

MICRO-PLAN

FOR

L3 LANDSCAPE : THENZAWL 'E'

UNDER

GREEN INDIA MISSION

Prepared by & Submitted by:

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L3 Landscape: Thenzawl 'E'
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Chapter 1

Objectives and Scope

1.1 Objectives for GIM implementation

Although the identified landscape (L-1) - the entire state of Mizoram - has a large area under forest cover, the forests are not rich in quality. About 67.70 % of the forest cover is open, having very less canopy density. A large extent of open forest, particularly in the hilly terrain, can have devastating impacts on the normal structure and the delicate interdependencies of diverse flora and fauna in the forest ecosystem. The situation is likely to be further aggravated in Mizoram by the prevalence of shifting cultivation and other biotic interferences.

Efforts to enrich and protect the forests are being taken up by effectively implementing various schemes such as National Afforestation Programme, Integrated Forest Management, Thirteenth Finance Commission Grants-in-Aid, National Bamboo Mission, New Land Use Policy etc. The local people are being encouraged to shift from shifting cultivation to settled agriculture by providing them technical and financial assistance.

The treatments being done to the landscape coupled with the proposed interventions under Green India Mission (GIM) will save the valuable hilly ecosystem of the State from deterioration. It is expected that implementation of proposed strategies will enhance the quality of existing forests, ecologically re-stock wastelands, improve eco-system services, increase forest-based livelihood income and augment annual CO₂ Sequestration.

1.2 Scope of implementing planned interventions under GIM

The GIM, which aims at providing sustainable livelihood support to the people in a stable ecosystem would be implemented initially in 51 villages of eight identified L2 landscapes within the State. These villages form compact blocks for treatment in five Forest divisions/4 districts of the State. It is further planned to extend the mission in other parts of the State. It is to mention here that, the entire State has been identified as vulnerable i.e L1 landscape

Chapter 2

Details of Identified Landscapes

2.1 L1 Landscape

The entire State of Mizoram (Area: 21,081 sq. km.) has been taken as L1 Landscape. Proper treatment of the landscape in the State would bring ecological security in the region and would also contribute significantly to stabilize the changing climate.

2.2 L2 Landscape

Operational units (L2 level) have been identified based mainly on five indicators which are (1) extent of open forest, (2) dependency of the local population on the forests i.e. biotic pressure, (3) drainage pattern, (4) prevalence of shifting cultivation and (5) compact block for treatment under GIM.

Considering the above views, 2 no. of operational units ie L2 Landscapes have been taken up subsequently under GIM in Thenzawl Forest Division

2.3 L2 landscape within Thenzawl Forest Range:

Of the two L2 Landscapes in Thenzawl Forest Division the L2 Landscape: Thenzawl based on Lungrang tlang lies to the north of Thenzawl town within Thenzawl Forest Range. The landscape is a Community Reserve and consists of open and degraded forests. Further, it forms the catchment area of Lau river which is the only source of water for Thenzawl town. The treatments under Green India Mission would ensure continuous and uninterrupted supply of water for Thenzawl town. As such, Lungrang tlang was selected as L2 landscape for treatment under GIM.

2.4 Importance of L2 Landscape: Thenzawl (Lungrang tlang)

The identified landscape lies in the catchment area of Lau river, the source of water supply to Thenzawl town. Treatment of this landscape under GIM would ensure regular water supply to 8698 inhabitants (2011 census) living in Thenzawl town. Well-stocked good-quality forests in "Lungrang tlang" landscape will also stabilize

water flow in the major river of the region i.e. Lau river flowing in north-west direction.

2.5 L3 landscape:

All the 3 villages within the L2 Landscape: Thenzawl (Lungrangtlang) having interests in Green India Missions have been taken as “Working Units” i.e. L3 landscape.

2.6 L3 landscape (Thenzawl ‘E’)

The area under Village Council of Thenzawl ‘E’ is one of the three L3 landscapes (working units) identified for coverage in L2 landscape: Thenzawl (Lungrang tlang). The Thenzawl ‘E’ village was established around the year 1961. It has a population of 3361 with 970 households (220 households under BPL category). The villagers are quite educated, literacy rate being 96%.

The total geographical area of this L3 landscape is 54.47 sq. km. In the past, most of the land was covered with well-stocked good-quality forests. However, the forests have suffered serious depletion and degradation due to traditional practice of shifting cultivation and uncontrolled felling of trees. As a result, presently, most of the areas are either wastelands or forests having very less canopy density i.e. less than 10%. It is expected that execution of well-planned strategies under GIM may result into ecological stability in the region.

