1
				[9.2.2] Digitization of Reserved Forest	Nos.	2
		[9.3] Providing computers and GPS set to frontline forest officers		[9.2.3] Digitization of Protected areas	Nos.	1
			2	[9.3.1] Procurement of computers for divisions/ranges	Nos.	1
				[9.3.2] Supply of GPS handset to Divisions	Nos.	1
[10] Regeneration/cultivation and value-addition to the forest produces particularly bamboos and establishment of linkages to potential markets for value-added products	8	[10.1] Felling and Marketing of private bamboo	3	[10.1.1] Guidelines for harvest and sale of private bamboo	Date	3
		[10.2] Provision of technical support to bamboo planters under New Land Use Policy (NLUP)	3	[10.2.1] No. of beneficiaries under bamboo trade of NLUP	Nos.	2
				[10.2.2] No. of training given to NLUP beneficiaries	Nos.	1
		[10.3] Setting up of Bamboo Processing Centre and establishing market linkages	2	[10.3.1] Strengthening of bamboo model value addition center	Nos.	2
[11] Improvement of ambient environment through monitoring of air/water quality and environmental education and awareness	8	[11.1] Monitoring of air/water quality by State Pollution Control Board	5	[11.1.1] Number of water monitoring stations	Nos.	1
				[11.1.2] Frequency of water quality monitored	Nos.	1
				[11.1.3] Additional water sample test	Nos.	1
				[11.1.4] Number of air monitoring stations	Nos.	1
				[11.1.5] Frequency of air quality monitored	Nos.	1
		[11.2] Awareness building on uses of plastic and other environmental issues in coordination with eco-clubs and other relevant NGOs	3	[11.2.1] Awareness generation campaigns and programs organised	Nos.	1
				[11.2.2] Educational Institutions covered	Nos.	1
[M1] Efficient Functioning of the RFD System	5	[M1.1] Timely submission of Mid Term Achievement		[11.2.3] Number of Eco CLubs and Environmental NGOS engaged	Nos.	1
		[M1.2] Timely submission of Results for 2013-2014		[M1.1.1] On-time submission	Date	1
		[M1.3] Timely submission of Draft RFD for 2014-2015 for approval		[M1.2.1] On-time submission	Date	2
[M2] Effective redressal of citizens' grievances	5	[M2.1] Timely disposal of citizens' grievances lodged through FAKSELNA BOX		[M2.1.1] Citizens' grievances disposed off from FAKSELNA BOX within 30 days	%	2
		[M2.2] Timely disposal of citizens' grievances lodged through www.mizolaw.nic.in		[M2.2.1] Citizens' grievances disposed off through www.mizolaw.nic.in within 30 days	%	3

Annex 8.2.1 Preliminary Project Design Matrix

Ver.0.0

Overall Goal:	Indicator	Means of Verification	Assumption
To contribute to sustainable and climate resilient socio economic development in Mizoram			
Project Objective:	Indicator	Means of Verification	Assumption
To maintain ecological balance and respond to climate change by enriching the degraded forest cover, conservation biodiversity, improving livelihood and strengthening government institutions			
Components:	Activities	Indicators	Means of Verification
1. Forests and Water Conservation – To enhance forest ecosystem services			
Sub-component 1.1: Landscape-based Planning	1.1.1 Survey and Mapping 1.1.2 Demarcation of Treatment Areas (Scoping (Site Identification and Selection)) 1.1.3 Preparation of Landscape-based Plan (Micro Plan)		
Sub-component 1.2: Forest Management/ Restoration inside the Reserved Forests	1.2.1 Production of Quality Planting Materials 1.2.1.1 Establishment of New Nurseries 1.2.1.2 Updating of Existing Nurseries 1.2.1.3 Production of Quality Planting Materials 1.2.2 Improving Quality of the Reserved Forests 1.2.2.1 Improving Quality of Degraded Forests for Coverage under ANR 1.2.2.2 Improving Quality of Degraded Forests for Afforestation through AR 1.2.3 Planting Site Improvement (Soil and Moisture Conservation) 1.2.3.1 Survey and Demarcation (Cost included at 1.1.2) 1.2.3.2 Soil and Moisture Conservation Works a) Improving quality of degraded forests for		

Components:	Activities	Indicators	Means of Verification
	coverage under ANR b) Improving quality of degraded forests for afforestation through AR		
Sub-component 1.3: Forest Management in Community Forests	1.3.1 Production of Quality Planting Materials 1.3.1.1 Production of Quality Planting Materials 1.3.2 Improving Quality of the Community Forests 1.3.2.1 Site selection 1.3.2.2 Improving Quality of Community Forest for Coverage under ANR by Timber/ NTFP Species 1.3.2.3 Improving Quality of Community Forest for Coverage under AR by Timber/ NTFP Species 1.3.3 Planting Site Improvement (Soil and Moisture Conservation) 1.3.3.1 Preparation of Site Specific Plan 1.3.3.2 Soil and Moisture Conservation Works a) Improving Quality of Community Forest for Coverage under ANR by Timber Species b) Improving Quality of Community Forest for Coverage under AR by Timber/ NTFP Species 1.3.4 Community-based Forest Fire Management 1.3.4.1 Preparation of Community-based Forest Fire Management Plan 1.3.4.2 Procurement of Equipment for Community-based Forest Fire Management 1.3.4.3 Training for Community-based Forest Fire Management		
Sub-component 1.4: Forest Improvement for Water Conservation	1.4.1 Site Specific Plan for Watershed Conservation and Spring Shed Restoration 1.4.1.1 River and Spring Assessment (cost included in 1.3.4.1) 1.4.1.2 Preparation of Site Specific Plan for enrichment plantation		

Components:	Activities	Indicators	Means of Verification
	1.4.2 Production of Quality Planting Materials 1.4.2.1 Production of Quality Planting Materials 1.4.3 Improving Quality of the Forests for Water Conservation 1.4.3.1 Enrichment Planting in Gaps 1.4.3.2 Soil and Moisture Conservation Works 1.4.4 Watershed Treatment and Spring Shed Restoration 1.4.4.1 Watershed Treatment on Ridge to Valley Approach / Spring Shed Restoration 1.4.4.2 Spring-Shed Restoration		
Sub-component 1.5: Mitigation of Pressures on Forest Ecosystems through Livelihood Means	1.5.1 Community Mobilisation & Village Level Planning 1.5.2 EPA (Entry Point Activity) 1.5.3 Establishment of Village Level Nursery 1.5.4 Livelihood Activity		
2 Biodiversity Conservation and Management			
Sub-component 2.1: Biodiversity conservation inside PAs	2.1.1 Protection and habitat improvement of PAs 2.1.1.1 Creation and maintenance of protection measures 2.1.2 Habitat improvement works		
Sub-component 2.2: Biodiversity conservation outside PAs	2.2.1 Protection and Management of Biodiversity Significant Areas (BSA) 2.2.1.1 Protection and habitat improvement measures 2.2.1.2 Awareness, Education and Documentation 2.2.2 Enhancement of Capacity of Community Institutions for Sustainable Eco-tourism Development 2.2.2.1 Development of Ecotourism 2.2.3 Capacity enhancement for wildlife conservation 2.2.3.1 Wildlife rescue, veterinary care and rehabilitation 2.2.3.2 Training and exposure program on Wildlife Conservation and Management 2.2.3.3 Communication strategy on wildlife conservation		

Components:	Activities	Indicators	Means of Verification
Sub-component 2.3: Improvement of Knowledge Infrastructure for Research, Awareness and Education	2.3.1 Improvement of knowledge for biodiversity conservation 2.3.1.1 Inventories of flora and fauna in BD hotspots 2.3.1.2 CAMP workshops to update the list of RET species 2.3.1.3 Applied research on biodiversity and wildlife conservation and ecosystem management 2.3.2 Strengthen Digital Infrastructure for Biodiversity Information 2.3.2.1 Create Mizoram State Biodiversity Information System (MBIS) 2.3.3 Improvement of Biodiversity Knowledge Infrastructure 2.3.3.1 Develop Biodiversity Knowledge Parks 2.3.3.2 Improve interpretational values of Aizawl Zoo 2.3.3.3 Action research- developing ABS mechanism for selected species 2.3.3.4 Prepare Biodiversity Atlas for the State		
Sub-Component 2.4: Incentivising Community Conservation Actions through Livelihood Means	2.4.1 Community Mobilisation & Village Level Planning 2.4.2 EPA (Entry Point Activity) 2.4.3 Establishment of Village Level Nursery 2.4.4 Livelihood Activity including Biodiversity		
3 Institutional Strengthening			
Sub-component 3.1: Infrastructure Support	3.1.1 Buildings – New 3.1.1.1 New Office buildings 3.1.1.2 New quarters 3.1.2 Buildings – Extension/ Renovation 3.1.2.1 Divisional Offices - Extension 3.1.2.2 Range Offices - Extension 3.1.2.3 Range Offices - Renovation 3.1.2.4 Staff Quarters - Renovation 3.1.2.5 FRH - Renovation 3.1.2.6 FTS - Renovation of Hostel 3.1.2.7 FTS - Video Conference Room (incl. facilities)		

Components:	Activities	Indicators	Means of Verification
	3.1.2.8 FTS - two toilets in Academic Building 3.1.2.9 ADCs - Mara, Lai, Chakma 3.1.3 Office Equipment 3.1.3.1 Field Level 3.1.3.2 PMU/ State level		
Sub-component 3.2: Mobility Support	3.2.1 Field Offices 3.2.1.1 4WD (Supervision/ Flying Squad at Circles) 3.2.1.2 SUV (4x4) (Field Supervision by DCFs) 3.2.1.3 Trucks (for divisions) 3.2.1.4 Speed Boat (10-15 seater) 3.2.1.5 Pick-up trucks (for Rangers) 3.2.1.6 Motorcycles 3.2.1.7 FTS - Bus for Trainees 3.2.1.8 FTS - Speed Boat (25 seater) for Trainees 3.2.1.9 ADCs - Mara, Lai, Chakma 3.2.1.9-a) SUV (4x4) (Field Supervision) 3.2.1.9-b) Motorcycles 3.2.2 PMU/ State level 3.2.2.1 SUV (4x4) (for PD/ GB members) 3.2.2.2 SUV (For PMU officials) 3.2.2.3 Bus for Staff/ Trainees 3.2.2.4 High Speed Boat (6-10 seater) 3.2.2.5 Motorcycles 3.2.2.6 Rental (2 Cars for PMU/ Project Officers) – months		
Sub-component 3.3: Human Resource Support	3.3.1 Field Units (Contractual Staffing) 3.3.1.1 CMUs 3.3.1.2 DMUs 3.3.1.3 FMUs 3.3.1.4 VFDCs 3.3.1.5 ADCs 3.3.1.5-a) ADCs Project Staff (3 positions) 3.3.2 PMU/ State		

Components:	Activities	Indicators	Means of Verification
	3.3.2.1 Professionals 3.3.2.2 Support staff 3.3.3 FTS Aizawl		
Sub-component 3.4: DX (Digital Transformation) Support	3.4.1 Procurement of IT/Digital Infrastructure (Hardware / Software) 3.4.2 Development of Web enabled Forest Management DSS (with MIS/GIS integration, BIS and development of mobile apps) 3.4.3 Development of Digital GIS database (including boundary survey and digitization) 3.4.4 Strengthening Forest Monitoring (processes, methods and protocols)		
Sub-component 3.5: Capacity Development	3.5.1 Training Needs Assessment (TNA) and Capacity Development Plan 3.5.2 Trainings by Types 3.5.2.1 State/ PMU 3.5.2.2 Circle/ CMU 3.5.2.3 Division/ DMU 3.5.2.4 Range/ FMU 3.5.2.5 GP/ Village 3.5.2.6 NE Region 3.5.2.7 National 3.5.2.8 International 3.5.2.9 Regional Countries 3.5.2.10 International Study Tour 3.5.2.11 National Workshop 3.5.2.12 Seminars/ Workshops		
Sub-component 3.6: Monitoring and Evaluation (M&E)	3.6.1 Progress Monitoring 3.6.1.1 Biodiversity Monitoring 3.6.1.2 Periodic Reviews 3.6.1.3 Concurrent Monitoring (PMU and/or Circle level) 3.6.1.4 Computerized Accounting System 3.6.1.5 Annual Planning & Review Workshops		

Components:	Activities	Indicators	Means of Verification
	3.6.2 Impact Evaluation 3.6.2.1 Annual Outcome Assessments (by DMUs) 3.6.2.2 Baseline and Impact Surveys 3.6.3 Thematic Studies 3.6.4 Engagement of Professionals for scientific inputs (Local/ rtd. experts) 3.6.5 Reporting and Guidelines/ Manuals 3.6.5.1 Guidelines/ Manual/ Handbook (50 prints each; e-print for circulation) 3.6.5.2 Quarterly Report 3.6.5.3 Annual Plan of Operation 3.6.5.4 Annual Report		
Sub-component 3.7: Project Audits	3.7.1 Annual Statutory Financial Audits 3.7.2 Concurrent Financial Audits 3.7.3 Social Audits (in project Village Councils)		
Sub-component 3.8: Forest Research	3.8.1 Infrastructure support to strengthen research base 3.8.2 Prioritized research topics as per Research Plan 3.8.3 Green Enterprise Promotion (GEF) Fund		
Sub-component 3.9: Communication and Publicity	3.9.1 Project Website 3.9.2 Short films/ videos/ Digital documentation 3.9.3 Knowledge Materials		
Project Management Consultant (PMC)			

Annex 8.7.1 Recommended Species

(1) Reserved Forest

No.	Scientific Name	Local Name	English Name
1	<i>Acrocarpus fraxinifolius</i>	Nganbawm	Pink Cedar
2	<i>Adenanthera pavonina</i>	Senmaltet/Sentet	Red Sandal Wood
3	<i>Alseodaphne petiolaris</i>	Khuangthulh	No english name
4	<i>Amoora wallichii</i>	Sahatah	Aglaia
5	<i>Anogeissus acuminata</i>	Zairum	Axelwood
6	<i>Anthocephalus cadamba</i>	Banphar	Burflower tree
7	<i>Artocarpus chaplasi</i>	Tatkawng	Chaplash
8	<i>Bambax insignis</i>	Pang	Silk Cotton Tree
9	<i>Castanopsis tribuloides</i>	Thingsia	Chestnut
10	<i>Duabanga grandiflora</i>	Zuang	Lampati
11	<i>Gmelia arborea</i>	Thlanvawng	Beechwood
12	<i>Grevillea robusta</i>	Silver Oak	Silver Oak
13	<i>Messua ferra</i>	Herhse	Iron Wood Tree
14	<i>Michelia champaca</i>	Ngiau	Champak
15	<i>Stereospermum chelonoides</i>	Zihngthal	Fragrant Padri Tree
16	<i>Syzygium cumini</i>	Lenhmui	Black plum
17	<i>Terminalia arjuna</i>	Char kungmam	Arjun Tree
18	<i>Terminalia myriocarpa</i>	Char	Hollock
19	<i>Toona ciliata</i>	Teipui	Indian Cedar
20	<i>Xylia xylocarpa</i>	Thunguk	Burma Ironwood

(2) Community Forest

1) Timber species

No.	Scientific Name	Local Name	English Name
1	<i>Acrocarpus fraxinifolius</i>	Nganbawm	Shingle tree
2	<i>Adenanthera pavonina</i>	Senmaltet/Sentet	Red-bead tree
3	<i>Amoora wallichii</i>	Sahatah	Amari
4	<i>Anogeissus acuminata</i>	Zairum	Axlewood
5	<i>Anthocephalus cadamba</i>	Banphar	Burflower tree
6	<i>Artocarpus chaplasi</i>	Tatkawng	Chapalish
7	<i>Bambax insignis</i>	Pang	Silk cotton tree
8	<i>Bischofia javanica</i>	Khuangthli	Bishop wood
9	<i>Carallia branchiata</i>	Theiria	Carallia
10	<i>Duabanga grandiflora</i>	Zuang	Lampati
11	<i>Gmelia arborea</i>	Thlanvawng	Gamhar
12	<i>Gmelia oblongifolia</i>	Vawngthla	Gamhar
13	<i>Grevillea robusta</i>	Silver Oak	Australian Silver Oak
14	<i>Messua ferra</i>	Herhse	Iron wood tree
15	<i>Michelia champaca</i>	Ngiau	Joy perfume tree/Champak
16	<i>Syzygium cumini</i>	Lenhmui	Black plum
17	<i>Terminalia arjuna</i>	Char kungmam	Arjun
18	<i>Terminalia myriocarpa</i>	Char	East Indian almond
19	<i>Toona ciliata</i>	Teipui	Indian cedar
20	<i>Xylia xylocarpa</i>	Thinguk	Burma ironwood

2) NTFP species

No.	Scientific Name	Local Name	English Name
1	<i>Alstonia scholaris</i>	Thuamriat	Devil tree
2	<i>Artocarpus heterophyllus</i>	Lamkhuang	Jackfruit
3	<i>Averrhoa carambola</i>	Theiherawt	Carambola
4	<i>Bischofia javanica</i>	Khuangthli	Java cedar
5	<i>Cassia fistula</i>	Ngaingaw	Indian laburnum
6	<i>Cassia javanica</i>	April parpawl	Pink shower
7	<i>Delonix regia</i>	April par	Famboyant
8	<i>Embica officinalis</i>	Sunhlu	Indian gooseberry
9	<i>Ficus religiosa</i>	Hmawng	Peepal
10	<i>Grevillea robusta</i>	Silver Oak	Sacred fig tree
11	<i>Jacaranda mimosifolia</i>	April-parpawl	Jacaranda
12	<i>Lagerstroemia speciosa</i>	Thlado/Chawnpui	Queens crape-myrtle
13	<i>Ligustrum robustum</i>	Chawmzil	Sri Lankan privet
14	<i>Litchi chinensis</i>	Litchi	Lychee
15	<i>Mangifera indica</i>	Theihai	Mango
16	<i>Morus alba</i>	Thingtheihmu	White mulberry
17	<i>Persea americana</i>	Avacado	Avocado
18	<i>Prunus cerasoides</i>	Tlaizawng	Wild Himalayan cherry
19	<i>Spathodea campamulata</i>	Spathodea	African flame tree
20	<i>Tamarindus indica</i>	Tengtere	Tamarind

(3) Water Conservation Forest

No.	Scientific Name	Local Name	English Name
1	<i>Acer thomsonii</i>	Tukhau	Himalayan Maple
2	<i>Ailanthus integrifolia</i>	Phuanberhpui	White Siris
3	<i>Amomum aromaticum</i>	Aichal	Nepal cardamom
4	<i>Amomum linguiforme</i>	Aiduchhia	No english name
5	<i>Amomum maximum</i>	Aidu	Java Cardamom
6	<i>Balakata baccata</i>	Thingvawkpui	Mouse Deer's rubber tree
7	<i>Costus speciosus</i>	Sumbul	Elegant Costus/ Crepe Ginger
8	<i>Daubanga grandiflora</i>	Zuang	Lampati
9	<i>Erythrina veriegata</i>	Fartuah	Coral tree
10	<i>Ficus benghalensis</i>	Hmawng	Banyan Tree
11	<i>Ficus hirta</i>	Sazutheipui	Hairy Fig
12	<i>Ficus retusa</i>	Rihnim	Indian Laurel fig
13	<i>Ficus semicordata</i>	Theipui	Drooping Fig
14	<i>Macaranga indica</i>	Hnahkhar	Indian Macaranga
15	<i>Melia azedarach</i>	Neem suak	Bead Tree/Persian Lilac
16	<i>Musa acuminata</i>	Vai-Balhla	Cavendish Banana
17	<i>Musa balbisiana</i>	Changthir	Seedy Banana
18	<i>Musa ornata</i>	Changvandawt	Flowering Banana
19	<i>Phyrnium placentarium</i>	Hnahthial	Packing Leaf
20	<i>Premna racemosa</i>	Thingsaum	Headache Tree

Note: **bold-font** species are most recommended species

Annex 8.7.2 Recommended facilities on Soil and Moisture Conservation

1. Soil and Moisture Conservation for Planting Site Improvement

To enhance the quality of forest and its management in the target catchment areas, the following activities for the soil and moisture conservation will be conducted per the following models of approach.

Activities under Soil and Moisture Conservation

Models	Activity	Site Selection
1	Catchment Area Treatment Plan (CATP) integrated with plantation works	- Middle part of the hill - Narrow valley - Slope (upto 30%) - Catchment area 6 to 10 hectare - SMC activity will be vary based on the site feasibility.
1.1	Staggered Contour Trenches/ Trenches	
1.2	Brushwood Check Dam for gully plugging (Vegetative/ using locally available materials)	
1.3	Brushwood Check Dam for gully plugging (loose boulders but locally available stones)/ Gabion structures	
2	Erosion prevention works combined with Check Dams	- Middle and Lower part of the hill - Narrow valley - Slope (upto 30%) - Catchment area 3 to 5 Hectare - SMC activity will be vary based on the site feasibility.
2.1	Staggered Contour Trenches/ Trenches	
2.2	Brushwood Check Dam for gully plugging (Vegetative/ using locally available materials)	
2.3	Brushwood Check Dam for gully plugging (loose boulders but locally available stones)/ Gabion structures	

Source: JICA Survey team

2. Objective:

- To store water to keep humidity for planted seedlings

3. Methods:

3.1 Trenches / Direct Pit method for Soil and Moisture Conservation:

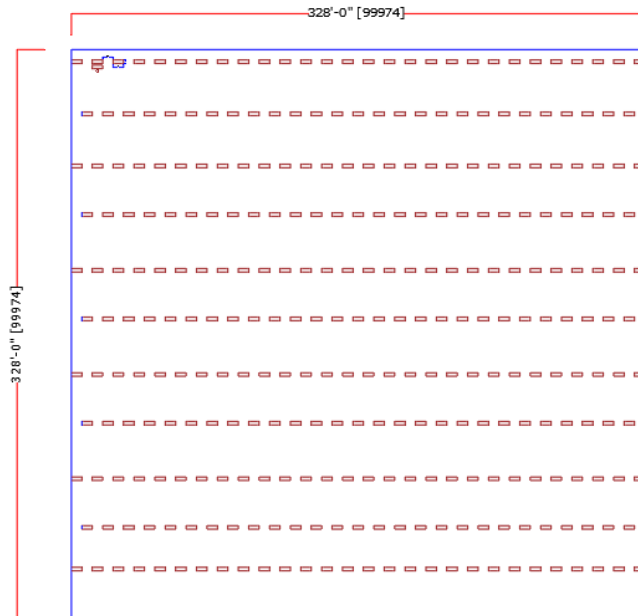
Trenches/ Direct pits along the hill slopes create a water break which reduces the formation of rills and gullies during times of heavy water runoff; which is a major cause of top soil loss and soil erosion. The water break also allows more time for the water to settle into the soil.

- I. Staggered trenches
- II. Staggered contour trenches

I. Staggered Trenches:

The staggered trench method is the hillside works to arrest or retain the soil flow in the hillside, plantation, and slopey land (less than 10%). Staggered trench method with 2.0 m x 0.60 m x 0.50 m is used and 2.0 m apart in the trenches. The vertical interval between staggered trenches is fixed at 10.0 m. In order to maintain the function of the staggered trench, the maintenance works shall be conducted once 2 years with site clearing and excavation of retained soil of the trench. Materials and soil generated by the maintenance works shall be used for materials for mulching trees.

This activity will be integrated with the plantation activity in the state. All degraded areas treated through plantation activities will have a sub-component of soil and moisture conservation activities. Such activities will include digging Contour trenches, which involve simple earth work that may be undertaken by the villagers/ VFDC members under the guidance of Forest Officer. Contour trenches are used both on hill slopes as well as on degraded and barren waste lands for soil and moisture conservation and afforestation purposes. The trenches break the slope and reduce the velocity of surface runoff. It can be used in all slopes irrespective of rainfall conditions (i.e., in both high and low rainfall conditions), varying soil types and depths.



A Staggered Trench in Ailawng by Land Resources Department, Mizoram (source: JICA Survey team)

As has already been mentioned the soil type of most of the forest areas in Mizoram are sandy loam, clayey loam etc., which is very common for soil erosion. Such erosion is common to areas under Red Lateritic soil and gravely soil with low to medium soil depth, poor capacity of water retention and have frequently occurring surface encrustations. This unstable character of the soil coupled with undulating terrain of the tract often lead to severe run off and intense soil erosion. Therefore, it is imperative that all afforestation activities must be effectively safeguarded with suitable soil conservation measures.

Afforestation and reforestation activities will be confined to degraded forest areas with signs of sheet erosion and rill erosion of different intensities. There is a need therefore to adopt simple soil and moisture

conservation measures in the form of Contour trenches.

Details of the above soil and moisture conservation measures are given below;

Contour trench: Trenches of 2.0 m length and 0.60 m x 0.50 m size are dug all over the plantation area 2.0 m apart in contour lines, in a staggered manner, the lines being at 10.0 m interval. This is done to check run off, arrest soil and conserve moisture.

II. Staggered Contour Trenches:

Contour trenching is a simple, and a low-cost method of checking the velocity of runoff in the ridge area of any catchment treatment or watershed (slope is more than 10%). A contour trench is a trench dug along a contour line. A contour line is a line, which joins together points of the same elevation. Digging a trench along such a line increases the chances of containing runoff for a longer period of time within the trench. It is also true that if trenches were not to follow a contour, such digging could actually increase the possibility of soil erosion because there would be a rise in the velocity of runoff following an increase in the slope of the land. Primarily the main purpose of the contour trenches are

- a) Slowing down the velocity of runoff
- b) Checking soil erosion, and
- a) Improving local soil moisture profile

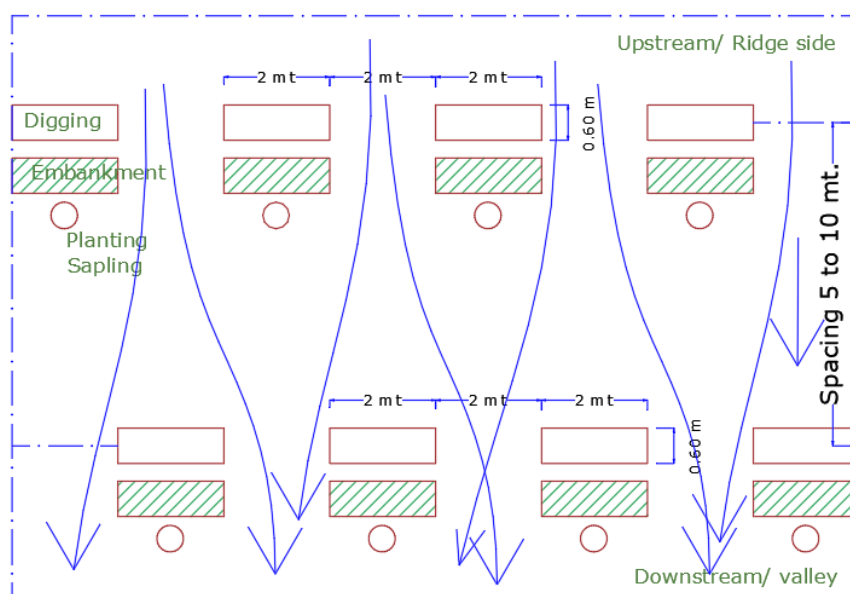
The extent of the contour trench shall be determined based on the slope of the area which is more than 10% and above. In the areas with moderately loamy soil contour trenches may be dug at suitable intervals depending on the slope. This will intercept runoff and help infiltration. The size of the contour trench should be sufficient to intercept at least 12 hours of continuous runoff. Staggered contour trenches with intermediate spaces are more effective than continuous contour trenches. The dugout soil is neatly piled in the shape of a 'bundh' embankment. "The vertical interval between staggered contour trenches is fixed at 10.0 m".



A Staggered Contour Trench in Ailawng by Land Resources Department, Mizoram (source: JICA Survey team)

Methodology

Instead of making trenches continuously, it should be made in a staggered and discontinuous manner. Dig a trench 5 m long on a contour line. Give a gap of 5 m. Dig another 5 m trench along the contour. The trenches are further dug in a similar fashion along this particular contour. Then, come to the next contour line a vertical interval of 10.0 m. Begin digging in a stretch, which covers the gap left in the higher contour line. The gaps in this contour line should fall below the trenches in the higher contour line. In this way, we maximize the amount of harvested runoff by the trenches. In other words, chains of staggered trenches should be made along successive contour lines so that water left by one line of trenches is captured by the immediately lower line, and it continues the process further.



In areas where there is an abundance of trees and vegetation, gaps in the excavation area in any case essential to allow space for the roots of the trees to spread and the contour trenches. Also, maybe there are hard rocks underneath the soil, trenches must be staggered and contour.

3.2 Gully Plugging Works - Brushwood Check Dam with locally available materials/ vegetative cover:

Gullies are mainly formed because physiographic, soil type, and heavy biotic interference in an area. The scouring of streams at their peak flows and sediment-laden run-off cause gullies. The gullies would be required to be treated with engineering/mechanical as well as vegetative methods. Check dams would be constructed in some of the areas to promote growth of vegetation that will consequently lead to the stabilization of slopes/area and prevention of further deepening of gullies and erosion.

Different types of gully control structures would be required for different conditions comprising of different materials depending upon the site conditions and the easy availability of material (stones) at local level and transport accessibility. Generally, brushwood check dams are recommended to control the erosion in the first order basin/streams in upper reaches and dry random stone masonry check dam shall be provided in the lower reaches where discharge is higher. In such stream where discharge and velocity of flow are still higher gabion structure shall be provided. Lower down the sub-watershed, i.e., in the third order drainage silt retention dams in the form of gabion structure shall be provided.

A gully plug/ hand-packed stone/ boulder wall is a small, temporary or permanent dam constructed across a drainage ditch, gully, swale, or channel to lower the speed of concentrated flows (like an overflow weir) for a certain design range of storm events, the proposed structures are as follows;

- a) **Brushwood check dam** (Bamboo posts, Bushes, etc. which is locally available)
- b) **Hand packed walls in hills** (rough dressed dry boulder walls with boulders or rough dressed drystone walls with stones which is locally available with wire mesh)

a) **Brushwood check dam:**

Brushwood check dam for gully control structures is the combination of the timbered trees/ bamboo posts as a fence and is functioned as gully plugging when assembled in a box/ chained manner and situated in the gully. Soil and/or Stones and/or fallen tree leaves is/are put into the box to arrest the sediment from flowing downstream in the gully valley. The local bamboo/ trees can be used as frame bars for the brushwood fences. This can be also mixed with the vegetative cover. Planting some grasses that are resistant to soil erosion is very important.



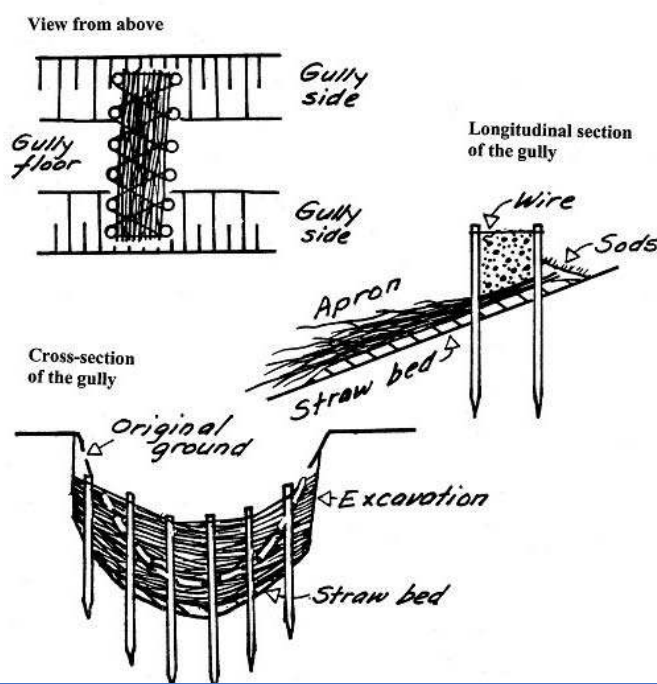
A Gully Control Structure using vegetative measures by using locally available materials such as dry wooden stumps, bamboo and loose boulder stones and mud in Lunglei Forest Division, Mizoram (source: JICA Survey team)

Salient Features:

- For making the structure more durable, it is combined with connecting wire or rope is advisable to be bonded on the junction of the mesh.
- Brushwood check-dams shall be prepared in the degraded valleys in the target/ project area.
- Locations of the brushwood check-dams shall be determined in the sites by the forest officers in consultation with the villagers.
- A simple and cheaper method is to establish suitable vegetation along the foot of the check dam
- The seedlings should be planted densely in single or more rows. These can provide good resistance to even small or moderate water flows. Any tree or shrub species, such as *Alnus*, pine, bamboo, salix, poplar, etc., can be used as posts
- The brushwood check dams are made of natural material, and the function of the brushwood check dam will deteriorate progressively. Therefore, maintenance works are indispensable. The maintenance works of the brushwood check-dams shall be once every two years with site clearing and repair of brushwood check-dams by use of natural material around there.
- Posts are set in trenches (0.3 by 0.2 m in size) across the gully to a depth of about 1/3 to 1/2 of the post length, and about 0.3 to 0.4 m apart. The length of the posts is 1.0 to 1.5 m and their top-end diameter is 3 to 12 cm.
- The height of the brushwood check dam will be maximum of 1.0 mt height to protect from failure.



A Gully Control Structure using vegetative measures by using locally available materials such as dry wooden stumps, bamboo and loose boulder stones and mud in Thenzawl Forest Division, Mizoram (Source: JICA Survey team)



Refer to the research manual on Gully Control in SAT Watersheds by ICRISAT, Hyderabad

b) Hand packed walls in hills/ Loose Boulder Structures:

This type of structures has been used widely in India. A gully plug can be built from logs of wood, rough stone, boulders, pea gravel-filled sandbags or bricks. These structures are relatively cheap and can last about 2-5 years.

- This type of structure will be made possible, where locally available rough boulder/ stones are available in nearby areas.
- It is very simple to build with local labourers; however, having restrictions in the height to which they can be built; would require regular maintenance.
- The proposed infrastructure developments will help in mitigating the adverse climate impacts,

- The construction of gully plugging will help in mitigating the impacts of drought & flood.

3.3 Technical assistance:

Technical assistance for the preparation of detailed design, cost estimate and timeline will be provided by DMU, PMU, PMC and resource agencies within the government, especially PWD or Rural Development or Land Resources, Soil & Water Conservation Department, Govt. of Mizoram.

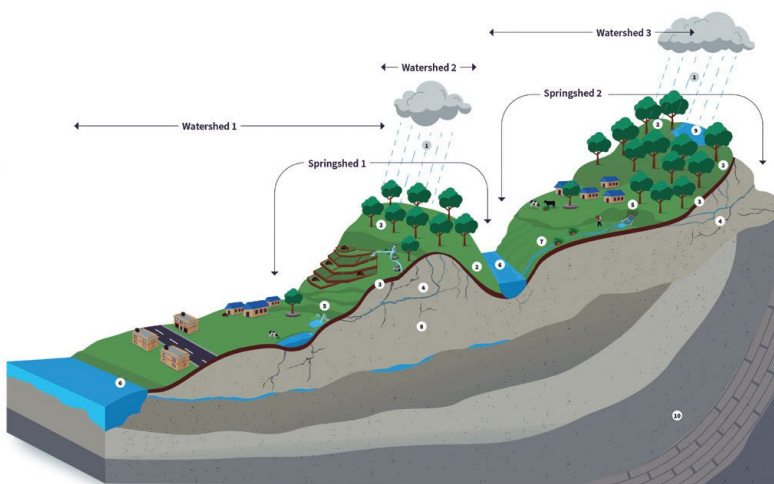
Annex 8.7.3 Recommended facilities on Watershed Treatment and Springshed Restoration

1. Watershed Treatment and Springshed Restoration

Springsheds differ from watersheds because the source of spring water is determined by aquifer characteristics and not surface topography. Also, movement of spring water which is groundwater, is determined by underlying geology, that is, nature of rocks, their inclination and structure. The point where the spring emerges is based on the relationship of the aquifer to the watershed surface. As defined above, a typical watershed drains water from a ridgeline into the valleys (drainage lines) that converge to a common point – possibly at the confluence of a river, whereas a springshed is a set of watersheds and aquifers that integrate into a system that supplies water to a group of springs.

The concept of watershed, therefore, cannot account for water which travels outside of the watershed boundaries, for example through rock beds that inclines towards an adjoining watershed.

Drying up of springs has increased water insecurity for many communities in the Indian Himalayan Region (IHR). According to a NITI Aayog report (2018), nearly 50% of springs in the IHR have dried up or have reduced discharge. Spring water quality has also diminished. Drying up of springs not only affects rural water security, but also river flows, riparian and wetland ecosystems, and biodiversity. Climate change is expected to further exacerbate these problems.



To address the issue of drying springs and deterioration of water quality across the state are preparing for doing on research project to support and strengthen the capacity of state actors and institutions for spring rejuvenation. The aim is to promote science based and socially inclusive springshed management approaches and community-based solutions to build resilience against climate change and other evolving threats to water security.

2. Objective:

- To revive the underground springs which is drying in present nature.
- To conserve the springs due to increased water insecurity for many local communities

3. Methods:

3.1 Trenches / Direct Pit method for Soil and Moisture Conservation:

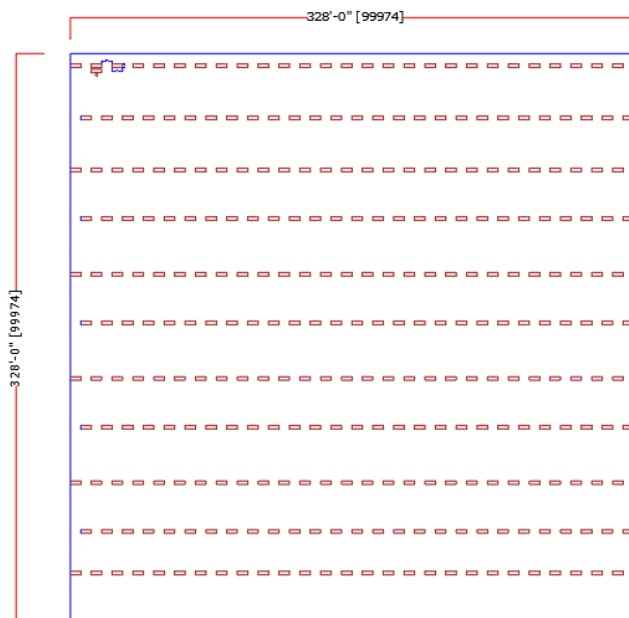
Trenches/ Direct pits along the hill slopes create a water break which reduces the formation of rills and gullies during times of heavy water runoff; which is a major cause of top soil loss and soil erosion. The water break also allows more time for the water to settle into the soil.

- I. Staggered trenches
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A Staggered Trench in Ailawng by Land Resources Department, Mizoram (Source: JICA Survey Team)

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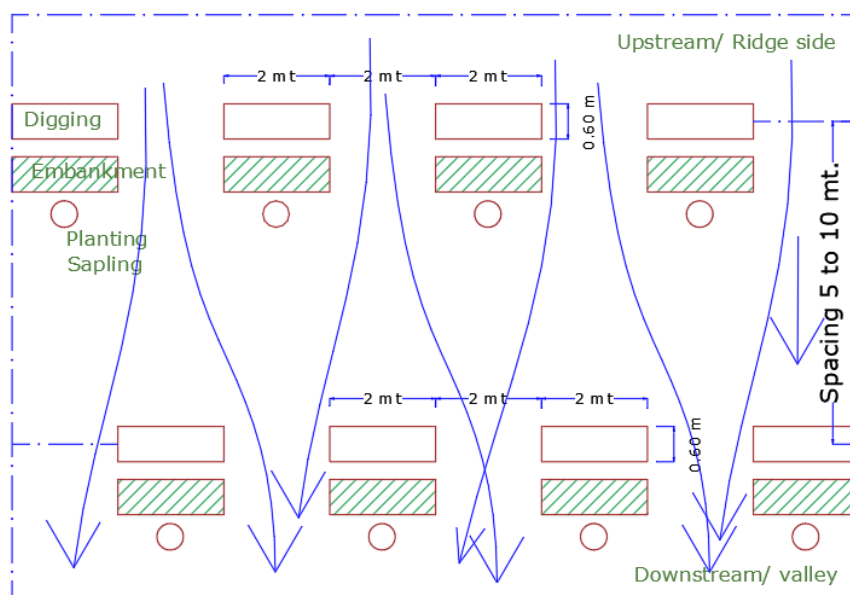
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3.2 Gully Plugging Works - Brushwood Check Dam with locally available materials/ vegetative cover:

Gullies are mainly formed because physiographic, soil type, and heavy biotic interference in an area. The scouring of streams at their peak flows and sediment-laden run-off cause gullies. The gullies would be required to be treated with engineering/mechanical as well as vegetative methods. Check dams would be constructed in some of the areas to promote growth of vegetation that will consequently lead to the stabilization of slopes/area and prevention of further deepening of gullies and erosion.

Different types of gully control structures would be required for different conditions comprising of different materials depending upon the site conditions and the easy availability of material (stones) at local level and transport accessibility. Generally, brushwood check dams are recommended to control the erosion in the first order basin/streams in upper reaches and dry random stone masonry check dam shall be provided in the lower reaches where discharge is higher. In such stream where discharge and velocity of flow are still higher gabion structure shall be provided. Lower down the sub-watershed, i.e., in the third order drainage silt retention dams in the form of gabion structure shall be provided.

A gully plug/ hand-packed stone/ boulder wall is a small, temporary or permanent dam constructed across a drainage ditch, gully, swale, or channel to lower the speed of concentrated flows (like an overflow weir) for a certain design range of storm events, the proposed structures are as follows;

- a) **Brushwood check dam** (Bamboo posts, Bushes, etc. which is locally available)
- b) **Hand packed walls in hills** (rough dressed dry boulder walls with boulders or rough dressed drystone walls with stones which is locally available with wire mesh)

a) **Brushwood check dam:**

Brushwood check dam for gully control structures is the combination of the timbered trees/ bamboo posts as a fence and is functioned as gully plugging when assembled in a box/ chained manner and situated in the gully. Soil and/or Stones and/or fallen tree leaves is/are put into the box to arrest the sediment from flowing downstream in the gully valley. The local bamboo/ trees can be used as frame bars for the brushwood fences. This can be also mixed with the vegetative cover. Planting some grasses that are resistant to soil erosion is very important.



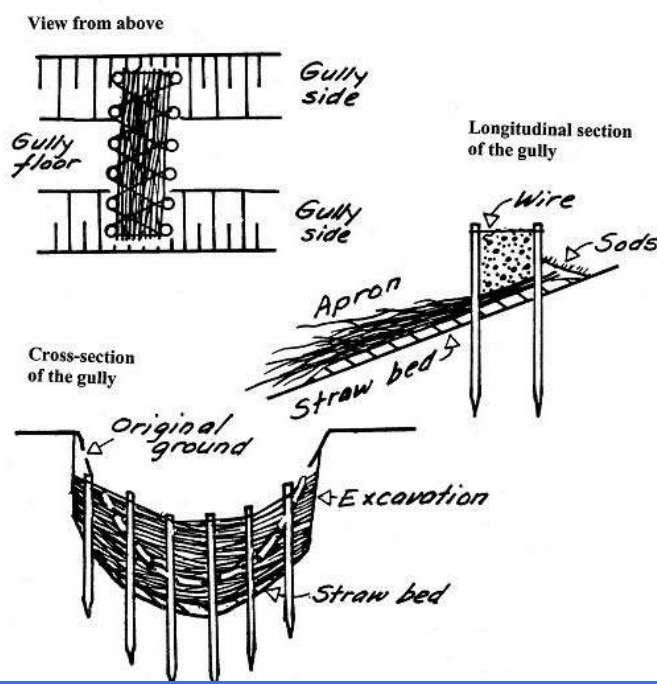
A Gully Control Structure using vegetative measures by using locally available materials such as dry wooden stumps, bamboo and loose boulder stones and mud in Lunglei Forest Division, Mizoram (Source: JICA Survey Team)

Salient Features:

- For making the structure more durable, it is combined with connecting wire or rope is advisable to be bonded on the junction of the mesh.
- Brushwood check-dams shall be prepared in the degraded valleys in the target/ project area.
- Locations of the brushwood check-dams shall be determined in the sites by the forest officers in consultation with the villagers.
- A simple and cheaper method is to establish suitable vegetation along the foot of the check dam
- The seedlings should be planted densely in single or more rows. These can provide good resistance to even small or moderate water flows. Any tree or shrub species, such as *Alnus*, pine, bamboo, salix, poplar, etc., can be used as posts
- The brushwood check dams are made of natural material, and the function of the brushwood check dam will deteriorate progressively. Therefore, maintenance works are indispensable. The maintenance works of the brushwood check-dams shall be once every two years with site clearing and repair of brushwood check-dams by use of natural material around there.
- Posts are set in trenches (0.3 by 0.2 m in size) across the gully to a depth of about 1/3 to 1/2 of the post length, and about 0.3 to 0.4 m apart. The length of the posts is 1.0 to 1.5 m and their top-end diameter is 3 to 12 cm.
- The height of the brushwood check dam will be maximum of 1.0 mt height to protect from failure.



A Gully Control Structure using vegetative measures by using locally available materials such as dry wooden stumps, bamboo and loose boulder stones and mud in Thenzawl Forest Division, Mizoram (Source: JICA Survey Team)



Refer to the research manual on Gully Control in SAT Watersheds by ICRISAT, Hyderabad

b) Hand packed walls in hills/ Loose Boulder Structures:

This type of structures has been used widely in India. A gully plug can be built from logs of wood, rough stone, boulders, pea gravel-filled sandbags or bricks. These structures are relatively cheap and can last about 2-5 years.

- This type of structure will be made possible, where locally available rough boulder/ stones are available in nearby areas.
- It is very simple to build with local labourers; however, having restrictions in the height to which they can be built; would require regular maintenance.
- The proposed infrastructure developments will help in mitigating the adverse climate impacts,
- The construction of gully plugging will help in mitigating the impacts of drought & flood.

- A series of loose boulder structures may be prepared by looking at the site conditions.

3.3 Gully Plugging works (Gabions with Loose boulder structures, Random Rubble Masonry with cement mortar, etc.)

Rainfall pattern of the area and water seepage coupled with geological formation results in landslides. Water plays an important role in triggering of landslides and mass wasting processes along with other factors such as slope and nature of soil/land-cover/land-use. Gabion structures shall be provided at the base of the land slide zones to control the toe erosion by water.

Gabions are boxes or mats formed out of wire mesh and filled with durable stone. Structures are formed by linking the boxes. Gabion boxes and mattresses can utilize local resources of stone and can be built by local unskilled and skilled labour. They are flexible, easy to move and can be repaired by the local workforce.

Some basic rules to be followed for gabion construction –

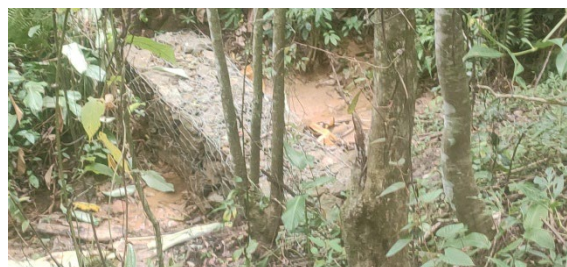
- The gabion stone should be ideally between 100 mm and 200 mm in size and should normally be at least 1.5 times the size of the mesh;
- Stone should be hard and durable and may be from a quarried source or naturally occurring rounded river stone. River boulders are generally very durable.
- It is necessary to use variable sized stones to pack the voids between the larger stone.
- The gabion wire should be at least 2.5mm in diameter and should be woven into a mesh. It is important that the wires forming the mesh



A Gabionic Check Dam in Ailawng supported by PMKSY-WDC 2.0 implemented by Department of land resources, Mizoram



RR stone masonry Gully plugging in Thenzawl north village (Source: JICA Survey Team)



A Gabionic check dam in Ailawng supported by PMKSY-WDC 2.0 implemented by Department of land resources, Mizoram (Source: JICA Survey Team)

are double twisted so that if a wire is broken it is prevented from unraveling and progressively weakening the structure. The mesh is formed into panels, usually of size 1m x 1m or 1m x 2m etc., or into rolls 2m to 4m wide.

- The gabion boxes (0.5 m or 1m high) are formed by lacing the mesh panels together using a lacing wire of at least 2 mm diameter.
- The boxes should be placed on a prepared flat surface, sloping back into the slope at 10° and preferably keyed into the ground to a depth of at least 0.5m. Each box should be laced to all adjacent

3.4 Percolation Tanks/ Dug Out Pits/ Farm Pond

Percolation tank is an artificially created surface water body, submerging in its reservoir a highly permeable land, so that surface runoff is made to percolate and recharge the ground water storage. Percolation tank is an artificial reservoir which are constructed across stream, submerging a land area with adequate permeability to facilitate sufficient percolation to collect surface water run-off and allow it to percolate within the permeable land. This is one of the effective methods of refilling groundwater table (also known as groundwater recharge).



A Dug Out Pit in Ailawng by Land Resources department, Mizoram (Source: JICA Survey Team)

Farm ponds are dug out or excavated in flat terrain where topography does not permit construction of embankment. Farm pond, because of its depth, exposes less water surface for a given volume than an earthen dam and thus causes less evaporation loss.

Selection of site:

Following aspects should be examined for selection of site.

- Annual runoff from the watershed should be adequate to fill the dug-out;
- The soil type at the site should be investigated. Soil which is highly permeable is not suitable for the bottom and sides of the dugout. In case of excessive seepage, the pond should be provided with suitable lining (puddling compacted to bulk density). Again very hard soil where excavation is difficult may be avoided.
- Soil underlain by limestone containing crevices, sinks or channels may be avoided.



A Dug Out Pit in Ailawng by Land Resources department, Mizoram (Source: JICA Survey Team)

Construction

The pond site is cleared of all vegetation. The pond is excavated by step method by employing manual labour. The excavated material should be placed in such a manner that its weight does not destabilize the pond and the material does not get washed back to the pond by rain water. The excavated material may be stacked in bunds of easy slope away from the pond leaving a berm space equal to the depth of the pond.

3.5 Earthen Check Dams:

Soil and moisture conservation work, which included the construction of check dams along the valleys combined with soil erosion prevention works on hillsides, were conducted to improve the livelihoods of the local communities and to maintain the water regime and soil fertility of the area.

- The stored water of the check dam enhances the soil moisture conditions of vegetation, helps in ground water recharge capacity raising the water table in the area.
- Availability of water ensures the increase of agricultural yield by multi-cropping.
- Soil and moisture conservation work mitigate soil erosion as sediment production. As the result, sediment discharge from the area decreases to the downstream area, and disaster risks related to the sediment in the downstream stretches are reduced.