Further, this L3 landscape controls water flow in several streams/rivers such as Lau lui and Mat lui. These water-bodies are natural sources of water for Thenzawl ‘E’ Village and other nearby villages. The productivity of agricultural crops also depends upon water flow in these streams/rivers.

2.7 Extent and other features of L3 landscape - Thenzawl ‘E’

Table 1	
Location	The L3 Landscape -Thenzawl ‘E’ is located along Aizawl-Lunglei highway (World Bank Road). It is about 20 kms. away from Serchhip town, district headquarter of Serchhip district, and about 90 kms. from Aizawl, the State capital.
GPS coordinates:	23 ⁰ 19’24.93’’N & 92 ⁰ 46’53.04’’E, 23 ⁰ 15’6.98’’N & 92 ⁰ 51’24.46’’E 23 ⁰ 13’39.41’’N & 92 ⁰ 48’57.08’’E, 23 ⁰ 13’44.63’’N & 92 ⁰ 45’27.78’’E

Area	54.47 sq. kms.
Forest cover	Moderately dense forests – 16.24 sq. kms. Open forests – 29.11 sq. kms. Non-forests - 9.12 sq. kms.
Forest type	Cachar Tropical Semi Evergreen Forest (2B/C2) mixed with bamboo breaks. Important species found in the locality are <i>Toona ciliata</i> , <i>Amoora wallichii</i> , <i>Terminalia chebula</i> , <i>Embllica spp</i> s, <i>Artocarpus chaplase</i> etc. Dominant bamboo species are <i>Melocanna baccifera</i> , <i>Dendrocalamus hamiltonii</i> , <i>Bambusa tulda</i> , <i>D longispathus</i> etc
Soil quality	Three soil orders i.e. ultisols, inceptisols and entisols are found in the project area. The surface soil textures are loam to clay loam with clay content increasing with depth in the hills whereas in the valleys it is mostly sandy loam to sandy clay loams. The soils are acidic in nature with pH values ranging from 4.5 to 6.3. The soils in the hills are strongly acidic in reaction, whereas, the soils in alluvial deposits are less acidic in nature. The percentage of organic carbon content is medium (0.70 %).
Topography	Most parts of the land is undulating with moderate slope i.e. 15° to 40 ° with an altitude of 800-900 mts. above MSL, whereas some parts of the land are comparatively flat.

2.8 Profile of L3 Landscape (Thenzawl 'E')

2.8.1 Population and Workers Population

The population data of Thenzawl 'E' village is given below in the following table:

Table 2A				
No of Households	Population		Children below 6yrs	Total
	Adult Male	Adult Female		
970	1421(42.3%)	1504(44.8%)	436(13%)	3361

The average family size is 5 to 6 persons per household.

Source : Field verification

Workers Population is as under:-

Table 2B			
Total Workers	Regular/Main Workers	Irregular/Marginal Workers	Non Workers
Workers: 1986 (47.43%) Male: 1025 (51.61%) Female: 961(48.38%)	Regular Workers: 402 (30%) Male : 312 (7.8%) Female: 90(2.25%)	Irregular Workers: 1587(39.6%) Male: 713(17.8%) Female: 871(21.79%)	NonWorkers: 2011(52.57%) Male: 544(13.61%) Female: 1467(36.70%)

Source : Field verification

2.8.2 Social structure

The social structure of the population at Thenzawl 'E' village is as under:-

Table 3				
General	Scheduled Caste	Scheduled Tribe	OBC	Total
Nil	5	3356(99.85%)	Nil	3361

Source : Field verification

2.8.3 Wealth Ranking

Table 4		
Sl. No.	Classification	No of families
1	Rich (Families having RCC building or motor car whose annual income exceeds Rs 5,00,000.00)	41(approx)
2	Middle class (Families whose annual income is less than Rs 5,00,000.00 but above BPL)	709(approx)
3	Poor (Families who are listed as BPL by the Govt.)	220(approx)

Source : Field verification

2.8.4 No of Educational institutions

Table 5A						
Anganwadi	Primary school	Middle school	High school	HSS	Colleges	Others
11	6	4	1	1	-	-

Source : Field verification

2.8.5 Enrolment (as on 8.6. 2017)

Table 5B						
Anganwadi	Primary school	Middle school	High school	HSS	Colleges	Others
436	290	184	78	83	-	-