Generally, catchment area treatment tries to reduce the velocity of runoff water through a series of interventions. The aim is to lower the water velocity, to make the water flow vertically downwards rather than horizontally across the village. Interventions are made at different points in the village in a location-specific manner utilizing locally available materials and the vast knowledge of the local people regarding water flows and resource availability. Interventions are generally planned according to the ridge-to-valley principle.



D/S photo of RR Stone masonry check dam
(Source: JICA Survey Team)

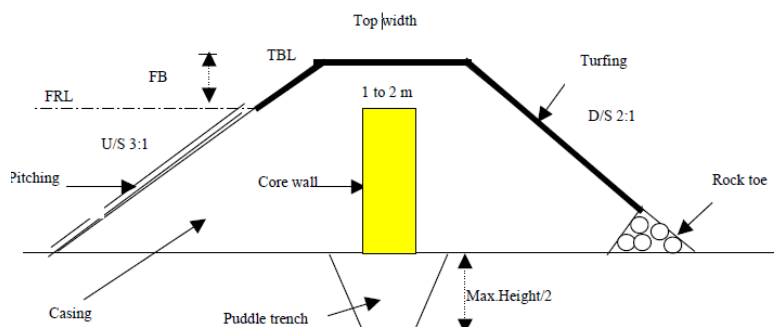
The reduction in the volume and velocity of runoff confers the following benefits:

- Reduction in soil erosion;
- Trapping of silt which reduces the rate of siltation in check dam in the lower reaches.
- Increasing the soil moisture profile locally, which provides greater support to vegetation;
- It increases the ground water table significantly.
- Increasing the duration of flow in the drainage line.
- Constructing the earthen check dam in the higher valley which maybe termed as percolation tank.

Design Specifications:

As shown in the drawing alongside, the salient design features as follows;

- Water storage capacity
- Top width
- Bottom width
- Height of the dam
- Upstream side slope
- Downstream side slope
- Puddle trench
- Core wall
- Rock toe
- Grass turfing
- Free board
- Full reservoir level
- Settlement allowance/ Ramming of earth in the check dam
- Seepage line etc.



Earthen check dams which are relatively small-scale structures and can be constructed and maintained by local communities. These are the most cost-effective measures in the long run activities.

During the detailed design, the following matters shall be kept in mind:

- On wide valleys with gentle slopes (<10%), long earthen embankments will be constructed with relatively large water surfaces (< 2.0 ha). On narrow valleys with moderate slopes (10-20 %), small earthen embankments will be constructed with relatively small water bodies (<0.5 ha). Key trenches should be excavated into impervious foundation structures to prevent embankments from collapsing.
- Impermeable core walls will be introduced to prevent seepage and collapsing of embankments. mud core walls would be considered at sites where suitable soils for impermeable core walls are easily obtained. Types of core wall can be decided from the results of soil surveys at the detailed design stage.
- Spillways are to be lined with brick mortars to prevent erosion from the slopes. In order protect the river/stream bed and banks downstream of the spillway from the spillway discharge the brush wood, sand bags, or mortal gunny bags shall be installed.
- Downstream side slopes of the embankment are to be covered by grass turfing. Up-stream side slope surfaces of the embankment are to be lined with vegetative materials, such as bamboo net with mud/cement plaster, to reduce seepage and prevent scouring by run-off water or wind wave. Coconut leaves / banana leaves may be introduced to the bottom of down-stream side slopes of the embankment as water weeping material.
- Around the impound area of the check dam, bamboo plantations and NTFP plantations are to be established to reduce the amount of soil flowing from the slopes into the water and to prevent sedimentation.



An Earthen Check Dam in Kawrthah Forest division, Mizoram (Source: JICA Survey Team)

Design

After approval of the planning by DMU, the detailed design of check dams shall be prepared by RMU. DMU will approve the proposed design and amount sanctioned, and minutes of understandings shall be signed between VFDC and RMU. DMU shall approve the detailed design and cost estimate. Prior to the detailed design, the following survey and study shall be conducted by RMU:

Construction:

Construction of the check dams shall be conducted by VFDC with the help of local community under the assistance of RMU.

Firstly, the check dams of Model 1 will be constructed after the plantation works of VFDC, in consideration of establishment of fishery by VFDC.

Secondly, the check dams of Model 2 will be constructed outside the plantation works but with the help of local communities by VFDC, in consideration of establishment of fishery.

Operation and Maintenance:

- The check dams shall be operated and monitored by VFDC under assistance of RMU.
- The revolving fund of VFDC shall be used for the operation and maintenance.
- Mizoram has extremely erosive soil, stony soil with intensive rainfall. Due to this condition, the earthen part of the check dams, especially downstream slope of embankment, will deteriorate. Therefore, periodical maintenance works are indispensable to maintain the function of the check dams. Required repair works of the periodical maintenance will be once in every two years with repair of embankment slope and its vegetation cover,

- Design of the maintenance works of all shall be prepared by RMU. The periodical maintenance works for the check dams shall be conducted by VFDC under the technical assistance of RMU and DMU.
- In addition to the periodical maintenance works of the check dams, repair of the vegetation cover of the embankment slope shall be conducted at any time.

3.6 Technical assistance:

Technical assistance for the preparation of detailed design, cost estimate and timeline will be provided by DMU, PMU, PMC and resource agencies within the government, especially PWD or Rural Development or Land Resources, Soil & Water Conservation Department, Govt. of Mizoram.

Annex 8.7.4 Discussions held on Convergence

1. Mizoram State Rural Livelihood Mission (MzSRLM)

MINUTES OF MEETING

Meeting Title	Meeting on how to converge with the MzSRLM
Venue:	CEO Office
Date:	11 th July 2023
Time:	2:00 – 2:45 PM (Indian Standard Time)

1. PARTICIPANTS

NO.	NAME	DESIGNATION	ORGANIZATION
1.	H. Lalchhandami	CEO	MzSRLM
2.	Michiko Ebato	Co-Team Leader	JICA Survey team
3.	TP	Survey Assistant-2	JICA Survey team

2. DISCUSSIONS

NO.	TOPIC	DISCUSSION
1.	Introduction	- Ms. Ebato explained the objectives of the meeting and how to work together for the project under the livelihood component.
2.	Partnership with other organization	- Mrs. Lalchhandami (CEO) explained their partnership with other organization/ agency through MoU. - No foreign funded project has been implemented by MzRLM. - The convergence with other organization/ agencies is at the district level. - With regards to the livelihood component, the MzSRL had signed MoU with : - <u>Mizoram Organic Mission (MOM)</u> – MOM uses SHG of MzSRLM as their identified beneficiaries with regards to organic purposes. - <u>North-East Initiative Development Agency (NEIDA)</u> - NEIDA supported funds to construct pig house for SHGs who receives support on piggery programme of MzSRM's piggery programme. - <u>World Bank Team</u> – Uses SHG for their different activities with regards to livelihood component. - <u>Tourism Department</u> – Home stay is developed in convergence with tourism department. The rooms are sold on air b&b. - <u>Poultry Company</u> – Trained women with regards to vaccination and health sanitation. - <u>Health Strengthening Project</u> – uses SHG for capacity building in health strengthening purposes. - <u>Fisheries Department</u> – implement in Kolasib district (but not to a very large extent).
3.	Assets distribution and loan	- The MzSRLM do not distribution any asset (in kind or material), but assist their SHG beneficiaries only in loan and capacity building part.
4.	Support for Male	- As male is part of the SHG family, so there is no other support for male. There is no extra training for gents under MzSRLM.

3. WAY FORWARD

NO.	WAY FORWARD
1.	- Once the project begins, the nature of partnership is to be discussed with MzSRLM. (There are various ways of collaboration. The fund to enhance their existing scheme can be placed with them. (like in the case of NEIDA). Monitoring and day to day guidance of SHGs can also be provided by MzSRM.) - MOU needs to be signed.

2. Bamboo Development Agency

MINUTES OF MEETING

Meeting Title	Meeting on how to converge with the Bamboo Development Agency (BDA)
Venue:	Bamboo Development Agency Office (BDA)
Date:	12 th July 2023
Time:	11:00 – 12:00 (Indian Standard Time)

1. PARTICIPANTS

NO.	NAME	DESIGNATION	ORGANIZATION
1.	Lalzarmawia	Project Director	BDA
2.	Laldinliana Chhange	Bamboo Expert	JICA Survey team
3.	Michiko Ebato	Co-Team Leader	JICA Survey team
4.	TP	Survey Assistant-2	JICA Survey team

2. DISCUSSIONS

NO.	TOPIC	DISCUSSION
1.	Introduction	- The meeting commenced at 11:00 AM at the Project Director Office, Bamboo Development Agency.
2.	Enrolment of members in a Cluster	- The Project Director handed the List of Clusters (in hardcopy) registered under the Bamboo Development Agency to the JST and he then explained the Clusters - current status, works and their problems. - The Cluster list consists of 26 clusters and they are all registered society. - In order to become a member in a cluster, another new cluster has to be formed. Each cluster is registered as a society. - To form a new cluster, a meeting with cluster members will be held. Thereafter, they will be registered with the Bamboo Development Agency. They will also elect the representatives among themselves. - If the existing cluster members agree, new members can also join.
3.	Marketing	- The BDA supports the marketing by engaging entrepreneurs. They will be engaged to support cluster (production/ value addition) and marketing.
4.	Problems faced by the Clusters	- Delay in payment from the buyers was the main problem faced by the cluster members. Because of this, cluster members slowly shifted to other jobs. - Sizes of the Cluster's Products are not uniform. In this regard, The Project Director suggested expert Trainers from other foreign countries (like Laos/ Japan/ Vietnam). (i.e. Master artisans can be called from Japan to train Master Trainers in Mizoram.) - For cane and bamboo, raw material bank needs to be established and treatment needs to be improved.
5.	Procurement of Raw Materials	- The cluster members mostly procured their raw materials from their respective local areas.
6.	Training Cost	- The cost of training mostly depends on the duration of the training. - However, according to the Project Director, per day training cost is usually 250 INR including lunch and allowance.

3. WAY FORWARD

NO.	WAY FORWARD
1.	Further discuss will be held once the project has started. MOU can be signed when agreed for convergence.
2.	BDA identified clusters that can further be strengthened. In case, any project villages are nearby these clusters and villagers are interested in joining, the project may discuss with BDA for convergence.

Attachment:

Attachment 1-1: Potential investment needed for developing existing clusters.

Attachment 1-2: Existing clusters

3. State Bamboo Mission/ Horticulture Department

MINUTES OF MEETING

Meeting Title	Meeting on how to converge with the Horticulture Department
Venue:	Director's room
Date:	14 th July 2023
Time:	1:00 PM – 3:00 PM (Indian Standard Time)

1. PARTICIPANTS

NO.	NAME	DESIGNATION	ORGANIZATION
1.	C.H. Lalmuanpuia	Director	Horticulture Department
2.	Michiko Ebato	Co-Leader	JICA Survey team
3.	Laldinliana Chhangte	Bamboo Expert	JICA Survey team
4.	TP	Survey Assistant-2	JICA Survey team

2. DISCUSSIONS

NO.	TOPIC	DISCUSSION
1.	Introduction	- Mr. C.H Lalmuanpuia chaired the meeting and gave a short welcome speech to the members and introduced his staff members to the JST. - Ms. Ebato (JST) explained the objectives of the Survey Team and the project mode of operation to the members.
2.	Procurement of Bamboo seedlings.	- According to the Director, three types of bamboo seedlings are available from the private enterprises. However, due to fund constraints, the department could not procure the seedlings for the time being. - In this regard, planting of seedlings is already late. So, planting of bamboo seedlings will be kept for the next year programme.
3.	Assistance given by Horticulture Department to bamboo processing units	- Assistances were given to three (3) clusters under Bamboo Development Agency, Commerce and Industries Department. - Tools were supplied to improve their technology. - Imparted trainings to the Bamboo shoot making units and Furniture making units. - State Bamboo Mission has also sent interested youth to Assam for training.
4.	Ethanol Production	- In this regard, the concerned department has contacted the State government. However, due to fund constraint and transportation problem, bio-fuel production could not be implemented. - The discussion on ZoGreen will also take time to materialize.
5.	With regards to Bamboo plantation, problems faced by the department	- The concerned department has organized the clusters, but due to poor road connectivity, further activities like harvesting, value addition and processing have been difficult. - Limited fund was also one of the problem faced by the department.

3. WAY FORWARD

NO.	WAY FORWARD
1.	Proposals for collaboration on bamboo charcoal was to be shared by the Horticulture Department but not received.
2.	The project may discuss the nature of partnership with the department. One potential area for convergence is the Village Nurseries that are supported by the project to supply raw materials for

	their CFCs/ value addition activities or function as seed bank for bamboos.
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4. Land Resources, Soil & Water Conservation Department

MINUTES OF MEETING

Meeting Title	Meeting on how to converge with the Land Resources, Soil & Water Conservation Department (LR,SWCD)
Venue:	Director's room
Date:	14 th July 2023
Time:	11:00 AM – 12:00 PM (Indian Standard Time)

1. PARTICIPANTS

NO.	NAME	DESIGNATION	ORGANIZATION
1.	Hualthanga	Director	LR,SWCD Department
2.	Michiko Ebato	Co-Leader	JICA Survey team
3.	Laldinliana Chhangte	Bamboo Expert	JICA Survey team
4.	TP	Survey Assistant-2	JICA Survey team

2. DISCUSSIONS

NO.	TOPIC	DISCUSSION
1.	Introduction	- Mrs. Ebato (JST) explained the objectives of the Survey Team and the project mode of operation to the Director.
2.	Broom Grass Plantation activities undertaken by LRSWCD	- Terraces were constructed for the Broom Grass Cultivation at 3 to 4 ft. in size. - Broom Grass was cultivated at the edge of each terrace.
3.	Identification varieties and sites.	- Western sides of Mizoram including Mamit District and Kolasib District were identified as potential sites for Broom Grass Cultivation, - Variety like Phiahpui (local name) is mostly preferred for marketing across the states of India as it soft in nature. However, Phiahthir (local name) is preferred by the local people as it is hard and tough for cleaning some rough surfaces.
4.	Harvesting and Marketing	- Harvesting and Marketing are undertaken by MAFED.
5.	Area for convergence	- Terrace construction - Planting and Weeding material - Go-down construction

3. WAY FORWARD

NO.	WAY FORWARD
1.	Large scale land development is supported by the department. As part of the soil water conservation intervention, broom grasses are planted. Thus, where the landscape/ terrain is suitable for this kind of treatment, convergence may be considered.
2.	The quality of broom grass preferred in the local market and outside differ. Thus, taking into the access to the market and labour wages, species shall be selected.

5. Registrar of Cooperative Societies

MINUTES OF MEETING

Meeting Title	Meeting on how to converge with the Cooperative Societies in Mizoram
Venue:	Office of the Registrar of Cooperative Societies
Date:	13 th July 2023
Time:	11:00 – 12:15 (Indian Standard Time)

1. PARTICIPANTS

NO.	NAME	DESIGNATION	ORGANIZATION
1.	Mr. Amol Shrivastava	Registrar	Cooperative Societies
2.	Michiko Ebato	Co-Leader	JICA Survey team
3.	Laldinliana Chhangte	Bamboo Expert	JICA Survey team
4.	TP	Survey Assistant-2	JICA Survey team

2. DISCUSSIONS

NO.	TOPIC	DISCUSSION
1.	Introduction	- Mr. Amol Shrivastava (Registrar) chaired the meeting and gave a short welcome speech to the members. - Mrs. Ebato (JST) explained the objectives of the Survey Team and the agenda for the meeting. - The Registrar then handed the list of Van Dhan Vikas Kendra (VDVKs) Processing Units in Mizoram and the existing MSP list for Minor Forest Produce and their areas of activities to the JST.
2.	Role of the Office of the Registrar of Cooperative Societies	- Administrative and Financial support to the Societies but no Functional support.
3.	Role of Tribal Cooperative Marketing Development Federation of India (TRIFED)	- TRIFED is a business entity which is under the Ministry of Tribal Affairs. The regional office is in Guwahati, Assam. - However, in order to use this marketing platform, the societies need to maintain the standards or criteria of the TRIFED, which maybe sometimes not beneficial for the societies in many cases as it may require larger amount of capital.

3. WAY FORWARD

NO.	WAY FORWARD
1.	The Office of Registrar of Corporate Societies support registration of corporate societies under Van Dhan scheme. MSP also has been administered by the same. However, no technical support for value addition and marketing except MSP.
2.	If any of the VFDC members are willing to be organised and work as a corporate society, this office can support. This is also the state office for TRIFED. Thus, the marketing of handicrafts can be discussed through them.

Attachment:

Attachment 2-1: List of Clusters under Van Dhan Vikas Kendra

Attachment 2-2: MSP

Attachment 2-1: List of Clusters under Van Dhan Vikas Kendra

A. PROPOSED EXPENDITURE REQUIREMENT FOR STRENGTHENING EXISTING BAMBOO PRODUCT CLUSTERS/ UNIT UNDER BAMBOO DEVELOPMENT AGENCY TO BE IMPLEMENTED UNDER JICA FUND

Sl. No	Name of the Entrepreneur/Cluster/ Unit	Nature of Works	Proposed action to be taken	Amount Required in lakh
1.	B.T Enterprise, Durtlang, Mizoram	Production of Bamboo Charcoal Briquette (Pillow shape)	1. Supply of raw bamboo charcoal by village unit to B.T enterprise using drum and kiln process at village level and training. 2. Strengthening/ expansion of existing bamboo charcoal briquette unit. i.e B.T Enterprise by providing atomised honey comb briquetting machine.	50.00 lakh (to cover 5 villages @ Rs.10 lakh/ village). 5.00 lakh
2.	Lungdai Bamboo Charcoal Making Cluster, Mizoram (21 members)	Production of honey comb bamboo charcoal briquette	They are proposed to produce Bamboo charcoal briquette utilizing their charcoal by using local made Honey comb charcoal briquette making machine	Rs. 5.25 lakh (@ Rs.25000/ machine for 21 members)
3.	Sesawng Bamboo Handicraft Cluster, Mizoram. (34 members)	Production of various bamboo handicraft items such as Traditional cap, tray, basket, tea coaster, vase, phone stand, pen stand etc.	Since they are provided Common Facility Centre. Machineries to be installed at the CFC are required as per the following. Cross cutting machine, Miter saw, Jig saw, Sanding machine, Bamboo thin slivering machine, strip bending machine, knot removing machine etc.	5.00 lakh
4.	Lengte Bamboo Handicraft Cluster, Mizoram (48 members)	Production of various bamboo handicraft and decorative items such as bamboo flower, tray, basket, steamer etc.	Since they are provided Common Facility Centre. Machineries to be installed at the CFC are required as per the following. Cross cutting machine, Miter saw, Jig saw, Sanding machine, Bamboo thin slivering machine, strip bending machine, knot removing machine etc.	5.00 lakh

5.	Edentharr Bamboo Handicraft Cluster, Aizawl, Mizoram (23 members)	Production of various bamboo handicraft items such as hanger, tray, basket, tea coaster, vase, phone stand, pen stand etc.	Common Facility Centre is provided. Machineries to be installed are required as per the following: Cross cutting machine, Miter saw, Jig saw, Sanding machine, Bamboo thin slivering machine, strip bending machine, knot removing machine etc.	5.00 lakh
6.	Khawzawl Bamboo Furniture Cluster, Mizoram (74 members)	Three hectare high density plantation of Bamboo <i>T. Oliveri</i> (<i>Phunkirua</i>) was practiced.	Proper maintenance of management for the plots is required. It is intended to extract rhizome and distributed to the cluster members for expansion of plantation.	5.00 lakh
7.	Bamboo Treatment Plant (Long Pressure Impregnation Plant) at BTP Sairang and King Marketing, Kawnpui	Production of treated bamboo for construction works.	Upgradation and rectification of treatment plants are required.	15.00 lakh
Total				95.25 lakh

B. PROPOSED EXPENDITURE REQUIREMENT FOR NEW BAMBOO PRODUCT CLUSTERS/ UNIT UNDER BAMBOO DEVELOPMENT AGENCY TO BE IMPLEMENTED UNDER JICA FUND

Sl. No	Name of the Entrepreneur/ Cluster/Unit	Nature of Works	Proposed action to be taken	Amount Required in lakh
1.	Rawpuichhip Bamboo Handicraft Cluster, Mizoram (19 members)	Production of bamboo handicraft items like bamboo tray (Thlangra), bamboo basket (Em)	Setting up of Common Facility Centre for the cluster is needed along with machineries to be installed.	30.00 lakh
2.	Zemabawk Bamboo Handicraft Cluster, Aizawl, Mizoram (20 members)	Production of various bamboo handicraft items such as hanger, tray, basket, tea coaster, vase, phone stand, pen stand etc.	Setting up of Common Facility Centre for the cluster is needed along with machineries to be installed.	30.00 lakh
3.	Khawruhlian Bamboo Handicraft cluster	Production of bamboo handicraft items like bamboo tray (Thlangra), bamboo basket (Em& Thul) etc	Setting up of Common Facility Centre for the cluster is needed along with machineries to be installed.	30.00 lakh
TOTAL				90.00 lakh

C. OTHERS

Sl. No	Name of the Entrepreneur/ Cluster/Unit	Nature of Works	Proposed action to be taken	Amount Required in lakh
1.	Export Import Business Training Centre, Industrial Estate, Zuangtui, Aizawl	Impart in-house training on cane & Bamboo handicraft by engaging reputed institution from India and abroad.	a) Completion of building construction b) Skill development training including honorarium for master trainers, lodging, fooding, travelling expenses of master trainers & trainees. c) Tools, Machineries & Raw materials	311.00 lakh 50.00 lakh 20.00 lakh
2.	King Industries, Falkland, Aizawl	Forest Stewardship Council (FSC) Certification (1000 Ha)	a) GIS studies & Expert fees by MIRSAC Mizoram Remote Sensing Application Centre b) Biodiversity Study by ECOMS Eco-Management Services (ECOMS Mizoram) c) FSC consultation with EIA and SIA by Leaf Consultancy – Sri Lanka d) FSC certifying body - FM Certification Preferred by Nature e) FSC certifying body – COC Preferred by Nature f) Miscellaneous	3.85 lakh 16.00 lakh 20.00 lakh 8.77 lakh 8.53 lakh 2.00 lakh
			TOTAL	440.00 lakh

GRAND TOTAL (A+B+C) - Rs. 625.25 lakh

Attachment 1-2: Clusters under Bamboo Development Agency					
Sl.No.	Name of Cluster	Location	Sector	Products	Active or Inactive
1	Chite Bamboo Handicraft Cluster (46 members)	Chite, Aizawl, Mizoram	Handicraft	Basket, tray, Thul, fan, small jewellery items, etc.	Active
2	Edentharr Bamboo Handicraft Cluster (23 members)	Edentharr, Aizawl, Mizoram	Handicraft	Basket, , tray, flower vase,, tea coaster, etc.	Active
3	Zemabawk Bamboo Handicraft Cluster (40 members)	Zemabawk, Aizawl, Mizoram	Handicraft	Tea coaster, pen stand, hanger, chair, etc.	Active
4	Sesawng Bamboo Handicraft Cluster (34 members)	Sesawng, Mizoram	Handicraft	Basket, tray, flower vase, tea coaster, pen stand, phone stand, etc.	Active
5	Lengte Bamboo Handicraft Cluster (48 members)	Lengte, Mizoram	Handicraft	Basket, ornament items, steamer, etc.	Active
6	Rawpuichhip Bamboo Handicraft Cluster(18 members)	Rawpuichhip, Mizoram	Handicraft	Em, hnam	Active
7	Khawruhlian Bamboo Handicraft Cluster (31 members)	Khawruhlian, Mizoram	Handicraft	Em, thlangra	Active
8	Teikhang Bamboo Handicraft Cluster (15 members)	Teikhang, Mizoram	Handicraft	Khumbeu, tea coaster	Inactive
9	Lunglei Bamboo Handicraft Cluster (23 members)	Lunglei, Mizoram	Handicraft		Inactive
10	Mamit Bamboo Handicraft Cluster (24 members)	Mamit, Mizoram	Handicraft	Khumbeu, tea coaster, hanger, basket, etc.	Inactive
11	Kawrpuchhuah Bamboo Handicraft Cluster (20 members)	Kawrpuchhuah, Mizoram	Handicraft	Khumbeu, tea coaster, hanger, etc.	Inactive
12	Lengpui Bamboo Furniture Cluster (30 members)	Lengpui, Mizoram	Furniture	Chair, table, small items	Active
13	Khawzawl Bamboo Furniture Cluster (701 members)	Khawzawl, Mizoram			Active
14	Hnahthial Bamboo Furniture Cluster (33 members)	Hnahthial, Mizoram	Furniture		Inactive
15	Lawngtlai Bamboo Furniture Cluster (21 members)	Lawngtlai, Mizoram	Furniture		Inactive
16	W.Serzawl Bamboo Furniture Cluster (25 members)	W.Serzawl, Mizoram	Furniture		Inactive
17	Siaha Bamboo Furniture Cluster (20 members)	Siaha, Mizoram	Furniture		Inactive
18	Zawlnuam Bamboo Furniture Cluster (30 members)	Zawlnuam, Mizoram	Furniture		Inactive
19	Thingsulthlah Agarbatti Cluster (26 members)	Thingsulthlah, Mizoram	Agarbatti Stick	Round agarbatti stick	Active
20	Darlawng Agarbatti Cluster (39 members)	Darlawng, Mizoram	Agarbatti Stick	Round agarbatti stick	Active
21	Haulawng Agarbatti Cluster (33 members)	Haulawng, Mizoram	Agarbatti Stick		Inactive
22	Maubuang Bamboo Cluster (30 members)	Maubuang, Mizoram	Flat bamboo		Inactive
23	Vairengte Cane and Bamboo Cluster (30 members)	Vairengte, Mizoram	Cane & Bamboo		Active
24	Chhingchhip Bamboo By-product Cluster (14 members)	Chhingchhip, Mizoram	Bamboo charcoal & vinegar	Bamboo charcoal & vinegar	Active
25	Chhuanthar Bamboo Charcoal Cluster (50 members)	Baktawng, Mizoram	Bamboo charcoal		Active
26	Lungdai Bamboo Charcoal Cluster (21 members)	Lungdai, Mizoram	Bamboo charcoal	Bamboo charcoal	Active

Attachment 2-1: VDVks Processing Units in Mizoram						
Sl.No.	Name of value added products	Name of District	Name of VDVK	Whether operational (OP) or non-operational (N- operational (N-	No. of operational in the Unit	No. of VDVks engaged in the Unit
1	Mizo Chilli	Aizawl West	Maubuang	OP	2	2
			S.Hlimen	OP		
		Aizawl East	Mualpheng	OP	1	1
		Lunglei	Serte	N-OP		1
		Champhai	Kelkang	OP	1	1
		Serchhip	Lungkawlh	OP	2	2
			Zawlpui	OP		
		Kolasib	Kolasib Venglai	OP	2	2
			Kolasib-I	OP		
Mamit	W.Phaileng-II	OP	1	1		
Siaha	Laki	OP	2	2		
	Saiko	OP				
	TOTAL				11	12
2	Turmeric	Aizawl West	Chawlhmun	OP	1	1
		Aizawl East	Ratu	N-OP		1
		Lunglei	Ramlaitui	N-OP	4	7
			Lungsen	OP		
			Tlabung	OP		
			Rangte	N-OP		
			Sertlangpui	N-OP		
			Thenhlum	OP		
			Bunghmun	OP		
		Serchhip	Serchhip	OP	2	2
			New Serchhip	OP		
		Kolasib	Nisapui (Serlui)	OP	2	2
			Kawnpui-I	OP		
		Mamit	Reiek	OP	1	1
		Siaha	Khopai	OP	1	1
	TOTAL				11	15
3	Animal Feeds	Aizawl West	Tachhip	N-OP		2
			Sialsuk	N-OP		
		Aizawl East	Zohmun	N-OP	1	5
			Suangpuilawn	N-OP		
			Kepran	N-OP		
			Thingsulthliah (Phullen)	OP		
			Durtlang	N-OP		
		Lunglei	Pukpui	N-OP	1	3
			Vanhne	N-OP		
			Dawn	OP		
		Champhai	Champhai Bethel	OP	6	8
			Chawnchim	N-OP		
			Khawzawl-III (Khawzawl Dinthar)	OP		
			Khawzawl-IV (Khawzawl Vengthar)	N-OP		
			Kawlkulh	OP		
			Khawzawl-I (Khawhai)	OP		
			Vaphai	OP		
			Biate	OP		
		Mamit	W.Phaileng-III (New Mamit)	OP	3	3
			Darlak-I	OP		
			Kawrthah	OP		
			TOTAL			
4	Ginger	Aizawl West	Aibawk	OP	2	2
			North Lungleng	OP		
		Aizawl East	Rulchawm	OP	5	5
			Khanpui	OP		
			Ruallung	OP		
			Saitual	OP		
			Keifang	OP		
		Lunglei	Zote S	OP	1	2
			Haulawng	N-OP		
		Mamit	West Phaileng-I	OP	2	2
			Darlung	OP		
		Siaha	Chhaolo-II	OP	1	3
			Amotlah	N-OP		
			Tisi	N-OP		
			TOTAL			

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Sl.No.	Name of value added products	Name of District	Name of VDVK	Whether operational (OP) or non-operational (N-)	No. of operational in the Unit	No. of VDVks engaged in the Unit
5	Hill Broom	Aizawl East	East Phaileng	OP	3	3
			Lungsum	OP		
			Sihphir	OP		
		Champhai	Zokhawthar (Vaihmun)	OP	3	3
			Zion Veng	OP		
			Khawzawl-II (Champhai Kahrawt)	OP		
		Serchhip	N.Vanlaiphai	OP	4	4
			Chhiahtlang	OP		
			Keitum	OP		
			Mualcheng	OP		
		Kolasib	Kannan	OP	6	6
			Saipum	OP		
			Kolasib-II	OP		
			Khamrang	OP		
			Bukpui	OP		
			Kawnpui	OP		
		Mamit	Mamit-II (Hmunsam)	OP	2	2
			Mamit-I (Lungsir)	OP		
		Siaha	Zyho	OP	2	2
			New Saikao	OP		
		Lunglei	Changpui Lungchem	OP	4	4
			Belthei	OP		
			Tipperghat	OP		
			Kauchhuah	OP		
	TOTAL				24	24
6	Betelnut	Aizawl West	Sairang-I		1	1
		Kolasib	Vairengte		3	5
			Bilkhawthlir			
			Bairabi N			
			Kawnpui-II			
			Hortoki			
		Mamit	Darlak		7	8
			Tuidam			
			Zawlnuam			
			Phaizau			
			Rengdil-I			
			Rengdil-II			
			Hriphaw (Zawlnuam Zauyai)			
			Zawlnuam-II			
	TOTAL				11	14
7	Nimbu/Lemon	Aizawl West	Thiak	OP	2	3
			Sairang	OP		
			Tanhril	N-OP		
		Aizawl East	Seling	OP	1	1
		Kolasib	Bairabi S	OP	5	5
			Kolasib Vengthar	OP		
			Kolasib Diakkawn	OP		
			New Diakkawn	OP		
	TOTAL				8	9
8	Jaggery Candy (Sugarcane)	Aizawl West	Lungleng-I	OP	2	2
			Phulpui	OP		
		Serchhip	Khawlailung	OP	1	1
	TOTAL				3	3
9	Pickles	Aizawl West	Zotlang	OP	3	4
			Saikhamakawn	N-OP		
			Venghnuai SE	OP		
			Venghnuai	OP		
		Lunglei	Hauruang	OP	6	8
			Rahsi Veng (Kanghmun S)	OP		
			Bualpui V	OP		
			Zotlang	OP		
			Mualthuam	N-OP		
			Phairuankai	OP		
			Putlungasih	OP		
			Hrangchalkawn	N-OP		
		Serchhip	Serchhip Chanmari	OP	1	1
	TOTAL				10	13

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Sl.No.	Name of value added products	Name of District	Name of VDVK	Whether operational (OP) or non-operational (N-OP)	No. of operational in the Unit	No. of VDVks engaged in the Unit
10	Banana	Aizawl West	Salem	OP	1	1
		Aizawl East	Thingsul Tlangnuam	OP	1	1
		Serchhip	Khuntung	N-OP		1
	TOTAL				2	3
11	Coffee	Aizawl East	Sawlung	OP	1	1
	TOTAL				1	1
12	Amla/Gooseberry	Lunglei	Cherhlun	OP	2	2
			Tawipui S	OP		
		Serchhip	Buangpui (Thenzawl)	OP	2	2
			Hrangturzo	OP		
	TOTAL				4	4
13	Sesame Oil	Lunglei	Zawlpui	N-OP	1	3
			Bawlia Tuisen	OP		
			Buarpui	N-OP		
	TOTAL				1	3
14	Grape	Champhai	Hnahlan	OP	1	1
	TOTAL				1	1
15	Honey	Champhai	Champhai Vengsang	OP	1	1
		Serchhip	Leng	OP	1	1
	TOTAL				2	2
16	Tea	Champhai	Kawlben (Leisenzo)	OP	1	1
	TOTAL				1	1
17		Lunglei	Chhipphir	N-OP		2
			Thuampui	N-OP		
		Siaha	New Laty	OP	1	1
	TOTAL				1	3
18	Orange	Lunglei	Sethlun	N-OP		1
	TOTAL					1
19	Handlooms	Champhai	Hnahlan Saron Veng	OP	1	1
	TOTAL				1	1
20	Aloe vera	Serchhip	Chhuanthar Tlangnuam	OP	1	1
	TOTAL				1	1
21	Bamboo Vinegar	Serchhip	Baktawng	OP	1	1
		Champhai	Champhai	OP	1	1
	TOTAL				2	2
22	Tailoring	Mamit	Kawrthah South	OP	1	1
	TOTAL				1	1
23	Anchiri	Siaha	Lopu	N-OP	1	2
			Pala	OP		
	TOTAL				1	2
24	Mango	Siaha	Kaochao	OP	1	1
	TOTAL				1	1
25	Elephant foot yam	Siaha	Chheihllu	OP	2	4
			Chakhei-II	N-OP		
			Phura	N-OP		
			Lobo-II	OP		
	TOTAL				2	4
26	Miscellaneous	Aizawl West	Samlukhai	N-OP		3
			Sateek	N-OP		
			Khatla	N-OP		
	TOTAL					3
GRAND TOTAL					122	159

Attachment 2-2: Existing MSP List				
Sl. No.	Name of MFP	Bot/Scientific Name	Name of MFP in Mizo	Rate per Kg
1	Tamarind with seeds	Tamarindus indica	Tengtere	36
2	Wild honey		Khuai zu	225
3	Gum Karaya	Sterculia Urenus		114
4	Karanj seed	Pongamia pinnata		22
5	Sal seed	Shorea robusta		20
6	Mahua seed	Madhuca longicifolia		29
7	Sal leaves	Shorea robusta		35
8	Chironji pods with seeds	Buchanania lanzan		126
9	Myrobalan	Tarminalia chebula	Re raw	15
10A	Rangeeni lac		Thal hrit	200
10B	Kusumi lac		Thal hrit chi khat	275
11	Kusum seeds	Schleichera oleosa		23
12	Neem seeds	Azadirachta indica	Neem rah	27
13	Puwad seeds	Cassia tora	Ringworm damdawi	16
14	Baheda	Terminalia bellerica		17
15	Hill broom grass	Thysonalaena maxima	Hmunphiah	50
16	Dry Shikakai seeds	Acacia concinna	Khangthur rah	50
17	Bael pulp dried	Aegle marmelos		30
18	Nagar Motha	Cyperus rotundas	Thip	30
19	Shitavari roots (dried)	Asparagas racemocus	Hnahsin zam chi	107
20	Gudmar/Madhunashini	Gymnema sylvestre		41
21	Kalmegh	Andrographis paniculata		35
22	Tamarind de-seeded	Tamarindus indica	Tengtere mu tello	63
23	Guggul	Exudates		812
24	Mahua flowers dried	Madhuca longicifolia		30
25	Tejpatta dried	Cinnamomum tamala	Tejopata ro	40
26	Jamun dried seeds	Syzygium cumini	Hmuipui	42
27	Dried amla pulp (de-seeded)	Phyllanthus emblica	Sunhlu ro mu tello	52
28	Marking nut	Semecarpus anacardium		9
29	Soap nut dried	Sapindas emarginatus	Hlingsi	14
30	Bhava seed	Amaltas/Cassia fistula		13
31	Arjuna bark	Terminalia arjuna	Thingpbuk pil	21
32	Kolum dry	Garcinia indica		29
33	Giloe	Tinospora cordifolia	Hrui vankai	40
34	Kaunch seed	Mucuna pruniens	Bete mu	21
35	Chirata	Swertia chirayita		34
36	Vaybidding/Vavding	Embelia ribes		94
37	Dhavaiphool dried flowers	Woodfordia floribunda	Ainawn	37
38	Nux Vomica	Strychnos nux vomica		42
39	Ban tulsi leaves (dried)	Ocimum tenuiflorum	Runhmu sen	22
40	Kshirni	Hemidesmus indicus		35
41	Bakul dried	Mimusops elengii		46
42	Kutaj dried bark	Holarrhena pubescens/Hantidysenterica		31
43	Noni/Aal dried fruit	Morinda citrifolia		17
44	Sonpatha/Syonak pods	Oroxylum indicum	Archangkawm	21
45	Chanothi seeds	Abrus precatorius		45
46	Kalihari (dried tubers)	Gloriosa superb		31
47	Makoi (dried fruits)	Solanum nigrum	Anhling ro	24
48	Apang plant	Aschyranthes aspera		28
49	Sugandhmantri roots/tubers	Homalomena aromatic	Anchiri bul	38
50	Van tulsi seeds F	Ocimum gratissimum	Runhmu dum mu	16
51	Ven jeera A	Vernonia anthelmintica	Nihawi chi	70
52	Beetel nut raw A	Areca catechu raw	Kuhva khehloh	30
53	Beetel nut dry AP	Areca catechu dry	Kuhva ro	200
54	Mushroom dry AP	Agaricus bisporus dry	Pa ro	300
55	Black rice A	Oryza sativa L	Buhban dum	100
56	Johar rice A	Oryza sativa	Buhfai tui	50
57	King chilli A	Capsicum Chinese Jacq	Hmarchapui T	300

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Sl. No.	Name of MFP	Bot/Scientific Name	Name of MFP in Mizo	Rate per Kg
58	Mustard A	Brassica nigra	Antam	40
59	Raw cashew A	Anacardium occidentale	Sazu pumpui thei	450
60	Cashew nut AP	Anacardium occidentale	Sazu pumpui thei mu	800
61	Tamrind seed F	Tamarindus indica	Tengtere mu	11
62	Bamboo brooms F	Thysonalaena maxima	Mauhnah	60
63	Ginger dry AP	Zingiber officinale	Sawngthing ro	50
64	Perilla dry A	Perilla frutescens	Chhawhchhi ro	140
65	Rosella A	Hibiscus sabdariffa	Chhimbawng	200
66	Nuttgal A	Rhus chinensis	Khawmhma	150
67	Zanthoxylum dried A	Zanthoxylum armatum	Arhrik hlo	200
68	Jack fruit seeds A	Artocarpus heterophyllus	Lamkhuang mu	45
69	Dry anola F	Phyllanthus emblica	Sunhlu rah ro	60
70	Kachri Baheda P	Terminalia bellerica	Ar-a fangma	20
71	Kachri HarraP	Terminalia Chebula		23
72	Seed lac F...P	Kerria lacca		677
73	Tasar cocoon		Pangang kawmum	
	Reeling Class Grade-I (Spe. Avg. Shell wt: 1.55g & above			3200 per 1000nos
	Un-Reeling Class Grade-I (Spe. Avg. Shell wt: 1.40g & above			1500 per 1000nos
74	Cashew kernel	Anacardium occidentale	Sazu pumpui thei mu	90
75	Elephant apple dry	Dillenia indica		120
76	Bamboo shoot	Phyllostachysedulis	Raw/Mautuai	70
77	Malkangmi seed	Celastruspaniculatus wild		100
78	Mahul leaves	Bauhinia Vahlii		15
79	Nagod	Vitex negundo		20
80	Gokhru	Tribulus terrestris		60
81	Pipla/Uchithi (dried berry)	Piper pedicellatum		120
82	Gamhar/Gamari (dry bark)	Gmelina arborea		20
83	Oroxylum indicum (dry bark)	Oroxylum indicum	Archangkawm kawr	40
84	Wild mushroom dry	Agaricusssp	Pa pho ro	400
85	Shringraj	Eclipta Alba	18	
86	Tree moss	Bryophytes	350	

Notes: The approved list is 87 in number, Sl.No.10 has A & B.

Annex 8.7.5 Collaboration & Convergence in the Project

Type of Institution	Potential Collaborator	Contact Information	Indicative Types of Collaboration	Indicative Process of Implementation
Japanese Local Government	Oita Prefecture Bamboo Crafts Training Centre	Address: Attn: Management and Training Division 3-3 Higashi Shoen, Beppu-shi, Oita Prefecture Phone: +81-977-23-3609 Fax: +81-977-26-5969	- Bamboo master trainers may be dispatched from the centre. - Artisans can be sent for short term training programmes to improve on the production skills including treatment. - Study tour to the centre - The centre has an incubation centre and support services for the entrepreneurs and trains artisans. - Objective of the collaboration: To learn how the training programmes are developed, institutional arrangement for the support of entrepreneurs, and the centre's role in marketing.	- Confirmation of thematic needs for study tour and needs assessment by PMU - PMU will contract North East Cane and Bamboo Development Council (NECBDC) / JICA Technical Cooperation Project Team for support in coordinating with the centre. - PMU may engage Japanese coordinator to facilitate the communication with the Japan side after the completion of the JICA Technical Cooperation Project in December 2024. - During the discussion, cost sharing shall be discussed with the Centre and MOU shall be exchanged. - PMU may spend the training and study tour cost budgeted under Component 3 for the purpose.
Japanese Specialised Organisation	Japanese Association of Zoos and Aquariums (JAZA)	Address: 402 Vera Heights Okachimachi, 4-23-10 Taito, Taito-ku, Tokyo 110-8567 Japan Phone: Fax:	- The persons in charge of animal management may be sent for the trainings for adequate management of the animals at zoos - The persons in charge of management and protection of illegally traded animals may be sent for the trainings for systems	- Confirmation of thematic needs for study tour and needs assessment by PMU - PMU will assess the need of the zoo officers/ workers.

Type of Institution	Potential Collaborator	Contact Information	Indicative Types of Collaboration	Indicative Process of Implementation
			on management and protection of illegally traded animals at custom offices.	
Japan Overseas Cooperation Volunteers (JOCV)	JOCV Volunteer (Bamboo)	-	- Skills development in bamboo craft production	- PMU/ PMC will identify the area that needs to be supported by JOCV volunteer (bamboo) in Tripura. - PMU will approach JICA Technical Cooperation Project Team working with NECBDC to invite JOCV Volunteer(s) who may be placed in Tripura. - Training budget under livelihood improvement can be used for inviting the volunteer (s) to undertake capacity building activities.
Private Sector (Local bamboo entrepreneurs)	King Industry Somorita Etc.	-	- Cluster development - Marketing of the produces (buy back arrangement)	- PMU will assess the need of the private sectors for bamboo by PMU while identifying the potential for bamboo based livelihood activity based on the Village Level Plans. - PMU will identify the potential partner company to work with. - PMU will develop a concept note for partnership and approach local entrepreneurs. - PMU and the entrepreneurs agree on the scope of collaboration. MOU may be signed. - PMU will organize (a) cluster(s)

Type of Institution	Potential Collaborator	Contact Information	Indicative Types of Collaboration	Indicative Process of Implementation
				through DMU/ FMU and register them under Society's Act or Cooperative Societies Act. It could also be registered under Company's Act as Farmer Producer Company. - Work plan will be jointly developed by the cluster and entrepreneurs. - Once the operation beings, DMU/ FMU will provide the monitoring and support cluster organisation as necessary. - As for the sustainability of the cluster, cluster development may be done in collaboration with Bamboo Mission or Bamboo Development Agency.
Private Sector (Green Business/ start-ups)	By call for proposal	-	- Entrepreneurs associated with the following products and business; ➤ Production and marketing of NTFP based products including bamboo ➤ Renewable energy ➤ Trading of carbon credit ➤ Sustainable tourism etc - Entrepreneurs engaged in the above should be willing to	- PMU will announce a call for proposal on the project website to identify the entrepreneurs that are engaged in the business of forests, environment and etc that contributes to green development. - PMU will form a committee for proposal evaluation. PMU/ PMC will draft the selection criteria and procedure. - The entrepreneurs selected shall be supported under Green Enterprise Promotion Fund (GEF-P) (Sub-component 3.8., Activity 3.8.3). The scale of grant to be given will

Type of Institution	Potential Collaborator	Contact Information	Indicative Types of Collaboration	Indicative Process of Implementation
			work with VFDC/EDC in the project area. - The enterprises shall contribute either to reduce the anthropogenic pressure on the forest ecosystems or incentivizing the biodiversity conservation.	be defined by PMU/ PMC.
Research Institutions	ICFRE- Forest Research Centre for Bamboo & Rattan, Aizawl	Head Forest Research Centre for Bamboo & Rattan Aizawl Bethlehem Vengthlang, Aizawl, Mizoram 796007 Phone- +91-389- 2301157 Email- head_frcbr@icfre.org	- Assessment of the potential bamboo species that can replace the existing bamboo species in the Reserved Forests - R&D using the bamboos in the Reserved Forests	- PMU will develop the research concept note and discuss with FRCBR to define the scope of partnership. (The first contact may be made in Aizawl but the discussion shall be held with ICFRE in Dehradun.) - PMU and FRCBR may decide to share the cost of research activities if the research topics agree with the priority area where FRCBR is working on. - MOU shall be exchanged by the both parties. In the MOU, items like cost sharing and the ownership of the deliverables shall be clearly defined.
	By call for proposal	-	Research topics relevant to the project may be publicly advertised on the project website to call for a research	- PMU will form a research committee to identify the research areas and obtain approval from MFD.