Source : Field verification

2.8.6 Literacy percentage

Male – 97%, Female – 95%, Overall – 96%

Source: Census data 2011

2.8.7 Occupation

Table 6		
Sl. No.	Category of Occupation	No of families
1	Govt. service	148
2	Jhumming (Shifting cultivation)	40
3	Horticulture including WRC	230
4	Business/Petty trade	59
5	Daily labourers	493
6	Others	-

Source : Field verification

2.8.8 Livestock population

Table 7					
Cattle	Goat	Sheep	Pig	Poultry	Other
19	6	Nil	542	2815	-

Source: Field verification

2.8.9 Agriculture practices

Table 8

Category	Current Jhumming	Abandoned Jhumming	WRC
Area (sq.km)	0.27 sq.km	0.79 sq.km	0.75 sq.km

Source: Existing Land Use Map

2.8.10 Cropping pattern

Table 9				
Sl No	Crop	Time of sowing	Time of harvest	% of agri. area covered
1	Rice	April-May	Sept- Nov	20
2	Orange	May-June	Oct-Dec	15
3	Banana	April-March	Jan-Dec	15

4	Rubber	May-June	March-April	2
5	Maize	March	July	4
6	Ginger	April- June	Oct-March	5
7	Pumpkin	March	June	1
8	Calocasia (Bal)	April	Nov-Dec	3
9	Local pea (Behlawi)	March	Sept-Nov	5
10	Soya bean	June-July	Nov-Dec	10
11	Oil Palm	April-June	Aug-Dec	20

2.9 Water Resource

There are three main sources of water for the people living in Thenzawl 'E' village i.e. water connection from Public Health Engineering (PHE) department, water collection points connected to perennial fountains and rain water harvesting. Water connection from PHE department has many outlets for all villagers and house-to-house connection has been provided. Rain water harvesting is being done by limited well-to-do families only.

2.10 Energy Consumption Pattern

The village has already been electrified by Power & Electricity department of the State. In addition, energy requirement is met from LPG connections, kerosene oil and fuel-wood collected from the Village Supply Reserves, the Jhumlands and the surrounding forests.

2.11 Demand for fuel-wood

The demand for fuel-wood has been worked out based upon inputs received from NGOs, VC members and other villagers. The annual demand is as under:-

Table 10

Average annual demand/household	No of households	Total annual demand of the village
1.9 cum	970	1843 cum

2.12 Existing infrastructure

Anganwadi Centre -11nos., Primary School - 6nos., Middle School - 4nos., High School – 1no., Community Hall – 1no., Mini-Market -1no., Mini-Playground-1 no., Vety. Dispensary -1no., Bazar shed -1no.

2.13 Problems and Priority

Through PRA exercise, problems being faced by the villagers could be ascertained. These are lack of proper medical facility, absence of link road to agricultural fields, incomplete net-work of approach roads within the village, in-sufficient supply of LPG cylinders and scarcity of water-supply.

2.14 Demographic statistics of L3 Landscape

Table 11								
Sl. No.	Village	Population			Poverty (BPL families)	Forest dependency	Drivers of degradation	JFMCs/ other institutions of Gram Sabha
		Total	SC	ST				
1	Thenzawl 'E'	3361	5	3356	220	Shifting cultivation, fuel-wood, timber for construction of houses, furniture etc.	Dealt in para 2.17	Village Forest Development Committee (VFDC) is active in the village.

Source: Field verification

2.15 Present interventions for addressing livelihood needs (forestry as well as non-forestry sector) and promoting sustainable forest development

Table 12						
Sl. No.	Name of Scheme	Implementing Agency	Forestry and Wildlife activities	Other components like SMC	Details of livelihood component	Villages covered
1	NLUP (New Land Use Policy)	Different line department s such as-Soil Conservation, Horticulture, Agriculture, Forest,Seric ulture,Fisher ies, Industries, AH&Vety etc	Plantation of bamboos and other indigenou s species	Construction of terracing, trenching, Rain water harvesting structures	Provision of technical and sustainable livelihood support so as to wean them away from the traditional practice of jhumming	Thenzawl 'E'
2	NAP (National Afforestation Pro gramme)	FDA Thenzawl/ concerned VFDC	Sustainable manage ment of forests with people's participati on. Plantation is carried out on degraded lands	Construction of contour trenching, Checkdams, inspection path etc.	Livelihood generation through direct employment, sustainable extraction of forest produce, value addition and marketing	Thenzawl 'E'