Type of Institution	Potential Collaborator	Contact Information	Indicative Types of Collaboration	Indicative Process of Implementation
			partner. ➤ Ecosystem valuation ➤ Sustainable usage of forest resources ➤ REDD+ pilot ➤ ABS pilot The above research topics are indicative. The research agenda requires prior approval by MFD's research committee.	- PMU will announce call for proposal on the project website. - The condition of this research partnership is that the applicant must be ready to contribute in terms of finance, human resource, and knowledge, which PMU will also contribute. (It may resemble matching grant modus operandi.) - The proposal will be reviewed by the PMU research committee. Evaluation criteria of the proposal will be pre-defined by PMU with inputs from PMC. - The identified partner will sign MOU with PMU. - As a pre-condition, the project may need to have adequate human resources to work with the partner agency in this research project so that they can benefit from the knowledge/ technical transfer on the job basis.
Central/ State Government	Bamboo Development Agency	Director, Bamboo Development Agency Directorate of Commerce & Industries Building, New Building, Khatla, Aizawl, Mizoram – 796 001 Phone: 0389 – 2314950, 2300060	- Cluster development of bamboo - Skills training - Marketing (linkage with buyers/ entrepreneurs)	- Based on the village level plan, PMU/ PMC will identify the area for convergence and prepare a proposal. - PMU will approach the relevant agencies for collaboration for discussion and negotiation. - MOU shall be signed, if required for collaboration

Type of Institution	Potential Collaborator	Contact Information	Indicative Types of Collaboration	Indicative Process of Implementation
		Email: mizorambda@rediffmail.com		
	Bamboo Mission	Dr. Elizabeth Saipari SMD (NBM) & Director, Horticulture Department, Tuikual, Near Tennis Court, Aizawl – 796001 Ph : 0389 – 2314370 Fax : 0389 - 2329725 Email: dirhorti_mizoram@yahoo.in, saipari_eli@yahoo.co.in		
	Registrar of Cooperative Societies	Registrar, Cooperative Societies, Mizoram, Aizawl. Phone: (0389) 2316412 Fax: (0389) 2322139 (Fax) email : cooperationdept@gmail.com	- Cluster development and marketing through Van Dhan Yojna - Registration of a cluster as a cooperative society	
	Mizoram State Rural Livelihood Mission	MINECO, Khatla Above BDO Tlangnuam Office, Near Gate No.1 Aizawl, Mizoram - 796001 Phone: 0389-2334622 Fax:0389-2334834 E-mail: srlm.mizoram@gmail.com	- SHG & SHG cluster based livelihood promotion including agriculture, piggery, home stay, etc.	- Based on the village level plan, PMU/ PMC will identify the area for convergence and prepare a proposal. - PMU will approach the relevant agencies for collaboration for discussion and negotiation. - MOU shall be signed, if required for collaboration

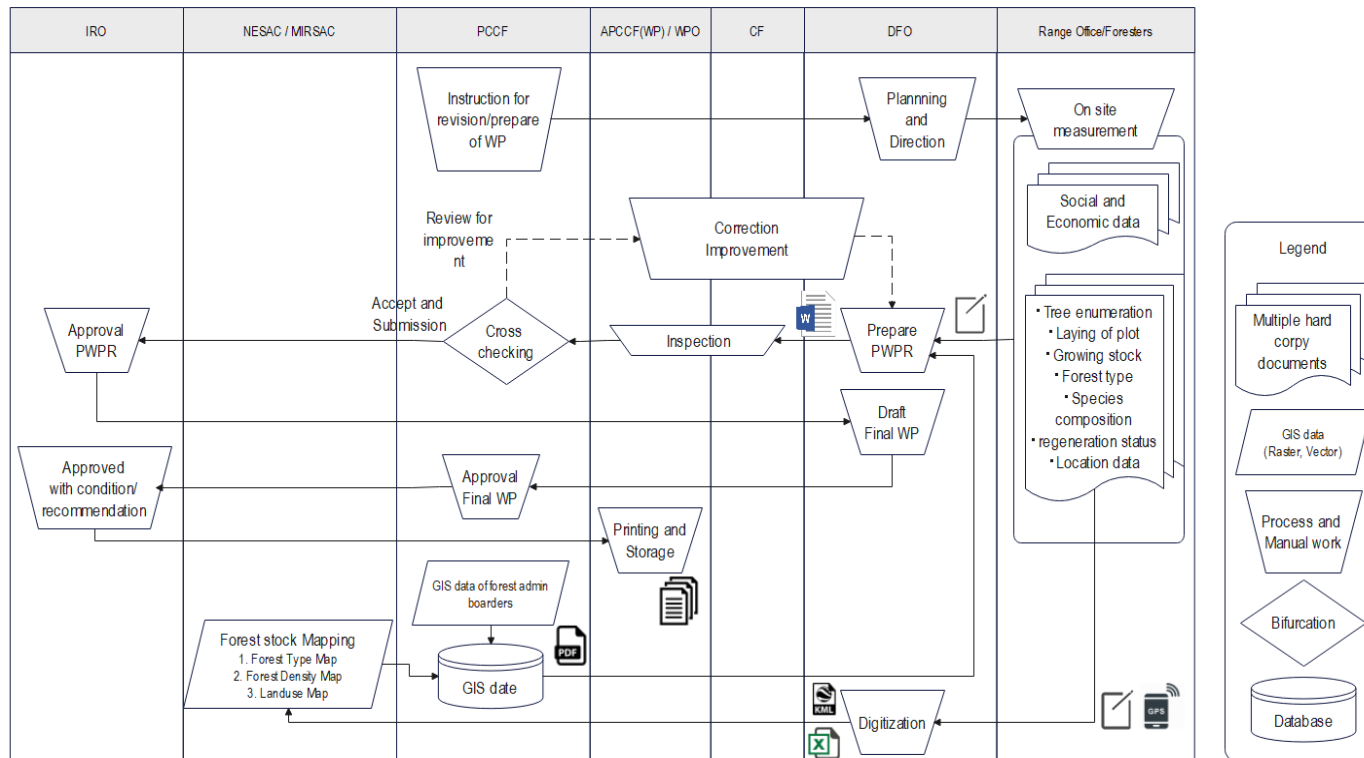
**Annex 8.8.1 Indicative Terms of Reference for Communication Expert for Developing a
Communication Strategy for Wildlife and Biodiversity**

Annex 8.9.1 Current process flow and after DX flow of working plan and monitoring

1. Working plan

1) Current process flow

Current Flow of the revision working plan (WP)



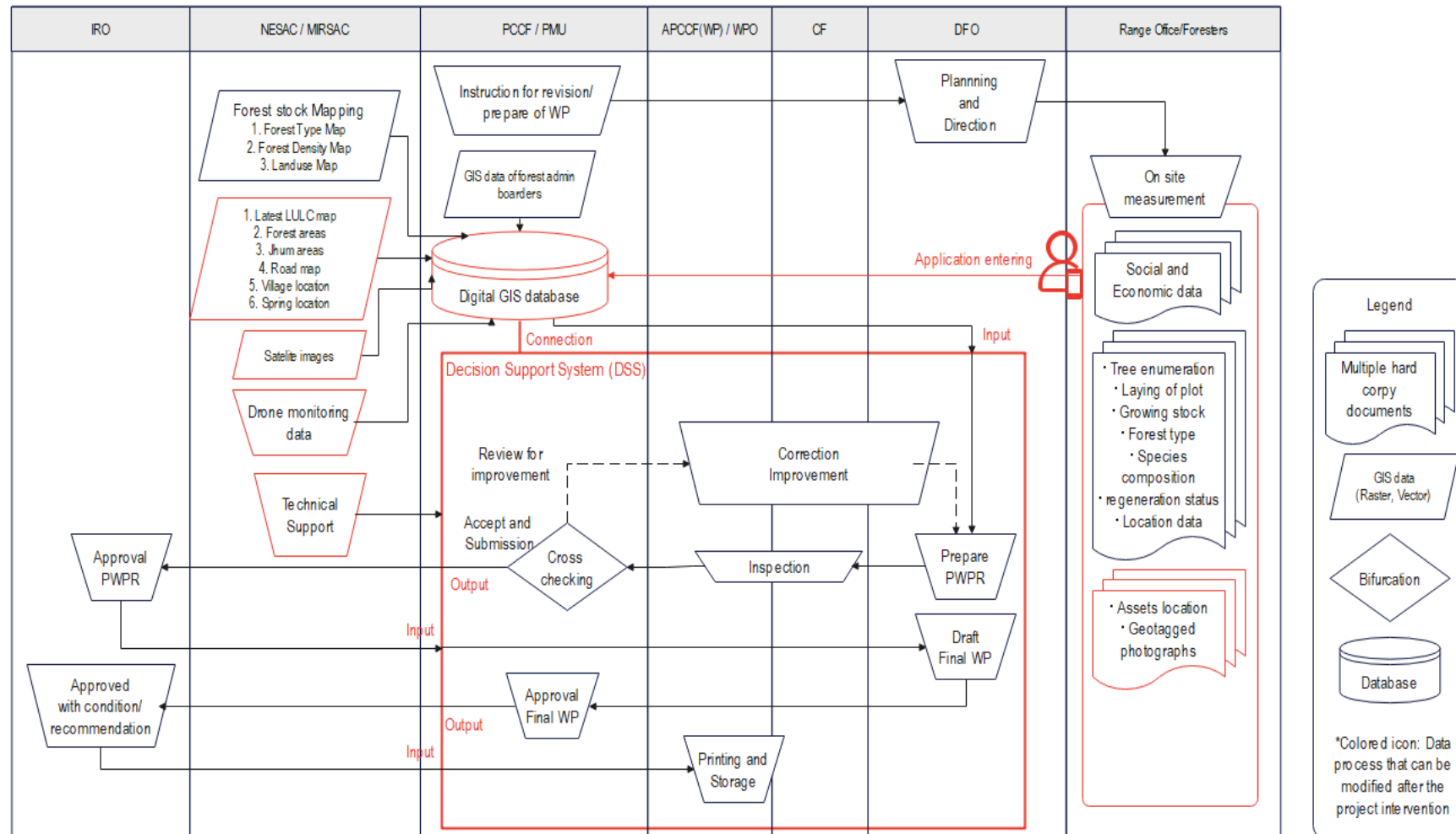
*PWPR: Pre-Working Plan Report

*IRO: Integrated Regional Office

Source: JICA Survey Team based on interviews with MFD

2) Process flow after DX

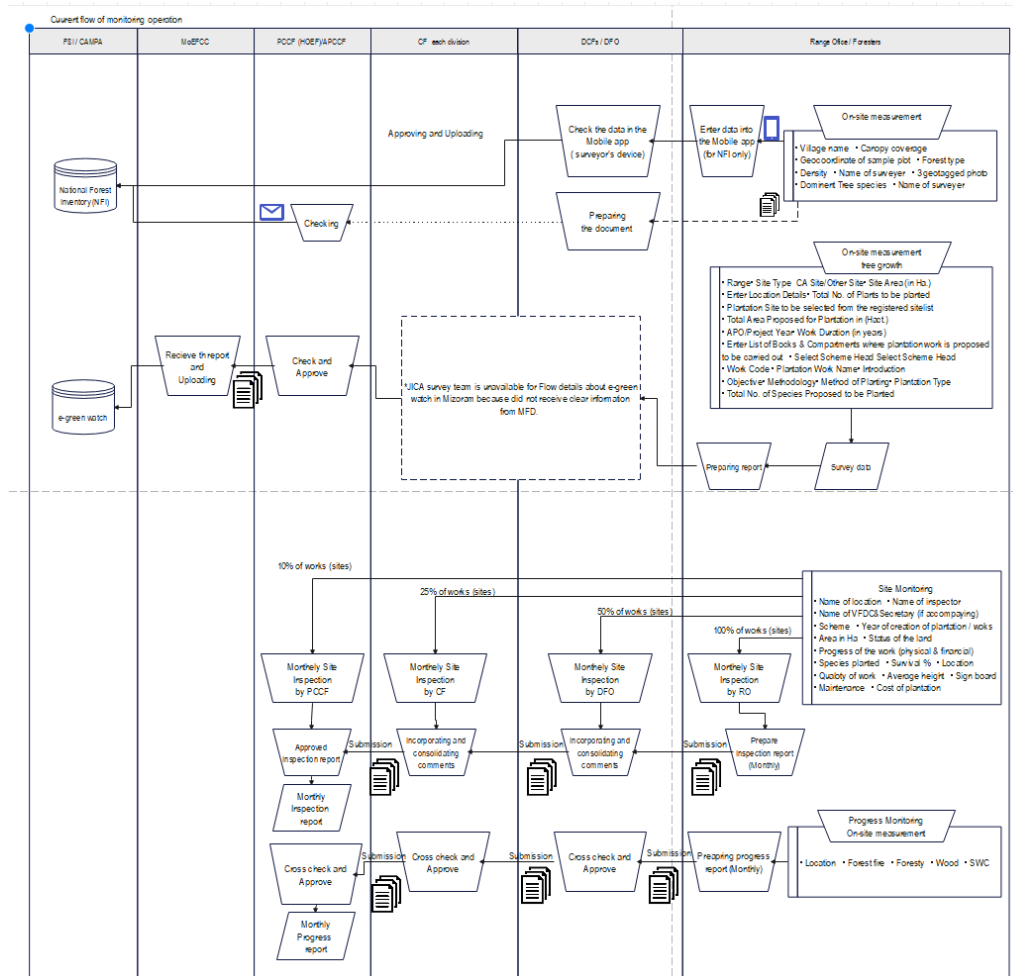
Flow of the revision working plan (WP) after DX



Source: JICA Survey Team based on interviews with MFD

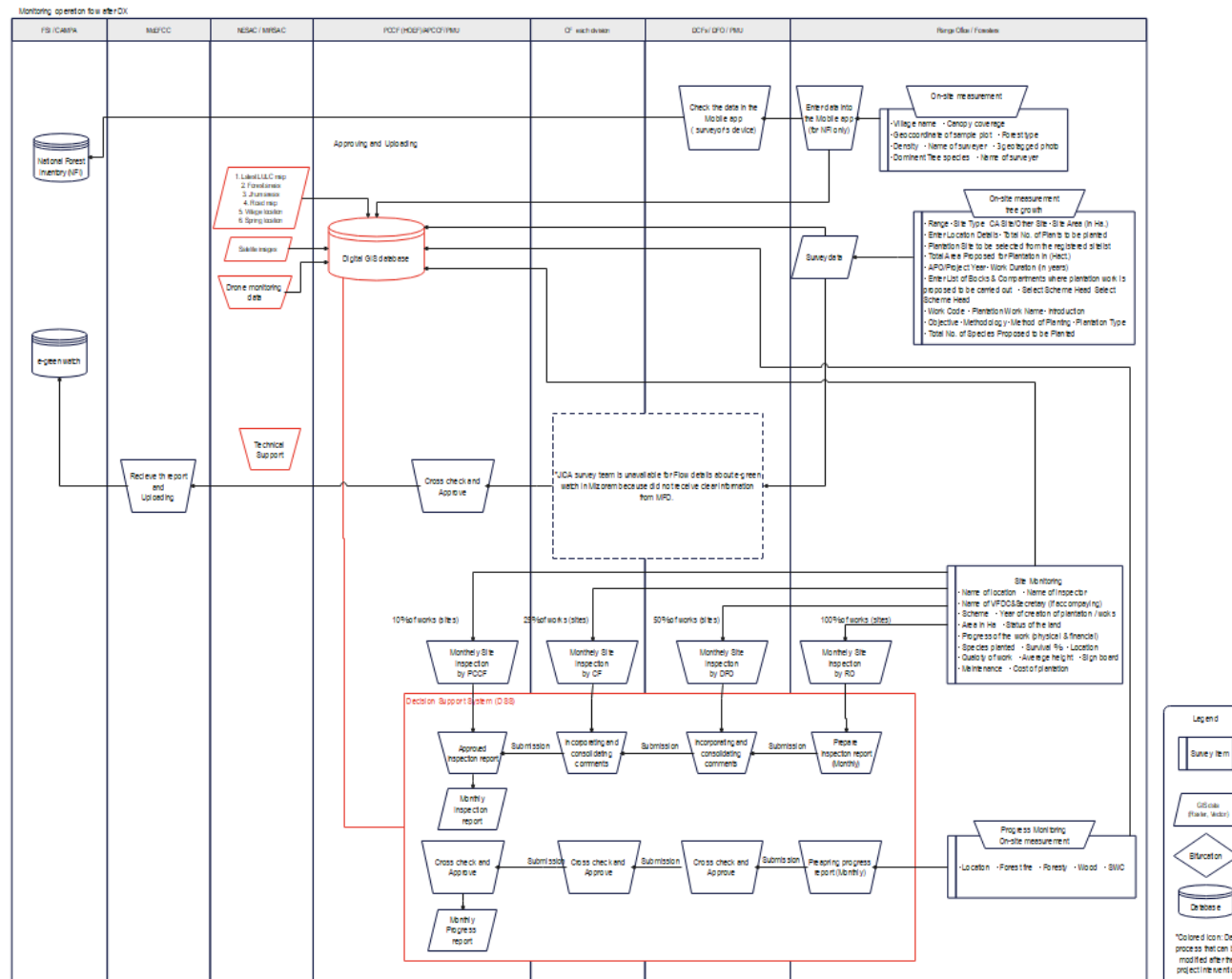
2. Monitoring (Forest Survey of India, e-green watch, monthly and inspection report for internal

1) Current process flow



Source: JICA Survey Team based on interviews with MFD

2) Process flow after DX



Source: JICA Survey Team based on interviews with MFD

Annex 8.9.2: Capacity Development - Training Details

Sl. No	Component Name	Sub-component Name	Category	Topic of training/ Capacity development	Target Group	Level	Number of Batches	Batch Size (no. of persons)	Duration of event (days)	Persons Trained	Person-Days	Remarks, if any
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
1	Forests and Water Conservation	Forest Management	Certificate Course	Community-based forest fire management	Range Officer	Range/ FMU	5	35	1	175	175	
2	Forests and Water Conservation	Forest Management	Certificate Course	Community-based forest fire management	VFDC	GP/ Village	16	20	1	320	320	
3	Forests and Water Conservation	Forest and Water Conservation	Certificate Course	Forests and Water Conservation	VFDC	GP/ Village	16	20	1	320	320	
4	Forests and Water Conservation	Forest and Water Conservation	Certificate Course	Forests and Water Conservation	Range Officer	Range/ FMU	5	35	1	175	175	
5	Forests and Water Conservation	Forest and Water Conservation	Certificate Course	Soil & Moisture Conservation for Forest and Water Conservation	Range Officer	Range/ FMU	5	35	1	175	175	
6	Forests and Water Conservation	Forest and Water Conservation	Certificate Course	Forests and Water Conservation	DCF/ ACF	Division/ DMU	3	30	1	90	90	
7	Forests and Water Conservation	Forest Management	Certificate Course	Forest management	DCF/ ACF	Division/ DMU	3	30	1	90	90	
8	Biodiversity Conservation	Outside PA	Exposure Visit	PBR and ABS	VFDC	GP/ Village	1	12	6	12	72	BMC members can also be considered
9	Biodiversity Conservation	Outside PA	Exposure Visit	PBR and ABS	Others - Specify in Remarks	Range/ FMU	1	6	6	6	36	ACF and FMU Heads and 3 members of SBB
10	Biodiversity Conservation	Inside PA	Technical Training	Project orientation	Others - Specify in Remarks	Range/ FMU	1	22	1	22	22	Range Officer & Forester
11	Biodiversity Conservation	Inside PA	Technical Training	PA, Corridors, and buffer area management	Others - Specify in Remarks	Range/ FMU	1	11	2	11	22	ACF and FMU Heads of WL Division
12	Biodiversity Conservation	Outside PA	Technical Training	BSA- Conservation need and importance	Range Officer	Range/ FMU	1	15	2	15	30	ACF and FMU Heads of territorial division
13	Biodiversity Conservation	Inside PA	Technical Training	Communication strategy with local target groups	Others - Specify in Remarks	Division/ DMU	1	20	1	20	20	DCF, ACF and Range officers

Sl. No	Component Name	Sub-component Name	Category	Topic of training/ Capacity development	Target Group	Level	Number of Batches	Batch Size (no. of persons)	Duration of event (days)	Persons Trained	Person-Days	Remarks, if any
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
14	Biodiversity Conservation	Inside PA	Technical Training	Snake rescue and handling,	Others - Specify in Remarks	Circle	2	14	1	28	28	Range officer, Forester
15	Biodiversity Conservation	Inside PA	Technical Training	Snake rescue and handling,	VFDC	Range/ FMU	4	20	1	80	80	
16	Biodiversity Conservation	Inside PA	Refresher Training	Snake rescue and handling,	Others - Specify in Remarks	State	2	25	2	50	100	VFDC, Foresters, ecotourism staff, local youths
17	Biodiversity Conservation	Outside PA	Workshop	Conservation management plan preparation for BSAs	Others - Specify in Remarks	Range/ FMU	4	20	1.5	80	120	VFDC members, Range officers
18	Biodiversity Conservation	Outside PA	Technical Training	BSA- Conservation need and importance	VFDC	Range/ FMU	3	25	1	75	75	
19	Biodiversity Conservation	Outside PA	Workshop	Ecotourism -concepts and opportunities	Others - Specify in Remarks	Circle	4	25	1	100	100	ACF, Range officers, VFDC
20	Biodiversity Conservation	Outside PA	Exposure Visit	Sustainable Ecotourism sites national	Others - Specify in Remarks	National	2	20	7	40	280	ACF, Range officers, VFDC
21	Biodiversity Conservation	Outside PA	Workshop	Illegal wildlife trade - wildlife laws etc.	Others - Specify in Remarks	State	2	20	1	40	40	Custom, Police officials
22	Biodiversity Conservation	Outside PA	Technical Training	Safe handling of confiscated wild animals	Others - Specify in Remarks	Circle	4	25	1	100	100	ACF, Range officer, Forester
23	Biodiversity Conservation	Outside PA	Managerial Training	Ecotourism management and marketing	Others - Specify in Remarks	State	1	25	2	25	50	VFDC members, Range officers, ACF
24	Biodiversity Conservation	Outside PA	Refresher Training	Ecotourism management and marketing	Others - Specify in Remarks	State	2	25	2	50	100	VFDC members, Range officers, ACF
25	Biodiversity Conservation	Outside PA	Seminar	Cross border Illegal wildlife trade	Others - Specify in Remarks	International	1	50	2	50	100	International Experts (10), National Experts (15), MoEFCC, JICA, State Forest Dept.
26	Biodiversity Conservation	Outside PA	Workshop	Cross border Illegal wildlife trade	Others - Specify in Remarks	Regional	1	50	2	50	100	Regional Experts (10), National Experts (10), MoEFCC, JICA, State Forest Dept, Neighbouring Forest Dept., NGOs

Sl. No	Component Name	Sub-component Name	Category	Topic of training/ Capacity development	Target Group	Level	Number of Batches	Batch Size (no. of persons)	Duration of event (days)	Persons Trained	Person-Days	Remarks, if any
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
27	Biodiversity Conservation	Knowledge Research	Workshop	CAMP Workshops (one each for plant, mammals, birds, herpetofauna, fish)	Others - Specify in Remarks	National	5	20	2	100	200	Taxonomic group experts, local universities, neighbouring state university, State FD
28	Biodiversity Conservation	Outside PA	Technical Training	Nature Interpreter/ Guide	Others - Specify in Remarks	State	1	20	2	20	40	VFDC, ecotourism staff, local youths
29	Biodiversity Conservation	Outside PA	Refresher Training	Nature Interpreter/ Guide	Others - Specify in Remarks	State	1	20	2	20	40	VFDC, ecotourism staff, local youths
30	Biodiversity Conservation	Outside PA	Certificate Course	Nature Interpreter/ Guide	Others - Specify in Remarks	State	1	20	15	20	300	Interested youths (50% women) who apply
31	Biodiversity Conservation	Knowledge Research	Workshop	BD Strategy and Action Plan - Preparation Process	Others - Specify in Remarks	State	4	50	1	200	200	State level Subject experts, FD, Community, NGOS
32	Biodiversity Conservation	Outside PA	Workshop	Wildlife rescue, veterinary and rehabilitation	Others - Specify in Remarks	Division/ DMU	1	10	3	10	30	Zoo staffs
33	Biodiversity Conservation	Outside PA	Refresher Training	Wildlife rescue, veterinary and rehabilitation	Others - Specify in Remarks	Division/ DMU	1	10	2	10	20	Zoo staffs
34	Biodiversity Conservation	Outside PA	Exposure Visit	Wildlife rescue, veterinary and rehabilitation	Others - Specify in Remarks	Division/ DMU	1	10	7	10	70	Director Zoo, , other technical staff of rescue centre
35	Biodiversity Conservation	Outside PA	Refresher Training	Illegal wildlife trade - wildlife laws etc.	Others - Specify in Remarks	State	1	25	2	25	50	Custom, Police officials, DCF, ACF
36	Livelihood Improvement	Project Management	Technical Training	Community Based Forest Management and Conservation and Livelihood	Others - Specify in Remarks	State	1	30	1	30	30	APCCF& above, CCF, CF
37	Livelihood Improvement	Community Development	Technical Training	Community Based Forest Management and Conservation and Livelihood	DCF/ ACF	Division/ DMU	6	15	2	90	180	
38	Livelihood Improvement	Community Development	Technical Training	Community Based Forest Management and Conservation and Livelihood	Range Officer	Range/ FMU	2	30	3	60	180	
39	Livelihood Improvement	Community Development	Technical Training	Community Based Forest Management and Conservation and Livelihood	Others - Specify in Remarks	Range/ FMU	6	30	3	180	540	Forester, Forest Guard, Project Technical Personnel

Sl. No	Component Name	Sub-component Name	Category	Topic of training/ Capacity development	Target Group	Level	Number of Batches	Batch Size (no. of persons)	Duration of event (days)	Persons Trained	Person-Days	Remarks, if any
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
40	Livelihood Improvement	Community Development	Technical Training	Community Based Forest Management and Conservation and Livelihood	Others - Specify in Remarks	GP/ Village	65	30	3	1,950	5,850	VFDC, SHG, Village stakeholders
41	Livelihood Improvement	Livelihood Improvement	Technical Training	Community Action Planning for Sustainable Livelihood	DCF/ ACF	Division/ DMU	6	30	1	180	180	
42	Livelihood Improvement	Livelihood Improvement	Technical Training	Community Action Planning for Sustainable Livelihood	Range Officer	Range/ FMU	2	30	1	60	60	
43	Livelihood Improvement	Livelihood Improvement	Technical Training	Community Action Planning for Sustainable Livelihood	Others - Specify in Remarks	Range/ FMU	6	30	2	180	360	Forester, Forest Guard, Project Technical Personnel
44	Livelihood Improvement	Livelihood Improvement	Technical Training	Community Action Planning for Sustainable Livelihood	Others - Specify in Remarks	GP/ Village	65	20	2	1,300	2,600	VFDC, SHG, Village stakeholders
45	Livelihood Improvement	Livelihood Improvement	Technical Training	Planning for Convergence	Others - Specify in Remarks	State	1	30	1	30	30	APCCF& above, CCF, CF
46	Livelihood Improvement	Livelihood Improvement	Technical Training	Planning for Convergence	DCF/ ACF	Division/ DMU	6	15	1	90	90	
47	Livelihood Improvement	Livelihood Improvement	Technical Training	Planning for Convergence	Range Officer	Range/ FMU	2	30	1	60	60	
48	Livelihood Improvement	Livelihood Improvement	Technical Training	Planning for Convergence	Others - Specify in Remarks	Range/ FMU	6	30	1	180	180	Forester, Forest Guard, Project Technical Personnel
49	Livelihood Improvement	Livelihood Improvement	Technical Training	Planning for Convergence	Others - Specify in Remarks	GP/ Village	65	30	1	1,950	1,950	VFDC, SHG, Village stakeholders
50	Livelihood Improvement	Livelihood Improvement	Technical Training	Short term skills training (1)	VFDC	GP/ Village	5	30	30	150	4,500	VFDC family members, skills that are not covered under MzRLM/ 1 batch per CMU
51	Livelihood Improvement	Livelihood Improvement	Technical Training	Short term skills training (2)	VFDC	GP/ Village	5	30	30	150	4,500	VFDC family members, skills that are not covered under MzRLM/ 2 batch per CMU
52	Livelihood Improvement	Livelihood Improvement	Technical Training	Short term skills training (3)	VFDC	GP/ Village	5	30	30	150	4,500	VFDC family members, skills that are not covered under MzRLM/ 3 batch per CMU
53	Livelihood Improvement	Livelihood Improvement	Technical Training	Short term skills training (4)	VFDC	GP/ Village	5	30	30	150	4,500	VFDC family members, skills that are not covered under MzRLM/ 4 batch per CMU

Sl. No	Component Name	Sub-component Name	Category	Topic of training/ Capacity development	Target Group	Level	Number of Batches	Batch Size (no. of persons)	Duration of event (days)	Persons Trained	Person-Days	Remarks, if any
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
54	Livelihood Improvement	Livelihood Improvement	Technical Training	Short term skills training (5)	VFDC	GP/ Village	5	30	30	150	4,500	VFDC family members, skills that are not covered under MzRLM/ 5 batch per CMU
55	Livelihood Improvement	Livelihood Improvement	Study Tour	Model Cases of Forest & Biodiversity Conservation through Livelihood Means	CF/ CCF	National	2	15	7	30	210	Meghalaya, Tripura, Tamil Nadu, Karnataka
56	Livelihood Improvement	Livelihood Improvement	Study Tour	Model Cases of Forest & Biodiversity Conservation through Livelihood Means	DCF/ ACF	National	4	15	7	60	420	Meghalaya, Tripura, Tamil Nadu, Karnataka
57	Livelihood Improvement	Livelihood Improvement	Exposure Visit	Model Cases of Forest & Biodiversity Conservation through Livelihood Means	Range Officer	Regional	4	15	5	60	300	Meghalaya, Tripura
58	Livelihood Improvement	Livelihood Improvement	Exposure Visit	Model Cases of Forest & Biodiversity Conservation through Livelihood Means	Forester	Regional	6	20	5	120	600	Meghalaya, Tripura
59	Livelihood Improvement	Livelihood Improvement	Exposure Visit	Model Cases of Forest & Biodiversity Conservation through Livelihood Means	Others - Specify in Remarks	Regional	12	20	5	240	1,200	Meghalaya, Tripura
60	Institutional Strengthening	Project Management	Technical Training	Tally based project accounting	Accounts Staff	Division/ DMU	4	15	3	60	180	
61	Institutional Strengthening	Project Management	Technical Training	Tally based project accounting	Accounts Staff	State/ PMU	4	10	3	40	120	
62	Institutional Strengthening	Monitoring & Evaluation	Technical Training	M&E Techniques and Methods	Project Technical Staff	State/ PMU	2	10	3	20	60	
63	Institutional Strengthening	Monitoring & Evaluation	Technical Training	M&E Techniques and Methods	DCF/ ACF	State/ PMU	2	12	2	24	48	
64	Institutional Strengthening	Monitoring & Evaluation	Technical Training	M&E Techniques and Methods	Range Officer	State/ PMU	5	15	3	75	225	
65	Institutional Strengthening	Project Management	Technical Training	JICA/ EAP Procurement Methods	DCF/ ACF	State/ PMU	2	10	2	20	40	
66	Institutional Strengthening	Project Management	Technical Training	JICA/ EAP Procurement Methods	Project Technical Staff	State/ PMU	3	10	2	30	60	
67	Institutional Strengthening	DX (Digital Transformation)	Technical Training	Field based hands-on training on new NFI, Stock mapping and Carbon assessment	Forest Guard	Circle/ CMU	5	25	5	125	625	
68	Institutional Strengthening	DX (Digital Transformation)	Technical Training	Field based hands-on training on new NFI, Stock mapping and Carbon assessment	Forester	Circle/ CMU	5	25	5	125	625	

Sl. No	Component Name	Sub-component Name	Category	Topic of training/ Capacity development	Target Group	Level	Number of Batches	Batch Size (no. of persons)	Duration of event (days)	Persons Trained	Person-Days	Remarks, if any
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
69	Institutional Strengthening	DX (Digital Transformation)	Technical Training	Field based hands on training on new NFI, Stock mapping and Carbon assessment	Range Officer	State/ PMU	1	25	5	25	125	
70	Institutional Strengthening	DX (Digital Transformation)	Referresher Training	Referresher training on GIS/RS Application in Forestry Sector	DCF/ ACF	State/ PMU	2	12	1	24	24	
71	Institutional Strengthening	DX (Digital Transformation)	Referresher Training	Referresher training on GIS/RS Application in Forestry Sector	CF/ CCF	State/ PMU	2	12	1	24	24	
72	Institutional Strengthening	DX (Digital Transformation)	Technical Training	Hands on Training on QGIS in forestry applications - GPS Data collection, GIS data layer creation, data processing, analysis	Forester	State/ PMU	4	12	5	48	240	Per Division 2 Forester/ Forest Guard who are young and have willingness to learn/ have good aptitude
73	Institutional Strengthening	DX (Digital Transformation)	Technical Training	Hands on Training on GPS survey, data importing and kml generation	Forest Guard	Circle/ CMU	16	20	2	320	640	
74	Institutional Strengthening	DX (Digital Transformation)	Technical Training	Training on customised WebGIS/MIS application	Forester	State/ PMU	10	25	4	250	1000	These trainings will be conducted by the Developer so to be included in the ToR of the Developer - avoid duplication
75	Institutional Strengthening	DX (Digital Transformation)	Technical Training	Training on customised WebGIS/MIS application	Forest Guard	State/ PMU	10	25	4	250	1000	These trainings will be conducted by the Developer so to be included in the ToR of the Developer - avoid duplication
76	Institutional Strengthening	DX (Digital Transformation)	Technical Training	Training on customised WebGIS/MIS application	Range Officer	State/ PMU	1	25	2	25	50	These trainings will be conducted by the Developer so to be included in the ToR of the Developer - avoid duplication
77	Institutional Strengthening	DX (Digital Transformation)	Managerial Training	Training on customised WebGIS/MIS application	DCF/ ACF	State/ PMU	1	25	2	25	50	These trainings will be conducted by the Developer so to be included in the ToR of the Developer - avoid duplication
78	Institutional Strengthening	DX (Digital Transformation)	Managerial Training	Training on customised WebGIS/MIS application	CF/ CCF	State/ PMU	1	12	1	12	12	May also include APCCF/PCCF (These trainings will be conducted by the Developer so to be included in the ToR of the

Sl. No	Component Name	Sub-component Name	Category	Topic of training/ Capacity development	Target Group	Level	Number of Batches	Batch Size (no. of persons)	Duration of event (days)	Persons Trained	Person-Days	Remarks, if any
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
												Developer - avoid duplication)
79	Institutional Strengthening	DX (Digital Transformation)	Technical Training	Training on customised Accounting Software	Accounts Staff	State/ PMU	1	20	5	20	100	For PMU's and DMU's Accounts Staff
80	Institutional Strengthening	DX (Digital Transformation)	Certificate Course	Certificate course in RS/GIS in forestry sector	Others - Specify in Remarks	National	8	1	90	8	720	ACF/ RO/ Forester/ FG with prior exposure in GIS/RS and having good performance
81	Institutional Strengthening	Environment and Social Considerations	Managerial Training	Outline of ESIA & STFD framework and JICA guideline, and basics of gender mainstreaming and disability inclusion	HPC/ GB/ PMU members	State/ PMU	1	20	0.5	20	10	
82	Institutional Strengthening	Environment and Social Considerations	Managerial Training	Outline of ESIA & STFD framework and JICA guideline, and basics of gender mainstreaming and disability inclusion	APCCF & above	State/ PMU	1	2	0.5	2	1	
83	Institutional Strengthening	Environment and Social Considerations	Managerial Training	Outline of ESIA & STFD framework and JICA guideline, and basics of gender mainstreaming and disability inclusion	CF/ CCF	State/ PMU	1	3	0.5	3	2	
84	Institutional Strengthening	Environment and Social Considerations	Managerial Training	Outline of ESIA & STFD framework and JICA guideline, and basics of gender mainstreaming and disability inclusion	DCF/ ACF	Division/ DMU	3	20	0.5	60	30	all the officers involved in project
85	Institutional Strengthening	Environment and Social Considerations	Managerial Training	Outline of ESIA & STFD framework and JICA guideline, and basics of gender mainstreaming and disability inclusion	Range Officer	Range/ FMU	5	30	0.5	150	75	
86	Institutional Strengthening	Environment and Social Considerations	Managerial Training	Outline of ESIA & STFD framework and JICA guideline, and basics of gender mainstreaming and disability inclusion	Forester	Range/ FMU	5	30	0.5	150	75	
87	Institutional Strengthening	Environment and Social Considerations	Managerial Training	Outline of ESIA & STFD framework and JICA guideline, and basics of gender	VFDC	GP/ Village	16	20	0.5	320	160	including EDC

Sl. No	Component Name	Sub-component Name	Category	Topic of training/ Capacity development	Target Group	Level	Number of Batches	Batch Size (no. of persons)	Duration of event (days)	Persons Trained	Person-Days	Remarks, if any
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
				mainstreaming and disability inclusion								
88	Institutional Strengthening	Environment and Social Considerations	Managerial Training	Outline of ESIA & STFD framework and JICA guideline, and basics of gender mainstreaming and disability inclusion	SHG	GP/ Village	16	20	0.5	320	160	
89	Institutional Strengthening	Environment and Social Considerations	Technical Training	Implementation of framework including baseline survey, screening, monitoring, reporting, and so on	DCF/ ACF	Division/ DMU	1	16	1	16	16	
90	Institutional Strengthening	Environment and Social Considerations	Technical Training	Implementation of framework including baseline survey, screening, monitoring, reporting, and so on	Forester	Range/ FMU	3	20	1	60	60	
91	Institutional Strengthening	Environment and Social Considerations	Technical Training	Implementation of framework including baseline survey, screening, monitoring, reporting, and so on	Others - Specify in Remarks	GP/ Village	3	30	1	90	90	extension workers
92	Institutional Strengthening	Environment and Social Considerations	Technical Training	Implementation of framework including baseline survey, screening, monitoring, reporting, and so on	VFDC	GP/ Village	16	20	0.5	320	160	including EDC
93	Institutional Strengthening	Environment and Social Considerations	Technical Training	Baseline survey, screening, monitoring, reporting, and so on, regarding gender mainstreaming/disability inclusion	DCF/ ACF	Division/ DMU	1	16	1	16	16	
94	Institutional Strengthening	Environment and Social Considerations	Technical Training	Baseline survey, screening, monitoring, reporting, and so on, regarding gender mainstreaming/disability inclusion	Range Officer	Range/ FMU	3	20	1	60	60	

Annex 8.10.1: Draft ToR for Project Management Consultant for Mizoram Biodiversity Conservation and Forest Enrichment Project

Annex 8.11.1 Key Indicators for Project Monitoring

Sl.	Item	Unit	Quantity	Proposed approach	Target Completion year	Indicator	MoV
1	Forest and Water Conservation (including Livelihoods)						
1.1	Landscape-based Planning						
1.1.1	Survey and mapping						
1.1.2	Demarcation of Treatment Areas (RF and Community Forests)	ha	11,000	Batch-wise undertaking survey/GPS, and installing boundary pillars/ marks for the areas selected for treatment	by 2025 for all three batches	Boundaries pillars/ marks geo-codes and GIS maps	Utilization Certificate/ Progress Report
1.1.3	Preparation of Landscape based Plan (Micro Plan)	Village	100	Project team works with community institutions in project villages; conducts PRA and data analysis for micro plan	by 2026 for all the batch	Number of micro plans prepared	Approved Micro Plans; Utilization Certificate
1.2	Forest Management/ Restoration inside the Reserved Forests						
1.2.2	Production of quality planting materials						
1.2.2.1	Establishment of new nurseries	No.	15	Nurseries are established as per design and norms	by 2024	Number of nurseries established and operational	Utilization Certificate/ Progress Report
1.2.2.2	Upgrading of existing nurseries	No.	20	Nurseries are upgraded as per design and norms	by 2024	Number of nurseries upgraded and operational	Utilization Certificate/ Progress Report
1.2.2.3	Production of quality planting materials	ha	7,000				
1.2.2.3-a)	Seedlings for ANR	No.	9,68,000	Batch-wise raising saplings (agro-forestry/ indigenous spp.) or arranged through procurement	by 2026 for all three batches	Count of quality saplings raised/ procured	Nursery record/ Purchase register
1.2.2.3-b)	Seedlings for AR	No.	36,30,000	Batch-wise raising saplings (agro-forestry/ indigenous spp.) or arranged through procurement	by 2026 for all three batches	Count of quality saplings raised/ procured	Nursery record/ Purchase register
1.2.3	Improving quality of the Reserved Forests						
1.2.3.1	Improving quality of degraded forests for coverage under ANR	ha	4,000	Batch-wise undertaking survey/GPS, and executing works as per site specific Treatment Plan	by 2027 for all three batches	a) Plantation accomplished as per target; b) Survival % - 1st, 3rd and 5th year	Plantation Journal; Monitoring Report
1.2.3.2	Improving quality of degraded forests for afforestation through AR	ha	3,000	Batch-wise undertaking survey/GPS, and executing works as per site specific Treatment Plan	by 2027 for all three batches	a) Plantation accomplished as per target; b) Survival % - 1st, 3rd and 5th year	Plantation Journal; Monitoring Report
1.2.4	Planting site improvement (Soil and Moisture Conservation)						
1.2.4.1	Survey and Demarcation (Cost included at 1.1.1)	ha	7,000				
1.2.4.2	Soil and Moisture Conservation works						
1.2.4.2-a)	Improving quality of degraded forests for coverage under ANR	ha	4,000	Identification of critical micro-watersheds based on selection criteria; Site specific plan and technical drawing/ estimate	by 2027 for all three batches	Structures installed as per target	MB/ Utilization Certificate
1.2.4.2-b)	Improving quality of degraded forests for afforestation through AR	ha	3,000	Identification of critical micro-watersheds based on selection criteria; Site specific plan and technical drawing/ estimate	by 2027 for all three batches	Structures installed as per target	MB/ Utilization Certificate
1.3	Forest Management in Community Forests						
1.3.1	Production/ Procurement of quality planting materials						
1.3.1.1	Production of quality planting materials	ha	4,000				
1.3.1.1-a)	Seedlings for ANR	No.	7,26,000	Batch-wise raising saplings (agro-forestry/ indigenous spp.) or arranged through procurement	by 2026 for all three batches	Count of quality saplings raised/ procured	Nursery record/ Purchase register
1.3.1.1-b)	Seedlings for AR	No.	12,10,000	Batch-wise raising saplings (agro-forestry/ indigenous spp.) or arranged through procurement	by 2026 for all three batches	Count of quality saplings raised/ procured	Nursery record/ Purchase register
1.3.2	Improving quality of the Community Forests						
1.3.2.1	Site selection	LS	1				
1.3.2.1-a)	Identification of sites	LS	1				
1.3.2.1-b)	Consensus building	LS	1				
1.3.2.2	Improving quality of community forest for coverage under ANR, by timber/ NTFP species	ha	3,000	Batch-wise undertaking survey/GPS, and executing works as per site specific Treatment Plan	by 2027 for all three batches	a) Plantation accomplished as per target; b) Survival % - 1st, 3rd and 5th year	Plantation Journal; Monitoring Report
1.3.2.3	Improving quality of degraded community forest for coverage under AR, by Timber/ NTFP species	ha	1,000	Batch-wise undertaking survey/GPS, and executing works as per site specific Treatment Plan	by 2027 for all three batches	a) Plantation accomplished as per target; b) Survival % - 1st, 3rd and 5th year	Plantation Journal; Monitoring Report
1.3.3	Planting site improvement (Soil and Moisture Conservation)						
1.3.3.1	Preparation of Site Specific Plan	ha	4,000				
1.3.3.2	Soil and Moisture Conservation works						
1.3.3.2-a)	Improving quality of community forest for coverage under ANR, by timber species	ha	3,000	Identification of critical micro-watersheds based on selection criteria; Site specific plan and technical drawing/ estimate	by 2027 for all three batches	Structures installed as per target	MB/ Utilization Certificate
1.3.3.2-b)	Improving quality of community forest for coverage under ANR, by NTFP species	ha	1,000	Identification of critical micro-watersheds based on selection criteria; Site specific plan and technical drawing/ estimate	by 2027 for all three batches	Structures installed as per target	MB/ Utilization Certificate

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1.3.4	Community-based forest fire management						
1.3.4.1	Preparation of Community-based fire management plan	LS	1				
1.3.4.2	Procurement of equipment for Community-based fire management	village	100	Preparing tender document; Procuring items through contractors or GeM	by 2026	a) Tender document b) Payment release	Installation Certificate/ Purchase or Stock register
1.3.4.3	Training for community-based Forest fire management	village	35	Training are organized in batches for stakeholder as per Calander	by 2027	Number of persons trained (gender disaggregated) by type of stakeholders	Monitoring Report; Utilization Certificate
1.4	Forest Improvement for Water Conservation						
1.4.1	Site specific plan for watershed conservation and spring shed restoration						
1.4.1.1	River and Spring Assessment (cost included in 1.3.4.1)	ha	5,000				
1.4.1.2	Preparation of Site Specific Plan for enrichment plantation	ha	2,500	Batch-wise undertaking survey/GPS, and preparing site specific Treatment Plan	by 2026 for all three batches	Number of Site Specific Plan prepared	Site Specific Plans; Monitoring Report
1.4.2	Production of quality planting materials						
1.4.2.1	Production of quality planting materials	No.	6,05,000	Batch-wise raising saplings (agro-forestry/ indigenous spp.) or arranged through procurement	by 2026 for all three batches	Count of quality saplings raised/ procured	Nursery record/ Purchase register
1.4.3	Improving quality of the forests for water conservation						
1.4.3.1	Enrichment planting in gaps	ha	2,500	Batch-wise undertaking survey/GPS, and executing works as per site specific Treatment Plan	by 2027 for all three batches	a) Plantation accomplished as per target; b) Survival % - 1st, 3rd and 5th year	Plantation Journal; Monitoring Report
1.4.3.2	Soil and Moisture Conservation	ha	2,500	Identification of critical micro-watersheds based on selection criteria; Site specific plan and technical drawing/ estimate	by 2027 for all three batches	Structures installed as per target	MB/ Utilization Certificate
1.4.4	Watershed treatment and Spring shed Restoration						
1.4.4.1	Watershed Treatment on Ridge to Valley Approach/ Spring-Shed Restoration	ha	5,000	Identification of critical micro-watersheds based on selection criteria; Site specific plan and technical drawing/ estimate	by 2027 for all three batches	Structures installed as per target and Spring-sheds are restored	MB/ Utilization Certificate
1.5	Mitigation of Pressures on Forest Ecosystems through Livelihood Means						
1.5.1	Community Mobilisation & Village Level Planning	Village	100	Project team work with community and project village institutions; conducts PRA and data analysis for micro plan	by 2026 for all the batches	Number of micro plans prepared	Approved Micro Plans; Utilization Certificate
1.5.2	EPA	Village	100	EPA identified in a community meeting; Action plan prepared out of the approved Micro Plan	by 2027 for all three batches	Works accomplished as per plan	Monitoring Report; MB/ Utilization Certificate
1.5.3	Establishment of village level nursery	Village	100	Community Groups are identified for extending project support to IGA-based on plan	by 2028 for all the batch	Number of villages where nurseries are established for income generation	Monitoring Report; Utilization Certificate
1.5.4	Livelihood activity	LS	1	Interventions/ activities are identified for extending project support to IGs based on plan	by 2028 for all the batch	Number of SHGs/ IGs supported for income generation	Monitoring Report; Utilization Certificate
2	Biodiversity Conservation (including Livelihoods)						
2.1	Biodiversity Conservation inside PAs						
2.1.1	Protection & Habitat Improvement of PAs						
2.1.1.1	Creation and maintenance of protection measures			Proposals for protection measures are prepared; Administrative/ financial sanctions of the estimates and design given by competent authorities	by 2026	a) Procurement accomplished as per plan; b) Works are completed and Payment released	MB/ Utilization Certificate
2.1.1.1-a)	Setting up of wireless network with operator support	No.	1				
2.1.1.1-b)	Construction of new watch towers	No.	35				
2.1.1.1-c)	Maintenance of existing watch towers	No.	8				
2.1.1.1-d)	Construction of Anti Poaching Camps	No.	28				
2.1.1.1-e)	Maintenance of Anti Poaching Camps	No.	23				
2.1.1.1-f)	Construction of Patrolling Roads	Km	25				
2.1.1.1-g)	Annual Maintenance of Patrolling Roads (25Km) for 5 yrs.	Km	125				
2.1.1.1-h)	Patrolling paths -New	Km	200				
2.1.1.1-i)	Patrolling paths -Maintenance (6 years, 200 km annual)	Km	1,200				
2.1.1.1-j)	Boundary Pillars	No.	1,000				
2.1.1.1-k)	Miscellaneous (Fire arms, camping / safety equipment etc for 10 Protected areas)	LS	10				
2.1.1.2	Habitat improvement works	0	-				
2.1.1.2-a)	Plantation of fruit bearing trees in notional area (ANR)	Ha	300				
2.1.1.2-a-i)	Seedling cost with 10% loss	No.	72,600	Batch-wise raising saplings (agro-forestry/ indigenous spp.) or arranged through procurement	by 2026 for all three batches	Count of quality saplings raised/ procured	Nursery record/ Purchase register
2.1.1.2-a-i)	Plantation and maintenance	Ha	300	Batch-wise undertaking survey/GPS, and executing works as per site specific Treatment Plan	by 2027 for all three batches	a) Plantation accomplished as per target; b) Survival % - 1st, 3rd and 5th year	Plantation Journal; Monitoring Report
2.1.1.2-b)	Creation of grassland (ha)	Ha	150	Site specific Treatment Plan is prepared	by 2026	a) Grassland area accomplished as per target; b) germination % assessment	Plantation Journal; Monitoring Report

2.2	Biodiversity Conservation outside PAs	0	-				
2.2.1	Protection & Management of Biodiversity Significant Areas (BSA)						
2.2.1.1	Protection and Habitat Improvement Measures (5 sites)	0	-	Preparing tender documents for each work item, and procuring contractor	by 2025	a) Works accomplished as per plan; b) Payment released	MB/ Utilization Certificate
2.2.1.1-a)	Preparation of Conservation and Management Plan (CMP)	Sites	5				
2.2.1.1-b)	Protection measures (Survey & Demarcation of area, patrolling path, Protection Camps etc)	Sites	5				
2.2.1.1-c)	Habitat Improvement (planting trees RET species, water holes etc.) in notional area; 10 ha per site	Sites	5				
2.2.1.1-d)	Village Nursery - for RET and Fruit bearing native species (2500 sapling @30/-)	Sites	5				
2.2.1.1-e)	Other site specific work (emerge from CMP)	Sites	5				
2.2.1.2	Awareness, Education and Documentation	0	-				
2.2.1.2-a)	Awareness and Education Programs (with nearby schools and colleges/eco-clubs)	Sites	5				
2.2.1.2-b)	Volunteer honorarium (2 person x 4 years x 5 sites)	MM	480				
2.2.1.2-c)	Equipments-Survey tools (digital camera, binoculars, tools, pictorial guides)	Sites	5				
2.2.1.2-d)	Other site specific work (emerge from CMP)	Sites	5				
2.2.2	Incentives to communities for sustainable engagement in conservation and management						
2.2.2.1	Development of Eco-tourism (five sites)	0	-	Preparing tender documents for each work item, and procuring contractor	by 2025	a) Works accomplished as per plan; b) Payment released	MB/ Utilization Certificate
2.2.2.1-a)	Feasibility Study and Site development Plan (five sites)	Sites	5				
2.2.2.1-b)	Infrastructure and amenities development (trails, gate, toilets, signages etc.)	Sites	5				
2.2.2.1-c)	Accommodation and Recreation/ Sporting facilities	Sites	5				
2.2.2.1-d)	Caretaker Support (two persons; 3 yrs.)	Sites	5				
2.2.2.2	Eco development activities in the project areas (under Livelihoods sub-component)	0	-				
2.2.3	Capacity enhancement for wildlife conservation						
2.2.3.1	Wildlife rescue, veterinary care and rehabilitation	LS	1	Preparing tender documents for each work item, and procuring contractor	by 2025	a) Works accomplished as per plan; b) Payment released	MB/ Utilization Certificate
2.2.3.2	Training and exposure program on Wildlife Conservation and Management (budget under Capacity Development)	0	-				
2.2.3.3	Communication strategy on wildlife conservation	0	-				
2.2.3.3-a)	Preparation of Wildlife and Biodiversity Communication Strategy	contract	1	Preparing TOR and procuring specialized agency	by 2026	Award of contract/ letter	Study Report/ Utilization Certificate
2.2.3.3-b)	Designing Communication tools and Conduct awareness programs in fringe villages of PAs- 4 yrs.	LS	4	Preparing TOR and procuring specialized agency	by 2028	Award of contract/ letter	Study Report/ Utilization Certificate
2.3	Improvement of Knowledge Infrastructure for Research, Awareness, Education and Communication	0	-				
2.3.1	Improvement of knowledge for Biodiversity Conservation						
2.3.1.1	Inventories of flora and fauna in BD hotspots - 1) Plants, 2) Mammals & Birds, 3) Herpetofauna, 4) Butterfly/ Moth/insects, and Spider, and 5) Fish, Crabs and Molluscs	deliverables	5	Preparing TOR and procuring specialized agency	by 2026	Award of contract/ letter	Study Report
2.3.1.2	CAMP workshops to update the list of RET species (budget under Capacity Development)	0	-	CAMP Workshops are organized as per Training Calendar	by 2028	Number of events organized	Proceedings/ Utilization Certificate
2.3.1.3	Applied research on biodiversity and wildlife conservation, and ecosystem management	studies	4	Preparing TOR and procuring specialized agency	by 2026	Award of contract/ letter	Study Report
2.3.2	Strengthen Digital Infrastructure for Biodiversity Information						
2.3.2.1	Mizoram State Biodiversity Information System (MBIS) (budget under DX)	0	-	Preparing TOR and procuring specialized agency	by 2026	Award of contract/ letter	Software/ Utilization Certificate
2.3.3	Improvement of Biodiversity Knowledge Infrastructure			Preparing tender documents for each work item, and procuring contractor	by 2025	a) Works accomplished as per plan; b) Buildings are commissioned and Payment released	MB/ Utilization Certificate
2.3.3.1	Develop Biodiversity Knowledge Parks	LS	1				
2.3.3.2	Improve interpretational values of Aizawl Zoo	LS	1				
2.3.3.2-a)	Civil works -New construction of Building/ Enclosures	0	-				
2.3.3.2-b)	Civil works - Repair and Maintenance of Buildings/ Enclosures	0	-				
2.3.3.2-c)	Furniture, doors, window work	0	-				
2.3.3.2-d)	Visitor amenities	0	-				
2.3.3.2-e)	Interpretation Centre- displays, models, interactive kiosks etc.	0	-				
2.3.3.2-f)	Signages/ equipments	0	-				
2.3.3.3	Action Research - developing ABS mechanism for selected species in the State						
2.3.3.3-a)	Study - Assessment of value chain of targeted NTFP species	study	1	Preparing TOR and procuring specialized agency	by 2026	Award of contract/ letter	Study Report
2.3.3.3-b)	Knowledge Material development - tools, manuals, films/ videos etc.	year	4	Preparing TOR and procuring specialized agency	by 2026	Award of contract/ letter	Knowledge Material; Utilization Certificate