3	NBM (National Bamboo Mission)	FDA Thenzawl / concerned VFDC	Plantation of bamboo spp, Training to farmers to increase crop productivity		Livelihood support is expected from extraction of bamboo &marketing of value added products	Thenzawl 'E'
4	MIDH(Mis sion for Integrated Develop ment of Horticulture	DHO Serchhip	Rubber plantation	Terracing, Rain water harvesting structures	Technical &Financial support to promising farmers only.	Thenzawl 'E'
5	MGNREGS	DRDA, Serchhip Dist	Roadside plantation	Terracing Checkdam, Retaining wall, contour trenching, Public water point, Rain water harvesting structures	Provision of 100 days employment for every willing household	Thenzawl 'E'
6	IWMP(Inte grated Watershed Manage ment Programme)	DRDA Serchhip,	Rubber plantation	Terracing Checkdam, contour & staggered trenching,	Support to SHGs	Thenzawl 'E'

				Public water point, Rain water harvesting structures, Farm ponds, Fish ponds		
7	RKVY(Rast ria Krishi Vikaas Yojona)	DHO(Horti), DAO(Agri), DFDO(Fishery, DO(Sericulture) Serchhip district	Planting of Mulberry cuttings under sericulture, Oil palm plantation under Agriculture (OPAE)	Terracing(W RC-II),Rain water harvesting unit, Fish/Farm ponds	Provision of financial and material support to selected promising farmers.	Individuals /cluster selected from village
8	RADP (Rainfed Area Develop ment Programme)	DAO Serchhip	Shift from shifting cultivation to settled cultivation (WRC-II)	Terracing, water harvesting structure	Technical and financial support to vulnerable families	Selected cluster &Individuals
9	IAY(Indira Gandhi Awaas Yojona)	DRDA, Serchhip	Nil	Nil	Construction of houses for the poor	Thenzawl 'E'

2.16 Gaps/Strategies identified under GIM

Table 13					
Sl. No.	Village	Forestry activities proposed	Other activities like SMC	Livelihood activities proposed	Any others
1	Thenzawl 'E'	1)Enhancement of quality in existing forests(with limited root stock and open blanks) 2)Ecosystem restoration(Rehabilitation of Shifting cultivation) 3)Agro forestry 4)Social forestry 5)Support to community conserved areas	Interventions in catchment areas of hydrological importance	Community livelihood enhancement.	Promoting alternate energy sources

2.17 Drivers of degradation and deterioration in the forest eco-system

Table 14		
Sl. No.	Village	Drivers of degradation
1	Thenzawl 'E'	Traditional practice of shifting cultivation, Lack of strategic and participatory land-use planning, excessive population pressure on the forests for fuel-wood, fodder, timber etc., inadequate scientific management of watersheds including rainwater harvesting.

Chapter 3

Process undertaken for preparation of Micro-Plan/Sub-Landscape Plan

3.1 Constitution of Micro-Plan Working Group

A meeting was held with members/representatives of Village Council for Thenzawl 'E' village, conservation-oriented NGOs (YMA, MHIP and MUP), forest officers and other prominent citizens.. As per recommendations made in the meeting, a Micro-Plan Working Group was constituted for facilitating preparation of micro-plan for Thenzawl 'E' Landscape (L3). The constitution of the group is as under:-

Leader :	C.Lalkhawthanga	Range Officer, Thenzawl Range
Members :	1) Lalenglina	VCP
	2) B.Laldingngheta	VC Member
	3) K.Lalmuanpuia	YMA representative
	4) H.Lalrokima	YMA representative
	5) ZD Dengkunga	MUP representative
	6) Vanlalmawia	MUP representative
	7) J.Lalhriatpuui	MHIP representative
	8) B.Zahmingliani	MHIP representative
	9) R.Thanngura	VFDC representative
	10) PL Chhuana	VFDC representative
	11) Zorammawia F/G	Dept. representative

A questionnaire was designed by the committee for collection of data on (1) demographic status, (2) socio-economic conditions of the villagers, (3) resources available in the village etc. The questionnaire was designed to facilitate (1) assessment of current land use pattern and formulation of proposed land use pattern, (2) participatory resource-based land-use planning, (3) identification of livelihood needs, (4) planning of activities for sustainable livelihood support to the people and ecological stability in the region. The members of the Working Group also visited the area covered under L3 landscape.