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2.3.3.3-c)	Workshops/ Meetings/ Seminars for stakeholders (budget under Capacity Development)	0	-				
2.3.3.4	Prepare Biodiversity Atlas for the State	contract	1	Preparing TOR and procuring specialized agency	by 2026	Award of contract/ letter	Atlas; Utilization Certificate
2.3.3.5	Developing tools and programs for effective communication	0	-				
2.4	Incentivising Community Conservation Actions through Livelihood Means						
2.4.1	Community Mobilisation & Village Level Planning	Village	20	Project team work with community and project village institutions; conducts PRA and data analysis for micro plan	by 2026 for all the batches	Number of micro plans prepared	Approved Micro Plans; Utilization Certificate
2.4.2	EPA	Village	20	EPA identified in a community meeting; Action plan prepared out of the approved Micro Plan	by 2027 for all three batches	Works accomplished as per plan	Monitoring Report; MB/ Utilization Certificate
2.4.3	Establishment of village level nursery	Village	20	Community Groups are identified for extending project support to IGA-based on plan	by 2028 for all the batch	Number of villages where nurseries are established for income generation	Monitoring Report; Utilization Certificate
2.4.4	Livelihood activity	LS	1	Interventions/ activities are identified for extending project support to IGs based on plan	by 2028 for all the batch	Number of SHGs/ IGs supported for income generation	Monitoring Report; Utilization Certificate
3	Institutional Strengthening						
3.1	Infrastructure Support						
3.1.1	Buildings - New			Preparing tender documents for each work item, and procuring contractor	by 2025	a) Works accomplished as per plan; b) Buildings are commissioned and Payment released	MB/ Utilization Certificate
3.1.1.1	New Office Buildings						
3.1.1.1-a)	PMU Office building-cum-Rest House - one unit (4 levels; including furniture-fixtures)	sq. Ft.	8,000				
3.1.1.1-b)	Divisional Offices (including furniture & fixtures)	No.	1				
3.1.1.1-c)	Range Offices (including furniture & fixtures)	No.	14				
3.1.1.2	New Quarters	0	-				
3.1.1.2-a)	RO Quarters (2 bedrooms with toilet+kitchen/ common area with toilet; incl. furniture & fixtures)	No.	21				
3.1.1.2-b)	CF Quarters (2 bedrooms with toilet+kitchen/ common area; incl. furniture & fixtures)	No.	1				
3.1.1.2-c)	DFO Quarters (2 bedrooms with toilet+kitchen/ common area; incl. furniture & fixtures)	No.	1				
3.1.1.2-d)	Zoo Directors Quarters (3 bedrooms with toilet+kitchen/ common area; incl. furniture & fixtures)	No.	-				
3.1.2	Buildings - Extension and Renovation			Renovation/ Extension plans of buildings are prepared; Administrative/ financial sanctions of the estimates and design given by competent authorities	by 2025	a) Works accomplished as per plan; b) Buildings are operational and Payment released	MB/ Utilization Certificate
3.1.2.1	Divisional Offices - Extension (one multipurpose hall, two toilets (male/female))	No.	14				
3.1.2.2	Range Offices - Extension (one multipurpose hall, two toilets (male/female))	No.	30				
3.1.2.3	Range Offices - Renovation	No.	15				
3.1.2.3	Staff Quarters - Renovation	No.	30				
3.1.2.3	FRH - Renovation	No.	4				
3.1.2.4	FTS - Renovation of Hostel	No.	1				
3.1.2.5	FTS - Video Conference Room (incl. facilities)	No.	1				
3.1.2.6	FTS - two toilets in Academic Building	No.	2				
3.1.2.7	ADCs - Mara, Lai, Chakma	0	-				
3.1.2.7-a)	Divisional Offices - Extension (one multipurpose hall, two toilets (male/female))	No.	-				
3.1.3	Office Equipment			Preparing tender document; Procuring items through contractors or GeM	by 2024	Procurement accomplished as per plan	Installation Certificate/ Purchase or Stock register
3.1.3.1	Field level	0	-				
3.1.3.1-a)	Laptops of CMUs	No.	5				
3.1.3.1-b)	Laptops of DMUs	No.	13				
3.1.3.1-c)	Desktop for DMUs	No.	29				
3.1.3.1-d)	Desktop for FMUs	No.	60				
3.1.3.1-e)	Printer B/W A4 multifunctional for CMUs	No.	5				
3.1.3.1-f)	Printer B/W A4 multifunctional for DMUs	No.	16				
3.1.3.1-g)	Printer Ink tank for FMUs	No.	60				
3.1.3.1-h)	Camera DSLR for CMUs	No.	5				
3.1.3.1-i)	Camera DSLR for DMUs	No.	16				
3.1.3.2-f)	Duplex Photocopier Machine for DMUs	No.	16				
3.1.3.1-j)	ADCs - Mara, Lai, Chakma	0	-				
3.1.3.1-j-i)	Desktop for DMUs	No.	-				
3.1.3.1-j-ii)	Printer B/W A4 multifunctional for DMUs	No.	-				
3.1.3.2	PMU/ State level	0	-				
3.1.3.2-a)	Laptop	No.	7				
3.1.3.2-b)	Desktop	No.	7				
3.1.3.2-c)	Printer B/W A4 multifunctional	No.	4				
3.1.3.2-d)	Printer Colour LaserJet	No.	1				
3.1.3.2-e)	Camera DSLR	No.	2				
3.1.3.2-f)	Duplex Photocopier Machine	No.	1				

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3.2	Mobility Support			Preparing tender document; Procuring vehicles through agencies or GeM	by 2024	Vehicles are procured as per plan	Vehicle Registration Certificate/ Purchase or Stock register
3.2.1	Field level						
3.2.1.1	SUV (Supervision/ Flying Squad at Circles)	No.	5				
3.2.1.2	SUV (4x4) (Field Supervision by DCFs)	No.	16				
3.2.1.3	Trucks (for divisions)	No.	16				
3.2.1.4	Speed Boat (10-15 seater)	No.	10				
3.2.1.5	Pick-up trucks (for Rangers)	No.	30				
3.2.1.6	Motorcycles	No.	42				
3.2.1.7	FTS - Bus for Trainees	No.	1				
3.2.1.8	FTS - Speed Boat (25 seater) for Trainees	No.	1				
3.2.1.9	ADCs - Mara, Lai, Chakma	0	-				
3.2.1.9-a)	SUV (4x4) (Field Supervision)	No.	-				
3.2.1.9-b)	Motorcycles	No.	-				
3.2.2	PMU/ State level	0	-				
3.2.2.1	SUV (4x4) (for PD/ GB members)	No.	2				
3.2.2.2	SUV (For PMU officials)	No.	2				
3.2.2.3	Bus for Staff/ Trainees	No.	1				
3.2.2.4	High Speed Boat (6-10 seater)	No.	-				
3.2.2.5	Motorcycles	No.	1				
3.2.2.6	Rental (2 Cars for PMU/ Project Officers)	months	72				
3.3	Human Resource Support			Preparing ToR and procuring human resources through agency	by 2024	Number of staff deployed	Contract/ MOU with Agency
3.3.1	Field Units (Contractual Staffing)						
3.3.1.1	CMUs (one position)	Year	7				
3.3.1.2	DMUs (4 positions)	Year	7				
3.3.1.3	FMUs (one position)	Year	7				
3.3.1.4	Village level - Extension Worker (one position)	Year	7				
3.3.1.5	ADCs - Mara, Lai, Chakma	0	-				
3.3.1.5-a)	ADCs Project Staff (3 positions)	Year	7				
3.3.2	PMU/ State (Contractual Staffing)						
3.3.2.1	Professionals (11 staff)	Year	8				
3.3.2.2	Support staff (8 staff)	Year	8				
3.3.3	FTS Aizawl (Contractual 2 staff)	Year	6				
3.3.4	MzSBB (Contractual 2 staff)	Year	6				
3.4	DX (Digital Transformation) Support						
3.4.1	Procurement of IT/Digital infrastructure (Hardware / Software)			Preparing tender document; Procuring items through contractors or GeM	by 2024	Procurement accomplished as per plan	Installation Certificate/ Purchase or Stock register
3.4.1.1	Procurement of IT Computer Hardware and Software	0	-				
3.4.1.1-a)	Ink Tank A3 Colour printer	No.	14				
3.4.1.1-b)	Handheld GPS (etrex)	No.	100				
3.4.1.1-c)	Mobiles	No.	79				
3.4.1.1-d)	Workstation	No.	14				
3.4.1.1-e)	UPS	No.	14				
3.4.1.1-f)	Ms-Office (Home and Student) One time purchase	No.	14				
3.4.1.2	Procurement of field survey tools	0	-				
3.4.1.2-a)	Field survey equipments	FMUs	60				
3.4.1.3	Upgradation of GIS Lab (MFD HQ)	0	-				
3.4.1.3-a)	Ink Tank A3 Colour printer	No.	1				
3.4.1.3-b)	Handheld GPS (etrex)	No.	4				
3.4.1.3-c)	Mobiles	No.	4				
3.4.1.3-d)	Workstation	No.	4				
3.4.1.3-e)	Ms-Office (Home and Student) One time purchase for 1 PC	No.	4				
3.4.1.3-f)	UPS	No.	4				
3.4.1.3-g)	GIS Software (Licensed)	No.	1				
3.4.1.3-h)	ERDAS Imagine Software (Licensed)	No.	1				
3.4.1.3-i)	Plotter A0 size	No.	1				
3.4.1.3-j)	Indoor Multi screen Video wall	sq. Ft.	100				
3.4.2	Development of Web enabled Forest Management DSS (Inc. GIS/ MIS, BIS)			Preparing tender document; Procuring items/ services providers as per norms	by 2024	a) Procurement accomplished as per plan; b) envisaged MIS/ digital outputs are delivered	Installation Certificate/ Purchase or Stock register
3.4.2.1	Project website development and Maintenance	Yrs.	8				
3.4.2.2	Development of Forest Management Decision Support System (FMDSS) - Outsourcing	0	-				
3.4.2.2-a)	FMDSS - Base modules/ Mobile Apps - one contract	modules	5				
3.4.2.2-b)	FMDSS - Additional modules/ Mobile Apps - multiple contracts	modules	4				
3.4.3	Development of Digital GIS database			Preparing tender document; Procuring items/ services providers as per norms	by 2024	a) Procurement accomplished as per plan; b) envisaged GIS/ digital outputs are delivered	Installation Certificate/ Purchase or Stock register
3.4.3.1	Treatment Area Survey - Plantation sites, Other Assets/Interventions	0	-				
3.4.3.1-a)	Ground Truthing and GPS Data Collection - Community Forest	Per Ha.	150				
3.4.3.1-b)	Ground Truthing and GPS Data Collection - Trutting - RF	Per Ha.	150				
3.4.3.2	GIS data layer creation - digitization/procurement	0	-				
3.4.3.2-a)	GIS Data Procurement from MiRSAC - Land Use - Land Cover	LS	1				
3.4.3.2-b)	Procurement of State level Land Use data for year after 2022	LS	1				

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3.4.3.2-c)	Additional GIS Data Procurement - Village boundaries, Soil type, Drainage, Spring location, ISFR data etc.	LS	1				
3.4.4	Strengthening Forest Monitoring (processes, methods and protocols)			Preparing tender document; Procuring items through contractors or GeM	by 2024	a) Procurement accomplished as per plan; b) Works are accomplished as per plan	Installation Certificate/ Purchase or Stock register
3.4.4.1	Satellite based monitoring	0	-				
3.4.4.1-a)	Satellite Image - Komsat 3A [0.55 meter PAN and 2.2 meter MSS]	SqKm	280				
3.4.4.1-b)	Land Use/ Land Cover map creation using Komsat Images	SqKm	280				
3.4.4.1-c)	LISS-IV (Georeferenced/Ortho Kit) Around 20 satellite scenes	scenes	40				
3.4.4.1-d)	Land Use/ Land Cover map creation using LISS IV	scenes	40				
3.4.4.2	Use of Drone technology for sample sites and species mapping - Outsourcing MiRSAC	0	-				
3.4.4.2-a)	Drone survey and mapping of plantation sites - RF	SqKm	7,000				
3.4.4.2-b)	Drone survey and mapping of plantation sites - Community Forest	SqKm	7,000				
3.4.4.2-c)	UAV Charges	Sites	70				
3.4.4.2-d)	Transportation Cost	Sites	70				
3.4.4.2-e)	Digitization and creation of Land use/cover using Drone images	SqKm	12,000				
3.5	Capacity Development						
3.5.1	Training Need Assessment (TNA) and Capacity Development Plan	study	1	Preparing TOR and procuring specialized agency	by 2024	Award of contract/ letter	Study Report
3.5.2	Trainings by Types (List of training attached)			Training/ Events are organized in batches for stakeholder as per Calander	by 2028 for a	Number of persons trained (gender disaggregated) by type of stakeholders	Monitoring Report; Utilization Certificate
3.5.2.1	State/ PMU						
3.5.2.1-a)	Certificate Course (one batch; size 20; 15 days)	Persons	20				
3.5.2.1-b)	Managerial Training (batch 6; size 2-25; 1-2 days)	Persons	87				
3.5.2.1-c)	Refresher Training (batch 9; size 12-25; 1-2 days)	Persons	168				
3.5.2.1-d)	Technical Training (batch 48; size 10-30; 1-5 days)	Persons	907				
3.5.2.1-e)	Workshop (batch 6; size 20-50; 1 days)	Persons	240				
3.5.2.2	Circle/ CMU						
3.5.2.2-a)	Technical Training (batch 32; size 14-25; 1-5 days)	Persons	698				
3.5.2.2-b)	Workshop (batch 4; size 25; 1 day)	Persons	100				
3.5.2.3	Division/ DMU						
3.5.2.3-a)	Certificate Course (batch 3; size 30; 1 day course)	Persons	180				
3.5.2.3-b)	Managerial Training (batch 3; size 20; 1 day)	Persons	60				
3.5.2.3-c)	Technical Training (batch 25; size 15-30; 1-3 days)	Persons	472				
3.5.2.4	Range/ FMU						
3.5.2.4-a)	Certificate Course (batch 15; size 35; 1 day course)	Persons	525				
3.5.2.4-b)	Exposure Visit - Within State (one batch; size 6; 6 days)	Persons	6				
3.5.2.4-c)	Managerial Training (batch 10; size 30; 1 day)	Persons	300				
3.5.2.4-d)	Technical Training (batch 40; size 11-30; 1-3 days)	Persons	1,043				
3.5.2.4-e)	Workshop (batch 4; size 20; 2 days)	Persons	80				
3.5.2.5	GP/ Village						
3.5.2.5-a)	Certificate Course (batch 32; size 20; 1 day)	Persons	640				
3.5.2.5-b)	Exposure Visit - Within State (one batch; size 12; 6 days)	Persons	12				
3.5.2.5-c)	Managerial Training (batch 32; size 20; 1 day)	Persons	640				
3.5.2.5-d)	Technical Training (batch 32; size 20; 1 day)						
3.5.2.5-d-i)	Skill Training (batch 25; size 30; 30 days)	Persons	750				
3.5.2.5-d-i)	Technical Training (batch 214; size 20-30; 1-3 days)	Persons	5,610				
3.5.2.6	NE Region	0	-				
3.5.2.6-a)	Exposure Visit - Outside State (batch 20; size 21; 5 days)	Persons	420				
3.5.2.7	National						
3.5.2.7-a)	Certificate Course (8 batch; size 1; 3 months course)	Persons	8				
3.5.2.7-b)	Exposure Visit - Outside State (batch 2; size 20; 7 days)	Persons	40				
3.5.2.7-c)	Study Tour National (batch 6; size 15; 7 days)	Persons	90				
3.5.2.7-d)	Workshop (5 batch; size 20 persons; 2 days)	Persons	100				
3.5.2.8	International						
3.5.2.8-a)	Seminar (one batch; size 50 persons; 2 days)	Persons	50				
3.5.2.9	Regional Countries						
3.5.2.9-a)	Workshop (one batch; size 50 persons; 2 days)	Persons	50				
3.5.2.10	International Study Tour (2 Wks.) (S.Africa, Indonesia/ Malaysia, Japan, Europe)	persons	20				
3.5.2.11	National Workshop (3 days; 70 persons) - one time	persons	70				
3.5.2.12	Seminars/ Workshops (for sharing results, innovations/ good practices etc.)	No.	10				
3.6	Monitoring & Evaluation and Reporting						
3.6.1	Progress Monitoring						
3.6.1.1	Biodiversity Monitoring System	Biennial	4	Preparing TOR and procuring specialized agency	by 2026, 2028 & 2030	Award of contract/ letter	Study Report; Utilization Certificate
3.6.1.2	Periodic Review (GB & HPC level)						
3.6.1.2-a)	GB (15-20 persons)	Quarterly	30	In-house preparation by PMU	every quarter	Number of meetings organized	Approved Proceedings
3.6.1.2-b)	HPC (15-20 persons)	Six-monthly	15	In-house preparation by PMU	every six-months	Number of meetings organized	Approved Proceedings
3.6.1.3	Concurrent Monitoring (PMU and/or Circle level)						
3.6.1.3-a)	PMU/ EC (20-30 persons)	per 2 months	45	In-house preparation by PMU	every 2 months	Number of field trips conducted of project officials	Field Reports

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3.6.1.3-b)	CMU/ Circle (15-20 persons) - 5 CMUs	monthly	90	In-house preparation by PMU	every month	Number of field trips conducted of project officials	Field Reports
3.6.1.4	Computerized Accounting System: PMU (2), CMUs(5), DMUs(13), ADCs(3)	locations	23	Preparing TOR and procuring specialized agency	by 2024	Award of contract/ letter	Installation Certificate; Utilization Certificate
3.6.1.5	Annual Planning & Review Workshops (1-2 days)						
3.6.1.5-a)	PMU level (50 persons) - one location	Year	7	In-house preparation by PMU	every year	Number of events organized	Approved Proceedings
3.6.1.5-b)	CMU/ Circle (20-30 persons) - 4 Circles (every year)	Year	7	In-house preparation by PMU	every year	Number of events organized	Approved Proceedings
3.6.2	Impact Evaluation						
3.6.2.1	Annual Outcome Assessments (by DMUs) - 12 DMUs	Year	7	DMUs organize assessment exercise with the project team annually	by 2031	Number of AOA organized	Assessment Reports; Utilization Certificate
3.6.2.2	Baseline and Impact Surveys						
3.6.2.2-a)	Socio-economic/ Gender Surveys						
3.6.2.2-a-i)	Baseline	times	1	Preparing TOR and procuring specialized agency	by 2025	Award of contract/ letter	Study Report; Utilization Certificate
3.6.2.2-a-i)	Impact (mid and end-term)	times	2	Preparing TOR and procuring specialized agency	by 2028 (midline); and by 2032 (endline)	Award of contract/ letter	Study Report; Utilization Certificate
3.6.2.2-b)	Physical Surveys						
3.6.2.2-b-i)	Baseline	times	1	Preparing TOR and procuring specialized agency	by 2025	Award of contract/ letter	Study Report; Utilization Certificate
3.6.2.2-b-i)	Impact (mid and end-term)	times	2	Preparing TOR and procuring specialized agency	by 2028 (midline); and by 2032 (endline)	Award of contract/ letter	Study Report; Utilization Certificate
3.6.2.2-c)	Environmental Impact Assessment						
3.6.2.2-c-i)	Baseline	times	1	In-house preparation by PMU	by 2025		Updated ESMF Check-list
3.6.2.2-c-i)	Impact (mid and end-term)	times	2	In-house preparation by PMU	by 2028 (midline); and by 2032 (endline)		Updated ESMF Check-list
3.6.3	Thematic/Short Studies	studies	5	Preparing TOR and procuring specialized agency	by 2029	Award of contract/ letter	Study Report; Utilization Certificate
3.6.4	Engagement of Professionals for scientific inputs (Local/ rtd. experts)	man-days	480	Preparing TOR and procuring experts/ individual	by 2031	Award of contract/ letter	Study Report; Utilization Certificate
3.6.5	Reporting & Guidelines/ Manuals						
3.6.5.1	Guidelines/ Manual/ Handbook (50 prints each; e-print for circulation)			Preparing TOR and procuring experts/ individual	by 2024	Award of contract/ letter	Study Report; Utilization Certificate
3.6.5.1-a)	Project Manuals	Types	5				
3.6.5.1-b)	Hand-books	Types	5				
3.6.5.1-c)	Guidelines	Types	20				
3.6.5.2	Quarterly Report (4 reports/ yr.) - 50 prints each time; e-print for circulation	No.	32	In-house preparation by PMU	every quarter	Number of reports printed	Report
3.6.5.3	Annual Plan of Operation (50 prints each time; e-print for circulation)	No.	8	In-house preparation by PMU	every year	Number of reports printed	Approved APO
3.6.5.4	Annual Report (50 prints each time; e-print for circulation)	No.	8	In-house preparation by PMU	every year	Number of reports printed	Approved Annual Report
3.7	Project Audits						
3.7.1	Annual Statutory Financial Audit (at PMU and CMU level)	Annual	8	Preparing TOR and procuring specialized agency	every year	Award of contract/ letter	Audit Report; Utilization Certificate
3.7.2	Concurrent Financial Audits (at DMU level - six monthly)	Bi-annual	15	Preparing TOR and procuring specialized agency	every year	Award of contract/ letter	Audit Report; Utilization Certificate
3.7.3	Social Audits (in project VCs; facilitated by FMUs) - annual; for 7 yrs.	times	840	In-house preparation by PMU	every year	Number of project villages where Social Audits are conducted	Social Audit Report; Utilization Certificate
3.8	Forest Research						
3.8.1	Infrastructure support to strengthen research base	LS	1	Preparing TOR and procuring specialized agency	by 2028	Work accomplished as per plan	Award letter; Utilization Certificate
3.8.2	Prioritized research as per Research Plan	LS	1	Preparing TOR and procuring specialized agency	by 2028	Work accomplished as per plan	MoU; Utilization Certificate
3.8.3	Green Enterprise Promotion (GEP) Fund	LS	1	Preparing TOR and specialized agency/ entrepreneur selected based on criteria	by 2028	Work accomplished as per plan	MoU; Utilization Certificate
3.9	Communication and Publicity						
3.9.1	Project Website (development & maintenance)	Years	8	Preparing TOR and procuring specialized agency	by 2024	Work accomplished as per plan	Award letter; Utilization Certificate
3.9.2	Short films/ videos/ Digital documentation	No.	5				
3.9.3	Knowledge Material	Years	8				

Annx 8.12.1: Procurement and Implementation Method

Work Item	Procurement Method	Ownership	Activity Executed by	Supported by	Remarks/ Procurement process
Component 1: Forest and Water Conservation					
1.1 Landscape-based Plannings					
1.1.1 Survey and Mapping	LCB	MFD	PMU	PMC	
1.1.2 Demarcation of Treatment Areas (Scoping, site identification and selection)	DU	MFD	DMU/FMU	PMC	
Batch 1					
Batch 2					
Batch 3					
1.1.3 Preparation of Landscape-based Planning	DU	MFD	DMU/FMU	PMU/ PMC	
Batch 1					
Batch 2					
Batch 3					
1.2 Forest Management/ Restoration inside the Reserved Forests					
1.2.1 Production of Quality Planting Materials					
1.2.1.1 Establishment of New Nurseries	DU	MFD	DMU/FMU	PMU	
Batch 1					
Batch 2					
Batch 3					
1.2.1.2 Updating of Existing Nurseries	DU	MFD	DMU/ FMU	PMU	
Batch 1					
Batch 2					
Batch 3					
1.2.1.3 Production of Quality Planting Materials	DU	MFD	DMU/ FMU	PMU	
Batch 1					
Batch 2					
Batch 3					
1.2.2 Improving Quality of the Reserved Forests					
1.2.2.1 Improving Quality of Degraded Forests for Coverage under ANR					
Batch 1					
(a) Creation of plantation	DU	MFD	DMU/ FMU	PMU	
(b) Maintenance of plantation (Year 1)	DU	MFD	DMU/ FMU	PMU	
(c) Maintenance after planting (Year 2-4)	DU	MFD	DMU/ FMU	PMU	
Batch 2					
(a) Creation of plantation	DU	MFD	DMU/ FMU	PMU	
(b) Maintenance of plantation (Year 1)	DU	MFD	DMU/ FMU	PMU	
(c) Maintenance after planting (Year 2-4)	DU	MFD	DMU/ FMU	PMU	
Batch 3					
(a) Creation of plantation	DU	MFD	DMU/ FMU	PMU	
(b) Maintenance of plantation (Year 1)	DU	MFD	DMU/ FMU	PMU	
(c) Maintenance after planting (Year 2-4)	DU	MFD	DMU/ FMU	PMU	
1.2.2.2 Improving Quality of Degraded Forests for Afforestation through AR					
Batch 1					
(a) Advance work	DU	MFD	DMU/ FMU	PMU	
(b) Creation of plantation	DU	MFD	DMU/ FMU	PMU	
(c) Maintenance of plantation (Year 1)	DU	MFD	DMU/ FMU	PMU	
(d) Maintenance after planting (Year 2-4)	DU	MFD	DMU/ FMU	PMU	
Batch 2					
(a) Advance work	DU	MFD	DMU/ FMU	PMU	
(b) Creation of plantation	DU	MFD	DMU/ FMU	PMU	
(c) Maintenance of plantation (Year 1)	DU	MFD	DMU/ FMU	PMU	

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Work Item	Procurement Method	Ownership	Activity Executed by	Supported by	Remarks/ Procurement process
(d) Maintenance after planting (Year 2-4)	DU	MFD	DMU/ FMU	PMU	
Batch 3					
(a) Advance work	DU	MFD	DMU/ FMU	PMU	
(b) Creation of plantation	DU	MFD	DMU/ FMU	PMU	
(c) Maintenance of plantation (Year 1)	DU	MFD	DMU/ FMU	PMU	
(d) Maintenance after planting (Year 2-4)	DU	MFD	DMU/ FMU	PMU	
1.2.3 Planting Site Improvement (Soil and Moisture Conservation)					
1.2.3.1 Preparation of Site Specific Plan					
Batch 1	DU	MFD	DMU/ FMU	PMU/ PMC	
Batch 2	DU	MFD	DMU/ FMU	PMU/ PMC	
Batch 3	DU	MFD	DMU/ FMU	PMU/ PMC	
1.2.3.2 Soil and Moisture Conservation Works					
a) Improving quality of degraded forests for coverage under ANR					
Batch 1	DU	MFD	DMU/ FMU	PMU	
Batch 2	DU	MFD	DMU/ FMU	PMU	
Batch 3	DU	MFD	DMU/ FMU	PMU	
b) Improving quality of degraded forests for afforestation under AR by Timber/ NTFP Species					
Batch 1	DU	MFD	DMU/ FMU	PMU	
Batch 2	DU	MFD	DMU/ FMU	PMU	
Batch 3	DU	MFD	DMU/ FMU	PMU	
1.3 Forest Management in Community Forests					
1.3.1 Production of Quality Planting Materials					
1.3.1.1 Production of Quality planting material					
Batch 1	DU	MFD	DMU/ FMU	PMU	
Batch 2	DU	MFD	DMU/ FMU	PMU	
Batch 3	DU	MFD	DMU/ FMU	PMU	
1.3.2 Improving Quality of the Community Forests					
1.3.2.1 Site selection					
Batch 1	DU	MFD	DMU/ FMU	PMU/ PMC	VFDC in the potential location to give consent.
Batch 2	DU	MFD	DMU/ FMU	PMU/ PMC	VFDC in the potential location to give consent.
Batch 3	DU	MFD	DMU/ FMU	PMU/ PMC	VFDC in the potential location to give consent.
1.3.2.2 Improving Quality of Community Forest for Coverage under ANR by Timber species					
Batch 1					
(a) Creation of plantation	MOU	Village Council	VFDC	DMU/ FMU/ PMU/ PMC	
(b) Maintenance of plantation (Year 1)	MOU	Village Council	VFDC	DMU/ FMU/ PMU/ PMC	
(c) Maintenance after planting (Year 2-4)	MOU	Village Council	VFDC	DMU/ FMU/ PMU/ PMC	
Batch 2					
(a) Creation of plantation	MOU	Village Council	VFDC	DMU/ FMU/ PMU/ PMC	
(b) Maintenance of plantation (Year 1)	MOU	Village Council	VFDC	DMU/ FMU/ PMU/ PMC	
(c) Maintenance after planting (Year 2-4)	MOU	Village Council	VFDC	DMU/ FMU/ PMU/ PMC	
Batch 3					
(a) Creation of plantation	MOU	Village Council	VFDC	DMU/ FMU/ PMU/ PMC	
(b) Maintenance of plantation (Year 1)	MOU	Village Council	VFDC	DMU/ FMU/ PMU/ PMC	
(c) Maintenance after planting (Year 2-4)	MOU	Village Council	VFDC	DMU/ FMU/ PMU/ PMC	
1.3.2.3 Improving Quality of Community Forest for Coverage under AR, by Timber/ NTFP species					
Batch 1					
(a) Advance work	MOU	Village Council	VFDC	DMU/ FMU/ PMU/ PMC	
(b) Creation of plantation	MOU	Village Council	VFDC	DMU/ FMU/ PMU/ PMC	
(c) Maintenance of plantation (Year 1)	MOU	Village Council	VFDC	DMU/ FMU/ PMU/ PMC	

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Work Item	Procurement Method	Ownership	Activity Executed by	Supported by	Remarks/ Procurement process
(d) Maintenance after planting (Year 2-4)	MOU	Village Council	VFDC	DMU/ FMU/ PMU/ PMC	
Batch 2					
(a) Advance work	MOU	Village Council	VFDC	DMU/ FMU/ PMU/ PMC	
(b) Creation of plantation	MOU	Village Council	VFDC	DMU/ FMU/ PMU/ PMC	
(c) Maintenance of plantation (Year 1)	MOU	Village Council	VFDC	DMU/ FMU/ PMU/ PMC	
(d) Maintenance after planting (Year 2-4)	MOU	Village Council	VFDC	DMU/ FMU/ PMU/ PMC	
Batch 3					
(a) Advance work	MOU	Village Council	VFDC	DMU/ FMU/ PMU/ PMC	
(b) Creation of plantation	MOU	Village Council	VFDC	DMU/ FMU/ PMU/ PMC	
(c) Maintenance of plantation (Year 1)	MOU	Village Council	VFDC	DMU/ FMU/ PMU/ PMC	
(d) Maintenance after planting (Year 2-4)	MOU	Village Council	VFDC	DMU/ FMU/ PMU/ PMC	
1.3.3 Planting Site Improvement (Soil and Moisture Conservation)					
1.3.3.1 Preparation of Site Specific Plan					
Batch 1	DU	MFD	DMU/ FMU	PMU/ PMC	
Batch 2	DU	MFD	DMU/ FMU	PMU/ PMC	
Batch 3	DU	MFD	DMU/ FMU	PMU/ PMC	
1.3.3.2 Soil and Moisture Conservation Works					
a) Improving Quality of Community Forest for Coverage under ANR by Timber/NTFP Species					
Batch 1	MOU	MFD	VFDC	DMU/ FMU/ PMU/ PMC	
Batch 2	MOU	MFD	VFDC	DMU/ FMU/ PMU/ PMC	
Batch 3	MOU	MFD	VFDC	DMU/ FMU/ PMU/ PMC	
b) Improving quality of degraded forests for afforestation under AR by Timber/ NTFP Species					
Batch 1	MOU	MFD	VFDC	DMU/ FMU/ PMU/ PMC	
Batch 2	MOU	MFD	VFDC	DMU/ FMU/ PMU/ PMC	
Batch 3	MOU	MFD	VFDC	DMU/ FMU/ PMU/ PMC	
1.3.4 Community based Forest Fire Management					
1.3.4.1 Preparation of Community-based Forest Fire Management Plan					
Batch 1	DU	Village Council	VFDC/ FMU/ DMU	PMU/ PMC	
Batch 2	DU	Village Council	VFDC/ FMU/ DMU	PMU/ PMC	
Batch 3	DU	Village Council	VFDC/ FMU/ DMU	PMU/ PMC	
1.3.4.2 Procurement of Equipment for Community-based Forest Fire Management					
Batch 1	LCB	Village Council	PMU	PMC	Distributed by DMU/ FMU
Batch 2	LCB	Village Council	PMU	PMC	Distributed by DMU/ FMU
Batch 3	LCB	Village Council	PMU	PMC	Distributed by DMU/ FMU
1.3.4.3 Training for Community-based Forest Fire Management					
Batch 1	DU	MFD	DMU/ FMU	PMU/ PMC	
Batch 2	DU	MFD	DMU/ FMU	PMU/ PMC	
Batch 3	DU	MFD	DMU/ FMU	PMU/ PMC	
1.4: Forest Improvement for Water Conservation					
1.4.1 Site Specific Plan for Watershed Conservation and Spring Shed Restoration					
1.4.1.1 River and Spring Assessment					
Batch 1	LCB	MFD	Contractor	DMU/ FMU/ PMU/ PMC	
Batch 2	LCB	MFD	Contractor	DMU/ FMU/ PMU/ PMC	
Batch 3	LCB	MFD	Contractor	DMU/ FMU/ PMU/ PMC	
1.4.1.2 Preparation of Site Specific Plan for enrichment plantation					
Batch 1	LCB	MFD	Contractor	DMU/ FMU/ PMU/ PMC	
Batch 2	LCB	MFD	Contractor	DMU/ FMU/ PMU/ PMC	
Batch 3	LCB	MFD	Contractor	DMU/ FMU/ PMU/ PMC	
1.4.2 Production of Quality Planting Materials					

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Work Item	Procurement Method	Ownership	Activity Executed by	Supported by	Remarks/ Procurement process
1.4.2.1 Production of Quality Planting Materials					
Batch 1	DU	MFD	DMU/ FMU	PMU	
Batch 2	DU	MFD	DMU/ FMU	PMU	
Batch 3	DU	MFD	DMU/ FMU	PMU	
1.4.3 Improving Quality of the Forests for Water Conservation					
1.4.3.1 Enrichment Planting in Gaps					
Batch 1					
(a) Creation of plantation	MOU	MFD	VFDC	DMU/ FMU/ PMU/ PMC	
(b) Maintenance of plantation (Year 1)	MOU	MFD	VFDC	DMU/ FMU/ PMU/ PMC	
(c) Maintenance after planting (Year 2-4)	MOU	MFD	VFDC	DMU/ FMU/ PMU/ PMC	
Batch 2					
(a) Creation of plantation	MOU	MFD	VFDC	DMU/ FMU/ PMU/ PMC	
(b) Maintenance of plantation (Year 1)	MOU	MFD	VFDC	DMU/ FMU/ PMU/ PMC	
(c) Maintenance after planting (Year 2-4)	MOU	MFD	VFDC	DMU/ FMU/ PMU/ PMC	
Batch 3					
(a) Creation of plantation	MOU	MFD	VFDC	DMU/ FMU/ PMU/ PMC	
(b) Maintenance of plantation (Year 1)	MOU	MFD	VFDC	DMU/ FMU/ PMU/ PMC	
(c) Maintenance after planting (Year 2-4)	MOU	MFD	VFDC	DMU/ FMU/ PMU/ PMC	
1.4.4 Watershed Treatment and Spring Shed Restoration					
1.4.4.1 Watershed Treatment on Ridge to Valley Approach/ Spring Shed Restoration					
Batch 1	MOU	MFD	VFDC/ Other Departments	DMU/ FMU/ PMU/ PMC	
Batch 2	MOU	MFD	VFDC/ Other Departments	DMU/ FMU/ PMU/ PMC	
Batch 3	MOU	MFD	VFDC/ Other Departments	DMU/ FMU/ PMU/ PMC	
1.4.4.2 Spring-Shed Restoration					
Batch 1	MOU	MFD	VFDC/ Other Departments	DMU/ FMU/ PMU/ PMC	
Batch 2	MOU	MFD	VFDC/ Other Departments	DMU/ FMU/ PMU/ PMC	
Batch 3	MOU	MFD	VFDC/ Other Departments	DMU/ FMU/ PMU/ PMC	
1.5 Mitigation of Pressures on Forest Ecosystems through Livelihood Means					
1.5.1 Community Mobilisation and Village Level Planning					
a) Community Mobilisation					
Batch 1	DU	MFD	DMU/ FMU	PMU/ PMC	with existing VFDC
Batch 2	DU	MFD	DMU/ FMU	PMU/ PMC	with existing VFDC
Batch 3	DU	MFD	DMU/ FMU	PMU/ PMC	with existing VFDC
b) Village Level Planning					
Batch 1	DU	MFD	VFDC/ DMU/ FMU	PMU/ PMC	
Batch 2	DU	MFD	VFDC/ DMU/ FMU	PMU/ PMC	
Batch 3	DU	MFD	VFDC/ DMU/ FMU	PMU/ PMC	
c) Capacity Building of VFDC					
Batch 1	DU	MFD	DMU/ FMU	PMU/ PMC	
Batch 2	DU	MFD	DMU/ FMU	PMU/ PMC	
Batch 3	DU	MFD	DMU/ FMU	PMU/ PMC	
1.5.2 EPA (Entry Point Activity)					
Batch 1	MOU	VFDC	VFDC	DMU/ FMU/ PMC	
Batch 2	MOU	VFDC	VFDC	DMU/ FMU/ PMC	
Batch 3	MOU	VFDC	VFDC	DMU/ FMU/ PMC	
1.5.3 Establishment of Village Level Nursery					
Batch 1	MOU	VFDC	VFDC	DMU/ FMU/ PMC	
Batch 2	MOU	VFDC	VFDC	DMU/ FMU/ PMC	
Batch 3	MOU	VFDC	VFDC	DMU/ FMU/ PMC	

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Work Item	Procurement Method	Ownership	Activity Executed by	Supported by	Remarks/ Procurement process
1.5.4 Livelihood Activity					
Batch 1	MOU	VFDC	VFDC/ Various Departments	PMU/ DMU/ FMU/ PMC	Through convergence
Batch 2	MOU	VFDC	VFDC/ Various Departments	PMU/ DMU/ FMU/ PMC	Through convergence
Batch 3	MOU	VFDC	VFDC/ Various Departments	PMU/ DMU/ FMU/ PMC	Through convergence
2.4 Incentivising Community Conservation Action through Livelihood Means					
2.4.1 Community Mobilisation and Village Level Planning					
a) Community Mobilisation					
Batch 1	DU	MFD	DMU/ FMU	PMU/ PMC	with existing VFDC
Batch 2	DU	MFD	DMU/ FMU	PMU/ PMC	with existing VFDC
b) Village Level Planning					
Batch 1	DU	MFD	VFDC/ DMU/ FMU	PMU/ PMC	
Batch 2	DU	MFD	VFDC/ DMU/ FMU	PMU/ PMC	
c) Capacity Building of VFDC					
Batch 1	DU	MFD	DMU/ FMU	PMU/ PMC	
Batch 2	DU	MFD	DMU/ FMU	PMU/ PMC	
2.4.2 EPA (Entry Point Activity)					
Batch 1	MOU	VFDC	VFDC	DMU/ FMU/ PMC	
Batch 2	MOU	VFDC	VFDC	DMU/ FMU/ PMC	
2.4.3 Establishment of Village Level Nursery					
Batch 1	MOU	VFDC	VFDC	DMU/ FMU/ PMC	
Batch 2	MOU	VFDC	VFDC	DMU/ FMU/ PMC	
2.4.4 Livelihood Activity					
Batch 1	MOU	VFDC	VFDC/ Various Departments	PMU/ DMU/ FMU/ PMC	Through convergence
Batch 2	MOU	VFDC	VFDC/ Various Departments	PMU/ DMU/ FMU/ PMC	Through convergence
Component 3: Institutional Strengthening					
Infrastructure Support					
Buildings - new					
New Office Buildings	LCB/ DU	MFD	Contractor	PMU/ CMU/ DMU	
New Quarters	LCB/ DU	MFD	Contractor	PMU/ CMU/ DMU	
Buildings - Extension and Renovation	DU	MFD	Contractor	PMU/ CMU/ DMU	
Office Equipment	LCB/ NCB	MFD	Contractor	PMU/ PMC	GeM (e market place)/ State Policy
Mobility Support	LCB/ NCB	MFD	Contractor	PMU/ PMC	GeM (e market place)/ State Policy
Human Resources	LCB/ DU	MFD	Contractor	PMU/ CMU/ DMU/ PMC	State Policy
DX (Digital Transformation) Support					
Procurement of IT/ Digital infrastructure (Hardware/ Software)					
Procurement of IT Computer Hardware and Software	LCB	MFD	Contractor	PMU/ PMC	
Procurement of field survey tools	LCB	MFD	Contractor	PMU/ PMC	
Upgradation of GIS Lab (MFD Hq)	LCB	MFD	Contractor	PMU/ PMC	
Development of Web Enabled Forest Management Decision Support					
Project website development and Maintenance	LCB	MFD	Contractor	PMU/ PMC	
Development of Forest Management Decision Support System	LCB	MFD	Contractor	PMU/ PMC	
Development of Digital GIS database (including boundary survey and digitization)					
Treatment Area Survey - Plantation sites, Other Assets/Interventions	DU	MFD	PMU/ DMU/ FMU	PMC	
GIS data layer creation - digitization/procurement	DU	MFD	PMU/ DMU/ FMU	PMC	
Strengthening Forest Monitoring (processes, methods and protocols)					
Satellite based monitoring	DU	MFD	PMU	PMC	
Use of Drone technology for sample sites and species mapping	DU	MFD	DMU/ FMU	PMU/ PMC	

Implementation Schedule

[illegible]

[illegible]

[illegible]

	Month	2023				2024				2025				2026				2027				2028				2029				2030				2031				2032				2033																													
		4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1
1.4.2 Production of Quality Planting Materials	0																																																																						
1.4.2.1 Production of Quality Planting Materials	0																																																																						
Batch 1	24																																																																						
Batch 2	24																																																																						
Batch 3	24																																																																						
1.4.3 Improving Quality of the Forests for Water Conservation	0																																																																						
1.4.3.1 Enrichment Planting in Gaps	0																																																																						
Batch 1	0																																																																						
(a) Creation of plantation	2																																																																						
(b) Maintenance of plantation (Year 1)	9																																																																						
(c) Maintenance after planting (Year 2-4)	36																																																																						
Batch 2	0																																																																						
(a) Creation of plantation	2																																																																						
(b) Maintenance of plantation (Year 1)	9																																																																						
(c) Maintenance after planting (Year 2-4)	36																																																																						
Batch 3	0																																																																						
(a) Creation of plantation	2																																																																						
(b) Maintenance of plantation (Year 1)	9																																																																						
(c) Maintenance after planting (Year 2-4)	36																																																																						
1.4.3.2 Soil and Moisture Conservation	0																																																																						
Batch 1	0																																																																						
(a) Preparation of Site Specific Plan	2																																																																						
(b) Soil and Moisture Conservation Works	2																																																																						
Batch 2	0																																																																						
(a) Preparation of Site Specific Plan	2																																																																						
(b) Soil and Moisture Conservation Works	2																																																																						
Batch 3	0																																																																						
(a) Preparation of Site Specific Plan	2																																																																						
(b) Soil and Moisture Conservation Works	2																																																																						
1.4.4 Watershed Treatment and Spring Shed Restoration	0																																																																						
1.4.4.1 Watershed Treatment on Ridge to Valley Approach/ Spring Shed Restoration	0																																																																						
Batch 1	11																																																																						
Batch 2	11																																																																						
Batch 3	11																																																																						
1.4.4.2 Spring-Shed Restoration	0																																																																						
Batch 1	23																																																																						
Batch 2	23																																																																						
Batch 3	23																																																																						
	0																																																																						
1.5 Mitigation of Pressures on Forest Ecosystems through Livelihood Means	0																																																																						
1.5.1 Community Mobilisation and Village Level Planning	0																																																																						
a) Community Mobilisation	0																																																																						
Batch 1	3																																																																						
Batch 2	3																																																																						
Batch 3	3																																																																						
b) Village Level Planning	0																																																																						
Batch 1	3																																																																						
Batch 2	3																																																																						
Batch 3	3																																																																						
c) Capacity Building of VFDC	0																																																																						
Batch 1	0																																																																						
Batch 2	0																																																																						
Batch 3	0																																																																						
1.5.2 EPA (Entry Point Activity)	0																																																																						
Batch 1	6																																																																						
Batch 2	6																																																																						
Batch 3	6																																																																						
1.5.3 Establishment of Village Level Nursery	0																																																																						
Batch 1	6																																																																						
Batch 2	6																																																																						
Batch 3	6																																																																						
1.5.4 Livelihood Activity	0																																																																						
Batch 1	36																																																																						
Batch 2	36																																																																						
Batch 3	35																																																																						
	0																																																																						

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Annex 13.3.1 Methodology for Economic Evaluation of the Project

1. Component 1: Forest and Water Conservation – To enhance forest ecosystem services

(1) Forest and Water Conservation

Under Component 1, trees and NTFP species will be planted, together with the soil and moisture conservation works for the Reserved Forests and Community Forests. In addition, forest will be improved for water conservation. The timbers and NTFPs will be harvested, depending on the production schedule, which could be regarded as the benefit of the project activity.

1) Assumptions

(a) Target area

Batch-wise targets area is summarised in the following table.

Table 1-1 Batch-wise Target Area by Plantation Model

	Plantation model	1st Batch	2nd Batch	3rd Batch	Total (ha)
		2025	2026	2027	
		ha	ha	ha	
Forest Management/ Restoration inside the Reserved Forests	Improving Quality of Degraded Forests for Coverage under ANR	800	2,000	1,200	4,000
	Improving Quality of Degraded Forests for Afforestation through AR	600	1,500	900	3,000
	Planting Site Improvement (Soil and Moisture Conservation)				
	- Degraded Forests for Coverage under ANR	800	2,000	1,200	4,000
	- Degraded Forests for Afforestation through AR	600	1,500	900	3,000
Forest Management in Community Forests	Improving Quality of Community Forest for Coverage under ANR by Timber/ NTFP Species	600	1,500	900	3,000
	Improving Quality of Community Forest for Coverage under AR by Timber/ NTFP Species	200	500	300	1,000
	Planting Site Improvement (Soil and Moisture Conservation)				
	- Community Forest for Coverage under ANR by Timber/ NTFP Species	600	1,500	900	3,000
	- Community Forest for Coverage under AR by Timber/ NTFP Species	200	500	300	1,000
Forest Improvement for Water Conservation	Improving Quality of the Forests for Water Conservation				
	- Enrichment Planting in Gaps	500	1,250	750	2,500
	- Soil and Moisture Conservation Works	500	1,250	750	2,500
	Watershed Treatment and Spring Shed Restoration	1,000	2,500	1,500	5,000

Source: JICA Survey Team

(b) Plantation model and items of cost and benefit of each plantation model

The assumptions for each plantation model to estimate economic cost and benefit are summarised in the following table.

Table 1-2 Assumptions for Economic Cost and Benefit Valuation by Plantation Model

Landscape	Forest Management/ Restoration inside the Reserved Forests		Forest Management in Community Forests		Forest Improvement for Water Conservation
Activity No.	1.2.2.1	1.2.2.2	1.3.2.2	1.3.2.3	1.4.3.1
Plantation type	Improving Quality of Degraded Forests for Coverage under ANR	Improving Quality of Degraded Forests for Afforestation through AR	Improving Quality of Community Forest for Coverage under ANR by Timber/ NTFP Species	Improving Quality of Community Forest for Coverage under AR by Timber/ NTFP Species	Enrichment Planting in Gaps
Tree species planted	To be determined (e.g., <i>Gmelia arborea</i> , <i>Syzygium cumini</i> etc.)	To be determined (e.g., <i>Gmelia arborea</i> , <i>Syzygium cumini</i> etc.)	To be determined (e.g., <i>Gmelia arborea</i> , <i>Syzygium cumini</i> etc.) (<i>Artocarpus heterophyllus</i> , <i>Averrhoa carambola</i> , etc.)	To be determined (e.g., <i>Gmelia arborea</i> , <i>Syzygium cumini</i> etc.) (<i>Artocarpus heterophyllus</i> , <i>Averrhoa carambola</i> , etc.)	To be determined (e.g., <i>Balakata baccata</i> , etc.)
Plantation density (trees/ha)	220	1,100	220	1,100	220
Ratio (%) of mix plantation	Various species mixed	Various species mixed	Various species mixed, including NTFP species	Various species mixed, including NTFP species	Various species mixed
Period of maintenance	First 3 years	First 3 years	First 3 years	First 3 years	First 3 years
Timing of logging/ clearance and reforestation timing	-	15 year after plantation		15 years after plantation	-
Benefit	- Timber - Other NTFPs	- Timber - Other NTFPs	- Fruit - Vegetables - Timber - Other NTFPs	- Fruit - Vegetables - Timber - Other NTFPs	- Water yield - Contribution to agricultural production

Source: JICA Survey Team

(c) Assumptions for cost and benefit of NTFP and timber

As shown in the previous table, main products from which benefits come are NTFPs and timber. Also vegetables can be planted between the planted trees, and fruit trees also one of the benefit of NTFP.

The assumptions for benefit from NTFPs by plantation model in each zone are summarised in the following table.

- According to K.K. Upadhyaya and L.K. Jna (1997)¹, hectare-wise revenue from products for agroforestry were estimated. Due to the price escalation of labour wages (INR100 in the report, and INR 420 in 2023), the revenues in the report were adjusted to the current prices by multiplying 4.0. The economic benefit per ha is estimated as shown in the table below.

Table 1-3 Benefits of the NTFPs and Timbers

Other NTFP/ Benefit	Unit price	Timing of Harvest
Timber (teak, etc.)	84,000 (INR/ha)	6 years after plantation
	799,000 (INR/ha)	1t years after plantation
Vegetables	36,000 (INR/ha)	Every year from 1st year
Fruit	200,000 (INR/ha)	Every year from 1st year

Source: Compiled by JICA Survey Team based on the report of K.K. Upadhyaya and L.K. Jna (1997)

¹ <https://econpapers.repec.org/article/agsinijae/297574.htm> (accessed on 30 August 2023)

Costs of seedling production, plantation, maintenance, harvest per ha used for project economic evaluation are derived from MFD, and basically the cost norms of GIM are used for.

2) Results

(a) Forest Management/ Restoration inside the Reserved Forests

The result of the calculation of cost, benefit, and net benefit is shown in the following table.