3.2 Participatory Rural Appraisal (PRA)

PRA exercise including group discussion, experience sharing, one to one discussion with the villagers etc. was conducted to promote people's participation in project planning, implementation and monitoring. Information on various issues concerning GIM implementation was explained to the villagers through interpretation of maps and other documents. Resource mapping, Preparation of existing land use map, seasonal Calendar (Cropping season) and wealth ranking exercise were completed during PRA activities. The principle of participatory land use planning was adopted with available technical inputs and in consultation with all the stakeholders including the local public, proposed land used map was prepared. The proposed land used map reflects the area where interventions are to be planned and implemented.

3.3 Households survey

House-hold survey was carried out in the village covering almost all the families. A structured questionnaire was prepared for collecting information on dependency of every family on the forests as well as other required data.

3.4 Transect Walk

Transect walk was done by the Micro-plan Working Group along-with some local people and VFDC members. During transect walk, inputs were obtained from the field for deciding upon the suitability of the proposed land-use. GPS reading of the prominent sites/spots visited by the Working group were also recorded.

3.5 Details of awareness programmes, meetings and work-shops along-with the resolutions and other outcomes

Table 15					
Sl. No.	Work-shop / meetings State Level / Landscape / Villages covered	Category (stakeholders and no. of participants)	Major outcomes	Details of facilitators engaged	Whether resolutions / photographs enclosed
1	State/L1 level(State Mission Directorate)	Representative of all line departments ,reputed academic and technical institutions	Suggestions were mainly given for strengthening institutions responsible for GIM implementation in the State		
2	Village/L3 level at Thenzawl 'E'	Representatives of VFDCs,VCs, and NGOs such as YMAS,MHIPs & MUP attended.	GIM guidelines in local dialect be distributed. Rural outreach activity for data collection be done at the earliest		

3.6 Details of facilitators engaged in the process, institutions who prepared the micro-plans and approval of the Gram-Sabha

Table 16					
Sl. No.	Village	Institution who prepared Micro-Plan JFMC/Others	Details of participation of all stakeholders /departments	Approval of Gram Sabha	Details of facilitators engaged
1	Thenzawl 'E'	Thenzawl FDA& Microplan Working Group as mentioned in para 3.1	Representatives of Govt departments, Conservation oriented NGOs,VFDCs, VCs, and local public.	Approved by Village Council, Thenzawl 'E'. Approval letter enclosed at annexture -	

Chapter 4

Activities proposed to be undertaken in the L3 landscape

4.1 Current Land Use pattern

Current land use pattern has been mapped with interpretation of satellite imageries and field verification of interpreted data. The details are as under:-

Thenzawl 'E' village

Table17A				
Sl. No.	Land Use category	Area(Sq.kms)	% of total area	Remarks
1	Working Area	54.47		
2	Current jhum land	0.27	0.69	
3	Abandoned jhumland	0.79	1.56	
4	Horticulture land	0.72	1.43	
5	WRC	0.75	1.49	
6	Supply Safety Reserve	2.72	5.00	
7	VFDC Plantation	0.04	0.18	
8	Dept. Plantation	0.09	0.17	
9	Private land	8.03	14.75	
10	Community land	39.66	72.82	
11	Settlement	1.04	1.91	

Source: GIS cell ,E&F dept, Mizoram

4.2 Proposed Land Use Pattern

After careful scrutiny of current land use pattern, needs assessment and consultation with stakeholders, the following land use model is designed/proposed:

Thenzawl 'E' village:

Table17B				
Sl. No.	Proposed land-use	Area (sq. km.)	% of total area	Remarks
1	Working Area	54.47		
2	Horticulture land	0.67	1.23	
3	WRC	0.69	1.27	
4	Supply Safety Reserve - Moderately dense forest cover but showing degradation	2.72	4.50	
5	Agro Forestry & Social Forestry - Farmers land including current fallows - Highways, Rural roads etc.	1.70 0.75	3.12 1.38	
6	Rehabilitation of Shifting Cultivation areas	2.40	4.41	
7	Private land	6.83	12.55	
8	Community land: - Eco-restoration of degraded open forest -Community land	2.80 34.87	5.14 64.49	
9	Settlement Area	1.04	1.91	

4.3 Treatments proposed

The following prescriptions (sub-missions/categories) are proposed to achieve the objectives under GIM through sustainable use of available natural resources:-