Table 1-4 Result of Cost and Benefit Calculation for Forest Management/ Restoration inside the Reserved Forests

Unit: thousand INR

Activity	1.2.2.1			1.2.2.2		
Benefit type	Improving Quality of Degraded Forests for Coverage under ANR			Improving Quality of Degraded Forests for Afforestation through AR		
Year	Cost	Benefit	Net Value	Cost	Benefit	Net Value
1		5,760			4,320	
2		20,160			15,120	
3		28,800			21,600	
4		60,800			45,600	
5		140,800			105,600	
6		202,240			151,680	
7		222,400			166,800	
8		208,960			156,720	
9		188,800			141,600	
10		188,800			141,600	
11		188,800			141,600	
12		188,800			141,600	
13		188,800			141,600	
14		188,800			141,600	
15		316,640			237,480	
16		508,400			381,300	
17		380,560			285,420	
18		188,800			141,600	
19		188,800			141,600	
20		188,800			141,600	
21		188,800			141,600	
22		188,800			141,600	
23		188,800			141,600	
24		188,800			141,600	
25		188,800			141,600	
26		188,800			141,600	
27		188,800			141,600	
28		188,800			141,600	
29		188,800			141,600	
30		188,800			141,600	
31		188,800			141,600	
32		188,800			141,600	
33		188,800			141,600	
34		188,800			141,600	
35		188,800			141,600	
36		188,800			141,600	
37		188,800			141,600	
38		188,800			141,600	
39		188,800			141,600	

Activity	1.2.2.1			1.2.2.2		
Benefit type	Improving Quality of Degraded Forests for Coverage under ANR			Improving Quality of Degraded Forests for Afforestation through AR		
Year	Cost	Benefit	Net Value	Cost	Benefit	Net Value
40		188,800			141,600	
41		188,800			141,600	
42		188,800			141,600	
43		188,800			141,600	
44		188,800			141,600	
45		188,800			141,600	
46		188,800			141,600	
47		188,800			141,600	
48		188,800			141,600	
49		188,800			141,600	
50		188,800			141,600	
Total		9,458,720			7,094,040	

Source: JICA Survey Team

(b) Forest Management in Community Forests

The result of the calculation of cost, benefit, and net benefit is shown in the following table.

Table 1-5 Result of Cost and Benefit Calculation for Forest Management in Community Forests

Unit: thousand INR

Activity	1.3.2.2			1.3.2.3		
Benefit type	Improving Quality of Community Forest for Coverage under ANR by Timber/ NTFP Species			Improving Quality of Community Forest for Coverage under AR by Timber/ NTFP Species		
Year	Cost	Benefit	Net Value	Cost	Benefit	Net Value
1		4,320			1,440	
2		15,120			5,040	
3		21,600			7,200	
4		45,600			15,200	
5		105,600			35,200	
6		151,680			50,560	
7		166,800			55,600	
8		156,720			52,240	
9		141,600			47,200	
10		141,600			47,200	
11		141,600			47,200	
12		141,600			47,200	
13		141,600			47,200	
14		141,600			47,200	
15		237,480			79,160	
16		381,300			127,100	
17		285,420			95,140	
18		141,600			47,200	
19		141,600			47,200	
20		141,600			47,200	
21		141,600			47,200	
22		141,600			47,200	
23		141,600			47,200	
24		141,600			47,200	
25		141,600			47,200	
26		141,600			47,200	
27		141,600			47,200	
28		141,600			47,200	
29		141,600			47,200	

Activity	1.3.2.2			1.3.2.3		
Benefit type	Improving Quality of Community Forest for Coverage under ANR by Timber/ NTFP Species			Improving Quality of Community Forest for Coverage under AR by Timber/ NTFP Species		
Year	Cost	Benefit	Net Value	Cost	Benefit	Net Value
30		141,600			47,200	
31		141,600			47,200	
32		141,600			47,200	
33		141,600			47,200	
34		141,600			47,200	
35		141,600			47,200	
36		141,600			47,200	
37		141,600			47,200	
38		141,600			47,200	
39		141,600			47,200	
40		141,600			47,200	
41		141,600			47,200	
42		141,600			47,200	
43		141,600			47,200	
44		141,600			47,200	
45		141,600			47,200	
46		141,600			47,200	
47		141,600			47,200	
48		141,600			47,200	
49		141,600			47,200	
50		141,600			47,200	
Total		7,094,040			2,364,680	

Source: JICA Survey Team

2. Component 2 Biodiversity conservation

(1) Avoided economic loss incurred by human wildlife conflict

Under Component 2, enhancing biodiversity conservation measures in the Protected Areas (PAs) through various protection & habitat improvement measures and by creating enabling environment for community's engagement, through activities to indirectly mitigate human wildlife conflict would reduce economic loss incurred by the conflict, which could be regarded as the benefit of the project activity.

1) Assumptions

The assumptions for cost and benefit estimate are given in the following table.

Table 2-1 Assumptions for Cost and Benefit Calculation for Avoidance of Human Wildlife Conflict

Assumptions for cost estimate	– All costs were considered as part of the project investment and maintenance cost for this calculation. Thus none was considered in the calculation.
Assumptions for benefit estimate	– The facilities installed under the activities fully functions from the 8th year of the project. – The project activities contribute to reduce the annual average compensation (100%) paid by MFD from 2015-2022 in Mizoram state. – The reduction of the compensation is assumed by the following ratio. 2nd year: 20% 3rd year: 30% 4th year: 60%

	5 th year: 70% 6 th year: 80% 7 th year onwards: 100 %
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Source: JICA Survey Team

Under the assumptions above, cost and benefit are calculated by Activity 2.1.1. The annual average compensation by division is shown in the following table.

Table 2-2 Annual Average of Compensation paid by WBFD for Human Wildlife Conflict

Division/WLS	Annual Average Compensation (INR) 2015 - 2022
Darlawn	224,059
Kolasib	161,814
Aizawl	204,038
Mamit	218,025
Kawrthah	170,433
Tlabung	58,246
N.Vanlaiphai	385,938
Dampa Tiger Reserve	86,361
Lunglei	140,862
Champhai	317,234
MADC	81,267
Thenzawl	66,129
Khawzawl	30,444
Chhimtuipui	300,573
Total	2,397,692

Source: JICA Survey Team based on the COMPENSATION PAID DURING 2015-2021, PCCF

1) Result

The result of the calculation of cost, benefit, and net benefit is shown in the following table.

Table 2-3 Result of Cost and Benefit Calculation

Activity	2.1.1		
Benefit type	Decrease of HWC		
Year	Cost	Benefit	Net Value
1		0	
2		0	
3		479,538	
4		719,308	
5		1,438,615	
6		1,678,384	
7		1,918,154	
8		2,397,692	
9		2,397,692	
10		2,397,692	
11		2,397,692	
12		2,397,692	
13		2,397,692	
14		2,397,692	
15		2,397,692	
16		2,397,692	
17		2,397,692	

Activity	2.1.1		
Benefit type	Decrease of HWC		
Year	Cost	Benefit	Net Value
18		2,397,692	
19		2,397,692	
20		2,397,692	
21		2,397,692	
22		2,397,692	
23		2,397,692	
24		2,397,692	
25		2,397,692	
26		2,397,692	
27		2,397,692	
28		2,397,692	
29		2,397,692	
30		2,397,692	
31		2,397,692	
32		2,397,692	
33		2,397,692	
34		2,397,692	
35		2,397,692	
36		2,397,692	
37		2,397,692	
38		2,397,692	
39		2,397,692	
40		2,397,692	
41		2,397,692	
42		2,397,692	
43		2,397,692	
44		2,397,692	
45		2,397,692	
46		2,397,692	
47		2,397,692	
48		2,397,692	
49		2,397,692	
50		2,397,692	
Total		109,334,755	

Source: JICA Survey Team

(2) Increased economic benefit incurred by promoting eco-tourism

Under Component 2, evolving sustainable ecotourism in suitable sites in Mizoram with high potential destinations for the promotion of eco-tourism activities in order to strengthen incentives for communities to engage in sustainable conservation and management would increase the economic gain incurred by tourism, which could be regarded as the benefit of the project activity.

1) Assumptions

The assumptions for cost and benefit estimate are given in the following table.

Table 2-4 Assumptions for cost and benefit of biodiversity conservation

Assumptions for cost estimate	– All costs were considered as part of the project investment and maintenance cost for this calculation. Thus none was considered in this calculation.
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Assumptions for benefit estimate	– The facilities installed under the activities fully functions from the 7th year of the project. – The project activities contribute to increase the annual average revenues collected by tourism in Mizoram (assumed 5%: eco-tourism) from 2012-2020 in Mizoram state. Average 23,955,000 INR per year based on the Mizoram Statistical Abstract which 5% will be 119,7750 INR per year. – 2nd year of the Project activity will begin. – 4th year of the project 50% of the full scale benefit will be achieved. – 5th year of the project, 70% of the full scale benefit will be achieved. – 6th year of the project, 80% of the full scale benefit will be achieved. – 7th year 100% of the benefit will be achieved. – 8th year 120% of the benefit will be achieved. – 9th year 150% of the benefit will be achieved. – 10 year from the commencement of the project, 120% of the benefit will be achieved. – 100% of the benefit will be retained after 11th year of the commencement of the project onwards.
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Source: JICA Survey Team

2) Result

The result of the calculation of cost, benefit, and net benefit is shown in the following table.

Table 2-5 Result of Cost and Benefit Calculation

Activity	2.2.2		
Benefit type	Eco-tourism		
Year	Cost	Benefit	Net Value
1		0	
2		0	
3		0	
4		0	
5		598,875	
6		838,425	
7		958,200	
8		1,197,750	
9		1,437,300	
10		1,796,625	
11		1,437,300	
12		1,197,750	
13		1,197,750	
14		1,197,750	
15		1,197,750	
16		1,197,750	
17		1,197,750	
18		1,197,750	
19		1,197,750	
20		1,197,750	
21		1,197,750	
22		1,197,750	
23		1,197,750	
24		1,197,750	
25		1,197,750	
26		1,197,750	

Activity	2.2.2		
Benefit type	Eco-tourism		
Year	Cost	Benefit	Net Value
27		1,197,750	
28		1,197,750	
29		1,197,750	
30		1,197,750	
31		1,197,750	
32		1,197,750	
33		1,197,750	
34		1,197,750	
35		1,197,750	
36		1,197,750	
37		1,197,750	
38		1,197,750	
39		1,197,750	
40		1,197,750	
41		1,197,750	
42		1,197,750	
43		1,197,750	
44		1,197,750	
45		1,197,750	
46		1,197,750	
47		1,197,750	
48		1,197,750	
49		1,197,750	
50		1,197,750	
Total		54,976,725	

Source: JICA Survey Team

3. Livelihood (Sub-component 1.5 & 2.4)

To estimate the economic benefits of Sub-component 1.5 and 2.4, broom stick making, bamboo bursary, and Anchiri processing were selected to estimate the economic benefits of sub-component 1.5 and 2.4. The outline of the activities and assumptions are given below.

(1) Broom stick making

1) Assumptions

One cluster under the sub-component 1.5 and one under sub-component 2.4 are assumed to be established.

Table 3-1 Assumptions for Calculating Economic Benefits of Broom Stick Making

Assumptions for cost estimate	– The cost of technical guidance and marketing support and other costs to start the activities were considered as part of the project investment and maintenance cost during the project period. – Operational cost after the project completion is considered for the procurement of raw materials. – The production will begin in the 2nd year of the project. – The production cycle is assumed to be 14 years and will start from the 2nd year of the project commencement. – The factory procures broom grass from 20 ha of plantation. The cost of procuring the raw materials from the nearby farmers in the project area is
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estimated at 70 INR per kg. The total cost of procurement during the production cycle is give below.

Year	Volume of Broom Grass to be Procured (Kg)	Cost of Broom Grass procured at 70 INR/ kg (INR)
1	7,470	
2	34,860	
3	49,880	
4	74,880	
5	99,920	
6	112,500	
7	112,590	
8	112,680	
9	112,770	
10	125,400	
11	125,500	
12	125,600	
13	125,700	
14	125,800	

- 10 Household/ Skilled Workers will be engaged for 10 months in a year. (Daily wage is estimated @ 450 INR per day. 20 working days per months)
- Break ups of the operational cost to be met by the beneficiaries are given below.

Item	Unit Cost INR	Qty	Total
One Time Investment			
Work shed/building	Own	Own	0
Weight & packing Machine	50,000	1	50,000
Factory building	800,000	1	800,000
Treatment barrel	5,000	1	5,000
Plastic handle injection molding machine	1,500,000	1	1,500,000
Small Tools & Equipment	1,200	1	1,200
Electrification	1,500	1	1,500
Total			2,357,700
Recurring			
Gunny bag jute	10,833	1	10,833
Skilled Worker	9,000	10	90,000
Insurance	500	1	500
Transportation	10,000	1	10,000
Electricity	2,500	1	2,500
Other Expenses Transit permit etc	31,450	2	62,900
Total			176,733
G Total			2,534,433

Assumptions for benefit estimate	- The annual cost of production is to be met by the beneficiaries after the project period. - Ex factory selling price of broom stick is 50 INR/ kg. - Annual production volume was estimated as below. ➤ 1ha=1,245 clump can be harvested. Which will be 7 to 15 kgs per clump (green). 2.2 kg of green clump can make 1 kg dry clump.			
	Year	Production Volume in Kg	No of Brooms Produced (3 brooms from 1kg)	Gross Income (INR)
	1	7,470	22,410	1,120,500
	2	34,860	104,580	5,229,000
	3	49,880	149,640	7,482,000
	4	74,880	224,640	11,232,000
	5	99,920	299,760	14,988,000
	6	112,500	337,500	16,875,000
	7	112,590	337,770	16,888,500
	8	112,680	338,040	16,902,000
	9	112,770	338,310	16,915,500
	10	125,400	376,200	18,810,000
	11	125,500	376,500	18,825,000
	12	125,600	376,800	18,840,000
	13	125,700	377,100	18,855,000
	14	125,800	377,400	18,870,000
	- Due to the progress in the production volume of broom grass during the cycle, the benefit also fluctuates. - Other assumptions to estimate the benefits are as below.			
	Project year 2-5: 50% of the expected benefit is realised with full investment.			
	Project year 6-10: 80% of expected benefit is realised with full investment.			
	Project Year 11-18: 100% of the expected benefit is realised with full investment.			
	Project Year 19-50: The production declines 80% of the benefit of 18 th year with full investment.			

Source: JICA Survey Team

2) Estimated Cost and Profit per Cycle

The results of the estimation of benefit of one broom grass making unit with 100% profit realisation is

Table 3-2 Cash Flow for Broom Making One Broom Making Unit per One Production Cycle

Unit: INR

Year	Yearly Production	Yearly income	Cost of Procurement of Broom Grass	Gunny bag per year	Electricity cost/year	Transport Cost & Insurance	Labour Charge	Total expenditure	Total Net Value (INR)
1	22,410	1,120,500	522,900	129,996	30,000	126,000	1,080,000	1,888,896	-768,396
2	104,580	5,229,000	2,440,200	129,996	30,000	126,000	1,080,000	3,806,196	1,422,804
3	149,640	7,482,000	3,491,600	129,996	30,000	126,000	1,080,000	4,857,596	2,624,404
4	224,640	11,232,000	5,241,600	129,996	30,000	126,000	1,080,000	6,607,596	4,624,404
5	299,760	14,988,000	6,994,400	129,996	30,000	126,000	1,080,000	8,360,396	6,627,604
6	337,500	16,875,000	7,875,000	129,996	30,000	126,000	1,080,000	9,240,996	7,634,004
7	337,770	16,888,500	7,881,300	129,996	30,000	126,000	1,080,000	9,247,296	7,641,204
8	338,040	16,902,000	7,887,600	129,996	30,000	126,000	1,080,000	9,253,596	7,648,404
9	338,310	16,915,500	7,893,900	129,996	30,000	126,000	1,080,000	9,259,896	7,655,604
10	376,200	18,810,000	8,778,000	129,996	30,000	126,000	1,080,000	10,143,996	8,666,004
11	376,500	18,825,000	8,785,000	129,996	30,000	126,000	1,080,000	10,150,996	8,674,004
12	376,800	18,840,000	8,792,000	129,996	30,000	126,000	1,080,000	10,157,996	8,682,004
13	377,100	18,855,000	8,799,000	129,996	30,000	126,000	1,080,000	10,164,996	8,690,004
14	377,400	18,870,000	8,806,000	129,996	30,000	126,000	1,080,000	10,171,996	8,698,004

given below.

Source: JICA Survey Team

3) Summary of Cost Benefit Calculation for Broom Stick Making for Sub-Component 1.5 & 2.4

Table 3-3 Summary of Cost and Benefit of Broom Stick Making for Sub-Component 1.5 and 2.4

Unit: INR

Project Year	Sub-component 1.5 Broom Grass Processing			Sub-component 2.4 Broom Grass Processing		
	Cost	Benefit	Net value	Cost	Benefit	Net value
1		-			-	
2		560,250			560,250	
3		2,614,500			2,614,500	
4		3,741,000			3,741,000	
5		5,616,000			5,616,000	
6		11,990,400			11,990,400	
7		13,500,000			13,500,000	
8		13,510,800			13,510,800	
9		13,521,600			13,521,600	
10		13,532,400			13,532,400	
11		18,810,000			18,810,000	
12		18,825,000			18,825,000	
13		18,840,000			18,840,000	
14		18,855,000			18,855,000	
15		18,870,000			18,870,000	
16		18,870,000			18,870,000	
17		18,870,000			18,870,000	
18		18,870,000			18,870,000	
19		15,096,000			15,096,000	
20		15,096,000			15,096,000	
21		15,096,000			15,096,000	
22		15,096,000			15,096,000	
23		15,096,000			15,096,000	
24		15,096,000			15,096,000	
25		15,096,000			15,096,000	
26		15,096,000			15,096,000	
27		15,096,000			15,096,000	
28		15,096,000			15,096,000	
29		15,096,000			15,096,000	
30		15,096,000			15,096,000	
31		15,096,000			15,096,000	
32		15,096,000			15,096,000	
33		15,096,000			15,096,000	
34		15,096,000			15,096,000	
35		15,096,000			15,096,000	
36		15,096,000			15,096,000	
37		15,096,000			15,096,000	
38		15,096,000			15,096,000	
39		15,096,000			15,096,000	
40		15,096,000			15,096,000	
41		15,096,000			15,096,000	
42		15,096,000			15,096,000	
43		15,096,000			15,096,000	
44		15,096,000			15,096,000	
45		15,096,000			15,096,000	
46		15,096,000			15,096,000	
47		15,096,000			15,096,000	
48		15,096,000			15,096,000	
49		15,096,000			15,096,000	
50		15,096,000			15,096,000	
Total		712,468,950			712,468,950	

Source: JICA Survey Team

(2) Bamboo Nursery

1) Assumptions

10 nurseries under the sub-component 1.5 and 5 nurseries under sub-component 2.4 are assumed to be supported.

Table 3-4 Assumptions for Calculating Economic Benefits of Bamboo Nursery

Assumptions for cost estimate	– The cost of technical guidance and marketing support and other costs to start the activities were considered as part of the project investment and maintenance cost. Thus, not considered in this calculation. – The cycle of production is assumed to be 15 years. – 1 nursery will be managed by 1 SHG. 5 nurseries will be established under each of sub-component 1.5 and 2.4. In total, 10 SHGs will be engaged for the activity. – The unit cost of one bamboo nursery is as below.		
	Item	Unit Cost INR	Qty
	Total		
	One Time Investment		
	Work shed/building	0	0
	Green House structure & Shed	100,000	1
	Seedbed soil (Sand, Soil, cowdung)	50,000	1
	Water Tanky & Pipe	40,000	1
	Bamboo Seeds	4,000	15
	Deep Freezer for seeds storing	25,000	1
	Electrification	5,000	1
	Total		280,000
	Recurring		
	bamboo seeds	4,000	1
	Skilled Worker	6,000	5
	Insurance	250	1
	transportation	250	1
	Electricity	1,500	1
	Other Expenses including sewing materials	2,000	1
	Total		38,000
		G Total	318,000

2) Estimation of Cost and Benefit per Production Cycle

Annex 13.3.1-14

Table 3-5 Results of Benefit Estimation of Bamboo Nursery for One Nursery per Production Cycle

Unit: INR

Year	Yearly saplings produce	Yearly income	Seeds buying cost/year	Electricity cost/year	Transport Cost & Insurance	Labour Charge	Total expenditure	Total Net Value/ SHG (INR)
1	-	-	280,000	18,000	6,000	360,000	664,000	664,000
2	90,000	1,350,000	48,000	18,000	6,000	360,000	432,000	918,000
3	150,000	2,250,000	48,000	18,000	6,000	360,000	432,000	1,818,000
4	300,000	4,500,000	48,000	18,000	6,000	360,000	432,000	4,068,000
5	300,000	4,500,000	48,000	18,000	6,000	360,000	432,000	4,068,000
6	300,000	4,500,000	48,000	18,000	6,000	360,000	432,000	4,068,000
7	300,000	4,500,000	48,000	18,000	6,000	360,000	432,000	4,068,000
8	300,000	4,500,000	48,000	18,000	6,000	360,000	432,000	4,068,000
9	300,000	4,500,000	48,000	18,000	6,000	360,000	432,000	4,068,000
10	300,000	4,500,000	48,000	18,000	6,000	360,000	432,000	4,068,000
11	300,000	4,500,000	48,000	18,000	6,000	360,000	432,000	4,068,000
12	300,000	4,500,000	48,000	18,000	6,000	360,000	432,000	4,068,000
13	300,000	4,500,000	48,000	18,000	6,000	360,000	432,000	4,068,000
14	300,000	4,500,000	48,000	18,000	6,000	360,000	432,000	4,068,000
15	300,000	4,500,000	48,000	18,000	6,000	360,000	432,000	4,068,000

Source: JICA Survey Team

3) Summary of Cost Benefit Calculation for Bamboo Nursery for Sub-Component 1.5&2.4

Table 3-6 Summary of Cost Benefit Calculation for Bamboo Nursery for Sub-Component 1.5 & 2.4

Unit: INR

Project Year	Sub-component 1.5 Bamboo nursery (5 nurseries)			Sub-component 2.4 Bamboo nursery (5 nurseries)		
	Cost	Benefit	Net value	Cost	Benefit	Net value
1		-			-	
2		-			-	
3		3,375,000			3,375,000	
4		5,625,000			5,625,000	
5		11,250,000			11,250,000	
6		15,750,000			15,750,000	
7		15,750,000			15,750,000	
8		15,750,000			15,750,000	
9		22,500,000			22,500,000	
10		22,500,000			22,500,000	
11		22,500,000			22,500,000	
12		22,500,000			22,500,000	
13		22,500,000			22,500,000	
14		22,500,000			22,500,000	
15		22,500,000			22,500,000	
16		18,000,000			18,000,000	
17		18,000,000			18,000,000	
18		18,000,000			18,000,000	
19		18,000,000			18,000,000	
20		18,000,000			18,000,000	
21		18,000,000			18,000,000	
22		18,000,000			18,000,000	
23		18,000,000			18,000,000	
24		13,500,000			13,500,000	
25		13,500,000			13,500,000	
26		13,500,000			13,500,000	

Project Year	Sub-component 1.5 Bamboo nursery (5 nurseries)			Sub-component 2.4 Bamboo nursery (5 nurseries)		
	Cost	Benefit	Net value	Cost	Benefit	Net value
27		13,500,000			13,500,000	
28		13,500,000			13,500,000	
29		13,500,000			13,500,000	
30		13,500,000			13,500,000	
31		13,500,000			13,500,000	
32		13,500,000			13,500,000	
33		13,500,000			13,500,000	
34		13,500,000			13,500,000	
35		13,500,000			13,500,000	
36		13,500,000			13,500,000	
37		13,500,000			13,500,000	
38		13,500,000			13,500,000	
39		13,500,000			13,500,000	
40		13,500,000			13,500,000	
41		13,500,000			13,500,000	
42		13,500,000			13,500,000	
43		13,500,000			13,500,000	
44		13,500,000			13,500,000	
45		13,500,000			13,500,000	
46		13,500,000			13,500,000	
47		13,500,000			13,500,000	
48		13,500,000			13,500,000	
49		13,500,000			13,500,000	
50		13,500,000			13,500,000	
Total		733,500,000			733,500,000	

Source: JICA Survey Team

(3) Anchiri Processing

One cluster of Anchiri processing is assumed to be established under the sub-component 1.5 and sub-component 2.4.

1) Assumptions

Table 3-7 Assumptions for Calculating Economic Benefits of Anchiri Processing

Assumptions for cost estimate	- The cost of technical guidance and marketing support and other costs to start the activities were considered as part of the project investment and maintenance cost. Thus, not considered in this calculation. 1 cluster of 6 villages will be supported in the production area of Anchiri. (6 ha of production area is assumed to be near by.) - Once cycle of production is 14 years including the Year 0 for establishing the production system. - The unit cost per cluster is given below.			
	Item	Unit Cost INR	Qty	Total
	One Time Investment			
	Land Holding	Own	Own	
	Site Development	200,000	1	200,000
	work Shed	250,000	1	250,000
	Go-Down	300,000	1	300,000
	Anchiri Washing Machine (400 kg/hr	400,000	1	400,000

	Solar Dryer	300,000	1	300,000										
	Bottle/Drum Filler Machine	500,000	1	500,000										
	Boiler Type Steam Distillation Unit (1 ton capacity)	800,000	1	800,000										
	Total			2,750,000										
	Recurring/Year													
	Purchase of Green Anchiri for 1 Year	40	58,000	2,320,000										
	Monitoring (3 times/year)	5,000	3	15,000										
	Salary & Wages (2 skilled, 6 manual workers) (8 hours/ dayx22 days/ monthx 12 months = 264 days)	60,000	12	720,000										
	Utilities	10,000	12	120,000										
	HDPE Drum	900	30	27,000										
	Conveyance	3,000	12	36,000										
	Misc.	5,000	12	60,000										
	Total	3,298,000												
		G Total		6,048,000										
Assumption s for benefit estimate	– 1,000 kg of dried anchiri will be processed/ day.													
	– Washing & drying will takes 3 weeks and oil extraction takes 1 week in a month.													
	– The monthly estimation of the production volume and income per cluster at full scale is as below.													
	<table><tr><th>Product Name</th><th>Rs/Kg</th><th>Daily Produce (Kg)</th><th>monthly produce</th><th>monthly income</th></tr><tr><td>Anchiri Oil</td><td>23,000</td><td>6</td><td>30</td><td>690,000</td></tr></table>				Product Name	Rs/Kg	Daily Produce (Kg)	monthly produce	monthly income	Anchiri Oil	23,000	6	30	690,000
	Product Name	Rs/Kg	Daily Produce (Kg)	monthly produce	monthly income									
	Anchiri Oil	23,000	6	30	690,000									
	– In addition to the above, the following benefit realisation is assumed while the investment remains at full scale.													
	Project year 2-5: 50% of the expected benefit is assumed.													
	Project year 6-8: 70% of the expected benefit is assumed.													
	Project year 9 to 14: 100% of the expected benefit is assumed.													
Project year 15 – 20: 80% of the year 14 is assumed with the investment of year 14.														
Project year 21 –50: 60% of the benefit of year 14 is assumed with the investment of year 14.														

Source: JICA Survey Team based on the information provided by Zo Bio Hub

2) Estimation of Cost Benefit for Anchiri Processing for One Cluster per Production Cycle

The results of the estimation of benefit of one Anchiri clusters with 100% profit realisation is given below.

Table 3-8 Results of Estimation of Benefit for Anchiri Processing for One Cluster per Production Cycle

Unit: INR

Year	Yearly Green Anchiri Oil Produced	Yearly income	Green Anchiri cost/year	Monitoring	Salary	Utilities	Conveyance & Misc	Total expenditure	Total Net Value (INR)
1	-	-	-	15,000	180,000	120,000	96,000	411,000	411,000
2	63	1,449,000	1,680,000	15,000	720,000	120,000	96,000	2,631,000	1,182,000
3	225	5,175,000	3,600,000	15,000	720,000	120,000	96,000	4,551,000	624,000
4	168	3,864,000	1,680,000	15,000	720,000	120,000	96,000	2,631,000	1,233,000
5	210	4,830,000	1,680,000	15,000	720,000	120,000	96,000	2,631,000	2,199,000
6	450	10,350,000	3,600,000	15,000	720,000	120,000	96,000	4,551,000	5,799,000
7	210	4,830,000	1,680,000	15,000	720,000	120,000	96,000	2,631,000	2,199,000
8	210	4,830,000	1,680,000	15,000	720,000	120,000	96,000	2,631,000	2,199,000
9	450	10,350,000	3,600,000	15,000	720,000	120,000	96,000	4,551,000	5,799,000
10	210	4,830,000	1,680,000	15,000	720,000	120,000	96,000	2,631,000	2,199,000
11	210	4,830,000	1,680,000	15,000	720,000	120,000	96,000	2,631,000	2,199,000
12	450	10,350,000	3,600,000	15,000	720,000	120,000	96,000	4,551,000	5,799,000
13	210	4,830,000	1,680,000	15,000	720,000	120,000	96,000	2,631,000	2,199,000

Source: JICA Survey Team based on the information provided by Zo Bio Hub

3) Summary of Cost Benefit Calculation for Anchiri Processing for Sub-Component 1.5&2.4

Table 3-9 Summary of Cost Benefit for Anchiri Processing for Sub-Component 1.5 & 2.4

Project Year	Sub-component 1.5 Anchiri Processing			Sub-component 2.4 Anchiri Processing		
	Cost	Benefit	Net value	Cost	Benefit	Net value
1		-			-	
2		-			-	
3		724,500			724,500	
4		2,587,500			2,587,500	
5		1,932,000			1,932,000	
6		3,381,000			3,381,000	
7		7,245,000			7,245,000	
8		3,381,000			3,381,000	
9		4,830,000			4,830,000	
10		10,350,000			10,350,000	
11		4,830,000			4,830,000	
12		4,830,000			4,830,000	
13		10,350,000			10,350,000	
14		4,830,000			4,830,000	
15		3,864,000			3,864,000	
16		3,864,000			3,864,000	
17		3,864,000			3,864,000	
18		3,864,000			3,864,000	
19		3,864,000			3,864,000	
20		3,864,000			3,864,000	
21		2,898,000			2,898,000	
22		2,898,000			2,898,000	
23		2,898,000			2,898,000	
24		2,898,000			2,898,000	
25		2,898,000			2,898,000	
26		2,898,000			2,898,000	
27		2,898,000			2,898,000	
28		2,898,000			2,898,000	
29		2,898,000			2,898,000	
30		2,898,000			2,898,000	
31		2,898,000			2,898,000	
32		2,898,000			2,898,000	
33		2,898,000			2,898,000	
34		2,898,000			2,898,000	
35		2,898,000			2,898,000	
36		2,898,000			2,898,000	
37		2,898,000			2,898,000	
38		2,898,000			2,898,000	
39		2,898,000			2,898,000	
40		2,898,000			2,898,000	
41		2,898,000			2,898,000	
42		2,898,000			2,898,000	
43		2,898,000			2,898,000	
44		2,898,000			2,898,000	
45		2,898,000			2,898,000	
46		2,898,000			2,898,000	
47		2,898,000			2,898,000	
48		2,898,000			2,898,000	
49		2,898,000			2,898,000	
50		2,898,000			2,898,000	
Total		169,395,000			169,395,000	

Source: JICA Survey Team based on the information provided by Zo Bio Hub

Annex 13.6.1 Summary of Economic Internal Rate of Return (EIRR) of the Project

Year	Economic Cost			Component 1										Component 2 Biodiversity Conservation				CO ₂ Sequestration	Total Benefit	
	Investment Cost #1	O&M Cost #2	Total	1.2 (ANR) Timber, NTFP (vegetable, fruit)	1.2 (AR) Timber, NTFP (vegetable, fruit)	1.3 (ANR) Timber, NTFP (vegetable, fruit)	1.3 (AR) Timber, NTFP (vegetable, fruit)	Broom stick making	Bamboo Nursery	Anchiri Processing	Human Wildlife Conflict	2.2.2 Eco-tourism	Broom stick making	Bamboo Nursery	Anchiri Processing	(Thousand INR)	(Thousand INR)			
1				5,760	4,320	4,320	1,440	560									15,840			
2				20,160	15,120	15,120	5,040	2,615	3,375		725	480		560	3,375	725	56,561			
3				28,800	21,600	21,600	7,200	3,741	5,625		2,588	719		2,615	5,625	2,588	93,108			
4				60,800	45,600	45,600	15,200	3,741	11,250		2,588	1,439		3,741	11,250	2,588	191,826			
5				140,800	105,600	105,600	35,200	5,616	11,250		1,932	1,439	599	5,616	11,250	1,932	426,833			
6				202,240	151,680	151,680	50,560	11,990	15,750		3,381	1,678		11,990	15,750	3,381	625,004	4,084		
7				222,400	166,800	166,800	55,600	13,500	15,750		7,245	1,918	958	13,500	15,750	7,245	701,761	14,294		
8				208,960	156,720	156,720	52,240	13,511	15,750		3,381	2,398	1,198	13,511	15,750	3,381	663,940	20,421		
9				188,800	141,600	141,600	47,200	4,262	20,340		2,719	2,398	1,437	4,262	20,340	2,719	593,217	20,421		
10				188,800	141,600	141,600	47,200	3,388	20,340		7,719	2,398	1,797	3,388	20,340	7,719	606,710	20,421		
11				188,800	141,600	141,600	47,200	8,659	20,340		2,199	2,398	1,437	8,659	20,340	2,199	605,852	20,421		
12				188,800	141,600	141,600	47,200	8,667	20,340		2,719	2,398	1,198	8,667	20,340	2,719	601,788	20,421		
13				188,800	141,600	141,600	47,200	8,675	20,340		7,719	2,398	1,198	8,675	20,340	7,719	616,684	20,421		
14				188,800	141,600	141,600	47,200	8,683	20,340		2,199	2,398	1,198	8,683	20,340	2,199	605,660	20,421		
15				316,640	237,480	237,480	79,160	8,698	20,340		1,233	2,398	1,198	8,698	20,340	1,233	955,318	20,421		
16				508,400	381,300	381,300	127,100	8,698	15,840		1,233	2,398	1,198	8,698	15,840	1,233	1,473,658	20,421		
17				380,560	285,420	285,420	95,140	8,698	15,840		1,233	2,398	1,198	8,698	15,840	1,233	1,122,098	20,421		
18				188,800	141,600	141,600	47,200	8,698	15,840		1,233	2,398	1,198	8,698	15,840	1,233	594,758	20,421		
19				188,800	141,600	141,600	47,200	4,924	15,840		1,233	2,398	1,198	4,924	15,840	1,233	587,210	20,421		
20				188,800	141,600	141,600	47,200	4,924	15,840		1,233	2,398	1,198	4,924	15,840	1,233	587,210	20,421		
21				188,800	141,600	141,600	47,200	4,924	15,840		267	2,398	1,198	4,924	15,840	267	585,278	20,421		
22				188,800	141,600	141,600	47,200	4,924	15,840		267	2,398	1,198	4,924	15,840	267	585,278	20,421		
23				188,800	141,600	141,600	47,200	4,924	15,840		267	2,398	1,198	4,924	15,840	267	585,278	20,421		
24				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
25				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
26				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
27				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
28				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
29				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
30				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
31				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
32				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
33				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
34				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
35				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
36				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
37				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
38				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
39				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
40				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
41				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
42				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
43				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
44				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
45				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
46				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
47				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
48				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
49				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
50				188,800	141,600	141,600	47,200	4,924	11,340		267	2,398	1,198	4,924	11,340	267	576,278	20,421		
				9,458,720,000	7,094,040,000	7,094,040,000	2,364,680,000	286,227,218	642,780,000	55,053,000	109,334,755	54,976,725	286,227,218	642,780,000	55,053,000	896,464,785	EIRR			

Source: JICA Survey Team

Annex 13.8.1 Assessment of CO₂ Sequestration

1. Overview

The project activities such as afforestation and assisted natural regeneration both in the recorded forests and community forests contribute to carbon sequestration. The annual average reduction of CO₂ emission per hectare was calculated by using the methodology described in the guidelines of JICA Climate-FIT by plantation model.

The total CO₂ sequestration amount is converted to the economic value by multiplying the price of carbon credit of forest project in the voluntary market in 2023¹, namely 159.66 INR² per t CO₂, (1.94USD/tCO₂). The summary of the result of estimate of CO₂ sequestration and its economic value is shown in the following table. The result of Climate-FIT to estimate each annual average by plantation model per ha is described in the following sections.

The cumulative total volume of CO₂ sequestered for 50 years of project life was estimated at 5,614,766 tCO₂ which economic value was 896,464,785 INR.

¹ https://carboncredits.com/carbon-prices-today/?gclid=Cj0KCQjwz8emBhDrARIsANNJjS4xqRbM5OKL9NctMAF2BYG1IXmWf_G7qffDEtj9djxxsF_8txSU1QoaAk61EALw_wcB

² 1 USD = 82.3 as per the JICA Precondition for Project Cost Estimation for Loan Project

Table 1 Summary of CO₂ Sequestration and Economic Value

Year	Reserved Forest								Community Forests								Forests for Water Conservation								All	All
	1.2.2.1				1.2.2.2				1.3.2.2				1.3.2.3				1.4.3.1									
	Improving Quality of Degraded Forests (Reserved Forests) ANR				Improving Quality of Degraded Forests (Reserved Forests) AR				Improving Quality of Community Foerst for Coveraget under ANR by Timber species				Improving Quality of Community Forest for Coverage under AR, by Timber/ NTFP species				Enrichment Planting in Gaps									
	Area	Annual amount of sequestration	Annual Value	Cumulative amount of sequestration	Area	Annual amount of sequestration	Annual Value	Cumulative amount of sequestration	Area	Annual amount of sequestration	Annual Value	Cumulative amount of sequestration	Area	Annual amount of sequestration	Annual Value	Cumulative amount of sequestration	Area	Annual amount of sequestration	Annual Value	Cumulative amount of sequestration	Annual amount of sequestration	Annual Value				
ha	tCO ₂ /yr	INR/yr	tCO ₂	ha	tCO ₂ /yr	INR/yr	tCO ₂	ha	tCO ₂ /yr	INR/yr	tCO ₂	ha	tCO ₂ /yr	INR/yr	tCO ₂	ha	tCO ₂ /yr	INR/yr	tCO ₂	tCO ₂	INR Thousand					
1																					0	0				
2																					0	0				
3																					0	0				
4																					0	0				
5																					0	0				
6	800	2,756	439,965	2,756	600	14,276	2,279,399	14,276	600	2,067	329,989	2,067	200	4,759	759,800	4,759	500	1,722	274,970	1,722	25,580	4,084				
7	2,800	9,645	1,539,876	12,400	2,100	49,967	7,977,895	64,244	2,100	7,234	1,154,963	9,301	700	16,656	2,659,298	21,415	1,750	6,028	962,395	7,750	89,529	14,294				
8	4,000	13,778	2,199,823	26,178	3,000	71,382	11,396,993	135,626	3,000	10,334	1,649,947	19,635	1,000	23,794	3,798,998	45,209	2,500	8,611	1,374,849	16,361	127,899	20,421				
9	4,000	13,778	2,199,823	39,956	3,000	71,382	11,396,993	207,008	3,000	10,334	1,649,947	29,969	1,000	23,794	3,798,998	69,003	2,500	8,611	1,374,849	24,972	127,899	20,421				
10	4,000	13,778	2,199,823	53,734	3,000	71,382	11,396,993	278,390	3,000	10,334	1,649,947	40,303	1,000	23,794	3,798,998	92,797	2,500	8,611	1,374,849	33,583	127,899	20,421				
11	4,000	13,778	2,199,823	67,512	3,000	71,382	11,396,993	349,772	3,000	10,334	1,649,947	50,637	1,000	23,794	3,798,998	116,591	2,500	8,611	1,374,849	42,194	127,899	20,421				
12	4,000	13,778	2,199,823	81,290	3,000	71,382	11,396,993	421,154	3,000	10,334	1,649,947	60,971	1,000	23,794	3,798,998	140,385	2,500	8,611	1,374,849	50,805	127,899	20,421				
13	4,000	13,778	2,199,823	95,068	3,000	71,382	11,396,993	492,536	3,000	10,334	1,649,947	71,305	1,000	23,794	3,798,998	164,179	2,500	8,611	1,374,849	59,416	127,899	20,421				
14	4,000	13,778	2,199,823	108,846	3,000	71,382	11,396,993	563,918	3,000	10,334	1,649,947	81,639	1,000	23,794	3,798,998	187,973	2,500	8,611	1,374,849	68,027	127,899	20,421				
15	4,000	13,778	2,199,823	122,624	3,000	71,382	11,396,993	635,300	3,000	10,334	1,649,947	91,973	1,000	23,794	3,798,998	211,767	2,500	8,611	1,374,849	76,638	127,899	20,421				
16	4,000	13,778	2,199,823	136,402	3,000	71,382	11,396,993	706,682	3,000	10,334	1,649,947	102,307	1,000	23,794	3,798,998	235,561	2,500	8,611	1,374,849	85,249	127,899	20,421				
17	4,000	13,778	2,199,823	150,180	3,000	71,382	11,396,993	778,064	3,000	10,334	1,649,947	112,641	1,000	23,794	3,798,998	259,355	2,500	8,611	1,374,849	93,860	127,899	20,421				
18	4,000	13,778	2,199,823	163,958	3,000	71,382	11,396,993	849,446	3,000	10,334	1,649,947	122,975	1,000	23,794	3,798,998	283,149	2,500	8,611	1,374,849	102,471	127,899	20,421				
19	4,000	13,778	2,199,823	177,736	3,000	71,382	11,396,993	920,828	3,000	10,334	1,649,947	133,309	1,000	23,794	3,798,998	306,943	2,500	8,611	1,374,849	111,082	127,899	20,421				
20	4,000	13,778	2,199,823	191,514	3,000	71,382	11,396,993	992,210	3,000	10,334	1,649,947	143,643	1,000	23,794	3,798,998	330,737	2,500	8,611	1,374,849	119,693	127,899	20,421				
21	4,000	13,778	2,199,823	205,292	3,000	71,382	11,396,993	1,063,592	3,000	10,334	1,649,947	153,977	1,000	23,794	3,798,998	354,531	2,500	8,611	1,374,849	128,304	127,899	20,421				
22	4,000	13,778	2,199,823	219,070	3,000	71,382	11,396,993	1,134,974	3,000	10,334	1,649,947	164,311	1,000	23,794	3,798,998	378,325	2,500	8,611	1,374,849	136,915	127,899	20,421				
23	4,000	13,778	2,199,823	232,848	3,000	71,382	11,396,993	1,206,356	3,000	10,334	1,649,947	174,645	1,000	23,794	3,798,998	402,119	2,500	8,611	1,374,849	145,526	127,899	20,421				
24	4,000	13,778	2,199,823	246,626	3,000	71,382	11,396,993	1,277,738	3,000	10,334	1,649,947	184,979	1,000	23,794	3,798,998	425,913	2,500	8,611	1,374,849	154,137	127,899	20,421				
25	4,000	13,778	2,199,823	260,404	3,000	71,382	11,396,993	1,349,120	3,000	10,334	1,649,947	195,313	1,000	23,794	3,798,998	449,707	2,500	8,611	1,374,849	162,748	127,899	20,421				
26	4,000	13,778	2,199,823	274,182	3,000	71,382	11,396,993	1,420,502	3,000	10,334	1,649,947	205,647	1,000	23,794	3,798,998	473,501	2,500	8,611	1,374,849	171,359	127,899	20,421				
27	4,000	13,778	2,199,823	287,960	3,000	71,382	11,396,993	1,491,884	3,000	10,334	1,649,947	215,981	1,000	23,794	3,798,998	497,295	2,500	8,611	1,374,849	179,970	127,899	20,421				
28	4,000	13,778	2,199,823	301,738	3,000	71,382	11,396,993	1,563,266	3,000	10,334	1,649,947	226,315	1,000	23,794	3,798,998	521,089	2,500	8,611	1,374,849	188,581	127,899	20,421				
29	4,000	13,778	2,199,823	315,516	3,000	71,382	11,396,993	1,634,648	3,000	10,334	1,649,947	236,649	1,000	23,794	3,798,998	544,883	2,500	8,611	1,374,849	197,192	127,899	20,421				
30	4,000	13,778	2,199,823	329,294	3,000	71,382	11,396,993	1,706,030	3,000	10,334	1,649,947	246,983	1,000	23,794	3,798,998	568,677	2,500	8,611	1,374,849	205,803	127,899	20,421				
31	4,000	13,778	2,199,823	343,072	3,000	71,382	11,396,993	1,777,412	3,000	10,334	1,649,947	257,317	1,000	23,794	3,798,998	592,471	2,500	8,611	1,374,849	214,414	127,899	20,421				
32	4,000	13,778	2,199,823	356,850	3,000	71,382	11,396,993	1,848,794	3,000	10,334	1,649,947	267,651	1,000	23,794	3,798,998	616,265	2,500	8,611	1,374,849	223,025	127,899	20,421				
33	4,000	13,778	2,199,823	370,628	3,000	71,382	11,396,993	1,920,176	3,000	10,334	1,649,947	277,985	1,000	23,794	3,798,998	640,059	2,500	8,611	1,374,849	231,636	127,899	20,421				
34	4,000	13,778	2,199,823	384,406	3,000	71,382	11,396,993	1,991,558	3,000	10,334	1,649,947	288,319	1,000	23,794	3,798,998	663,853	2,500	8,611	1,374,849	240,247	127,899	20,421				
35	4,000	13,778	2,199,823	398,184	3,000	71,382	11,396,993	2,062,940	3,000	10,334	1,649,947	298,653	1,000	23,794	3,798,998	687,647	2,500	8,611	1,374,849	248,858	127,899	20,421				
36	4,000	13,778	2,199,823	411,962	3,000	71,382	11,396,993	2,134,322	3,000	10,334	1,649,947	308,987	1,000	23,794	3,798,998	711,441	2,500	8,611	1,374,849	257,469	127,899	20,421				
37	4,000	13,778	2,199,823	425,740	3,000	71,382	11,396,993	2,205,704	3,000	10,334	1,649,947	319,321	1,000	23,794	3,798,998	735,235	2,500	8,611	1,374,849	266,080	127,899	20,421				
38	4,000	13,778	2,199,823	439,518	3,000	71,382	11,396,993	2,277,086	3,000	10,334	1,649,947	329,655	1,000	23,794	3,798,998	759,029	2,500	8,611	1,374,849	274,691	127,899	20,421				
39	4,000	13,778	2,199,823	453,296	3,000	71,382	11,396,993	2,348,468	3,000	10,334	1,649,947	339,989	1,000	23,794	3,798,998	782,823	2,500	8,611	1,374,849	283,302	127,899	20,421				
40	4,000	13,778	2,199,823	467,074	3,000	71,382	11,396,993	2,419,850	3,000	10,334	1,649,947	350,323	1,000	23,794	3,798,998	806,617	2,500	8,611	1,374,849	291,913	127,899	20,421				
41	4,000	13,778	2,199,823	480,852	3,000	71,382	11,396,993	2,491,232	3,000	10,334	1,649,947	360,657	1,000	23,794	3,798,998	830,411	2,500	8,611	1,374,849	300,524	127,899	20,421				
42	4,000	13,778	2,199,823	494,630	3,000	711																				

2. Results of Estimation

(1) Activity 1.2.2.1: Improving Quality of Degraded Forests (Reserved Forests) (ANR)

1. Forest and Natural Resources Conservation / Afforestation

Project Name

Mizoram Biodiversity Conservation and Forest Enrichment Project

Country

India

Emission Reduction

		Value	Unit
$ER_{AR,y}$	Net absorption	13,778	tCO ₂ /year
$\Delta C_{PJ,y}$	Project absorption	13,778	tCO ₂ /year
$\Delta C_{BL,y}$	Baseline absorption	0	
PE_y	Project emission	0	tCO ₂ /year

Inputs

*Input only orange cell

*Please provide the source of each data

Parameter	Description		Value	Unit	Source
t1	Year	Year of monitoring start	2025	Year	
t2	Year	Year of monitoring finish	2075	Year	
$A_{P,j,i}$	Acreage of the stratum i in the forested land	Type of tree A	4,000	ha	Improving quality of the Reserved Forests/ ANR
		Type of tree B		ha	Improving quality of the Reserved Forests/ AR
		Type of tree C		ha	Improving quality of the Community Forests/ ANR
		Type of tree D		ha	Improving quality of the Community Forests/ AR
		Type of tree E		ha	Improving quality of the forests for water conservation/ enrichment
$T_{A,y2,i}$	Per hectare aboveground biomass in the stratum i in year t2 (year of monitoring finish)	Type of tree A	70	t dm/ha	Terminalia spp.: default (12 m3 ha-1 yr-1) x 25% x 0.46 t dm m-3
		Type of tree B	486	t dm/ha	Gmelia spp.: default (31 m3 ha-1 yr-1) x 75% x 0.41 t dm m-3
		Type of tree C	70	t dm/ha	Terminalia spp.: default (12 m3 ha-1 yr-1) x 25% x 0.46 t dm m-3
		Type of tree D	486	t dm/ha	Gmelia spp.: default (31 m3 ha-1 yr-1) x 75% x 0.41 t dm m-3
		Type of tree E	70	t dm/ha	Terminalia spp.: default (12 m3 ha-1 yr-1) x 25% x 0.46 t dm m-3
$T_{A,yt1,i}$	Per hectare aboveground biomass in the stratum i in year t1 (year of monitoring start)	Type of tree A	0	t dm/ha	
		Type of tree B	0	t dm/ha	
		Type of tree C	0	t dm/ha	
		Type of tree D	0	t dm/ha	
		Type of tree E	0	t dm/ha	
CF_i	Carbon fraction of trees in the stratum i	Type of tree A	0.47	tC/tdm	
		Type of tree B	0.47	tC/tdm	
		Type of tree C	0.47	tC/tdm	
		Type of tree D	0.47	tC/tdm	
		Type of tree E	0.47	tC/tdm	
R_i	Ratio of belowground biomass to aboveground biomass (ratio of belowground vs. aboveground) for the stratum i	Type of tree A	0.42		
		Type of tree B	0.42		
		Type of tree C	0.42		
		Type of tree D	0.42		
		Type of tree E	0.42		
$A_{gr,j}$	Acreage of the stratum j subjected to the clearance	Grassland		ha	
		Grass land with shrubs		ha	
		Annual crops/fallow land		ha	
		Perennial crops		ha	
V_{Apyj}	Per hectare aboveground biomass in the stratum j in the year of clearance	Grassland		tC/ha	
		Grass land with shrubs		tC/ha	
		Annual crops/fallow land		tC/ha	
		Perennial crops		tC/ha	
R_j	Ratio of belowground biomass to aboveground biomass for the stratum j	Grassland			
		Grass land with shrubs			
		Annual crops/fallow land			
		Perennial crops			

Source: JICA Survey Team using Climate Fit

(2) Activity 1.2.2.2: Improving Quality of Degraded Forests (AR)

1. Forest and Natural Resources Conservation / Afforestation

Project Name

Mizoram Biodiversity Conservation and Forest Enrichment Project

Country

India

Emission Reduction

		Value	Unit
$ER_{AR,y}$	Net absorption	71,382	tCO ₂ /year
$\Delta C_{P,L,y}$	Project absorption	71,382	tCO ₂ /year
$\Delta C_{BL,y}$	Baseline absorption	0	
PE_y	Project emission	0	tCO ₂ /year

Inputs

Parameter	Description		Value	Unit	Source
t1	Year	Year of monitoring start	2025	Year	
t2	Year	Year of monitoring finish	2075	Year	
$A_{P,j}$	Acreage of the stratum i in the forested land	Type of tree A		ha	Improving quality of the Reserved Forests/ ANR
		Type of tree B	3,000	ha	Improving quality of the Reserved Forests/ AR
		Type of tree C		ha	Improving quality of the Community Forests/ ANR
		Type of tree D		ha	Improving quality of the Community Forests/ AR
		Type of tree E		ha	Improving quality of the forests for water conservation/ enrichment
$T_{A,y(t)}$	Per hectare aboveground biomass in the stratum i in year t2 (year of monitoring finish)	Type of tree A	70	t dm/ha	Terminalia spp.: default (12 m3 ha-1 yr-1) x 25% x 0.46 t dm m-3
		Type of tree B	486	t dm/ha	Gmelia spp.: default (31 m3 ha-1 yr-1) x 75% x 0.41 t dm m-3
		Type of tree C	70	t dm/ha	Terminalia spp.: default (12 m3 ha-1 yr-1) x 25% x 0.46 t dm m-3
		Type of tree D	486	t dm/ha	Gmelia spp.: default (31 m3 ha-1 yr-1) x 75% x 0.41 t dm m-3
		Type of tree E	70	t dm/ha	Terminalia spp.: default (12 m3 ha-1 yr-1) x 25% x 0.46 t dm m-3
$T_{A,y(t)}$	Per hectare aboveground biomass in the stratum i in year t1 (year of monitoring start)	Type of tree A	0	t dm/ha	
		Type of tree B	0	t dm/ha	
		Type of tree C	0	t dm/ha	
		Type of tree D	0	t dm/ha	
		Type of tree E	0	t dm/ha	
CF_i	Carbon fraction of trees in the stratum i	Type of tree A	0.47	tC/tdm	
		Type of tree B	0.47	tC/tdm	
		Type of tree C	0.47	tC/tdm	
		Type of tree D	0.47	tC/tdm	
		Type of tree E	0.47	tC/tdm	
R_i	Ratio of belowground biomass to aboveground biomass (ratio of belowground vs. aboveground) for the stratum i	Type of tree A	0.42		
		Type of tree B	0.42		
		Type of tree C	0.42		
		Type of tree D	0.42		
		Type of tree E	0.42		
$A_{SP,j}$	Acreage of the stratum j subjected to the clearance	Grassland		ha	
		Grass land with shrubs		ha	
		Annual crops/fallow land		ha	
		Perennial crops		ha	
V_{Apyj}	Per hectare aboveground biomass in the stratum j in the year of clearance	Grassland		tC/ha	
		Grass land with shrubs		tC/ha	
		Annual crops/fallow land		tC/ha	
		Perennial crops		tC/ha	
R_j	Ratio of belowground biomass to aboveground biomass for the stratum j	Grassland			
		Grass land with shrubs			
		Annual crops/fallow land			
		Perennial crops			

Source: JICA Survey Team using Climate Fit

(3) Activity 1.3.2.2: Improving Quality of Community Foerst for Coveraget under ANR by Timber species

1. Forest and Natural Resources Conservation / Afforestation

Project Name

Mizoram Biodiversity Conservation and Forest Enrichment Project

Country

India

Emission Reduction

		Value	Unit
$ER_{NR,y}$	Net absorption	10,334	tCO ₂ /year
$\Delta C_{P,L,y}$	Project absorption	10,334	tCO ₂ /year
$\Delta C_{BL,y}$	Baseline absorption	0	
PE_y	Project emission	0	tCO ₂ /year

Inputs

			*Input only orange cell		*Please provide the source of each data
Parameter	Description		Value	Unit	Source
t1	Year	Year of monitoring start	2025	Year	
t2	Year	Year of monitoring finish	2075	Year	
$A_{p,i,j}$	Acreage of the stratum i in the forested land	Type of tree A		ha	Improving quality of the Reserved Forests/ ANR
		Type of tree B		ha	Improving quality of the Reserved Forests/ AR
		Type of tree C	3,000	ha	Improving quality of the Community Forests/ ANR
		Type of tree D		ha	Improving quality of the Community Forests/ AR
		Type of tree E		ha	Improving quality of the forests for water conservation/ enrichment
$T_{A,y(i,j)}$	Per hectare aboveground biomass in the stratum i in year t2 (year of monitoring finish)	Type of tree A	70	t dm/ha	Terminalia spp.: default (12 m3 ha-1 yr-1) x 25% x 0.46 t dm m-3
		Type of tree B	486	t dm/ha	Gmelia spp.: default (31 m3 ha-1 yr-1) x 75% x 0.41 t dm m-3
		Type of tree C	70	t dm/ha	Terminalia spp.: default (12 m3 ha-1 yr-1) x 25% x 0.46 t dm m-3
		Type of tree D	486	t dm/ha	Gmelia spp.: default (31 m3 ha-1 yr-1) x 75% x 0.41 t dm m-3
		Type of tree E	70	t dm/ha	Terminalia spp.: default (12 m3 ha-1 yr-1) x 25% x 0.46 t dm m-3
$T_{A,y(t,i)}$	Per hectare aboveground biomass in the stratum i in year t1 (year of monitoring start)	Type of tree A	0	t dm/ha	
		Type of tree B	0	t dm/ha	
		Type of tree C	0	t dm/ha	
		Type of tree D	0	t dm/ha	
		Type of tree E	0	t dm/ha	
CF_i	Carbon fraction of trees in the stratum i	Type of tree A	0.47	tC/tdm	
		Type of tree B	0.47	tC/tdm	
		Type of tree C	0.47	tC/tdm	
		Type of tree D	0.47	tC/tdm	
		Type of tree E	0.47	tC/tdm	
R_i	Ratio of belowground biomass to aboveground biomass (ratio of belowground vs. aboveground) for the stratum i	Type of tree A	0.42		
		Type of tree B	0.42		
		Type of tree C	0.42		
		Type of tree D	0.42		
		Type of tree E	0.42		
$A_{p,r,j}$	Acreage of the stratum j subjected to the clearance	Grassland		ha	
		Grass land with shrubs		ha	
		Annual crops/fallow land		ha	
		Perennial crops		ha	
$V_{A,pv,i}$	Per hectare aboveground biomass in the stratum j in the year of clearance	Grassland		tC/ha	
		Grass land with shrubs		tC/ha	
		Annual crops/fallow land		tC/ha	
		Perennial crops		tC/ha	
R_j	Ratio of belowground biomass to aboveground biomass for the stratum j	Grassland			
		Grass land with shrubs			
		Annual crops/fallow land			
		Perennial crops			

Source: JICA Survey Team using Climate Fit

(4) Activity 1.3.2.3: Improving Quality of Community Forest for Coverage under AR, by Timber/ NTFP species

1. Forest and Natural Resources Conservation / Afforestation

Project Name

Mizoram Biodiversity Conservation and Forest Enrichment Project

Country

India

Emission Reduction

		Value	Unit
$ER_{AR,y}$	Net absorption	23,794	tCO ₂ /year
$\Delta C_{PJ,y}$	Project absorption	23,794	tCO ₂ /year
$\Delta C_{BL,y}$	Baseline absorption	0	
PE_y	Project emission	0	tCO ₂ /year

Inputs

Parameter	Description		Value	Unit	Source
t1	Year	Year of monitoring start	2025	Year	
t2	Year	Year of monitoring finish	2075	Year	
$A_{P,i,j}$	Acreage of the stratum i in the forested land	Type of tree A		ha	Improving quality of the Reserved Forests/ ANR
		Type of tree B		ha	Improving quality of the Reserved Forests/ AR
		Type of tree C		ha	Improving quality of the Community Forests/ ANR
		Type of tree D	1,000	ha	Improving quality of the Community Forests/ AR
		Type of tree E		ha	Improving quality of the forests for water conservation/ enrichment
$T_{A,y2,j}$	Per hectare aboveground biomass in the stratum i in year t2 (year of monitoring finish)	Type of tree A	70	t dm/ha	Terminalia spp.: default (12 m3 ha-1 yr-1) x 25% x 0.46 t dm m-3
		Type of tree B	486	t dm/ha	Gmelia spp.: default (31 m3 ha-1 yr-1) x 75% x 0.41 t dm m-3
		Type of tree C	70	t dm/ha	Terminalia spp.: default (12 m3 ha-1 yr-1) x 25% x 0.46 t dm m-3
		Type of tree D	486	t dm/ha	Gmelia spp.: default (31 m3 ha-1 yr-1) x 75% x 0.41 t dm m-3
		Type of tree E	70	t dm/ha	Terminalia spp.: default (12 m3 ha-1 yr-1) x 25% x 0.46 t dm m-3
$T_{A,y1,j}$	Per hectare aboveground biomass in the stratum i in year t1 (year of monitoring start)	Type of tree A	0	t dm/ha	
		Type of tree B	0	t dm/ha	
		Type of tree C	0	t dm/ha	
		Type of tree D	0	t dm/ha	
		Type of tree E	0	t dm/ha	
CF_i	Carbon fraction of trees in the stratum i	Type of tree A	0.47	tC/tdm	
		Type of tree B	0.47	tC/tdm	
		Type of tree C	0.47	tC/tdm	
		Type of tree D	0.47	tC/tdm	
		Type of tree E	0.47	tC/tdm	
R_i	Ratio of belowground biomass to aboveground biomass (ratio of belowground vs. aboveground) for the stratum i	Type of tree A	0.42		
		Type of tree B	0.42		
		Type of tree C	0.42		
		Type of tree D	0.42		
		Type of tree E	0.42		
$A_{gr,i,j}$	Acreage of the stratum j subjected to the clearance	Grassland		ha	
		Grass land with shrubs		ha	
		Annual crops/fallow land		ha	
		Perennial crops		ha	
$V_{A,gr,i,j}$	Per hectare aboveground biomass in the stratum j in the year of clearance	Grassland		tC/ha	
		Grass land with shrubs		tC/ha	
		Annual crops/fallow land		tC/ha	
		Perennial crops		tC/ha	
R_j	Ratio of belowground biomass to aboveground biomass for the stratum j	Grassland			
		Grass land with shrubs			
		Annual crops/fallow land			
		Perennial crops			

Source: JICA Survey Team using Climate Fit

(5) Activity 1.4.3.1: Enrichment Planting in Gaps

1. Forest and Natural Resources Conservation / Afforestation

Project Name

Mizoram Biodiversity Conservation and Forest Enrichment Project

Country

India

		Value	Unit
$ER_{R,y}$	Net absorption	8,611	tCO ₂ /year
$\Delta C_{P,y}$	Project absorption	8,611	tCO ₂ /year
$\Delta C_{BL,y}$	Baseline absorption	0	
PE_y	Project emission	0	tCO ₂ /year

Inputs

*Input only orange cell

*Please provide the source of each data

Parameter	Description		Value	Unit	Source
t1	Year	Year of monitoring start	2025	Year	
t2	Year	Year of monitoring finish	2075	Year	
$A_{P,i}$	Acreage of the stratum i in the forested land	Type of tree A		ha	Improving quality of the Reserved Forests/ ANR
		Type of tree B		ha	Improving quality of the Reserved Forests/ AR
		Type of tree C		ha	Improving quality of the Community Forests/ ANR
		Type of tree D		ha	Improving quality of the Community Forests/ AR
		Type of tree E	2,500	ha	Improving quality of the forests for water conservation/ enrichment
$T_{A2,i}$	Per hectare aboveground biomass in the stratum i in year t2 (year of monitoring finish)	Type of tree A	70	t dm/ha	Terminalia spp.: default (12 m3 ha-1 yr-1) x 25% x 0.46 t dm m-3
		Type of tree B	486	t dm/ha	Gmelia spp.: default (31 m3 ha-1 yr-1) x 75% x 0.41 t dm m-3
		Type of tree C	70	t dm/ha	Terminalia spp.: default (12 m3 ha-1 yr-1) x 25% x 0.46 t dm m-3
		Type of tree D	486	t dm/ha	Gmelia spp.: default (31 m3 ha-1 yr-1) x 75% x 0.41 t dm m-3
		Type of tree E	70	t dm/ha	Terminalia spp.: default (12 m3 ha-1 yr-1) x 25% x 0.46 t dm m-3
$T_{A1,i}$	Per hectare aboveground biomass in the stratum i in year t1 (year of monitoring start)	Type of tree A	0	t dm/ha	
		Type of tree B	0	t dm/ha	
		Type of tree C	0	t dm/ha	
		Type of tree D	0	t dm/ha	
		Type of tree E	0	t dm/ha	
CF_i	Carbon fraction of trees in the stratum i	Type of tree A	0.47	tC/dm	
		Type of tree B	0.47	tC/dm	
		Type of tree C	0.47	tC/dm	
		Type of tree D	0.47	tC/dm	
		Type of tree E	0.47	tC/dm	
R_i	Ratio of belowground biomass to aboveground biomass (ratio of belowground vs. aboveground) for the stratum i	Type of tree A	0.42		
		Type of tree B	0.42		
		Type of tree C	0.42		
		Type of tree D	0.42		
		Type of tree E	0.42		
$A_{gr,i}$	Acreage of the stratum j subjected to the clearance	Grassland		ha	
		Grass land with shrubs		ha	
		Annual crops/fallow land		ha	
		Perennial crops		ha	
V_{Apyj}	Per hectare aboveground biomass in the stratum j in the year of clearance	Grassland		tC/ha	
		Grass land with shrubs		tC/ha	
		Annual crops/fallow land		tC/ha	
		Perennial crops		tC/ha	
R_j	Ratio of belowground biomass to aboveground biomass for the stratum j	Grassland			
		Grass land with shrubs			
		Annual crops/fallow land			
		Perennial crops			

Source: JICA Survey Team using Climate Fit

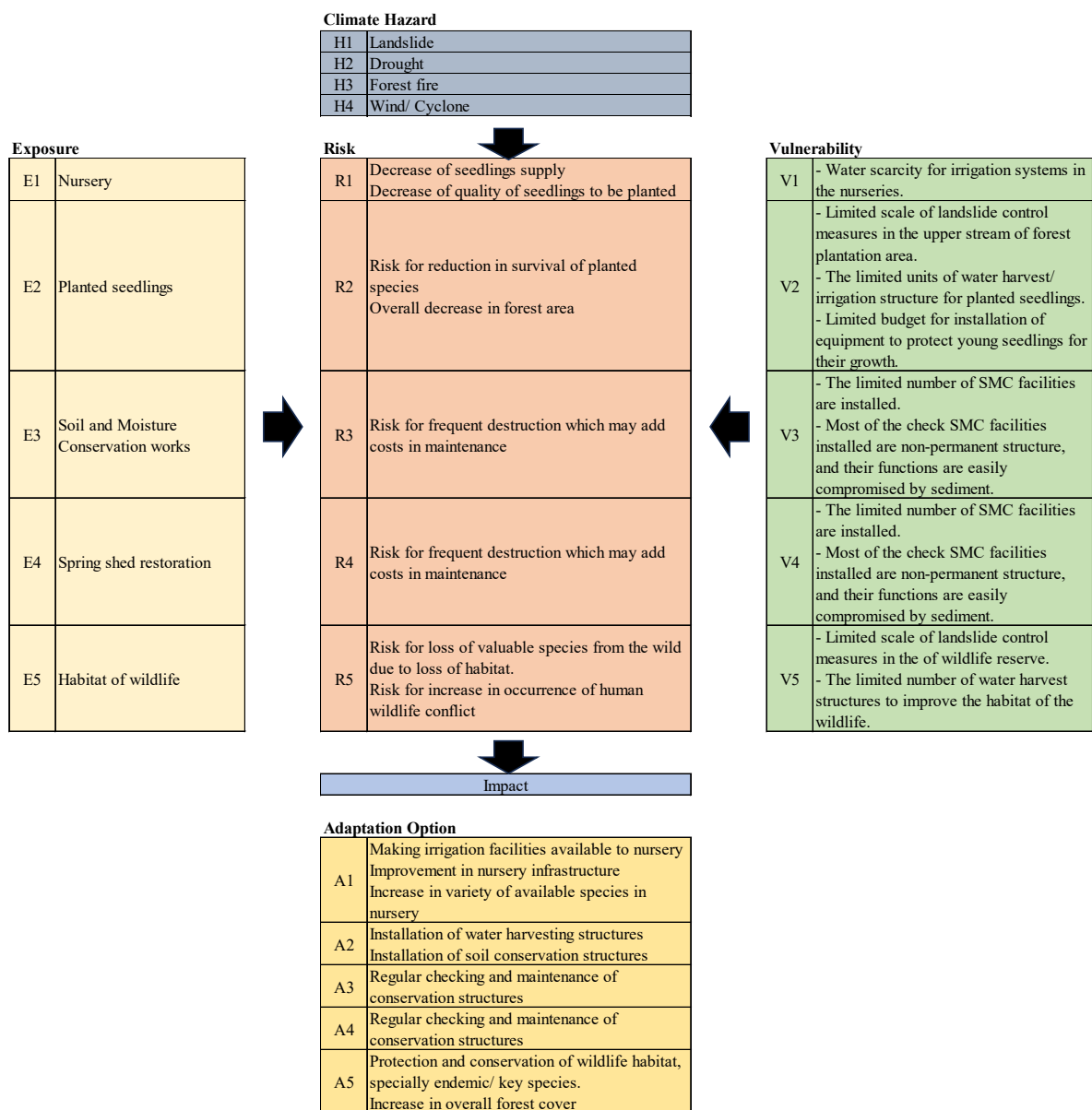
Annex 13.8.2 Climate Risk Matrix

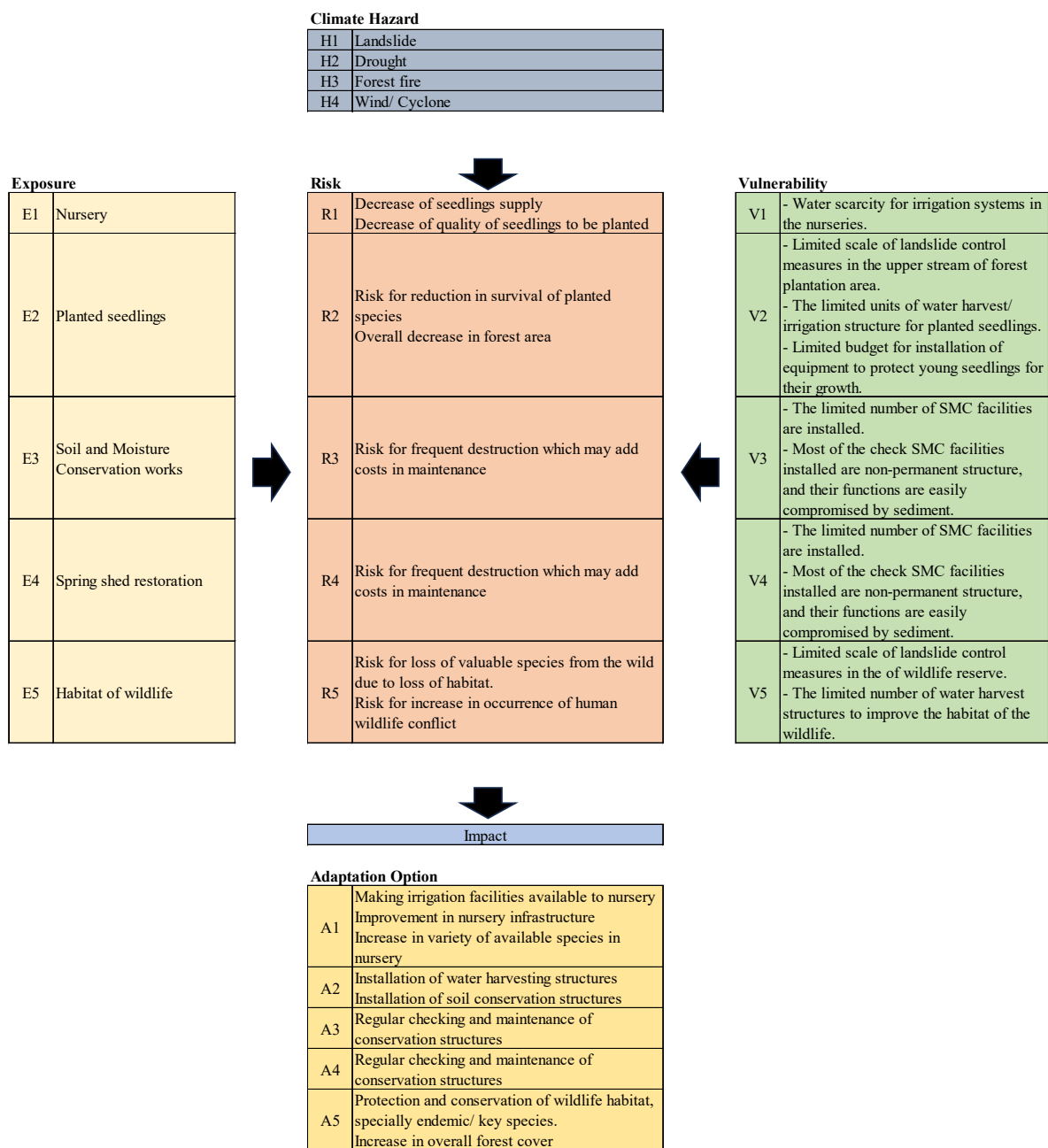
		Climate Hazard							
		H1	H2	H3	H4				
		Landslide	Drought	Forest fire	Wind / Cyclone	Vulnerability	No. of Impact scored more than 2	Climate Risk	Potential Options Adaptation
	Frequency	++	-	++	++				
	Future frequency tendency toward 2040 projected based on the past trend and projection of change in temperature/ precipitation**	↑ (due to intensity and irregularity in rainfall pattern)	↑ (increase in water stress due to decrease in quantity of spring and river recharge)	→ (irregularity in frequency occurrence)					
Exposure	E1 Nursery	0	1 Hamper the growth of seedlings	0	1 May hamper the growth of seedlings due to much humidity	- Water scarcity for irrigation systems in the nurseries.	0		- Making irrigation facilities available to nursery - Improvement in nursery infrastructure - Increase in variety of available species in nursery
	E2 Planted seedlings	2 May result in destruction and loss of planted seedlings	2 May result in low survival rate of planted seedlings	2 May result in destruction and loss of planted seedlings	1 May result in destruction and loss of planted seedlings	- Limited scale of landslide control measures in the upper stream of forest plantation area. - The limited units of water harvest/ irrigation structure for planted seedlings. - Limited budget for installation of equipment to protect young seedlings for their growth.	3	- Risk for reduction in survival of planted species - Overall decrease in forest area	- Installation of water harvesting structures - Installation of soil conservation structures
	E3 Soil and Moisture Conservation works	2 Already constructed check dams and other conservation structures may be destroyed with intensive landslides.	0	1 Functional depression of non-permanent structure made from natural materials by severe forest fire	1 Functional depression of non-permanent embankment structure by severe flood/ cyclonic storm	- The limited number of SMC facilities are installed. - Most of the check SMC facilities installed are non-permanent structure, and their functions are easily compromised by sediment.	1	- Risk for frequent destruction which may add costs in maintenance	- Regular checking and maintenance of conservation structures
	E4 Spring shed restoration	2 Already constructed check dams and other conservation structures may be destroyed with intensive landslides.	0	1 Functional depression of non-permanent structure made from natural materials by severe forest fire	1 Functional depression of non-permanent embankment structure by severe flood/ cyclonic storm	- The limited number of SMC facilities are installed. - Most of the check SMC facilities installed are non-permanent structure, and their functions are easily compromised by sediment.	1	- Risk for frequent destruction which may add costs in maintenance	- Regular checking and maintenance of conservation structures
	E5 Habitat of wildlife	1 May result in loss of vegetation	0	1 May result in loss of vegetation as well as death of wild animals	1	- Limited scale of landslide control measures in the of wildlife reserve. - The limited number of water harvest structures to improve the habitat of the wildlife.	0	- Risk for loss of valuable species from the wild due to loss of habitat. - Risk for increase in occurrence of human wildlife conflict	- Protection and conservation of wildlife habitat, specially endemic/ key species. - Increase in overall forest cover

Source: JICA Survey Team

*-(less than 1 event per 5 years on average) /+(more than 1 event per 5 years on average)/++(more than 1 event per year on average)

**increase (↑) no change (→) decrease(↓)





Annex 14.1.1 Environmental and Social Management System (ESMS) Checklist

Information as of

	Questions	Answer	Improvement Plan
1. Policy (environmental and social policy)			
1	Does the financial intermediary / executing agency have any formal environmental policy or procedures? If yes, please describe them and provide appropriate documentation. If no, does the financial intermediary /executing agency have any plan to set such policy or procedures?	No: The Executing Agency (EA), MFD, does not have its own formal environmental policies or procedures, but use the national policies prepared by MoEFCC and other relevant organizations for their projects. All activities undertaken by EA must be implemented in accordance with the relevant environmental laws, policies and procedures of Indian Government (defined by MoEF&CC and others) and the state government of Mizoram	The existing Indian legal/policy framework is sufficient for the elimination of sub-projects with serious adverse environmental impacts. EA may however involve certain sub-projects with minor environmental impacts (e.g. small-scale infrastructure). Although all such activities shall not require environmental clearance as per the legislations, the Environmental & Social Assessment Framework (ESAF) and the Tribal People Planning Framework (TPPF) to be prepared will be the principal documents which define measures to avoid adverse environmental and social impacts.
2	Are there any types of projects in which the financial intermediary / executing agency will not take part due to the environmental risks? (e.g., projects involving handling of hazardous wastes or endangered plants or animals).	No: No types of sub-projects with such environmental risks (e.g., generating hazardous wastes or affecting endangered plants or animals) are expected. However, the project will involve community related sub-projects which will be selected in participatory mode and therefore there is some flexibility for appropriate interventions in accordance with the ground situations. The Project objective aims at protecting environment, by promoting biodiversity and forest conservation, rather than any risks.	Sub-projects with serious environmental impacts beyond the mitigation capacity of the Project will be eliminated or avoided. ESAF/TPPF is the principal documents which define measures to avoid environmental and social adverse impact. Projects with serious environmental risks beyond the mitigation capacity of the natural environment will be avoided under ESAF/TPPF.
2. Procedures (screening, category classification and review procedures)			
3	Does the financial intermediary / executing agency have any environmental procedures such as screening, categorization and environmental review? If yes, please describe.	No: They have not experienced projects which require screening, categorization and environmental review. However; clear guidelines and procedures for environmental safeguard exist in Indian legislation system. The EA itself is responsible for implementation of environmental procedures such as screening, categorization and environmental review as per indicant laws and regulations.	The ESAF/TPPF being the principal documents, will clarify the basis for detail procedures for screening, categorization and environmental review of the Project and sub-projects. Additional supplemental documents will be prepared during the preparatory stage of the Project.

	Questions	Answer	Improvement Plan
4	Please describe how you ensure that your subproject companies and their subprojects are operated in compliance with the national laws and regulations and applicable JICA's requirements.	Basically, EA does not hire companies to execute sub-projects. Activities of the sub-projects are divided into three components: Forests and Water Conservation, Biodiversity Conservation and Management, and Institutional Strengthening, and will be managed by EA with a multifaced approach to integrate the agencies in the state and the division level. At the state PMU level, Forest Departments of Autonomous District Councils will work together in implementing sub-projects, and State livelihood will be roped in for their valuable advice to the project. At the DMU and DFU level, in cooperation with Village Forest Development Committees (VFDC) and Eco Development Committees (EDC), the community, and NGOs, the sub-projects will be implemented by the EA itself. However, EA shall hire companies to implement specific infrastructure construction (e.g. water conservation facilities and Biodiversity Knowledge Parks, etc.) as needed.	ESAF will be prepared for addressing issues arising under the Project and sub-projects. TPPF will be also prepared to cover instances where the Project will directly impact or involve forest dependents including STs/SCs/EWSs. Mitigation measures will be built into project component design and implementation. Overall coordination and support for ESAF/TPPF will be provided through the PMU as the executing agency. Within the executing agency, Project Director (PD)/ Chief Executive Officer (CEO) at PMU will hold central responsibility for ensuring ESAF in the Project, while Deputy Project Director (DPD) (M&E, Research and Institutional Strengthening) will hold positions of Environmental and Social Safeguard Managers. Under the supervision of DPD, two Program Managers, one in charge of M&E/ESAF and the other in charge of Livelihoods & Business Development, will be responsible for environmental and social safeguard issues, one in the field of environment issues and the other in the field of social issues respectively. Further, assistant DMU Officer 1 (M&E/ESAF) at DMU and Forester at FMU will be responsible for environmental safeguard issues, while Program Coordinator at DMU and Field facilitator at FMU will be responsible for social safeguard issues, to provide hands-on assistance to members of VFDCs/EDCs/SHGs who will be the Environmental and Social Safeguard Focal Person.
5	How are environmental considerations taken into account in the credit review and approval process for project loans or equity investments?	N/A	In the proposed ESAF, subproject exclusion and screening criteria are prepared. The subproject review, selection and approval will be conducted by assistant DMU Officer 1 (M&E/ESAF) and Program Coordinator at DMU and Forester and Field facilitator at FMU in accordance with the set subproject exclusion and screening criteria.
6	How are environmental issues taken into account in deciding whether to offer or extend commercial credit, working capital finance, trade finance, payment services and other financial services to a company?	N/A	In the proposed ESAF, subproject exclusion and screening criteria are prepared. The subproject review, selection and approval will be conducted by assistant DMU Officer 1 (M&E/ESAF) and Program Coordinator at DMU and Forester and Field facilitator at FMU in accordance with the set subproject exclusion and screening criteria.

	Questions	Answer	Improvement Plan
3. Organization and Staff (institutional framework and staff allocation)			
7	Please provide us with the organization chart of the financial intermediary / executing agency's Environmental and Social Management System (ESMS).	EA does not have ESMS as not required for their present role and responsibility; therefore the organizational chart is not available at the moment.	Organization structure of EA for ESAF/TPPF implementation will be clarified at the initial stage of the Project. The organizational chart will be prepared accordingly. Proposed institutional arrangement for ESAF/TPPF is described in "Item 9" hereunder.
8	Who is responsible for environmental and social management within the financial intermediary / executing agency? (name/role and title)	N/A	Project Director/CEO, MFD
9	Are there any staffs with training for environmental and social considerations in the financial intermediary / executing agency? If so, describe.	Key officers are well-trained in the application of the Forest Conservation Act and Wildlife (Protection) Act, relating to forest and wildlife clearance procedures. However, in most of cases not trained in environmental and social impact assessment procedures and risk management.	In the PMU, the PD will serve as Environmental and Social Safeguard Director for activities in each designated work field. DPD (M&E, Research and Institutional Strengthening) will serves as Environmental and Social Safeguard Manager. Under DPD, Program Manager (M&E/ESAF) and Program Manager (Livelihoods & Business Development) will be responsible for overall ESAF/TPPF monitoring and management of ESAF/TPPF related information for the Project at the PMU level. Assistant DMU Officer 1 (M&E/ESAF) and Program Coordinator at DMU level and Forester and Field facilitator at RMU level will serve as Environmental and Social Safeguard Chiefs for the project implementation respectively. Training will be provided by EA to improve understanding of environmental and social safeguards/ assessments, screening, monitoring procedures.
10	Are there any technical staffs with an engineering/industry background responsible for technical analysis of credit proposals?	All India Service Officers (IFS), State Service Officers, Frontline Uniformed Staff (FRO) are trained on basic engineering for small scale infrastructure etc during their service training.	For small scale water conservation facility development technical training will be provided to EA staffs and other key stakeholders accordingly.
11	What experience, if any, do the financial intermediary / executing agency have of hiring or dealing with environmental consultants?	N/A Activities which EA has been involved had minimal environmental impact, therefore; environmental consultant(s) have not been hired so far.	Environmental and Social Safeguard Director and Manager will be assigned in the PMU to support PMU for preparation and updating of ESAF/TPPF. In addition, project management consultants will be contracted for providing the PMU with overall assistance on technical and managerial aspects and policy initiatives relating to programme implementation including environmental and social consideration issues.

	Questions	Answer	Improvement Plan
12	What was the budget allocated to the ESMS and its implementation during a year? Please provide budget details including staff costs and training as well as any actual costs. What was the budget allocated to the ESMS and its implementation during a year?	N/A. EA does not have ESMS as such and therefore no budget has been specifically allocated to it.	During the Project, most of the cost associated with environmental and social safeguard will be covered by addressing relevant issues in the Project's approach or technical methodologies. As such they normally do not incur as separate budget lines. However, there will be some allocation of budget towards environmental and social considerations under the Project, mainly in the form of capacity building and M&E costs. Based on necessity, cost for hiring agency/experts in the field of environment and social consideration may be additionally required.
4. Monitoring and Reporting (Reporting procedures and monitoring)			
13	Do you receive environmental and social monitoring reports from subproject companies that you finance?	N/A	There will be limited usage of subproject companies for the project implementation. However, environmental and social monitoring of subproject activities will be conducted as part of the regular project monitoring.
14	Please describe how you monitor the subproject company and their subprojects' social and environmental performance.	N/A	Environmental and social monitoring/ evaluation of subproject activities will be conducted within the framework of project M&E system.
15	Is there an internal process to report on social and environmental issues to senior management?	Yes: Although there is no systematic monitoring and reporting process for environmental and social issues, there is an internal reporting system from Range forest office to the Headquarter through Divisional forest office and Circle office.	The Project will develop M&E system including MIS for monitoring and reporting on project progress, processes and impacts. Safeguards monitoring and reporting will be built into this system.
16	Do you prepare any social and environmental reports: - For other multilateral agencies or other stakeholders - E&S reporting in the Annual Report	No: Environmental and social reports have not been prepared systematically by EA.	EA will prepare and submit monitoring reports to JICA at regular basis. These reports shall contain designated sections on environmental and social aspects. The Project will include independent evaluations which will also assess the Project's implementation of the ESAF/TPPF and environmental and social issues related to the Project.
5. Experience(results of the environmental and social management)			
17	Has the financial intermediary / executing agency signed any national or international agreements or declarations concerning environmental issues?	No:	N/A

	Questions	Answer	Improvement Plan
18	Has the financial intermediary / executing agency ever received any criticism of its environmental record? If so, what was the criticism?	No:	The project as a whole is intended to strengthen community-based forestry institutions and implementation by these institutions. The project will also build the EA's capacity for more collaborative and participatory approaches to community development management. Therefore, the project aims to build better and stronger relationships with communities. The project will include social safeguards for protecting communities and especially the vulnerable segments of society including women, and poor, ensuring that they are properly consulted and are able to participate and benefit from the Project in appropriate ways.
19	Does the financial intermediary / executing agency carry out environmental audits of its properties to analyze health and safety issues, waste disposal, etc.?	No:	N/A
20	Please state any difficulties and/or constraints related to the implementation of the ESMS.	The EA, as an organization, still lacks experience in managing and monitoring environmental and social risks in a systematic way will be the principal challenge.	Through implementing the Project, establishing the proposed safeguards frameworks and measures, and through specific trainings EA will build their capacity and experience for managing and monitoring environmental and social risks.

6. Need of Capacity Development and Improvement Plan(Improvement and the need for capacity building measures)

ESMS requires different knowledge and skills sets at different management levels (i.e. field skills versus administrative/management skills) – these will be drawn out in the environmental and social safeguards capacity development and training programs.

Module Name	Theme/Topic	Key Participant	Schedule
Management/ Administrative Level	- JICA's safeguard policy - Basic introductory concept of safeguard - ESAF/TPPF steps and procedures to be applied in the Project - Free and prior informed consent (FPIC) - Monitoring and Evaluation	- PMU officers / - Assistant DMU Officer 1 (M&E/ESAF) and Program Coordinator at DMU level - Forester and Field facilitator at RMU level	- One time at the preparatory phase (total one batch)
Field/ Operational Level	- Basic introductory concept of safeguard - ESAF/TPPF steps and procedures to be applied in the Project - Community consultation processes - Free and prior informed consent (FPIC) - Monitoring and evaluation	- Representatives from VFDCs, EDCs, SHGs - Other representative from Village Council and Gram Panchayat (if necessary)	- One time for each district at the preparatory phase

Annex 14.4.1 Environmental Checklist

Information as of 16 Aug, 2023

Category	Environmental Item	Main Check Items	Yes: Y No: N Not Clear: NC	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
1 Permits and Explanation	(1) EIA and Environmental Permits	(a) Have EIA reports been already prepared in official process?	N	The Project doesn't include any activities which require prior clearances, such as Environmental clearance, Forest clearance, and Wildlife clearance. Environmental and Social Assessment Framework (ESAF) and Tribal People Planning Framework (TPPF) are prepared to avoid adverse environmental and social impact. The activities which may have significant environmental and social impact will be eliminated based on the ESAF/TPPF.
		(b) Have EIA reports been approved by authorities of the host country's government?	N	ditto
		(c) Have EIA reports been unconditionally approved? If conditions are imposed on the approval of EIA reports, are the conditions satisfied?	N	ditto
		(d) In addition to the above approvals, have other required environmental permits been obtained from the appropriate regulatory authorities of the host country's government?	N	Other environmental permits are also not required for the proposed project
	(2) Explanation to the Local Stakeholders	(a) Have contents of the project and the potential impacts been adequately explained to the local stakeholders based on appropriate procedures, including information disclosure? Is understanding obtained from the Local stakeholders?	Y	Specific stakeholder consultation meetings/workshops are not planned yet. However, series of meetings/ workshops are to be held with various stakeholders in relation to project formulation. Comments of local stakeholders will be integrated into design of subprojects and activities prior to their implementation following social assessment and consultation processes.
		(b) Have the comment from the stakeholders (such as local residents) been reflected to the project design?	Y	Since project activities outside RFs and PAs will be implemented through communities, comments of local stakeholders will be integrated into design of subprojects and activities prior to their implementation following social assessment and consultation processes.
	(3) Examination of Alternatives	(a) Have alternative plans of the project been examined with social and environmental considerations?	Y	The project location and components have not been fully determined yet. However social and environmental considerations to be factored into project design (through exclusion/selection

Category	Environmental Item	Main Check Items	Yes: Y No: N Not Clear: NC	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
				criteria for project activities). If the activities which may have some environmental and social impact, mitigation measures including alternatives will be studied based on the ESAF/TPPF.
2 Pollution Control	(1) Air Quality	(a) Do air pollutants, such as dust, soot and dust, sulfur oxides (SOx), nitrogen oxides (NOx), and organic chemical substances emitted from various sources, such as logging operations, forest products manufacturing processes, and incinerators comply with the country's emission standards and ambient air quality standards? Are any mitigating measures taken?	NC	No significant serious impacts by the Project are predicted. However, if any impact may be predicted by further studies, as required, necessary measures will be carried out based on ESAF.
	(2) Water Quality	(a) Is there a possibility that the use of chemicals, such as fertilizers, and agrochemicals will cause water pollution?	NC	Even though the contents of livelihood activities are not decided yet, no significant serious impacts to water quality by sub-projects are predicted. If some negative impacts are anticipated, mitigation measures and monitoring will be carried out based on ESAF.
		(b) Where facilities, such as forest products manufacturing facilities are installed, do effluents from the facilities comply with the country's effluent standards and ambient water quality standards?	Y/NC	Even though the contents of livelihood activities are not decided yet there would be no large-scale manufacturing facilities of forest products planned under the Project. The effluents from ecotourism facilities such as a camp with dining and sanitary facilities may cause water pollution but the installment of septic tanks can mitigate problems. Therefore associated effluent and effect on water sources will be nil or negligible. If some impacts are anticipated, mitigation measures and monitoring will be carried out based on ESAF.
	(3) Wastes	(a) Are wastes properly treated and disposed of in accordance with the country's regulations?	Y	There will not be any significant waste associated with the Project activities since there will be virtually no manufacturing. Ecotourism/ biodiversity knowledge park will generate garbage wastes, but waste management system will be planned as a part of microplan for the implementation of proper waste management. However, if any impact may be predicted by further studies, as required, necessary measures and monitoring will be carried out according to national regulations and ESAF.
	(4) Soil Contamination	(a) Are adequate measures taken to prevent contamination of soil and groundwater by use of chemicals, such as agrochemicals?	Y	Any chemicals will not be used under The Project. Thus, no significant serious impacts by the Project are predicted. However, if any negative impact may be predicted by further studies, as

Category	Environmental Item	Main Check Items	Yes: Y No: N Not Clear: NC	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
				required, necessary measures and monitoring will be carried out according to national regulations and ESAF.
		(b) Are any agrochemicals management plans prepared? Are any usages or any implementation structures organized for proper use of the plans?	N	The Project will not use any chemicals. However, existing guidelines will be adopted or guidelines will be prepared if necessary.
3 Natural Environment	(1) Protected Areas	(a) Is the project site or discharge area located in protected areas designated by the country's laws or international treaties and conventions? Is there a possibility that the project will affect the protected areas?	Y N	The locations of a sub-project, Biodiversity conservation inside PA are located in the protected areas such as national parks and wildlife sanctuaries. Project activities at PAs aims at improving habitats and increasing biodiversity, and no negative impact will be expected on protected areas If any adverse impact may be predicted by further studies, required countermeasures/monitoring will be examined to avoid/mitigate the predicted impacts based on the related laws/regulations and ESAF.
		(a) Does the project site encompass primeval forests, tropical rain forests, ecologically valuable habitats (e.g., coral reefs, mangroves, or tidal flats)?	Y	Primeval forests and ecologically valuable habitats are located in the Project areas. If any adverse impact may be predicted by further studies, required countermeasures/monitoring will be examined to avoid/mitigate the predicted impacts based on the related laws/regulations and ESAF.
	(2) Ecosystem	(b) Does the project site encompass the protected habitats of endangered species designated by the country's laws or international treaties and conventions?	Y	This project sites include the protected habitats o endangered species such as tigers, but the project aims at improving habitats and increasing biodiversity, and no negative impact will be expected on the protected habitat. However, if there are the possibilities that endangered plants or habitat for endangered species occur at or around the construction sites of water conservation facilities or buildings, biodiversity assessment will be carried out at or around the construction sites as occasion arises. If any adverse impact may be predicted by further studies, required countermeasures/monitoring will be examined to avoid/mitigate the predicted impacts based on the related laws/regulations and ESAF
		(c) Is there a possibility that changes in localized micro-meteorological conditions, such as solar radiation, temperature, and humidity due to a large-scale timber harvesting will affect the surrounding	N	There will be no large-scale timber harvesting in the Project

Category	Environmental Item	Main Check Items	Yes: Y No: N Not Clear: NC	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
		vegetation?		
		(d) Is there a possibility that a large-scale timber harvesting will result in loss of breeding and feeding grounds for wildlife?	N	There will be no large-scale timber harvesting in the Project
		(e) In the case of reforestation projects, is there a possibility that mono-species plantations will adversely affect wildlife habitats? Is there a possibility that mono-species plantations will cause outbreaks of pests?	N	Mono-species plantations will not be expected in the Project
		(f) If significant ecological impacts are anticipated, are adequate protection measures taken to reduce the impacts on the ecosystem?	N	Significant negative ecological impacts are not anticipated. Ecological restoration is a key Project goal.
		(g) Isn't an illegal deforestation associated with the project being carried out, or is an acquisition of the forest certification by the project proponent being carried out?	N	The Project will not involve any deforestation. Small-scale removal of trees associated with small-scale infrastructure development may occur and subject to relevant legislation requiring clearance.
	(3) Hydrology	(a) Is there a possibility that alteration of rainwater runoff and runoff characteristics due to a large-scale timber harvesting and access road construction will cause impacts on the hydrology of the surrounding areas?	NC	There will be no large-scale timber harvesting. The Project should have generally positive impacts on surrounding hydrology due to the construction of water conservation facilities and afforestation. Basically, no significant adverse impact is predicted. However, if water conservation facility construction may cause small changes of river flow and ground water level, monitoring of relevant items will be carried out based on ESAF.
		(b) Is there a possibility that decreased water retention capacity due to deforestation will affect the existing drainage patterns of the forest?	N	Soil and Moisture Conservation measures such as water conservation facilities are designed and implemented to maintain and improve drainage patterns of the forest.
	(4) Topography and Geology	(a) Is there a possibility that loss of forest stability due to timber harvesting will cause slope failures or landslides?	N	There will be no timber harvesting in the forest areas.
	(5) Management of Abandoned Sites	(a) Are adequate restoration and revegetation plans considered for the harvested areas? In particular, are adequate measures taken to prevent soil runoff from the harvested areas?	N	As no timber harvesting is proposed in the forest areas hence, there is no question of soil erosion etc.

Category	Environmental Item	Main Check Items	Yes: Y No: N Not Clear: NC	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
		(b) Is a sustainable management system for the harvested areas established?	N	ditto
		(c) Are adequate financial provisions secured to manage the harvested areas?	N	ditto
4 Social Environment	(1) Resettlement	(a) Is involuntary resettlement caused by project implementation? If involuntary resettlement is caused, are efforts made to minimize the impacts caused by the resettlement?	N	There will be no involuntary resettlement anticipated. Activities which involve involuntary resettlement should be avoided based on the subproject exclusion criteria on ESAF.
		(b) Is adequate explanation on compensation and resettlement assistance given to affected people prior to resettlement?	N	There will be no involuntary resettlement in The Project.
		(c) Is the resettlement plan, including compensation with full replacement costs, restoration of livelihoods and living standards developed based on socioeconomic studies on resettlement?	N	ditto
		(d) Is the compensations going to be paid prior to the resettlement?	N	ditto
		(e) Is the compensation policies prepared in document?	N	ditto
		(f) Does the resettlement plan pay particular attention to vulnerable groups or people, including women, children, the elderly, people below the poverty line, ethnic minorities, and indigenous peoples?	N	ditto
		(g) Are agreements with the affected people obtained prior to resettlement?	N	ditto
		(h) Is the organizational framework established to properly implement resettlement? Are the capacity and budget secured to implement the plan?	N	ditto
		(i) Are any plans developed to monitor the impacts of resettlement?	N	ditto
		(j) Is the grievance redress mechanism established?	N	ditto

Category	Environmental Item	Main Check Items	Yes: Y No: N Not Clear: NC	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
	(2) Living and Livelihood	(a) Is there a possibility that the project will adversely affect the living conditions of inhabitants? Are adequate measures considered to reduce the impacts, if necessary? Is particular attention paid to the inhabitants whose livelihoods are based on primary industries, such as farming, raising livestock, or hunting and gathering in the forests?	NC	The project activities at community forests and outside PAs aim at improving local people's livelihoods/ living conditions. However, if negative impact of activities at RF and PA on surrounding communities is expected, such impacts will be addressed through participatory planning and required countermeasures will be examined to avoid/mitigate the predicted impacts based on ESAF/TPPF.
		(b) Are adequate measures taken to prevent illegal entry into the forestry resource areas from the outside through newly constructed access roads?	NC	The Project may not construct new access roads in the majority of Project areas. If any adverse impact may be predicted by further studies, required countermeasures/monitoring will be examined to avoid/mitigate the predicted impacts based on the related laws/regulations and ESAF/TPPF.
		(c) Is there a possibility that the forest right of common is obstructed?	NC	A key Project objective is to strengthen community-based forest institutions and empower local people to realize their forest management, However, if negative impact of activities at RF and PA on surrounding communities is expected, such impacts will be addressed through participatory planning and required countermeasures will be examined to avoid/mitigate the predicted impacts based on ESAF/TPPF.
		(d) Are considerations given to life of residents before implementation of project?	Y	A key objective of the Project is to improve local livelihoods. Local people will be consulted prior to any Project activities and thus Project activities will be defined by the communities themselves based on ESAF/TPPF.
	(3) Heritage	(a) Is there a possibility that the project will damage the local archeological, historical, cultural, and religious heritage? Are adequate measures considered to protect these sites in accordance with the country's laws?	NC	There are archeological, historical, cultural, and religious heritage sites within the Project area, and some of them would be targets of conservation for the promotion of ecotourism. In addition, since the Project carried out in participation manner, it will have no significant impact on such sites. If any adverse impact may be predicted by further studies, required countermeasures will be examined to avoid/mitigate the predicted impacts.
	(4) Landscape	(a) Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?	N	Basically, no significant impact is predicted affecting the landscape since infrastructure under the Project will be on a small scale..
	(5) Ethnic Minorities and Indigenous	(a) Are considerations given to reduce impacts on the culture and lifestyle of ethnic minorities and indigenous peoples?	Y	Tribal People Planning Framework (TPPF) will be prepared to reduce impacts on the scheduled tribe and other forest dependents.

Category	Environmental Item	Main Check Items	Yes: Y No: N Not Clear: NC	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
	Peoples	(b) Are all of the rights of ethnic minorities and indigenous peoples in relation to land and resources respected?	Y	The TPPF includes measures to ensure that the rights of Scheduled Tribe and Forest Dependents are respected in terms of access to land and resources
	(6) Working Conditions	(a) Is the project proponent not violating any laws and ordinances associated with the working conditions of the country which the project proponent should observe in the project?	N	The working conditions will be protected by India's laws and regulations.
		(b) Are tangible safety considerations in place for individuals involved in the project, such as the installation of safety equipment which prevents industrial accidents, and management of hazardous materials?	NC	As required, proper instruction and guidance on safety consideration will be given to workers and other individuals involved in the Projects.
		(c) Are intangible measures being planned and implemented for individuals involved in the project, such as the establishment of a safety and health program, and safety training (including traffic safety and public health) for workers etc.?	NC	ditto (Such activities are relevant for large scale construction or commercial forestry but not for this type of Project.)
		(d) Are appropriate measures taken to ensure that security guards involved in the project not to violate safety of other individuals involved, or local residents?	NC	ditto (Security guard will not be required for most of the proposed project activities)
5. Others	(1) Impacts during Construction	(a) Are adequate measures considered to reduce impacts during construction (e.g., noise, vibrations, turbid water, dust, exhaust gases, and wastes)?	NC	Construction will be of small-scale with limited and temporary environmental impacts. If any adverse impacts may be predicted by further studies, required countermeasures/monitoring will be examined to avoid/mitigate the predicted impacts based on the related laws/regulations and ESAF
		(b) If construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts?	Y	It is considered that the construction activities will not affect the natural environment adversely in the sites, but adequate measures/monitoring will be adopted to mitigate impacts as required based on the related laws/regulations and ESAF.

Category	Environmental Item	Main Check Items	Yes: Y No: N Not Clear: NC	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
		(c) If construction activities adversely affect the social environment, are adequate measures considered to reduce impacts?	Y	Adverse social impacts of construction are expected to be eliminated through the exclusion/ selection criteria (e.g. resettlement, damage to cultural buildings etc.). However, if required, adequate measures such as detours, etc. will be taken to mitigate impacts to social environment based on ESAF.
	(2) Monitoring	(a) Does the proponent develop and implement monitoring program for the environmental items that are considered to have potential impacts?	Y	Monitoring should be executed, based on a monitoring system to be developed for the Project which includes the monitoring of environmental and social safeguards measures
		(b) What are the items, methods and frequencies of the monitoring program?	Y	The items, methods, and frequencies of the monitoring system are covered in the ESAF/TPPF
		(c) Does the proponent establish an adequate monitoring framework (organization, personnel, equipment, and adequate budget to sustain the monitoring framework)?	Y	ditto. (Also adequate provisions are made in the Project proposal to cover monitoring requirements)
		(d) Are any regulatory requirements pertaining to the monitoring report system identified, such as the format and frequency of reports from the proponent to the regulatory authorities?	N	The monitoring requirements will be entirely for the purposes of the Project and additional reporting to regulatory agencies will not be required because the Project activities will not require environmental clearance.
6 Note	Reference to Checklist of Other Sectors	(a) Where necessary, pertinent items described in the Agriculture checklist should also be checked.	NC	It is possible that The Project will include some agricultural activities as a part of livelihood improvement activities, but these will be small-scale and no significant impacts are predicted for the Project. However, details needed to be confirmed at further studies for the Project.
	Note on Using Environmental Checklist	(a) If necessary, the impacts to transboundary or global issues should be confirmed (e.g., the project includes factors that may cause problems, such as transboundary waste treatment, acid rain, destruction of the ozone layer, or global warming).	N	The Project will not have any significant global or transboundary impact. It will have a slight positive global impact due to forest restoration and carbon sequestration.