Table17C						
Sl. No.	Village	Submission/category				
		Enhance quality of forest cover	Ecosystem restoration & increase in forest cover	Agro forestry & Social forestry		Support to Community Reserves
1	Thenzawl 'E'	Stock enrichment planting to increase the quality of existing forests (ANR)	Plantation of indigenous spp to improve ecosystem and provisional services (AR)	Raising of plantation along with agri-crops for generating additional income sources	Afforestation activities with active people's participation of locals along the roads, in school premises etc	Support to community for conservation /improvement of their forests

Cross-cutting interventions:

Table 17D					
Sl. No.	Village	Cross-cutting interventions			
		Alternate energy sources	Livelihood enhancement Community	Community conserved areas and sacred groves	Watershed management
1	Thenzawl 'E'	Provision of Solar devices, LPG connection to BPL families	Support to forest based cottage industries for value addition of forest produce and marketing of value added products and Support to eco-tourism activities	Technical and financial assistance to village community as well as conservation oriented NGOs for sustainable management of forests	Rainwater harvesting, construction of check dams/ retaining wall, soil and water conservation measures

4.4 Objectives

Short term objectives

- Identification and arrest of drivers responsible for eco-system degradation
- Water-shed management - ridge to valley approach
- Increase in fuel-wood and fodder availability
- Employment generation
- Awareness for sustainable management of natural resources

Long term objectives

- Sustainable livelihood support to the people
- Ecological stability in the region

4.5 Submissions proposed for treatment (Action plan): Thenzawl 'E'

Table 18					
Village	Sub-Missions	Categories	Proposed area	Proposed cost (Rs in lacs)	Livelihood activities proposed based on Micro-Plan
Thenzawl 'E'	1:Enhancing quality of existing forest cover & improving ecosystem service	a)Moderately dense forest cover, but showing degradation.	160 Ha.	64.80 @Rs40,500/ Ha	Support to Cottage industries i.e 17% of Total Cost norms for submissions and interventions = Rs.124.6287 lakhs
		b)Eco-restoration of degraded open forest	(200 plants/ha Type A) 160Ha.	69.12 @Rs.43,200/ Ha	
			(2500 plants/ha Type C) 120Ha.	162.00 @Rs.1,35,000 /Ha	
	2:Ecosystem restoration and increase in forest cover	a)Rehabilitation of shifting cultivation areas	(1100 plants/ha) 240Ha	194.40 @Rs.81,000/ Ha	
	3:Agro forest & Social Forestry (increasing biomass & creating carbon sink)	a)Farmer's land including current fallows	(1100 plants/ha) 170 Ha	91.80 @Rs.54,000/ Ha	
		c)Highways/ Rural roads/ Canals/ Tank/Bunds	(1100 plants/ha) 75 Ha	141.75 @Rs.1,89,000 /Ha	
	4:Promoting alternative fuel energy	Biogas,solar device,LPG,Bio mass based systems, improved stoves	280 fly.	9.24 @Rs.3300/fly .	
Total cost norms for sub-missions and interventions				733.11 lakhs	

Chapter 5

Activities proposed under convergence

5.1 Activities proposed under convergence

Table 19					
Sl. No	Village	Scheme	Implementation Agency	Activities proposed	Proposed funding Rs in lakhs
1	Thenzawl 'E'	MGNREGS	DRDA, Serchhip	Provision of 100 days employment for every willing household.	100.00
		NAP	FDA Thenzawl	Sustainable management of forests with peoples' participation. Plantation is raised on degraded lands.	50.00
		NBM	FDA Thenzawl	Raising plantation of bamboo spp. Training farmers to increase bamboo products.	50.00
		NLUP	Different line departments like Forest, Horti., AH & Vety, Fisheries, Agri. etc.	Provision of technical and sustainable livelihood support so as to wean them away from the traditional practice of jhumming.	200.00

5.2 Activities proposed for overall improvement of the landscape to be taken up through convergence – Not yet decided

-

Chapter 6

Institutional Set-up for implementation in the landscape

6.1 GIM Committee:

Various committees have been constituted by the State government vide No.B.13011/3/2016-PCCF(PLG)/ Dated Aizawl the 25th August 2016 for effective implementation of GIM in the State of Mizoram. A copy of notification is attached at Annexure-----

The names of these committees are as under:-

- 1) Revamped Thenzawl 'E' VFDC for Green India Mission
- 2) Thenzawl 'E' Village Level GIM Committee