1) Regarding the term “Country's Standards” mentioned in the above table, in the event that environmental standards in the country where the project is located diverge significantly from international standards, appropriate environmental considerations are required to be made. In cases where local environmental regulations are yet to be established in some areas, considerations should be made based on comparisons with appropriate standards of other countries (including Japan's experience).

2) Environmental checklist provides general environmental items to be checked. It may be necessary to add or delete an item taking into account the characteristics of the project and the particular circumstances of the country and locality in which the project is located.

Annex 14.7.1 Environment and Social Assessment Framework (ESAF) and Vulnerable People's Planning Framework (VPPF) for Mizoram Biodiversity Conservation and Forest Enrichment Project

Environment and Social Assessment Framework
(ESAF) and Vulnerable People's Planning Framework
(VPPF)
For
Mizoram Biodiversity Conservation and Forest
Enrichment Project

1. Outline of the ESAF and VPPF

The Environmental and Social Assessment Framework (ESAF) for Mizoram Biodiversity Conservation and Forest Enrichment Project is the primary reference document outlining how environmental and social considerations will be addressed in project design and implementation.

The Vulnerable People's Planning Framework (VPPF) is to be applied as an additional framework that works together with the ESAF. The VPPF is specifically applied in situations where the project activities are expected to affect vulnerable people/groups such as poor family (Economically Weaker Section, EWS), households headed by women, elders, and differently affected person, differently abled people, and forest dwellers/forest dependents, while providing guidance for specific measures which may be required in addition to the provisions of the EIAF.

ESAF and VPPF refer to the other safeguards tools which are intended to concentrate on or elaborate specific aspects (i.e., micro plan, social assessment plan etc.).

1.1. Objective of the ESAF and VPPF

ESAF helps to establish a process for environmental and social safeguards which enables JICA and the executing agency (EA) of the Project better manage environmental and social risks of projects and to improve development outcomes. In the process, the framework also determines the institutional measures to be taken during the program implementation.

- The objectives of the ESAF and VPPF are summarized as:
- To provide a broad framework for the identification, management and monitoring of potential environmental and social risks arising under the Project;
- To enhance the Project's positive environmental and social impacts and avoid or otherwise mitigate associated negative impacts;
- To ensure that the rights and needs of forest dependents and their communities affected by or involved in the Project, are respected and met in the design and implementation of project interventions; and
- To ensure the protection of local ecosystems and environmental resources in the design and implementation of project interventions.

1.2. Structure of the ESAF and VPPF

The structure of the ESAF is as follows:

- Summary of the Project: It briefly describes the project framework and sub-projects.
- Environmental and Social Safeguard Policies of JICA: It briefly describes JICA's environmental and social safeguard policies, and clarifies how the Project shall be categorized and what types of measures will be required.
- Clarifying Definition and Selection of Safeguard Frameworks: It analyses and defines the key technical terms, and select appropriate safeguard frameworks to be applicable for the Project.
- Target Groups of ESAF and VPPF: It defines beneficiaries.
- Existing Environmental and Social Management Systems: Outline of the legal and policy context for environmental and social safeguard in India as well as in the Mizoram State.

- Environmental and Social Risks and Mitigation Measures: An assessment of potential positive and negative environmental and social aspects associated with the Project, as well as measures for the mitigation of adverse risks in project design and implementation.
- Framework and Procedures/ Detail Procedures of ESAF: It indicates the institutional framework and identifies procedures for management and mitigation of environmental and social risks of the project cycle. Social assessment to determine community needs and priorities, to obtain their views on the design and proposed implementation mechanisms of the Project is also covered here.
- Framework and Procedures/ Detail Procedures of Vulnerable People's Plan (VPP): It indicates the preparation of VPP and the detail procedures of VPP.
- Capacity Development Requirements for ESAF and VPPF Implementation: The capacity development and training requirements for effective implementation of the ESAF are identified.

2. Summary of the Project

2.1. Project Goal

Project goal and outputs of the Mizoram Biodiversity Conservation and Forest Enrichment Project are described in the following table.

Table 2-1 Project Goal and Objectives

Project Goal	To contribute to sustainable and climate resilient socio economic development in Mizoram
Project Purposes	To maintain ecological balance and respond to climate change by enriching the degraded forest cover, conservation biodiversity, improving livelihood and strengthening government institutions
Outputs	1. Forests and Water Conservation 2. Biodiversity Conservation and Management 3. Institutional Strengthening

Source: JICA Survey team

2.2. Project Phase

The proposed project has 8 years project period: 2024/2025 - 2031/2032. It has three stages, namely one-year preparatory phase, five and a half year implementation phase and one and a half year phasing out stage.

Table 2-2 Project Phases

Phase	Year	Project Activities
Preparatory phase	2024/2025 – 2025/2026	Setting up PMU and other required units, selection of Project Management Consultants (PMC), preparation of all manuals including Operational & Accounting procedures (Operation Manual providing detailed guidelines for project implementation), procurement and micro planning manuals, compendium of on-going government programs/schemes, selection of resource organizations/teams of NGOs, preparation of maps and datasets necessary to implement the Project, finalization of selection criteria, orientation of PMU and other required units, initiating required strengthening/development of infrastructure, site preparation, and selection of sites for raising nurseries for quality planting material and baseline surveys
Implementation phase	2025/2026 – 2030/2031	Preparing implementation plans in the first batch, including selection of remaining project village, and implementing project activities in subsequent batch of villages in phased

Phase	Year	Project Activities
		manner.
Phasing-out phase	2030/2031- 2031/2032	Ensuring sustainability of assets created under the Project, internalizing Project learning, experiences, procedures, and best practices evolved in the course of Project implementation, and transferring charges of all assets created under the project and documents.

Source: JICA Survey team

2.3. Project Component Structure

The proposed project has the following component structure.

Table 2-3 Project Component

	Project Component	Activities
1	Forests and Water Conservation	1.1 Landscape-based Planning 1.2 Forest Management/ Restoration inside the Reserved Forests 1.3 Forest Management in Community Forests 1.4 Forest Improvement for Water Conservation 1.5 Mitigation of Pressures on Forest Ecosystems through Livelihood Means
2	Biodiversity Conservation and Management	2.1 Biodiversity conservation inside PAs 2.2 Biodiversity conservation outside PAs 2.3 Improvement of Knowledge Infrastructure for Research, Awareness and Education 2.4 Incentivising Community Conservation Actions through Livelihood Means
3	Institutional Strengthen	3.1 Infrastructure Support 3.2 Mobility Support 3.3 Human Resource Support 3.4 DX (Digital Transformation) Support 3.5 Capacity Development 3.6 Monitoring and Evaluation (M&E) 3.7 Project Audits 3.8 Forest Research 3.9 Communication and Publicity

Source: JICA Survey team

3. Environmental and Social Safeguard Policies of JICA

3.1. JICA Principles for Environmental and Social Considerations

It is necessary to ensure that the project is implemented in compliance with JICA's Environmental and Social safeguard policies. JICA encourages JICA's partners, including host countries, borrowers, and project proponents, to implement the appropriate measures for environmental and social considerations when engaging in cooperation activities. At the same time, JICA provides support for and examinations of environmental and social considerations in accordance with the guidelines. The outline of the JICA Guideline for Environmental and Social Considerations, revised in January 2022, is summarized below.

I. General

- A wide range of impacts must be addressed.
- Environmental and social considerations must be implemented from an early stage until monitoring stage.
- Environmental and social considerations are reviewed in accordance with the mitigation hierarchy.
- Accountability and transparency is ensured when implementing cooperation projects.

- JICA ensures meaningful participation of stakeholders and incorporates stakeholder opinions into decision-making processes, in order to implement environmental and social considerations that are appropriate to the local situation and to reach a consensus
- JICA actively discloses information on environmental and social considerations in collaboration with project proponent, in order to ensure accountability and to promote participation of various stakeholders.
- JICA makes efforts to enhance the capacity of its organizations and operations, in order to sufficiently and effectively implement environmental and social considerations.
- JICA addresses requests for acceleration of its process towards project implementation, while undertaking environmental and social considerations.

II. Indigenous People

The following environmental and social considerations are required, according to the nature of the Project:

- Avoiding implementation of interventions that may have adverse impacts on indigenous peoples in the planning stage itself.
- Ensuring that there is minimum impact and all steps are taken to mitigate any adverse impact that may arise in case of an unavoidable situation.
- Taking all steps possible to uphold all the rights of the indigenous people pertaining land and resources in accordance with the respective international declarations and treaties like the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP).
- Implementing the process of free, prior and informed consultation for obtaining the consent of indigenous peoples for implementation of the project.
- Preparing an Indigenous Peoples Plan in order to achieve the above stated objectives. It is desirable that the IPP includes the elements laid out in the ESS 7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities (IP/SSAHUTLC) of the World Bank's environmental and social policies.

3.2. Key Process Elements

JICA's key process elements for environmental and social considerations is summarised below:

Project Categorisation:

Projects are categorized according to the scope/severity of the environmental and social impacts or risks, as follows:

Category	Description
Category A	Significant adverse impacts e.g. Large-scale development/ infrastructure Large-scale involuntary resettlement, projects in sensitive areas e.g. National Park
Category B	Generally site-specific impacts, few impacts are irreversible, normal mitigation measures can be designed
Category C	Minimal/little adverse impact
Category FI (Financial intermediary)	Substantial selection and appraisal of intervention after JICA approval of funding

Source: Compiled based on the JICA Guidelines for Environmental and Social Considerations 2022

At this stage, the Project is categorized as FI, but after finalizing the loan agreement and contents of

the sub-projects, each sub-project will be reviewed based on the result of the impact assessment and categorized as A, B, or C based on the result of the review.

If some of sub-projects are categorized as B, it is necessary for PMU to prepare and implement the Environment Management Plan (EMP) and Environment Monitoring Plan (EMoP), according to the JICA Guideline. In addition, based on the result of the monitoring, a report of environment and social considerations has to be prepared and submitted to JICA, separately from the project management report.

Impacts Assessment

In order to assess the impacts a wide range of environmental and social considerations are taken into account with view towards both enhancing positive benefits and avoiding/ mitigating negative impacts.

Type of Impact	Description
Environmental Impact	Natural Environment - air, water, land Systems - water usage, climate change, ecosystems, waste management Scale – local, regional, boundary/ global scale impacts
Social Impact	On community/people's - lands, economies, livelihoods, employment, natural resources; – resettlement, local conflicts – gender, vulnerable groups including differently abled groups, indigenous peoples, children; – social institutions, health, cultural heritage, existing social infrastructures and services, equality of benefits and losses, local conflicts, working conditions, etc.

Source: JICA Survey team

Information Disclosure and Consultation:

JICA requests that project proponents disclose information on the environmental and social impact of the Project both to JICA as well as local stakeholders well in advance of implementation. Frameworks for consultation and information disclosure need to be developed and agreed.

3.3. Compatibility with International Standards

The JICA Guidelines for Environmental and Social Considerations state that JICA's projects must not deviate significantly from the World Bank's Safeguard Policies, and that JICA should refer to the internationally recognized standards and good practices, including those of the international financial organizations, when appropriate.

JICA refers to international policies, procedures and standards such as those of the World Bank in part so as to avoid further proliferation of safeguards approaches and standards. Of relevance to the Project, although JICA has special concerns related to Indigenous Peoples, it does not have a detailed policy with explicit procedures for situations where such peoples are affected by projects and refers to the World Bank ESS7: IP/SSAHUTLC, the contents and format of the safeguards framework elaborated for the Project follows that indicated in the World Bank ESS7, as requested by JICA for the preparation of the Project.

3.4. Project Categorisation by the JICA Guidelines

(1) Categorization of the Project:

The Project is currently categorized as 'FI' in accordance with the JICA Guidelines (2022). The 'FI' classification remains valid for the following reasons

- JICA's funding of projects will be provided to a financial intermediary or executing agency.
- The selection and appraisal of the sub-projects will be substantially undertaken by the executing agency only after JICA's approval of the funding, so that the sub-projects cannot be specified prior to JICA's approval of funding.
- Sub-projects will be selected in participatory mode by communities and as such cannot be specifically defined at this stage.
- Sub-projects with significant adverse environmental or social impacts requiring environmental clearance will be eliminated through screening procedures. However, certain potential environmental and social impacts are perceived, and there is the potential that the Project may damage protected areas and involve forest dependents (Scheduled Tribes (ST), Scheduled Castes (SC) and other forest dependents).

The Project is overall expected to have a mainly positive impact on the environment given that its primary objective is to enhance biodiversity, increase forest coverage and to improve livelihood of forest dependent people in the project areas. Although it is not possible to precisely state exactly what sub-projects will be implemented in which specific location and scale, the Project will exclude "Category A" sub-projects with a significant environmental impacts or risks.

At the time of selection, finalisation and approval of sub-projects, respective sub-projects to be categorised as either "Category B" or "Category C" according to the scope/severity of the environmental and social impacts or risks.

(2) Definition and outline of Sub-Project:

In this document, the word of sub-project is used to represent a bunch of the activities of the Project pursuant to the JICA Guidelines. Screening and categorisation shall be carried out for each sub-project and the result shall be submitted to JICA. The list of the sub-projects are shown as below;

Sub-Projects

1. Forests and Water Conservation
(1) Landscape-based Planning
• Conduct ground surveys, collect satellite images, prepare for maps, • Conduct site identification and selections • Prepare for Landscape-based Planning
(2) Forest Management/ Restoration inside the Reserved Forests
• Establish new nurseries at selected sites • Update existing nurseries • Produce quality planting materials (QPMs) of local species including Rare, Endangered and Threatened (RET) species • Plant indigenous tree species to improve the quality of Degraded Forests through ANR and AR • Conduct site survey and soil and moisture conservation measures will be implemented at the planting sites
(3) Forest Management in Community Forests
• Transfer QPMs to village based nurseries at selected villages • Conduct the selection of sites and pieces through participation of villagers • Plant indigenous tree species and NTFP species through ANR and AR by VFDC through FMU • Conduct site survey and soil & moisture conservation measures will be implemented at the planting sites • Prepare and implement community based fire management plan
(4) Forest Improvement for Water Conservation
• Conduct baseline surveys on river and springs and prepare for site specific plans • Produce QPMs (procured by FMU and implemented by VFDC) • Plant seedlings (enrichment planting in GAP) by VFDC

Watershed treatment and springshed restoration
(5) Mitigation of Pressures on Forest Ecosystems through Livelihood Means
- Organize community mobilizations by DMU/FMU - Prepare for village level plan, including Entry Point Activities (EPA) and Livelihood Activities - Conduct capacity development of VFDC - Implement Entry Point Activity according to the guideline (to be prepared by PMU) - Establish village level nursery - Implement Livelihood Activities in cooperation with other departments concerned, by SHGs in the target villages or members of VFDC (SHGs are organized under the project of Mizoram Rural Livelihood Mission, MzRLM)
2. Biodiversity Conservation and Management
(1) Biodiversity conservation inside PAs
- Create and maintain protection measures (construct/modify watching towers, Anti Poaching Camps, patrolling road, as well as set up wireless network) at all the 1 - Improve habitats by planting fruit trees in degraded forest and create grassland patches in some of the forest blanks
(2) Biodiversity conservation outside PAs
1) Protection and Management of Biodiversity Significant Areas (BSA) - Select project sites from the list of Biodiversity Significant Areas (BSA), according to the selection criteria, to be prepared by PMU - Notify the project area as community management area by VFDC/VC - Prepare for site-specific conservation and management plan (CMP) by an expert, along with GIS data set and fauna-flora inventory (CMP must be approved by VC and PMU) - Conduct awareness and educational programs 2) Incentives to communities for sustainable engagement in conservation and management <u>Eco-Tourism</u> - Select project site for Eco-tourism from the candidate sites and establish Eco-Tourism Development Committee (ETDC) under VFDC - Prepare for the framework, either Community model run by VFDC/ETDC or Public-People-Private partnership model - Prepare for site development plan and construct infrastructure and amenities <u>Eco-Development</u> refer to Activity (4) Incentivising Community Conservation Actions through Livelihood Mean 3) Capacity enhancement for wildlife conservation - Construct the rescue and rehabilitation centre in Aizawl zoo - Conduct Training and exposure programs on Wildlife Conservation and Management - Prepare and implement Wildlife and Biodiversity Communication Strategy
(3) Improvement of Knowledge Infrastructure for Research, Awareness and Education
1) Improvement of knowledge for biodiversity conservation - Create and manage the inventories of fauna and flora (plants, mammals and birds) in 14 hotspots (9 Protected Areas and 5 BSAs (contracted out to a outside organization) - Organize a CAMP workshops to update the list of RET species - Conduct a research on biodiversity conservation and ecosystem management 2) Strengthen Digital Infrastructure for Biodiversity Information - Create Mizoram State Biodiversity Information System (MBIS) 3) Improvement of Biodiversity Knowledge Infrastructure - Develop Biodiversity Knowledge Parks with Botanical garden complex and animal complex such as butterfly park - Construct and manage an interpretation center at Aizawl zoo - Develop Access Benefit Sharing (ABS) Mechanism for some species - Prepare Biodiversity Atlas for the State
(4) Incentivising Community Conservation Actions through Livelihood Means
- Organize community mobilizations by DMU/FMU - Prepare for village level plan, including Entry Point Activities (EPA) and Livelihood Activities - Conduct capacity development of VFDC - Implement Entry Point Activity according to the guideline (to be prepared by PMU) - Establish village level nursery - Implement Livelihood Activities in cooperation with other departments concerned, by SHGs in the target

villages or members of VFDC (SHGs are organized under the project of Mizoram Rural Livelihood Mission, MzRLM)
3. Institutional Strengthening
(1) Infrastructure Support Construct new office buildings and quarters/ residences, extend/renovate existing office buildings, procure office equipment
(2) Mobility Support Procure vehicles for PMU/DMU/FMU/ADC
(3) Human Resource Support
(4) DX (Digital Transformation) Support - Procure IT Computer Hardware and Software and field survey tools - Upgrade GIS Lab (MFD Hq) - Develop Web enabled Forest Management DSS and Digital GIS database - Strengthen Forest Monitoring
(5) Capacity Development
(6) Monitoring and Evaluation (M&E)
(7) Project Audits
(8) Forest Research
(9) Communication and Publicity

Source: JICA Survey team

3.5. Requirements by the JICA Guidelines

As per the JICA guidelines 2022, JICA will examine the following conditions in relations to the project implementation. The financial intermediary or the executing agency (Mizoram Forest Department, MFD) will be required to comply with the requirements of JICA as stated below.

- Whether the related financial intermediary or executing agency will ensure appropriate environmental and social considerations as stated in the guidelines.
- Whether institutional capacity in order to confirm environmental and social considerations of the financial intermediary or executing agency is sufficient, or if requires adequate measures be taken to strengthen the capacity.
- Whether the financial intermediary or executing agency will examine the potential positive and negative environmental impacts of sub-projects and takes the necessary measures to avoid, minimize, mitigate, or compensate for potential negative impacts, as well as measures to promote positive impacts if any such measures are available.
- JICA will disclose the results of environmental reviews on its website after concluding agreement documents.
- Over a certain period of time, JICA will confirm with the project proponents etc. the results of monitoring the items that have significant environmental impacts. This will be done in order to confirm that the project proponents etc. are undertaking environmental and social considerations for projects that fall under Categories A, B, and FI.

4. Clarifying Definitions and Selection of Safeguards

4.1. Defining Environmental and Social Vulnerabilities

(1) Social Vulnerability:

Social vulnerability is the status of a group of people who are typically socially excluded, frequently disadvantaged by discriminatory practices and are limited in their capacity to access benefit of development or opportunities offered in development programs. This often happens because of their

social characteristics such as culture, identity, economic systems and social institutions. They are often victims of environmental vulnerability too since their land-based subsistence and livelihood may be at risk due to change in land use practices, degradation of the environment, etc.

(2) Environmental Vulnerability:

Environmental vulnerability is a condition when ecosystem integrity is threatened by anthropogenic and/or natural hazards. This could happen over spatial or temporal scales of ecosystems. Factors that impact the environment negatively and thereby reduce the resilience of the environment to sustain varies spatially. Vulnerability may increase with the intensity and frequency of human interventions and/or natural hazards.

4.2. Selection of an Appropriate Frameworks for Environmental and Social Considerations

The Project will not involve any sub-projects with significant adverse environmental impacts, nor will involve any loss of land, resettlement or livelihoods, it is proposed to ensure maximum positive and no negative environmental impact, and to guarantee social safeguard measures. Considering these points, for the purposes of developing a safeguards framework suitable to the Project and the local context, ESAF and VPPF are found to be appropriate. These frameworks are applicable to a broad range of socially marginalized and vulnerable community groups. The ESAF explains for a broad environmental and social framework, while the VPPF is specifically applicable to the vulnerable people or groups found within and surrounding the Project area.

Table 4-1 Required Framework for the Project

Name of Framework	Brief Explanation
1. Environmental and Social Assessment Framework (ESAF)	To meet the requirements of the JICA Guidelines, a broad ESAF is prepared to ensure that environmental/ social issues are considered and that various socially disadvantaged and forest dependent groups are recognized and consulted; their needs met and their rights recognized.
2. Vulnerable People's Planning Framework (VPPF)	To meet the requirements of the JICA Guidelines and in reference to ESS7 of the World Bank on Indigenous Peoples, VPPF needs to be additionally prepared to be applied where the Project affects or interacts with such groups identified as vulnerable people/groups, who are mostly indigenous people, for the Project.

Source: JICA Survey team

5. Target Group of ESAF and VPPF

The ESAF and VPPF will be applicable to all ST, SC and forest dependents within the Project areas and to all the project components identified within the Project area. The Project must provide its benefits equally to all the affected persons. Followings are the key groups that the ESAF and VPPF exercise particular cautions, and most of them belong to ST.

- Poor People/ Households, EWS
- Women Headed Households
- Landless
- Other Vulnerable People including differently abled person/ Households
- Forest Dependents and Forest Dwellers

The table below indicates indicative beneficiary selection criteria of target groups of the ESAF to address environmental and social considerations.

Table 5-1 Indicative Beneficiary Selection Criteria of ESAF Target Groups

Activity	Proposed Beneficiary Selection Criteria	Implementing Body
Forests and Water Conservation Biodiversity Conservation and Management	Selection criteria for areas (divisions/ranges) • Reducing anthropogenic pressure to the Forests ➤ Jhum area ➤ high concentration of Jhumia and Below Poverty Line (BPL)/ Priority Households (PHH) families • Forest and water ➤ area of critical watershed ➤ area of severer ground water depletion) • Other elements of sustainable forest management including biodiversity conservation ➤ area of presence of RET species ➤ area reporting highest number of smuggling and pouching of wild animals Selection criteria for villages • Agree to take part in the project • Agree to follow the project implementation modality	VFDC/VC VFDC/ETDC

Source: JICA Survey team

6. Existing Environmental and Social Management Systems

6.1. Legal and Policy Framework for Environmental and Social Considerations in India

Overall, environmental and social safeguards policies and related implementing legislation in India do not deviate from the requirements of JICA Guidelines. The following tables outline key legislation and policy in India and Mizoram and relevant to the Project.

Table 6-1 Legal and Policy Framework in India

Law/ Policy	Description/ Outline	Responsible Ministry/ Agency
A. Environment Protection and EIA		
Environment (Protection) Act, 1986 and Amendment 1991	The Environment Protection Act is the basic environmental law of India. It regulates the power of the central government to take measures to protect and improve the environment through such means as planning, the establishment of environmental quality standards, the examination of manufacturing processes, the collection and dissemination of information, and the preparation of manuals.	MoEF&CC Central and/or State Pollution Control Boards
Environment (Protection) Rules 1986 and Amendments	The Environmental Protection Rules provide standards for emission or discharge of environmental pollutants and makes it possible for the central government to prohibit or restrict the establishment of industries or the carrying out of specific processes or operations based on factors specified in Rule 5.	MoEF&CC, Central and/or State Pollution Control Boards
EIA Notification 2006 and Amendments 2007, 2008, 2009, 2011, 2012, and (2020)	The Environment Impact Assessment Notification 1994 defines procedures such as screening, scoping, impact assessment, mitigation measures, and public consultation, to obtain prior EC for various projects that have a substantial impact on the environment. MoEF&CC published the draft EIA Notification 2020.	MoEF&CC,

Law/ Policy	Description/ Outline	Responsible Ministry/ Agency
The National Green Tribunal Act 2010	The National Green Tribunal Act provides for the establishment of a tribunal to exercise the jurisdiction, powers, and authority conferred on it by or under this act. The National Green Tribunal shall have jurisdiction over all civil cases in which a substantial question relating to the environment is involved.	National Green Tribunal (NGT; under MoEF&CC)
B. Forest & Wildlife		
Indian Forest Act 1927	This Act was enacted to preserve forest cover and significant wildlife. It defines procedure for declaring Reserved Forest, Protected Forest and Village Forest. Further, describes power to impose duty on timber and other forest-produce and to make rules to regulate transit of forest-produce, and collection of drift and stranded timber. The Act also has provision to impose penalties and procedures thereof.	MoEF&CC State level Environment and Forest departments Implementing Agency
The National Forest Policy 1988	The policy principally aims at ensuring environmental stability and maintenance of ecological balance including atmospheric equilibrium which are vital for sustenance of all life forms, human, animal and plant. The derivation of direct economic benefit must be subordinate to this principal aim. The principal aim is supported by several objectives: to increase the forest and tree cover (a minimum of 1/3 of the total land area of the country), to maintain and restore ecological balance, to preserve natural forest with variety of flora and fauna, to conserve soil and water, to check the extension of sand dunes, and to increase the productivity and efficiency of the natural use.	MoEF&CC, State level Environment and Forest departments
Forest Conservation Act 1980 and Amendment 1988	The Forest Conservation Act was adopted in 1980 to protect and conserve forests. It strictly restricts and regulates the use of forest land for non forest purposes without the prior approval of Central Government. For this purpose the Act lays down the pre-requisites for the diversion of forest land for non forest purpose.	MoEF&CC, State level Environment and Forest departments
Forest Conservation Rule 2003	The rule is set up following by Section 4 of the Forest Conservation Ac. 1980 to stipulates the procedure for forest clearance etc.	MoEF&CC, State level Environment and Forest departments
Wildlife (Protection) Act 1972 and Amendment 1993, 2003, 2006	This Act provides for protection of wild animals, birds and plants, prohibition on hunting any wild animal specified in Schedule I, II, III and IV, prohibition on picking, uprooting, of specified plants, constitution of Sanctuaries, National Parks and Closed Areas, prohibition on trade or commerce of wild animals, in Trophies, Animal Articles derived from Certain Animals. The Act also empowers certain officials to investigate and impose penalties.	MoEF&CC, State Forest Department (or Wildlife department)
Biological Diversity Act 2002	This is umbrella legislation aimed at conservation of biological resources and associated knowledge as well as facilitating access to them in a sustainable manner and through a just process.	National Biodiversity Authority, State bio-diversity board
C. Coastal and Wetland Management		
Wetlands (Conservation and Management) Rules, 2017 and its guideline, 2020	The rules were notified under the provisions of the Environment (Protection) Act, 1986 as regulatory framework for conservation and management of wetlands in India. The guideline supports the State/UT to Preparing a list of wetlands, to Identify wetlands for notification, to develop a list of activities to be regulated and permitted, and to develop Integrated Management Plan	MoEF&CC, State Wetland Authority

Law/ Policy	Description/ Outline	Responsible Ministry/ Agency
Coastal Regulation Zone Notification 2011 and 2019	The CRZ Notification was issued by the Ministry of Environment and Forests, Government of India in 1991 under the Environment Protection Act, 1986, and amended in 2011 and 2019, in order to regulate activities in coastal areas of India, protect livelihood of communities in the coastal, and conserve ecosystem. It also shows the procedures of the prior CRZ Clearance.	MoEF&CC, State Coastal Zone Management Authority
D. Water, Air and Pollution		
Water (Prevention and Control of Pollution) Act 1974 and Amendment 1988	This Act aims at prevention and control of water pollution and the maintaining or restoring of wholesomeness of water. The Act resulted in the establishment of the Central and State Level Pollution Control Boards whose responsibilities include managing water quality and effluent standards, as well as monitoring water quality, prosecuting offenders and issuing licenses for construction and operation of certain facilities.	Central and/or State Pollution Control Boards
Air (Prevention and Control of Pollution) Act 1981	This Act provides for prevention, control and reduction of air pollution. The Act further provides for establishment of Boards, and assigning them with powers and functions towards prevention, control and reduction of air pollution.	Central and/or State Pollution Control Boards
Rules and Notifications framed under the Environment (Protection) Act 1986	The Hazardous Waste (Management & Handling) Rules, 1989 amended in 2000. The Manufacture, Use, Import, Export, Storage of Hazardous Microorganism, Genetically Engineered Organisms or Cells Rules, 1989. The Manufacture, Storage and Import of Hazardous Chemical Rules, 1989, amended in 2000. The Environment Audit Notification, 1993 The Coastal Regulation Zone Notification, 1991 The Chemical Accidents (Emergency Planning, Preparedness & Response) Rules, 1996 The Biomedical Waste (Management & Handling) Rules, 1998 The Municipal Solid Wastes (Management & Handling) Rules, 2000 Recycled Plastics Manufactures and Usage Rules, 1998 amended in 1999 • Notification on Flyash (14th September 1999) • The Noise Pollution (Regulation and Control Rules, 2000 • Ozone Depleting Substance (Regulation) Rules, 2000 • Batteries (Management & Handling) Rules, 2001	Central and/or State Pollution Control Boards
E. Scheduled Tribe and Scheduled Caste		
The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006	The Act, known as Forests Rights Act (FRA), recognizes and vests the forest rights and occupation in forest land in forest dwelling ST and other traditional forest dwellers who have been residing in such forests for generations but whose rights could not be recorded. The Act also recognizes the responsibilities and authority for sustainable use, conservation of biodiversity and maintenance of ecological balance and thereby strengthening the conservation regime of the forests while ensuring livelihood and food security of the forest dwellings ST and other traditional forest dwellers. The Act defines 13 types of forest rights, and outlines the procedures for vesting such rights Under the Act, Gram Sabha is the primary institution to decide on the forest rights claims.	Ministry of Tribal Affairs State Government
The Scheduled Tribes and Other Traditional Forest	The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Rules, 2008 were notified in order to implement the provisions of the FRA, and defines the	Ministry of Tribal Affairs

Law/ Policy	Description/ Outline	Responsible Ministry/ Agency
Dwellers (Recognition of Forest Rights) Rules, 2008, and 2012	procedure for vesting Forest Rights and roles and functions of key institutions such as Gram Sabha, and state, district, and sub-district level of committees. The Rules were amended in 2012, in order to ensure effective implementation of the Act and	State Government
Social Audit Policy	Social audits were made statutory in a 2005 Rural Employment Act and government also issued the Social Audit Rules in 2011 under the MGNREGA Act. The Social audits are normally supervised by autonomous bodies consisting of government and non-government representatives. Gram Sabhas were empowered to conduct Social Audits, after the 73rd Amendment of the Constitution, in addition to their other functions. No central policy or regulation exists that makes accounting audit and social audit mandatory.	Ministry of Rural Development

Source: JICA Survey team

Table 6-2 Legal and Policy Framework in Mizoram

Law/ Policy	Description/ Outline	Responsible Ministry/ Agency
A. Environment Protection and EIA		
Notification No. B.11012/59/88-FST	The State Government will adhere to the National Laws, Rules, and Notifications pertaining to environment protection and EIA.	Mizoram State Pollution Control Board
B. Forest, Wildlife and Information Disclosure		
Mizoram Forest Act, 1995	The act defines Forest produce and identified reserved trees. It gives guidelines for disposal of forest produce and power handling regarding Jhumming in Government Forest.	Mizoram Environment, Forests & Climate Change Department
Mizoram Wildlife (Protection) Rules, 1990	The rules highlight on sections such as entry to a Sanctuary or National park, general conditions governing the issue and cancellation of permit as such.	Mizoram State Biodiversity Board
The Mizoram Scale of Forest Produce Mahal Rules, 2002	The act encompasses cases regarding the sell of forest produce such as sale by tender system, sale by auction system and their manners of conducting sale.	Mizoram Environment, Forests & Climate Change Department
The Guidelines for Felling of Trees from Non-Forest Areas	This guideline gave issues regarding felling of trees which require special permission, and listed tree species not requiring felling permission. It orders plantation trees to be registered as well.	Mizoram Environment, Forests & Climate Change Department
The Mizoram (Prevention and control of fire in the Village Ram) Rules, 2001	The act gave guidelines for prevention of fire in jungle and jhum area, the power of the village council, powers to supervise and coordinate and discussed on offences and penalties.	Village councils
The Lushai Hills District (Jhumming) Regulation, 1954	The act gave authority to the village council regarding the distribution of jhum land within a village, special privileges to select jhum, mode of distribution of jhums and considers situations in case for prevention of erosion.	Village councils
C. Water and Air		
Mizoram Water (Prevention & Control of Pollution) Rules, 2002, 2009, 2010 Mizoram Air (Prevention & Control of Pollution) Rules, 2002, 2009, 2010	The two rules show how MPCB is organized and managed and specify the roles and responsibilities of president, chairman and board members, and so on in order to implement the Water and Air (Prevention & Control of Pollution) Acts in Mizoram	Mizoram State Pollution Control Board

Source: JICA Survey team

6.2. Existing framework of the environmental management and social safeguard

The Environmental Impact Assessment (EIA) in India is regarded as a major procedure in the review

and clearance of new or modified projects by the National environment policy 2006, formulated under the Environment (Protection) Act 1986, along with other clearances such as Forest Clearance.

In 2006, the EIA Notification 2006 was issued to set out the procedures for EIA. EIA Notification 2006 stipulates environmental clearance (EC), review organization, categorization, procedures for screening and scoping, EC application method, effective period of EC, monitoring after obtaining EC, transfer of EC, and various forms.

The current framework of the environmental and social safeguards systems in India includes Prior Forest Clearance (FC), Prior Wildlife Clearance (WC), and Prior Coastal Regulation Zone Clearance (CRZC), as well as EC.

(1) Prior Environmental Clearance

Under EIA Notification 2006, amended in 2009, all projects or activities included as Category A shall require prior environmental clearance from the MOEFCC on the recommendations of an Expert Appraisal Committee (EAC), to be constituted by the central government for the purposes of notification. Besides these, all projects or activities included as Category B in the Schedule will require prior environmental clearance from the State Environment Impact Assessment Authority (SEIAA). The SEIAA shall base its decision on the recommendations of a state or union territory (hereinafter referred to as “UT”) level Expert Appraisal Committee (SEAC), to be constituted for in the notification. Category B projects are further divided into Category B1 (projects that require submitting an EIA report) and B2 (project activities which do not require an EIA report). In the absence of a duly-constituted SEIAA or SEAC, a Category B project shall be treated as a Category A project.

The following table shows an example of a list of projects or activities which require prior EC. Under the draft EIA Notification, 2020, the MOEFCC proposes a recategorisation of some projects such as river-valley hydroelectric projects, from A to B1 or B2.

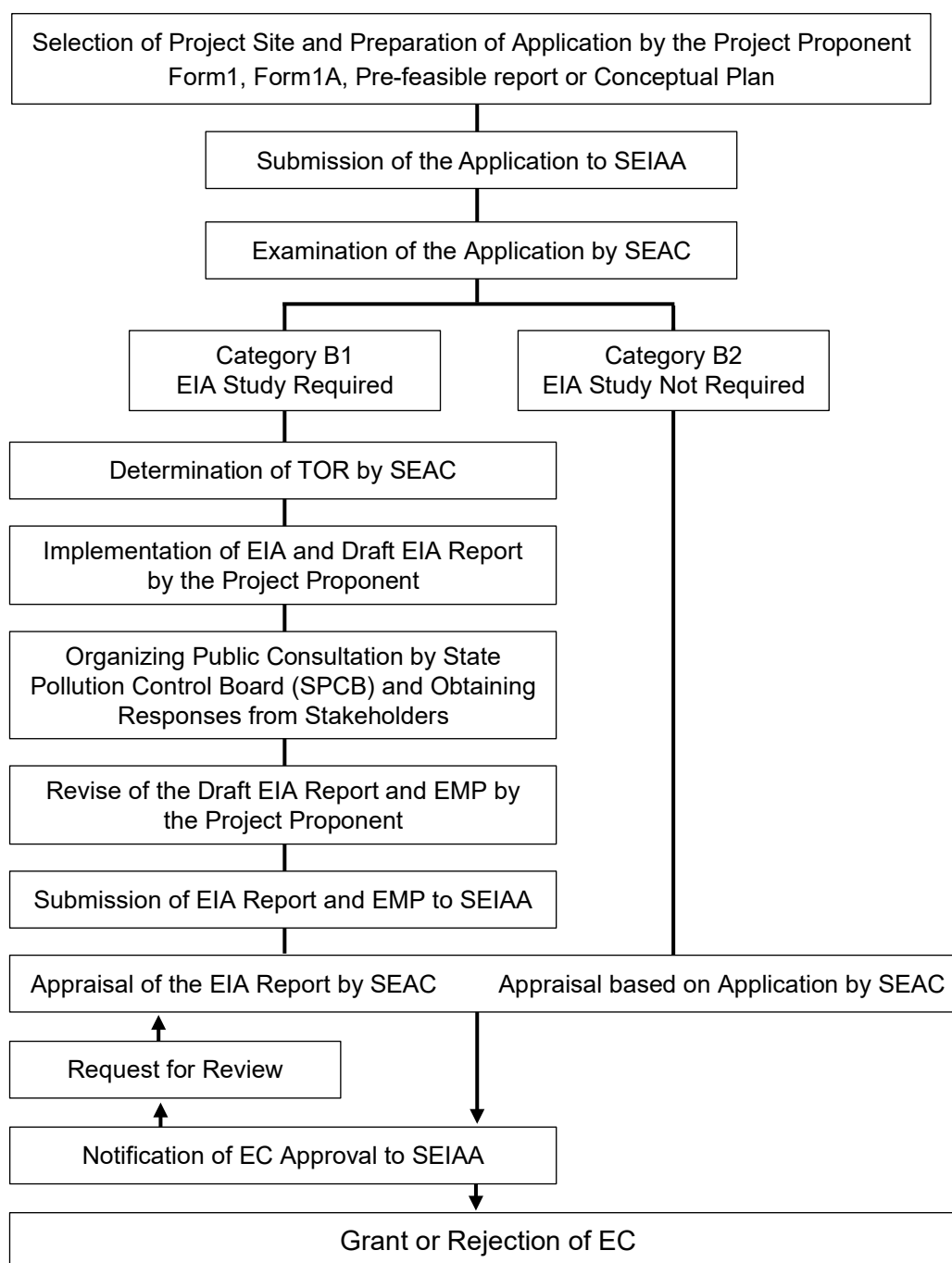
Table 6-3 Projects or Activities Requiring Prior Environmental Clearance

Project	Category with Threshold Limits		Conditions
	Category A	Category B	
1. Mining, extraction of natural resources, and power generation			
1(c) River valley projects	(i) >50mw Hydroelectric power generation; (ii) >10,000ha of culturable command area	(i) <50mw > 25mw hydroelectric power generation; (ii) < 10,000 ha of culturable command area	General Conditions shall apply
8.Building/Construction projects/Area Development projects and townships			
8(a) Building and construction projects		>20,000 sq. m and <150,000 sq. m of built-up area#	# Built-up area for covered construction; in cases of facilities open to the sky, it will be the activity area
8(b) Townships and Area Development projects		Covering an area > 50 ha and or built-up area > 150,000 sq. m #	# All projects under item 8(b) shall be appraised as Category B1
General Condition: Any project or activity specified as Category B will be treated as Category A, if it is located in whole or in part within 10 km from the boundary of the following: (i) Protected Area notified under the Wildlife (Protection) Act, 1972; (ii) Critically polluted areas as notified by the Central Pollution Control Board from time to time; (iii) Notified eco-sensitive areas; and (iv) Inter-state boundaries and international boundaries.			

Source: EIA Notification, 2006

The Project may construct soil and moisture conservation facilities such as check dams, however,

these interventions will not be listed as projects which require EC under the EIA Notification. If any buildings as a part of the interventions proposed in the project has an area greater than 20,000 m² prior EC shall be required. But the administration buildings are supposed to be much smaller than the 20,000 m². For the reference, the detailed stages prior to environmental clearance for Category B projects is shown below.



Source: JICA

Figure 6-1 Flow of Obtaining Environmental Clearance for Category Project B

MoEFCC proposed a draft Environmental Impact Assessment Notification, 2020, in March, 2020. The Draft EIA Notification is intended to promote transparency and streamline compliance, as it integrates numerous notification, amendments, office orders, circulars, court and tribunal directions since the last EIA notification in 2006.

The key changes are summarized below.

- Projects in certain sectors re-categorized from A to B1 or B2, such as river valley hydro-electric projects.
- About 40 industries will be classified under category B2, and therefore be exempt from the requirement of EIA study and public consultation process.
- EIA report is not be required in case of modernisation of projects where the intended increase in production capacity is up to 25% and public consultation exempt up to 50% increase in production capacity.
- Construction project up to 150,000 m² are exempt from the assessment. EC may be granted, after scrutiny by SEAC alone.
- Notice period for public hearing is reduced from 30 days to 20 days and the process to be completed in 40 days, shorten from 45 days.

(2) Prior Forest Clearance

Under the Forest Conservation Act, 1980, forest clearance from the statutory authority will be required if the forest area is to be used for non-forest purposes. For this purpose, an application is submitted to the relevant state government, which in turn recommends the case to the MOEFCC.

The Forest Conservation Act stipulates the definition of non-forest purpose as:
‘the breaking up or clearing of any forest land or portion thereof for —

(a) the cultivation of tea, coffee, spices, rubber, palms, oil-bearing plants, horticultural crops or medicinal plants;

(b) any purpose other than re-forestation;

but does not include any work relating or ancillary to conservation, development and forest and management of forests and wildlife, namely, the establishment of check-posts, fire lines, wireless communications and construction of fencing, bridges and culverts, dams, waterholes, trench marks, boundary marks, pipelines or other like purposes.’

The Project shall construct rain water harvesting structure, loose boulder check wall, and buildings, however, these interventions will be carried out for the forest conservation and management under the MFD. Thus, forest clearance may not be required. For the reference purpose the process of forest clearance on a parivesh site is shown below.

- The proposal (Form A, Form B and Form C), explaining the details of the project, UA and the applicant, land required for the project with a map, displacement people if any, status of EC, and so on, is submitted by the UA, and the Nodal officer (State Forest Department) examines it for its completeness (Part I). If the all the necessary documents are included, an acknowledgement letter along with the unique proposal number will be sent by the system.
- The proposal is forwarded online from the Nodal Officer to District Forest Office (DFO) for review. After filling up the Part II of Form A, Form B and Form C, the proposal, along with the site inspection report and recommendations are uploaded and forwarded to concerned Circle Officer (CF/CCF).
- After reviewing and filling up the Part III of Form A, Form B and Form C, the proposal along with the site inspection report and recommendations is uploaded and automatically backed to the Nodal Officer.

- After receiving the proposal online from Nodal Officer, the concerned State Secretary can view the proposal (Form-A/Form-B/Form-C submitted by U.A.) and recommendations of DFO, Circle and Nodal Officer and then may upload his/her Recommendations.
- The uploaded proposal by State Secretary is forwarded to either Regional Office (RO) or Head Office (HO) of MoEFCC, depending upon the category, area and Shape of forest land proposed to be diverted.
 - The case of less than 5 ha forest area except Mining, Hydel, Encroachments
Diversion of Forest Land is decided at RO without State Advisory Group (SAG) / Regional Empowered Committee (REC) meeting
 - The case of land up to 5 ha (Mining and regularization of encroachments only) and all other projects related with diversion of forest land from 5 to 40 ha
The proposal along with recommendations of SAG/REC is forwarded from RO to RO (HQ), Delhi, for approval of Competent Authority of MoEFCC.
After receiving the proposal and all the recommendations, HO can conduct Forest Advisory Committee (FAC) meeting.
Recommendations of FAC along with decision by the Competent Authority and agenda and minutes of the meetings are uploaded on portal.
 - The case of diversion of forest land for more than 40 ha. excluding linear projects
The proposal along with all the recommendations is directly forwarded to HO, Delhi, for the processing at Head Office (MoEFCC, Delhi).
- After the submission by the UA, the proposal is forwarded from the Nodal Officer to District Collector (DC) as well as District Forest Office. After viewing the proposal, DC has to upload FRA document.

(3) Prior Wildlife Clearance

According to the Wildlife (Protection) Act, 1972, any diversion of land or produce including water, from PA, such as wildlife sanctuaries and national parks, needs the recommendation of the State Board for Wildlife. No construction of commercial tourist lodges, hotels, zoos, and safari parks can be undertaken inside PA except with prior approval of the Standing Committee of NBWL.

If projects require Environmental Clearance and are located within the eco-sensitive zone around the PA or within a distance of 10 km from the boundaries of the PA, the User Agency (UA) or project proponent is required to obtain recommendations of the Standing Committee of the National Board for Wildlife (NBWL).

The procedure for Wildlife Clearance on a parivesh site is shown below.

- The proposal, explaining the details of the project, UA and the applicant, land required for the project with a map, displacement people if any, status of EC, and so on, submitted by the UA will be forwarded to the concerned District Forest Office (DFO)/Wild Life Warden
- The DFO scrutinizes the proposal and sends an acceptance letter to the UA, if all relevant documents are uploaded properly by the UA. Proposal details are forwarded automatically to all the DFOs involved in the proposal for their necessary action. (Five days.)
- After review, the DFO uploads part-II of Form-A on the portal, along with his/her recommendation and Site Inspection Report. The proposal details are forwarded automatically to concerned Chief Wildlife Warden (CWLW) for the necessary action. (30 days).

- After review, the CWLW uploads his/her recommendation and Site Inspection Report (if the site inspection has been done) and the proposal will be forwarded to the state government (SG) level. (20 days.)
- After reviewing the recommendations of the DFO and CWLW, the SG level user uploads recommendation of the State Board of Wildlife (SBWL) on the portal along with the SG report/recommendation. The proposal is forwarded to the Head Office (Wildlife), New Delhi.
- After reviewing the proposal from state level user, the MOEFCC (head office) level user processes the received documents for the approval of the 'Competent Authority' of the MOEFCC.
- After taking the approval of the Competent Authority, the MOEFCC (head office) level user has to update the status of the proposal and upload the recommendation letter of the NBWL on the portal

6.3. Environmental and Social Management System of the Executing/Related Agencies

MFD, as the executing agency (EA), is responsible for entire project implementation, while the VFDCs control and support project activities in their lands from community perspective.

(1) Mizoram Forest Department

MFD is responsible for entire project implementation including social environmental and social consideration issues, but has never experienced projects which require any prior clearances, therefore does not have a comprehensive environmental and social management system (ESMS) in place for the screening, management and monitoring of environmental and social risks of its standard operations and programmes. It is necessary to provide training of environmental management and monitoring for MFD officers during the preparation period.

On the other hand, at present VCs are involved in regular monitoring of various state government activities, and it is possible to involve VFDC and communities in the project management systems, including environmental and social monitoring, under the instructions of MFD.

(2) Mizoram biodiversity board

This board is constituted under Section 22 of the Biological Diversity Act, 2002 (Central Act 18 of 2003). The board ensures effective implementation of Biological Diversity Act, 2002 and the Biological Diversity Rules, 2004, for conservation of biodiversity, sustainable use of its components and fair and equitable sharing of benefits arising out of utilization of genetic resources.

The Functions of the Board are summarized below.

- advise the State Government, subject to any guidelines issued by the Central Government, on matters relating to the conservation of biodiversity, sustainable use of its components and equitable sharing of the benefits arising out of the utilisation of biological resources;
- regulate by granting of approvals or otherwise requests for commercial utilisation or bio-survey and bio-utilisation of any biological resource by Indians;
- perform such other functions as may be necessary to carry out the provisions of this Act or as may be prescribed by the State Government.

Any citizen of India or a body corporate, organisation or association registered in India intending to

undertake any activity referred to in section 7 shall give prior intimation in such form as may be prescribed by the State Government to the State Biodiversity Board. Upon receiving the same the board, in consultation with local bodies concerned, can prohibit or restrict such activity if it deems that such activities are against conservation.

(3) Village Forest Development Committee (VFDC)

In 1998, the State Government of Mizoram decided to introduce the scheme of "Joint Forest Management." to be implemented jointly by the State Government, village communities and voluntary agencies. For this purpose, VFDCs were established. VFDCs along with VCs will take an important role in the field of project monitoring and reporting.

(4) Forest Department of Autonomous District Councils

The forest departments of three ADCs, Mala ADC, Lai ADC and Chakma ADC, are responsible for project implementation in their ADCs but have not experienced any projects which require a comprehensive ESMS. Officers of these forest departments will receive trainings regarding ESMS during the preparation period along with counterparts of MFD.

6.4. Key Gaps and Shortfalls in Comparison to the Standards in the JICA Guidelines

Key gaps and shortfalls identified in each institution in comparison to international standards as indicated in the JICA Guidelines are as below. Even though the MFD implemented three ODA loan projects, this is the first time for the MFD to follow the JICA Guideline fully to its loan project.

Table 6-4 Gaps and Shortfalls JICA Guidelines and MFD Standards on E &S Considerations

	Executing Agency	Key Gaps and Shortfalls	Recommendations
1	MFD	MFD does not have its own Environmental and social safeguard policy and procedure, and follows the policy of the Union Government	If there is no relevant policy and procedure, use ESAF and STPF.
		Person in charge of environmental and social considerations not there	Need assignment of Environmental and Social Consideration Expert(s) / Specialist
		There have been no projects requiring screening and risk assessment, so there are no procedures for environmental screening and subsequent management of environmental risks associated with small-scale construction and other activities with potential adverse impacts.	Implementation of Capacity Development Plan for Environmental and Social Safeguards
		There have been no projects requiring, so there is no monitoring of safeguard processes and procedures.	Prepare and implement an Environmental and Social Safeguards Implement. Plan
		There are consultations but no clear procedures of Free, Prior and Informed Consultations at village level	In order to improve skills, conduct training programs for MFD officers/ staff and assist them in preparing tools and arranging for consultation at village level before commencing micro planning
2	People Organization	The constitutions of VFDC require women participation, but not mention vulnerable groups such as differently abled person.	Inclusion of vulnerable section of the society by efficient implementation of ESAF and VPPF
		Limitation in awareness of potential adverse environmental impacts.	If so, increase awareness at the time of providing Consultation at village level

	Executing Agency	Key Gaps and Shortfalls	Recommendations
			and proper implementation of the ESAF and VPPF
		Limitation in understanding of safeguard processes and procedures	Implementation of Capacity Development Plan for Environmental and Social Safeguards
		Limitation in conflict management and benefit sharing.	Implementation of Capacity Development Plan for Environmental and Social Safeguards

Source: JICA Survey team

7. Environmental and Social Risks and Mitigation Measures

The Project will have mainly positive environmental and social impacts. The below describes broad project benefits and positive environmental and social impacts.

- a. Forest / Natural and Physical Capital Benefits
 - Increased forest coverage throughout the state
 - Improved forest quality
 - Improved water conservation
 - Increased biodiversity by improving wildlife habitat conditions
 - Construction/Improvement of community infrastructure and facilities
 - Better awareness to prevent forest fires, decrease encroachment, protect wildlife
- b. Social Capital Benefits
 - Strengthened community institutions
 - Improved access to market
 - Empowerment of women, differently abled person, and forest dependent people
 - Judicious use of land, water, and etc. due to the project interventions safeguarding the environment
- c. Financial Capital Benefits
 - Increased incomes
 - Direct and indirect employment opportunities arising from project activities
 - Diversification of income sources and reduced financial risk
 - Value addition and better marketing for their produces
- d. Human Capital Benefits
 - Increased technical capacity for sustainable management of forests
 - Increased technical capacity of marketing and product development
 - Increased entrepreneurial and business management capacity of women and forest dependent people
- e. Improved Structures and Processes
 - Increased participation in community development planning and activities
 - Increased participation of local people in forest management
 - Improved capacity of government departments and extension service delivery

Source: JICA Survey team

However, the Project potentially could also bring a number of adverse environmental impacts. The following table presents environmental and social risks and mitigation measures by component.

Table 7-1 Summary of Positive and Negative Environmental / Social Impacts and Mitigation Measures

Activities	Potential Environmental and Social Impact	Possible Mitigation Measures
Planning (Project Planning, ETDC formation, micro planning)	<u>Social Impact:</u> Negative - Conflicts at community level - Micro planning could lead to increased conflict over the sustainable usages of natural resources and women and/or differently able person could be excluded from planning process	- Participatory procedures for micro planning, screening of sub-projects and avoidance of major impacts - Procedural steps for ensuring adequate consultation and participation of vulnerable groups in micro planning, ensuring women's contribution in micro-planning - Promotion of best-practice participatory approaches in the microplanning (conducting study tours) - Prioritization of vulnerable groups as beneficiaries
Infrastructure Development	<u>Environmental Impact:</u> Negative - Loss of endangered species and important habitats (nursery, spawning ground, nest) Positive - Increase the water conservation capacity of forests	- Participatory procedures for micro planning, screening of subprojects and avoidance of major impacts - Carrying out of ecological baseline survey - Proper design and planning of infrastructure activities to minimize environmental risks - Community-based/Participatory land/resource use planning
	- Litter/waste, soil/water pollution from construction of building or infrastructure - Litter/waste and water pollution from operation of camp, dining facilities and other eco-tourism facilities, and biodiversity knowledge park facilities	- Specific measures and disposal for dealing with litter and other waste produced - Carrying out monitoring
	- Water quality deterioration (especially siltation) by water conservation facilities - Change of ground water level	- Carrying out water quality and ground water level monitoring
	<u>Social Impact:</u> Negative - Potential loss of customary/religious/traditional knowledge as communities are trained in formal management approaches - Resource use conflicts e.g. over wells and other water supply/sanitation facilities - Increased developmental dependency Positive - Provide job opportunity as construction workers - <u>More water is available</u>	- Participatory procedures for planning, social assessment, screening of sub-projects and avoidance of major impacts - Proper design and planning of activities to minimize environmental risks - No use of private land or resettlement for Community infrastructures - Community involvement and employment in all aspects of construction, operation and maintenance - Prioritization of vulnerable groups as beneficiaries - Local regulations
	<u>Environmental Impact:</u> Up to activities	-
Livelihood activities (at present, activities are not decided yet.)	<u>Social Impact:</u> Negative - Increased dependency - Loss of traditional livelihood	- Community involvement and employment in all aspects of construction, operation and maintenance - Clear and equitable beneficiary selection and prioritizing forest dependent poor and

Activities	Potential Environmental and Social Impact	Possible Mitigation Measures
	– Loss of traditional knowledge/skill – Social exclusion/elite capture – Inequitable benefit sharing – Resource use conflicts – Others depend on activities Positive – Increase income – Prevent over-exploitation of forest/ deforestation	vulnerable households – Selection of female and vulnerable group beneficiaries with deliberate attempts to empower them – Documentation and utilization of traditional knowledge/ practices

Source: JICA Survey team

8. Framework and Procedures of ESAF

8.1. Overview of the ESAF Procedures

The proposed procedure for environmental and social considerations in the Project is summarised in the table below.

Table 8-1 Overview of ESAF Procedures

	Project Stage	Safeguard Activity	Suggested Guidance to be Developed	Developer of Guidance
1	Target area/village selection, and preliminary consultation	- Beneficiary Selection - Explanation of the Project overview - Information Disclosure and Free Prior Informed Consultation - Establishment of broad community support	- VFDC and ETDC Management Manual - Guidance Note to ensure social and environmental safeguard. - Selection criteria reflecting the social-environmental safe guard perspective - Selection to be done in a public meeting of people's institution placed by the Project (e.g., VFDC/ETDC)	- PMU will develop required guidance documents with an expert of Project Management Consultant
2	Baseline Surveys	- Social Assessment - Biodiversity Assessment (at construction site)	- Social Assessment Plan - Biodiversity Assessment Plan	
3	Sub-project Planning	- Process of micro plans to be participatory to reflect on the voices of the community members - Screening and selection of the activities with reference to the subproject exclusion criteria - Subproject categorisation as per the JICA Guidelines. - Participatory environmental and social assessment for confirmation of the screening results and finalization of the activities to be undertaken by ETDCs	- Micro Planning Manual - Participatory Environmental and Social Assessment (ESA) Plan (if necessary) - Screening criteria	
4	Approval of sub-project	- Activities in sub-projects shall be reviewed by FMU from the viewpoints of environmental and social safeguard and submit to DMU for review and approval.	- Screening criteria - Guidance Note to ensure social and environmental safeguard	
5	Sub-project Implementation	- Community participation in project activities	- Guidance Note to ensure social and environmental safeguard.	

	Project Stage	Safeguard Activity	Suggested Guidance to be Developed	Developer of Guidance
6	Monitoring and Reporting	- Through participatory M&E mechanism the impact of the project activities will be monitored by the executing agency	- Guidance Note to ensure social and environmental safeguard. - Monitoring Sheet	
7	Grievance Procedures	- Through the project's institutional structure	- Institutional responsibilities for addressing grievances	

Source: JICA study team

8.2. Institutional Framework for ESAF

ESAF will be implemented through existing institutional structure of the Project. The table below highlights institutional structure for ESAF with key environmental and social management roles and responsibilities. The implementation structure for the Project is shown in Annex 1.

Table 8-2 Institutional Structure for ESAF

Institution	Role in the Project	Role and/or Responsibility in ESAF
High Powered Committee	- Highest decision making body	- Approve the Operational Manual prepared by the PMU - Endorse Annual Plan of Operation (APO) and annual budget of the Project which approved by the GB - Suggest and endorse measures and actions to resolve issues raised by JICA, Government of India or any other agencies related to the project
Governing Body (GB)	- Decision making body	- Facilitation and coordination with various line departments and other agencies - Review functioning of PMU, with regards to implementation of environment and social assessments, management plans and monitoring programs - Approve APO and annual budget prepared by EB - Approve/ change/modification/revision in project components/sub components on the proposal prepared and submitted by EB before submission to JICA for concurrence
Executive Body (EB)	- Supervision and monitoring of all activities	- Develop Operational Manual for the project which describes and provides guidelines for preparation of micro-plan, annual plan, fund management etc. - Prepare APO in consultation with field level offices of PMU - Closely monitor the physical and financial progress of the Project by organizing regular meeting with field level offices - Prepare modifications and/or changes in components/sub components of the project with justification, when required, and submit to GB for onward submission to JICA, GoI for concurrence and approval
Project Management Unit (PMU)	- Project implementation, supervision and monitoring of all activities. - Documentation and reporting.	- Owner and implementation of the ESAF/ VPPF - Report to concerned departments in the State Government as well as to JICA in relation to environmental and social consideration in Annual Report in case environmental negative impact identified. - Information disclosure including elaboration of project information brochures and project homepage. - Consultation and guidance to DMUs/FMUs, and field level officers on information disclosure and consultation. - Ensure free, prior and informed consultation. - Development of Management Information System (MIS). - Development of approach and guidance for micro planning. - Training on micro planning to field level officers. - Technical guidelines for beneficiary selection, design of component technical approaches, safeguard checks/guidelines for particular activities (if required) - Development of monitoring forms, review of monitoring data, reporting, assistance with evaluations - Review of participatory Environmental and Social Assessments - Performance of due diligence follow-up

Institution	Role in the Project	Role and/or Responsibility in ESAF
		- Guide, instruct, prepare guidelines, establish and operate M&E, GIS/ MIS, dissemination of project information, hand-holding support in the field for all project activities
Divisional Management Unit (DMUs)	- Assist PMU in implementation of project activities -	- Supervise project activities of FMUs - Supervise works carried-out by partner NGOs and Resource organizations - Report the result of categorization of subprojects by the monitoring form, to PMU - Facilitate convergence at divisional level
Field Management Unit (FMUs)	- Assist DMUs and PMU in implementation of project activities -	- Undertake project monitoring and reporting, provide logistical support for independent evaluations. - Coordinate with Gram Sabha to select sub-projects with screening procedures and to conduct participatory Environmental and Social Assessments (ESA). - Support and encourage the target villages for micro planning at village levels, finalization of micro plans. - Conduct free, prior and informed consultation, and due diligence checks
Implementing organizations such as VFDC, EDC, SHGs, and so on	- Assist the Project in selecting target beneficiaries - Clarify local needs and expectations on the Project	- Conceive and raise local awareness on environmental and social considerations. - Provision of support in micro planning activities at village level. - Participating in Environmental and Social Assessments (ESA). - Supporting THE PROJECT for free, prior and informed consultation, and due diligence checks.

Source: JICA study team

Overall coordination and support for ESAF will be provided through the PMU at MFD and information related ESAF will be centrally managed by the PMU. PMU will be responsible to report to concerned departments in the State Government as well as to JICA in relation to environmental and social consideration

Within MFD, the Project Director (PD) will serve as Environmental and Social Safeguard Director and hold central responsibility for ensuring ESAF in the Project. Additional Project Director will serve as Environmental and Social Safeguard Manager to conduct overall management of ESAF monitoring and ESAF related information for the Project at the PMU level.

Further, DFOs of selected DMU will serve as Environmental and Social Safeguard DMU Chief for the project implementation at DMU level. FRO of selected FMU will serve also as Environmental and Social Safeguard FMU Chief for the project implementation at FMU level to provide hands-on assistance to members of Sub-committee who will be the Environmental and Social Safeguard Focal Person.

Table 8-3 Individual Role and Responsibility for ESAF

Organi- zation	Position	For ESAF	Role and Responsibility
PMU	Project Director (Chief Project Director)	Environmental and Social Safeguard Director	- Overall coordination and promotion of ESAF compliance - Overall responsible for ensuring ESAF in the Project. - Responsible to centrally manage information related to ESAF. - Responsible to report to concerned departments in the State Government as well as to JICA in relation to environmental and social consideration
PMU	Deputy Project Director (M&E, Research and Institutional Strengthening)	Environmental and Social Safeguard Manager	- Responsible for implementation of ESAF for their activities - Responsible for supervising activities by program managers - Responsible for examination of safeguards compliance.
	Program Manager (M&E/ ESAF)	Environmental Safeguard Chief	- Responsible for implementation of ESAF for their activities in the field of environment issues

Organi- zation	Position	For ESAF	Role and Responsibility
			- Responsible for monitoring, evaluating and reporting all the field level activities relating ESAF
	Project Manager (Livelihood & Business Development)	Social Safeguard Chief	- Responsible for implementation of ESAF for their activities in the field of environment issues - Responsible for monitoring, evaluating and reporting all the field level activities relating ESAF
DMU	Assistant DMU Officer (M&E/ESAF)	Environmental and Social Safeguard DMU Chief (Environment)	- Responsible for conducting overall management of ESAF monitoring and ESAF related information within DMU in the field of environmental issues - Responsible for regular collection of ESAF information as a part of MIS format
	Program Coordinator	Environmental and Social Safeguard DMU Chief (Social)	
FMU	Forester	Environmental and Social Safeguard FMU Chief (Environment)	- Responsible for regular collection of ESAF information as a part of MIS format at FMU level - Providing hands-on assistance to VFDCs/EDCs, SHG and other groups, regarding ESAF. - Closely communicating with the Environmental and Social Safeguard Focal Person for timely action if necessary.
	Field Facilitator (Community Mobilization)	Environmental and Social Safeguard FMU Chief (Social)	
VFDC/ETDC/SHG	VFDC/ ETDC/ SHG	Environmental and Social Safeguard Focal Person	- Support the Project for compliance of ESAF. - Encourage beneficiaries to participate in activities relating ESAF.

Source: JICA study team

The project's Management Information System (MIS) will include collection of safeguards-related data and the Project will also be subject to periodical evaluation and review, which will include examination of safeguards compliance. Through the Environmental and Social Safeguard Chiefs at DMU level, information will be regularly collected as a part of MIS format by the Environmental and Social Safeguard Manager who will be responsible for management of ESAF monitoring and ESAF related information of the Project.

8.3. Detail Procedures of ESAF

(1) Free, Prior and Informed Consultation (FPIC)

Beneficiary groups will be preliminarily selected based on the defined criteria, thereafter their participation in the Project must be confirmed through a process of free, prior and informed consultation with the VFDC. If broad community support does not exist and/or the village actively does not wish to participate in the Project, then another village may be selected.

Table 8-4 Consultation for Broad Community Support

Purpose/Objective:	Establishing broad community support for the project implementation
Consultation Topic:	- Basic information about the Project including area, location, purpose/objectives, key activities, stakeholders involved, target beneficiaries. - Expected role and involvement of communities. - An overview of possible environmental and social risks. - Necessity of Vulnerable People's Plan
Participants:	- Members of VFDC/ETDCs/working groups, SHGs - Gram Panchayat members - Other important individuals
Process:	- Following beneficiary group formation, community meeting will be held using simple language. - Opportunities for open discussion of the Project should be provided.

	- Opportunities and facilities to facilitate participation of women, elders and other vulnerable including differently abled person. - Adequate time should be provided following the meeting for the participants to digest the information. - Field level officers will visit individuals who have expressed their criticism on any aspect of project implementation. - Decide if they do not wish to participate. - Presentation and discussion with VFDC - Field level officers will participate in general community meeting to discuss concerns.
Material Required:	- Provision of simple/easy to read project brochures in Mizo and/or other languages which are usually used among the regions. - Consultation and Participation Monitoring Sheets
Individual Responsibility: Project Director (PD) Environmental and Social Safeguard Manager and Chiefs Assistant DMU officer and Program Coordinator at DMU Field Facilitator and Forester at FMU Environmental and Social Safeguard Focal Person	- To call a meeting - To propose and organize meetings. - To present the Project - To record participants and meeting minutes - To encourage participation of local communities

Source: JICA Survey team

(2) Social Assessment

1) Purpose of Social Assessment

Social Assessment is a tool to help understanding key social issues and risks, and to determine social impacts on the target population of the proposed sub-project. There are many social variables that potentially affect the impacts and success of projects and policies—such as gender, age, language, displacement, and socioeconomic status. Through data collection and analysis, the social assessment enables the Project in consultation with other stakeholders to prioritize critical issues and determine how to address them. The social assessment will serve a number of purposes:

- a) Establish the baseline socio-economic situation of “the Scheduled Tribes and Forest Dependents” in the project area to act as a reference for measuring project impact;
- b) Assess and opportunities to avail of basic social and economic services,
- c) Provide a basis for identifying appropriate community development and livelihoods interventions under the project
- d) Determine the short and long-term, direct and indirect, and positive and negative impacts of the project on the socio-cultural and economic status of particular vulnerable groups, including women, poor households, female-headed households, landless, SCs/STs and others as may be considered relevant
- e) Highlight key social issues present, particularly those that are underscored in the JICA guidelines (e.g. relating to human rights, involuntary resettlement, loss of livelihoods, indigenous peoples, gender etc)
- f) Provide a basis for developing recommendations for addressing the various concerns and issues of projects that affect them

The social assessment itself will be implemented, basically when, STs, SCs, or EWS which may have negative impact and require preparation of VPP are identified. In case there are no such targets, but certain adverse social impacts are anticipated, the implementation of the social assessment shall be conducted.

During the microplanning process, gathering of socio-economic related information will be conducted using similar methodologies as the social assessment described in this document. Information of the social assessment can be used for the microplanning process and additional

information will be taken if it is required.

If the socio-economic baseline survey is carried out in the any activities of the Project at the target area, the social assessment for the ESAF/VPPF can be omitted.

2) Social Assessment Approach and Task

The social assessment involves the participation of the members of the community to determine their needs and priorities, to obtain their views on the design and proposed implementation mechanisms of a particular project, and also to build capacity and involvement. It assists the executing agency in reaching the vulnerable and the poor and ensures that the project objectives are acceptable to the intended beneficiaries. The social assessment can be included in the micro planning process.

The social assessment plan will be prepared by EA to provide a reasonably detailed outline of the objectives, contents, methods and implementation schedule. ST, SC, EWS, forest dwellers and other forest dependents shall be identified as target group and consulted independently in the social assessment and micro planning process. The table below specify key tasks for the social assessment.

Table 8-5 Tasks for Social Assessment

	Tasks	Descriptions
1	Description of the socio-cultural, institutional, historical, and political context	It explains the extent of socio-cultural fragmentation or homogeneity. It will also address the macro-policy context of the Project. Broader questions such as the traditional and cultural norms regarding the use of the resources and how these relate to relations between and among stakeholder groups can be determined.
2	Consideration of the legal and regulatory environment	It looks at the legal and regulatory environment of the Project, especially in relation to standing ownership and access arrangements and what their implications are for different stakeholder groups, especially the poor and vulnerable.
3	Relevance of core aspects of social development to the Project	It describes the potential outcomes of the proposed project in terms of social opportunities, constraints, impacts, and risks, such as socio-cultural diversity, gender, institutions, rules, stakeholder's interests, social risk and vulnerability.
4	Development of a strategy to achieve social development outcomes	It analyses the opportunities for community involvement in project preparation and implementation, the existing and proposed framework for property rights/access to resources, and sustainable management alternatives to achieve the desired social development outcomes.
5	Recommendations for project design and implementation arrangements	It reviews proposals for project design and provide guidance to the implementing agency on participatory alternatives and institutional strengthening measures appropriate to the socio-cultural characteristics of the project area(s). This will provide a basis for integrating the social analysis of the core elements into a proposal for implementation arrangements.
6	Development of a monitoring plan	The monitoring system needs to have local participation in the generation and refinement of indicators over the project cycle in order for the affected communities to be involved in balancing their own interests in the management of resources for conservation and productive purposes.

Source: Social Analysis Guidelines in Natural Resource Management (2005), World Bank

3) Reporting of Social Assessment Results

A social assessment report shall include at least following contents.

Table 8-6 Indicative Contents of Social Assessment Report

Chapter	Descriptions
Introduction	To define the basic purpose of the Social Assessment, its scope and a brief outline of how the report is organised.
Sub-Project Description	To provide brief details of the sub-project – rationale, objectives, area, key activities, the proposed implementation schedule etc.

Chapter	Descriptions
Approach and Methodology	To describe the methods used in conducting the assessment, both quantitative and qualitative.
Socio-economic Baselines	To provide brief profiles of the target area.
Description of Sub-Project Impacts	Based on consideration of the sub-project's objectives and activities as well as the socio-economic/livelihoods assessment, to describe potential positive and negative impacts of the sub-project.
Vulnerable Groups:	To identify and describe particularly vulnerable groups within the community and how they may be affected by the Project.
Public Consultation and Information Disclosure	To document and present results of public consultation events with the communities.
Conclusion and Recommendations	To provide overall conclusions and recommendations.
Mitigation Measures	To identify specific measures to avoid, minimize and/or compensate for sub-project activities with adverse impacts on communities and particularly vulnerable groups.
Monitoring	To provide the developed monitoring plan including monitoring mechanism and monitoring implementation arrangements

Source: JICA Survey team

(3) Biodiversity Assessment

If the Subproject includes the construction of infrastructures such rain water harvesting structures, roads and buildings, and ecological impact is anticipated by the construction, biodiversity assessment shall be carried out in and around the construction sites and affected areas (e.g. submerged area by a check dam).

Biodiversity assessment includes but not limited to, following items.

- Identification of endangered species under IUCN Red List (especially Vulnerable, Endangered, Critically Endangered), India's Red List of threatened species of fauna and flora or scheduled under the Wildlife Act (1972)
- Identification of important habitat area for the endangered species

(4) Micro Planning and Subproject Planning

1) Micro Planning

Micro plans for Forests and Water Conservation at Community Forests and Biodiversity Conservation and Management outside PAs including ecotourism will be developed through participatory method. The micro planning process shall involve specific procedures ensuring that the needs and priorities of vulnerable groups are reflected in the plans.

2) Sub-project Planning (Beat Action Plan and Others)

Sub projects which are not included in a micro plan such as construction of forest and water conservation facilities and office buildings etc., Sub projects will be planned by related organizations such as FMU, DMU, or PMU. During such sub-project planning, related organizations shall careful review of the social assessment and biodiversity assessment results.

3) Selection and Screening

Sub-projects are selected based on the priority needs identified in the micro plans, beat action plans or other plans. Specific sub-projects will be selected on the basis of community preferences. However, certain exclusion criteria are required to ensure that the Project does not include sub-projects with potentially significant adverse environmental impacts such as EIA required projects (i.e., No Category 'A' or 'B' projects as per Indian EPA (1986) and the EIA Notification (2006)).

Sub-project selection and screening will be firstly carried out by VFDC for the micro plan and FMU officers in charge for the action plan. Each activity in the sub-project shall be screened and then the highest category among the activities will be the category of the sub-project. For example, if the infrastructure development activity falls into category B while other activities fall into category C, the sub-project shall be categorized as B. Then, the screening results are submitted to DMU with the screening result format attached in Annex 2 of this document.

The sub-project categorisation as per the JICA Guideline and finalisation of the exclusion criteria will be conducted by PMU prior to the commencement of the Project or at the early stage (before the EDC selection and consultation) of the preparatory work. In accordance with the JICA guidelines, various other exclusion criteria have also been developed and are shown in the table below.

Table 8-7 Subproject Exclusion Criteria

Component	Exclusion Criteria
1. Overall	- Sub-projects which involve diversion of forest land - Sub-projects that involve acquisition of private land - Sub-projects that cannot demonstrate the broad community support - Sub-projects likely to have major adverse impacts on the environment - Sub-projects which will fall into “Category A” as per the JICA Guideline - Sub-projects which will fall into “Category A” as per the EIA Notification, 2006
2. Forest and Natural Environment	- Sub-projects to be conducted inside protected areas and will not contribute to environmental protection/ conservation of the selected protected areas. - Sub-projects which are not in accordance with principle of sustainable forest management including biodiversity conservation - Sub-projects that substantially alter basic composition of forest, especially natural forest. - Sub-projects likely to cause damage to wildlife and their habitats - Sub-projects which involve felling of trees on RF or PA unless ancillary to conservation and management of forests and wildlife defined in the working plan (e.g. fire breaks, thinning etc.) - Sub-projects involving the collection, processing and sale of NTFP species listed under CITES, India’s Red List of threatened species of fauna and flora or scheduled under the Wildlife Act (1972) - Sub-projects involving the use of fertilizers and pesticides banned by WHO (Classes IA, IB and II)
3. Social Environment	- Sub-projects that involve child labour - Sub-projects or activities which could lead to the exploitation of women - Sub-projects which involve acquisition of private land and/or resettlement - Activities that could cause damage to places of religious importance, historical monuments or cultural properties

Source: JICA study team

Though sub-projects which fall into the “Category A” as per the JICA Guideline are not anticipated in the Project, following scale of sub-projects are basically regarded as the “Category A” and “Category B”. However, screening criteria might be changed based on its location and social situation.

Category A

JICA Guidelines stipulates that “Proposed projects are classified as Category A if they are likely to have significant adverse impacts on the environment and society. Projects with complicated or unprecedented impacts that are difficult to assess, or projects with a wide range of impacts or irreversible impacts, are also classified as Category A. These impacts may affect an area broader than the sites or facilities subject to physical construction. Category A, in principle, includes projects in sensitive sectors, projects that have characteristics that are liable to cause adverse environmental impacts, and projects located in or near sensitive areas”. Example of the screening criteria is as shown below.

- Conversion or felling more than 100 ha of forest

- Construction of embankments/dams with water reservoir area more than 100 ha
- Development of more than 100 ha agricultural area
- Large-scale involuntary resettlement and land acquisition (more than 100 persons)

Category B

JICA Guidelines stipulates that “Proposed projects are classified as Category B if their potential adverse impacts on the environment and society are less adverse than those of Category A projects. Generally, they are site-specific; few if any are irreversible; and in most cases, normal mitigation measures can be designed more readily.” and no specific criteria is set out. Example of the screening criteria for the project is as shown below.

- Construction of embankments/dams with water reservoir area more than 10 ha
- Development of more than 50 ha agricultural area
- Development of infrastructure or building where endangered species listed in Wildlife Act (1972) or their habitat are existed
- Building more than 20,000 square meters.
- Small-scale involuntary resettlement and land acquisition (more than 1 person)
- Other activities which fall into Category B in EIA Notification (2006)

Example of the endangered species listed Schedule IV (Plant) of Wildlife Act (1972) is shown below.

- | | |
|--|---|
| 1 Beddomes cycad (<i>Cycas beddomei</i>) | 4 Ladies slipper orchids (<i>Paphiopedilum</i> spp.) |
| 2 Blue vanda (<i>Vanda soerulec</i>) | 5 Pitcher plant (<i>Nepenthes khasiana</i>) |
| 3 Kuth (<i>Saussurea lappa</i>) | 6 Red vanda (<i>Ranantthera inschootiana</i>) |

Category C

JICA Guidelines stipulates that “Proposed projects are classified as Category C if they are likely to have minimal or little adverse impact on the environment and society.”

(5) Approval of Micro Plan and Sub-projects

Screening results from FMU shall be reviewed by DMU or PMU from the viewpoints of environmental and social safeguard and then submitted to DMU for approval. DMU officers shall final review the screening results and make a decision for approval.

During the review and approval processes, related organizations shall also take carefully considerations for above mentioned environmental and social safeguarded policy.

In case subprojects which fall into the “Category B” as per the JICA Guideline are identified during the above “Selection and Screening” process and adverse environmental/ social impacts are anticipated from such sub-projects, DMU shall report to JICA through PMU at the timely manner and preparation of the EMP and EMoP and their implementation will be required as shown below.

If the sub-project falls into category C, DMU shall submit the screening result with the screening result format attached in Annex 2 of this document to JICA through PMU quarterly together with Project Status Report (PSR) to be prepared for the overall Project

(6) Environmental Management Plan and Monitoring Plan

Sub-projects which require the Environmental Management Plan (EMP) and the Environmental Monitoring Plan (EMoP) are not determined at the time of preparation of this document. In case subprojects which fall into the “Category B” as per the JICA Guideline are identified, preparation of the EMP and EMoP will be required and the process indicated below should be followed.

- 1) Screening of subprojects
- 2) Scoping of subprojects
- 3) Environmental and social survey/assessments
- 4) Preparation of EMP and EMoP
- 5) Implementation and monitoring of subprojects based on EMP and EMoP

The sub-project owner and contractors/implementers are the key entities for the implementation of environmental clearance.

The EMP and EMoP shall consist and cover following aspects:

- 1) EMP: Environmental mitigation and consideration measures which shall be taken in the course of the Project implementation in construction and operation phases. The measures shall be examined based on the subproject description and assessment results of environmental, social, health and safety impacts.
- 2) EMoP: Environmental monitoring plan to supervise/examine the implementation of proposed environmental mitigation and consideration measures and to measure the quality of surrounding environments under the influence of the project activities during construction, and operation phases.

In case of community related sub-project activities, contents of the EMP and EMoP shall be included in the Micro Plan to be prepared by the concerned community.

(7) Monitoring and Reporting

The safeguards frameworks require certain outputs relevant to ensuring that environmental and social safeguards have been observed. Therefore, indicators are required to measure the utilization and quality of the safeguard processes. The table below presents monitoring items, their indicators, means of verification, frequency and responsible parties for demonstrating and measuring that safeguards measures have been implemented. Monitoring shall be carried out for each sub-project.

Such monitoring results shall be compiled as monitoring report and submitted to JICA by PMU. Monitoring form shall be developed also by PMU so that every sub-project can use same format. Monitoring report shall be submitted to JICA through PMU quarterly together with Project Status Report (PSR) to be prepared for the overall Project.

Table 8-8 Draft Monitoring Items, Indicators, Means of Verification, Frequency and Responsible Parties

	Item	Indicator	Means of Verification	Frequency	Responsible Party
1.	Information disclosure and establishment of broad community support	- Method, location, and timing of free, prior and informed consultation (FPIC) - No. of men, women, vulnerable person such as poor family and differently abled attended at the community meeting - % of interviewees satisfied with information disclosure process	- Minutes of the Meetings - Community resolution - Voting records	For every sub-project. Additional measurement should be carried out whenever need arises during the Project implementation.	PMU/DMU
2.	Baseline Surveys	<u>Social Assessment</u> - No. of men, women, poor family, differently abled person <u>Biodiversity Assessment</u> - No. of endangered species and locations	- Social Assessment Reports - Biodiversity Assessment Reports	For every assessment	DMU/FMU

	Item	Indicator	Means of Verification	Frequency	Responsible Party
3.	Sub-project Planning	- No. of men, women, poor family, differently abled person consulted in micro planning - % of interviewees satisfied with micro plans - Linkage/ convergence with other schemes	- Micro plans - Beat action plans - Other plans	For every sub-project planning	PMU/DMU/FMU
4.	Approval of Sub-project	- No. of excluded sub-projects	- Lists of sub-projects - Reports on the selection and screening	At the time of sub-project selection	PMU/DMU
5.	Sub-project implementation	- No. of men, women, poor family, differently abled person beneficiaries - % of interviewees satisfied with beneficiaries selected	- JFMC, SHGs, established - Sub-project Plans	At the time of beneficiary selection At the time of sub-project planning	PMU/DMU/FMU
6.	Monitoring and Evaluation	- No. of men, women, poor family, differently abled person attended community meeting	- Monthly, quarterly, annual monitoring forms - Social audit reports	At least once a year. Additional measurement should be carried out whenever need arises during the project implementation.	PMU/DMU/FMU
		<u>Forest and water conservation facilities</u> - Ground water level - River flow - Water quality(e.g. turbidity)	- Monitoring forms	Pre-construction: once After-construction: at least quarterly	PMU/DMU/FMU
		<u>Operation of camps and biodiversity knowledge parks</u> - Water quality such as BOD - Waste management	- Monitoring forms	During operation: twice a year monthly	
7.	Grievance procedures	- No of grievances submitted - No of grievances resolved - % of interviewees aware of and satisfied with grievance mechanism	- Grievance forms	At least once a year. Additional measurement should be carried out whenever need arises during the Project implementation.	PMU/DMU/FMU

Source: JICA Survey team

(8) Information Disclosure and Grievance Procedures

The executing agency will disclose all information relating environmental and social safeguard of the Project. This will include all the ESMS related documents including social assessment documents, monitoring report and their plans. All information will be made available in a timely manner, in an accessible place, and in a form and language(s) understandable to all stakeholders, including the general public, and affected people, if any, so that they can provide meaningful inputs for further development of the ESMS. JICA will also make the monitoring result open for the public via their website.

Formal grievance mechanism will be in line with existing policies, strategies, and regulations on grievances as defined by GoI (i.e., Guidelines for Redress of Public Grievances (2010)). However, it is expected that project related grievances can be dealt with through the proposed institutional structure of the Project. Thus, the grievance mechanism will be institutionalized in each level of project implementation, from the community to the executing agency.

Key principles for grievance redress in MFD are described hereunder:

1. The rights of all project participants are respected and their interests protected

2. Concerns of project participants arising from the project implementation process are adequately addressed and in a prompt and timely manner
3. Entitlements or livelihood support for project participants are provided on time and in accordance with the relevant GoI and JICA safeguard policies and applicable legal framework
4. Project participants are aware of their rights to access and to realize access to grievance procedures free of charge
5. The grievance mechanism will be institutionalized in each village by the Village Council

9. Framework and Procedures of VPPF

9.1. Preparation of Vulnerable People's Plan

(1) Process

The Vulnerable People's Plan shall be prepared at the VC/ VFDC level when adverse impacts of the Project on vulnerable people/groups are anticipated. The content of the Vulnerable People's Plan should be a part of the micro plan or other sub-project plan to be prepared. The Vulnerable People's Plan should be prepared by the lead of field officers/ animators and with active participation of vulnerable people of the village/ habitation. The indicative steps for preparation of the Vulnerable People's Plan have been described at the table below.

Table 9-1 Processes for Preparation of Vulnerable People's Plan

Step	Safeguard Activity, Methods, Processes
Screening and Basic Information Collection	- Consultation and confirmation of whether the plan is necessary to prepare or not. - Collection of basic information on the village/habitation such as status of vulnerable people; possibility of forest dwellers' participation in the project; potential impact of the project on forest dependents.
Social Assessment	- Assessments of needs and priorities of vulnerable people/groups by participatory rural appraisal tools
Consultation with Vulnerable people/groups	- Workshops and discussion for identification of mitigation measures and other support activities
Drafting and Approval of the Plan	- Preparation based on workshop/discussion activities - Meeting of VFDCs

Source: developed by JICA study team

(2) Contents of Vulnerable People's Plan

The Vulnerable People's Plan shall include at least following contents.

Table 9-2 Indicative Contents of Vulnerable People's Plan

Chapter	Descriptions
Introduction	- To define the basic purpose of the plan, its scope and a brief outline of how the report is organised. - To define vulnerable people/groups
Sub-Project Description	- To provide brief details of the sub-project – rationale, objectives, area, key activities, the proposed implementation schedule etc.
Socio-economic Baselines	- To provide brief profiles of the target area. - To provide baseline information on the demographic, social, economic and cultural characteristics of vulnerable people/groups - Baseline information on the natural resources (land, water and forest) managed and used by the vulnerable people/groups.

Chapter	Descriptions
Summary of the Social Assessment and Free, Prior and Informed Consultation	- To identify key project stakeholders - To describe consultation with the vulnerable people/groups - To assess the potential adverse and positive effects of the project
Action Plan	- To identify measures to be taken up for avoiding and/ or mitigating the potential adverse effects of the Project - To identify activities to be carried out for supporting the vulnerable people/groups to participate in the Project
Public Consultation and Information Disclosure	- To document and present results of public consultation events with the communities.
Cost estimates and financing plan	- To provide activities wise budget and possible sources of finance
Monitoring Plan	- To provide details of monitoring mechanism upon implementation of Vulnerable People's Plan

Source: developed by JICA study team

According to the World Bank's Guidance Note for Borrowers (Environmental & Social Framework for IPF Operations) regarding ESS7: Indigenous Peoples/ Sub-Saharan African Historically Underserved Traditional Local Communities, the IP/SSAHUTLC Planning Framework sets out as follows:

- | |
|---|
| <ul style="list-style-type: none"> a) The types of subprojects likely to be proposed for financing under the project. b) The potential positive and adverse impacts of such programs or subprojects on IP/SSAHUTLC. c) A plan for carrying out the social assessment for such programs or subprojects. d) A framework for ensuring the meaningful consultation tailored to IP/SSAHUTLC and in the specified circumstances, a framework for ensuring their Free, Prior, and Informed Consent during project implementation. e) Institutional arrangements, including capacity building where necessary, for screening project-supported activities, evaluating their effects on IP/SSAHUTLC, preparing IP/SSAHUTLC Plans, and addressing any grievances. f) Monitoring and reporting arrangements, including mechanisms and benchmarks appropriate to the project. |
|---|

(3) Institutional Framework for VPPF

In principle, the institutional framework for ESAF will be applied for implementation of VPPF

9.2. Detail Procedures of VPPF

(1) Free, Prior and Informed Consultation

It is important that the target population (vulnerable people/groups, who are mostly ST) of the Project are consulted in the process of establishing broad community support for the Project at local levels. At the preparatory stage, the locations where each of these communities live and derive a livelihood will be mapped. It should be ensured that these communities are adequately represented in consultation meetings and during the preliminary information disclosure. In consultation meetings and disclosing information including written materials, language of communication should be Mizo and/or other languages which are usually used among the regions. Contents of written materials should be simple enough for everyone to follow. Also, opportunities and facilities to facilitate participation of women, elders and other vulnerable such as differently abled person should be considered. It should be the responsibility of the animators/ field officers to make sure that visualization and visual presentations are used as much as possible. A well designed program would benefit from well documented consultations with indigenous communities.

(2) Social Assessment and Sub-Project Planning

Social assessment and sub-project planning process shall involve specific procedures ensuring that the needs and priorities of vulnerable groups are reflected in subprojects under the Project.

In principle, the social assessment for VPP should follow the procedure determined in the ESAF. However, in case, there are targets of VPP Following issues should be also covered in the Social Assessment.

- a. Demography, cultural and political characteristics of affected forest dependents, who are mostly ST.
- b. Lands which affected forest dependents have been traditionally possessing or customary using/occupying.
- c. Natural resources which affected forest dependents rely on for their social as well as economic bases.

(3) Selection and Screening of Subprojects

Selection of subprojects will be prioritized keeping in mind the target beneficiaries (vulnerable people/groups) will face no/minimum negative impacts by the project activities. All subprojects to be supported by the Project need and to be finalized through participatory consultation processes and vulnerable communities will be an integral part of this process. Target beneficiaries will have preferential treatment even during the project implementation stage.

(4) Monitoring and Reporting

Basically the monitoring and reporting related to the VPP to be monitored through regular Project monitoring and evaluation system together with ESAF. The Project will include participatory monitoring where identified vulnerable people/groups should be consulted separately. In this process, they are a part of the beneficiary community, ensuring that they have a fair opportunity to provide feedback on project implementation.

(5) Grievance Procedures

Grievance procedures for vulnerable people/groups are the same as that of other vulnerable groups provided in the ESAF. However, if deemed necessary, it is important to establish a grievance redress committee to respond effectively in a timely and responsible manner.

10. Capacity Development Requirements for ESAF and VPPF Implementation

The project will not include any sub-projects requiring prior clearances such as environmental clearance nor any activities with major social impacts, however as described in the previous sections, there are certain potential impacts and risks. Management and monitoring of environmental and social risks require a certain level of awareness and technical capacity.

Particularly for environment and social management, certain specialized knowledge and skills will be required at different management levels for operationalising the procedures for assessing and screening environmental and social impacts as well as implementing and monitoring safeguards measures.

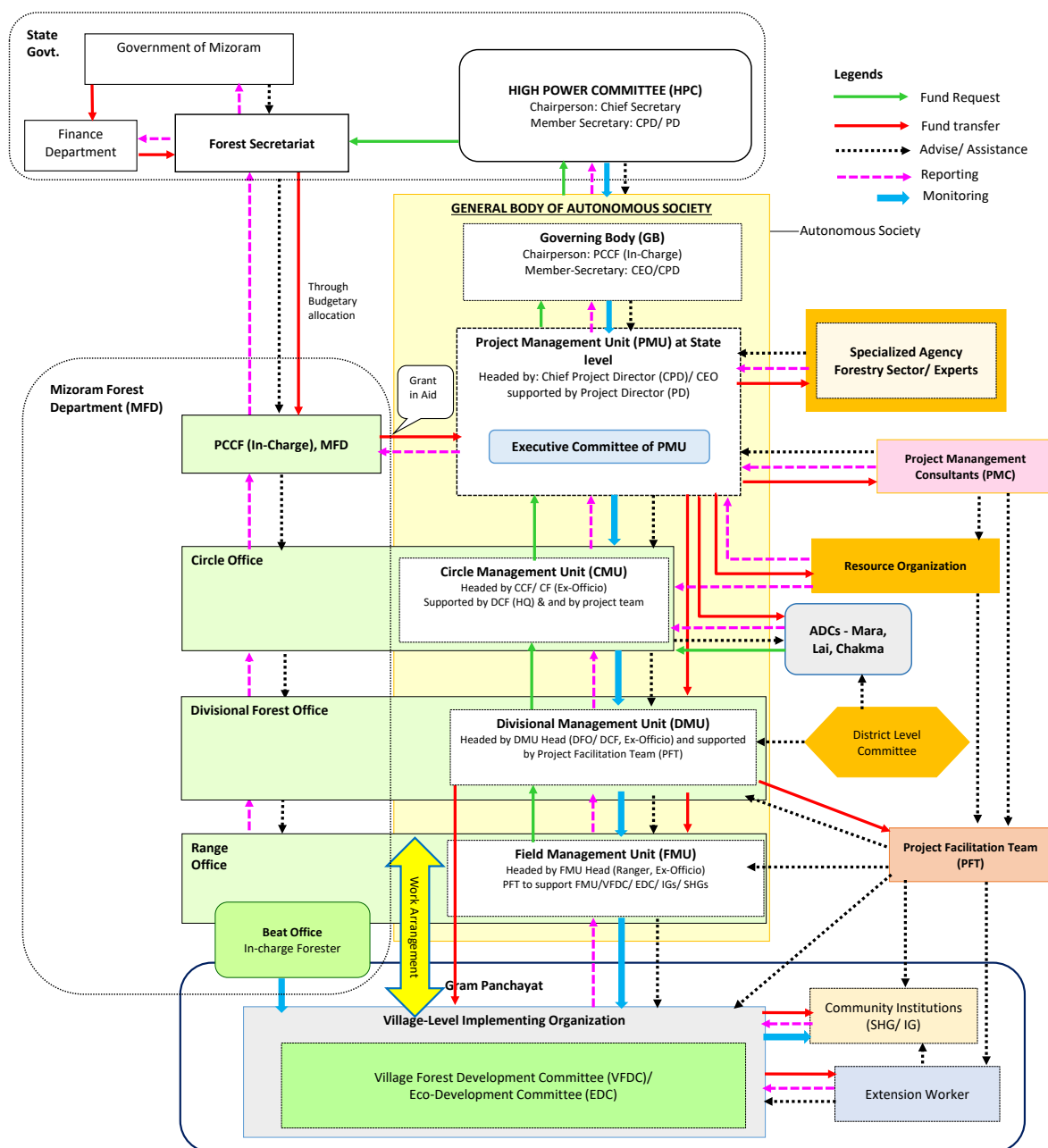
The table below describes indicative key capacity development requirements for implementing the ESAF and VPP measures, steps and procedures. Detailed capacity development plan for environmental and social safeguard will be developed by the executing agency in line with the capacity development component of the Project during at the preparation stage.

Table 10-1 Capacity Development Plan for Environmental and Social Safeguards

Module Name	Theme/Topic	Key Participant	Schedule
Management/ Administrative Level	- JICA's safeguard policy - Basic introductory concept of safeguard - ESAF/VPPF steps and procedures to be applied in the Project - Free and prior informed consent (FPIC) - Monitoring and Evaluation	- PMU officers - Assistant DMU officer and Project Coordinator at DMU/ Field Facilitator and Forester at FMU	- One time at the preparatory phase (total one batch)
Field/ Operational Level	- Basic introductory concept of safeguard - ESAF/VPPF steps and procedures to be applied in the Project - Community consultation processes - Free and prior informed consent (FPIC) - Monitoring and evaluation	- Representatives from VFDCs - Other representative from Village Council, Gram Panchayat, SHGs (if necessary)	- One time for each district at the preparatory phase (total 4 batches)

Source: JICA Survey team

Annex 1: Implementation Structure for the Project for the Project



Annex 2 Sample of Screening Results for Sub-Project

1. General Information of the Sub-Project

Items	Descriptions
Name of Sub-Project	(e.g. Micro Plan of XXX EDC)
Location	(e.g. XXX Village/Hamlet)
Implementation Organization	(e.g. XXX EDC)

2. Screening Results of the Sub-Project

Screening Results	Reason for the Screening	Person in Charge for Screening (Name, Position, Organization)
(A, B, C)	(e.g. this sub-project include Category B activity such as check dam construction)	(e.g. Mr. XXX, DFO of ZZZ DMU)

Note: The highest screening result of the activities should be applied for the sub-project

3. Screening Results of Each Activity in the Sub-Project

Component	Name of Activity	Location of the Activity	Description of the Activity	Screening Result	Reason for the Screening
Ecotourism	(e.g. construction and operation of camps and dining facilities, sanitary facilities)	(e.g. from Lat. XXX Long. XXX to Lat. YYY to Long YYY, Distance ZZZ km)	(e.g. tourist facilities with camp, dining facilities, sanitary facilities, and so on)	(e.g. C)	(e.g. effluent and waste will be generated during the operation in forest areas. Waste management plan will be prepared and septic tanks will be installed to mitigate the impacts)
Biodiversity Knowledge Park	(e.g. construction and operation of dining facilities, sanitary facilities, and so on)	(e.g. from Lat. XXX Long. XXX to Lat. YYY to Long YYY, Distance ZZZ km)	(e.g. dining facilities, sanitary facilities, and so on)	(e.g. C)	(e.g. effluent and waste will be generated during the operation in forest areas. Waste management plan will be prepared and septic tanks will be installed to mitigate the impacts)
Forest and water	(e.g. Construction of water conservation facilities)	(e.g. Lat. XXX, Long XXX,)	(e.g. one water conservation facility with catchment area of 15 ha and submerged area of 5ha will be constructed)	(e.g. B)	(e.g. some endangered species listed on Wildlife Act(1972) such as <i>cycas beddomei</i> were found at the construction sites based on the biodiversity assessment results. Endangered species will be transplanted outside of the submerged area)
Livelihood Improvement					
Institutional Strengthening					

Annex 14.10.1 Gender Action Plan

1. Project Components and Gender Action Plan

Necessary actions for the implementation of gender mainstreaming for each component are summarized below

Project Components/Sub-Components	Gender Action	Data Required	Means of Verification
Organizational structure	More number of women managers/ officers/ experts/ staffs/ are to be engaged in the project.	Number of managers, officers, experts, by gender	Project MIS
	Gender analysis of the target project areas is conducted.	Result of analysis	Report by survey contractor
	Gender Mainstreaming Guideline is finalised.	Gender Mainstreaming Guideline	Physical verification of the guideline
	All officers/ staff/ community level groups are to be trained in gender.	Number of trainees by gender	Project MIS
	Monitoring indicators by gender are to be adopted and the data to be collected accordingly.		Project MIS
	Gender specialist is to be engaged in PMC (Program Manager in charge of Livelihood and Business Development)	TOR of PMC, PMC proposal	Contract
	Close cooperation with a gender specialist of Mizoram State Rural Livelihoods Mission	Meeting minutes	Project MIS
Forest and Water Conservation at Community Forest, including Livelihood Activities Biodiversity Conservation and Management outside PAs, including Ecotourism and Livelihood activities	Information on the project is disseminated among all villagers	activity records	Reports by FMU
	Involvement of women and men in all activities of the Project is promoted: • micro-planning • mapping/GIS activities • community development • Ecotourism • Livelihood activities, etc. Target: more than 80% of households participate in project activities	Number of participants by gender, Meeting minutes Household participation rate	Project MIS Report by FMU
	To promote women to participate in decision-making process: Target: more than 50% of executive committee member are women	Women participation rate in executive committees of EDC Minutes of meetings	Project MIS Report by FMU
	Training on communication skills and leadership for women would be provided.	Number of trainees by gender	Project MIS
	More women would take leadership positions	number of chair/vice chair of the committees/ community level groups	Project MIS
	All officers/ staff/ community level groups are to be trained in gender.	Number of trainees by gender	Project MIS
	All the community based training programmes/exposure visits should have at least 50% of women participation.	Number of trainees by gender	Project MIS
	Training venues and timings need to be set to accommodate women's daily schedule and requirement.	Assessment by the participants	Report by FMU

	Training facilities shall have gender segregated toilet facilities.	Assessment by the participants	Report by FMU
	Community level training programmes are conducted in the local languages. Training/workshop materials are prepared in the local languages.	Assessment by the participants	Report by FMU
	No gender segregation in wages of ward facilitators	Financial report	Project MIS

2. Implementation Framework

The gender action plan is to be embedded in the project implementation process through project guidelines/ manuals/ training programmes and also through the gender mainstreamed recruitment process. The project design has taken gender into consideration as much as possible.

3. M&E System

At the PMU level, executive committee shall be responsible for monitoring on the progress of gender action plan and taking decision on necessary corrective actions to be taken in the project implementation process. Review meeting shall be held after receiving the quarterly report from PMU. The nodal person at PMU will prepare the quarterly report and annual report on the status of gender action plan.

At DMU/FMU level, Field Facilitator (Community Mobilization) shall be the focal person to monitor and assess the gender situation at range level and compiles the quarterly report based on the project MIS and field observation.

4. Gender Training

Project Implementation Unit	Topics to be covered	Duration	Category of the Participants
PMU	Human Rights and legal provisions in India Gender based violence Gender awareness Gender and leadership and governance Gender Action Plan and M&E Gender Budgeting Gender Analysis (Role play)	1 day (along with training on ESAF)	PMU officials/staff
DMU/FMU	Human Rights and legal provisions in India Gender based violence Gender awareness Gender and leadership and governance Gender roles and relations in the project areas Gender Action Plan Gender Budgeting Gender Analysis (including field exercise) Gender Monitoring	1 day	Assistant DMU officer (M&E/ESAF) at DMU Field Facilitator (Community Mobilization) at FMU
VFDC	Understanding gender Gender situation in the villages through gender analysis Gender action plans Gender budgeting	1 days	Executive members of VFDC

Project Implementation Unit	Topics to be covered	Duration	Category of the Participants
	Gender dimensions in Livelihood activity plan/ Ecotourism management plan Gender dimensions in EDC – leadership & governance		
SHG/working groups	Understanding Gender Gender situation in the villages through gender analysis Gender awareness Gender relations in the project areas Gender action plans	2 days	Representatives of SHGs