6.2 Institutional Set-up for implementation in the landscape

Table 20							
Sl. No.	Village	Institutions proposed for implementation	Submission of area			Details of other activities	Remarks
			Submission	Category	Area		
1	Thenzawl 'E'	Revamped VFDC	Enhancing quality of existing forest cover (ANR)	With limited root stocks and open blanks	160Ha	Provision of support to small scale cottage industries	Financial support for Livelihood will be given in the exit year
			Ecosystem restoration and increase in forest cover	Rehabilitation of shifting cultivation	240Ha		
			Social Forestry	Plantation in Govt.	10,000 seedling		

				offices compounds			
			Agro- forestry	Plantation along with agri-crops	10,000 seedling		
			Alternate energy source	LPG connection to poor families	200 Families		
				Solar devices	80 Families		

Chapter 7

Livelihood Issues

7.1 Brief note on the forest dependency and livelihood issues

7.1.1 Availability and Requirement of Fuel wood.

Most of the households use fuel-wood as supply of LPG cylinders is much limited in the rural areas. The requirement and availability of fuel-wood is indicated below:-

Table 21						
Sl. No.	Village	No. of households	Average fuel wood requirement per household (cum)	Annual Fuel wood requirement (cum)	Fuel wood availability (Annual Yield) (cum)	Remarks
1	Thenzawl 'E'	970	1.9	1843	1431	

7.1.2 Availability and Requirement of Fodder

Very few households practice cattle rearing for livelihood support. Therefore, demand for fodder is comparatively low.

7.1.3 Availability and requirement of Timber

Demand for timber used in house construction and furniture has been worked out and is indicated below:-

Table 22						
Sl. No.	Village	No. of households	Average timber requirement per household (cum)	Annual timber requirement (cum)	Timber availability (cum)	Remarks
1	Thenzawl 'E'	970	2.7	2619	1321	

7.1.4 Availability and Requirement of NTFP(s).

Bamboo, cane, thatch, honey etc. are some of the important NTFP (s) which are extracted by the villagers from the forests. The demand as well as the availability for various NTFPS has been indicated below:-

Thenzawl 'E' Village:

Table 23							
Bamboo (nos.)		Fuelwood(cum)		Broom(Qtls)		Thatching grass (Bundles)	
Demand	Supply availability	Demand	Supply Availability	Demand	Supply availability	Demand	Supply Availability
15,000	1,00,000	1843	1431	360	946	428	926

7.2 Details of activities to be carried out to address livelihood issues through Green India Mission including details of activities, beneficiaries, cost, village-wise plan etc.

Table24							
Sl. No	Village	Proposed livelihood activities	Role of facilitators, if any engaged	Beneficiaries No. of Family	Proposed cost(Rs in lakhs)	Remarks	
1	Thenzawl 'E'	Technical & Financial support to cottage industries	Provision of technical knowledge to improve quality and quantity of production as well as assistance in marketing	280	124.6287	Handloom industry is popular within L3 Landscape- Thenzawl 'E'. Hence on receipt of fund priority will be given for uplifting Handloom industry.	

7.3 Convergence of schemes of other departments/missions viz. NRLM to enhance the livelihood especially with the aim of addressing the drivers of degradation and the activities proposed along-with the beneficiaries, cost, and village-wise plan

Table 25							
Sl. No.	Village	Scheme	Implementing Agency/ department	Proposed livelihood activities	Beneficiaries	Proposed cost	Remarks
					No. of Family		
1	Thenzawl 'E'	NRLM	BDO, Serchhip	NIL	-	-	

Chapter 8

Baseline Survey

8.1 Baseline survey:

The baseline data for various parameters required for maintaining the outcomes of activities undertaken under GIM are given below:-

Thenzawl 'E' village:

Table 26		
Parameters	Indicator	Baseline Status (As on 8.6.2017)
1. Forest/tree cover on forest/ non-forest lands in the Mission Target Area (MTA)	a) % of area with forest cover	83.26% (Total forest cover 45.35 sq. km. out of 54.47 sq. km.)
	b) % area in various forest density classes	1) Very Dense = 0.0% 2) Moderately Dense= 29.82% (16.24 sq. kms.) 3) Open Forest = 53.44 % (29.11 sq. km.) 4) Non Forest = 16.74% (9.12 sq. km) Source: GIS cell E&F Dept. Govt. of Mizoram
2. Ecosystem services from targeted areas / landscapes	a) Shannon-Weiner Index	2.958 (annexure
	b) Biomass	Above Ground Biomass = 13.49 tonnes/ha Source: Field Survey data
3. Soil	a) Depth of top soil	The depth of top soil is very deep in valley flatlands whereas in the hills it is deep to very deep.

	b) Soil quality	<p>Three soil orders such as ultisols, inceptisols and entisols are found in the project area. The surface soil textures are loam to clay loam with clay content increasing with depth in the hills whereas in the valleys it is mostly sandy loam to sandy clay loams. The soils are acidic in nature with pH values ranging from 6.8 to 7. The soils in the hills are strongly acidic in reaction, whereas, the soils in alluvial deposits are less acidic in nature. The percentage of organic carbon content is medium (0.70%). The available nitrogen is medium (0.6 kg/ha) while available phosphorus is found low (12 kg/ha). The available potash is found to be high (285 kg/ha).</p>	
4. Hydrology	a) Wetland area b) Stream beds/water discharge c) Ground water, Table- water level in wells/springs	a) No wetlands in the Area b) No data on stream water discharge c) The area is hilly with variable elevation. Therefore, the ground water level varies. In the village settlement area, the depth of water in well is about 40 ft.	
5. Annual sequestration of CO ₂	Carbon sequestered in the target area.	Baseline Carbon Stock = 3,58,949.785 tonnes	
6. Forest / non-forest based livelihoods income	No. of targeted households (HH) reporting at least 25% increase in real income	Income(Rs. Annual)	No of Households
		More than 5Lakh	41
		5 lakh > -- < 50,000	709
		Less than 50,000	220
7. Quality of	a) % of forest area	83.26%	

forest cover & ecosystem services of forest / non-forests	naturally regenerating.	Source: GIS Cell, E&F Dept, Mizoram
a) Moderately dense forests	b) Biomass	21,907.76 tonnes (AGB)
b) Open forests		39,269.39 tonnes (AGB)
c) Degraded grasslands		-
d) Wetlands		-
2. Ecosystems are restored and forest cover is increased in Scrub, shifting cultivation areas etc.	a) % of area that is adequately stocked /productivity	
3. Forest and Tree cover in urban/ peri-urban land	a) % of forest and tree cover in the targeted urban/peri-urban areas	Plantation in urban/peri-urban not allotted to Thenzawl 'E'
4. Forest and tree cover on marginal agricultural lands / fallows and other non- forest land under agro forestry/ social forestry	a) % of tree cover on non-forest land.	16.74 % (9.12 sq. kms. out of 54.47 sq. kms.) Source: GIS Cell, E&F Dept Mizoram
5. Public forest/	a) % of area under	72.82 % (39.66 Sq Km out of 54.47 Sq Km)

non-forests areas (taken up under the Mission) are managed by the community institutions.	management of community institutions	Legally under the Village Council Source: GIS Cell E&F Dept, Mizoram	
6. Improved fuel wood-use efficiency and alternative energy devices adopted by households in the MTA.	a) % of HH reporting use of alternative energy devices.	Total Households = 970 LPG users = 40 Fuel-wood users = 860 Fuel-wood only users = 70 Solar Devices users = nil	
7. Forest/non forest based livelihoods of the people living in and around the forests are diversified.	a) % of HH reporting diversification of income sources.	Source of income	No of Households
		Govt. Service	148
		Jhumming	40
		Horticulture including WRC	230
		Business/Petty Trade	59
		Daily Labourers	493
		Others	-

Chapter 9

Status of reforms proposed

- 9.1** Role of Gram Sabha (Village Council) in project planning, implementation and monitoring
- 9.2** Revamping of VFDCs
- 9.3** FRAs compliance in areas covered under L3
- 9.4** Easing out regulatory framework in felling and transportation of forest produce
- 9.5** Strengthening frontline formation of E&F department

Chapter – 10

Mission Cost

10.1 Cost of the Mission

Cost of the mission for various work items has been given in the Abstract in Annexure - XIV

10.2 Mission sustainability

The mission will be executed with active participation of the local people. On completion of the project, crop productivity of the existing forest will increase substantially. Sustainable extraction of forest produce, value addition to forest produce as well as marketing of value added products will provide livelihood support to the people while maintaining ecological stability in the region. Thus the mission is economically viable and socially adoptable.

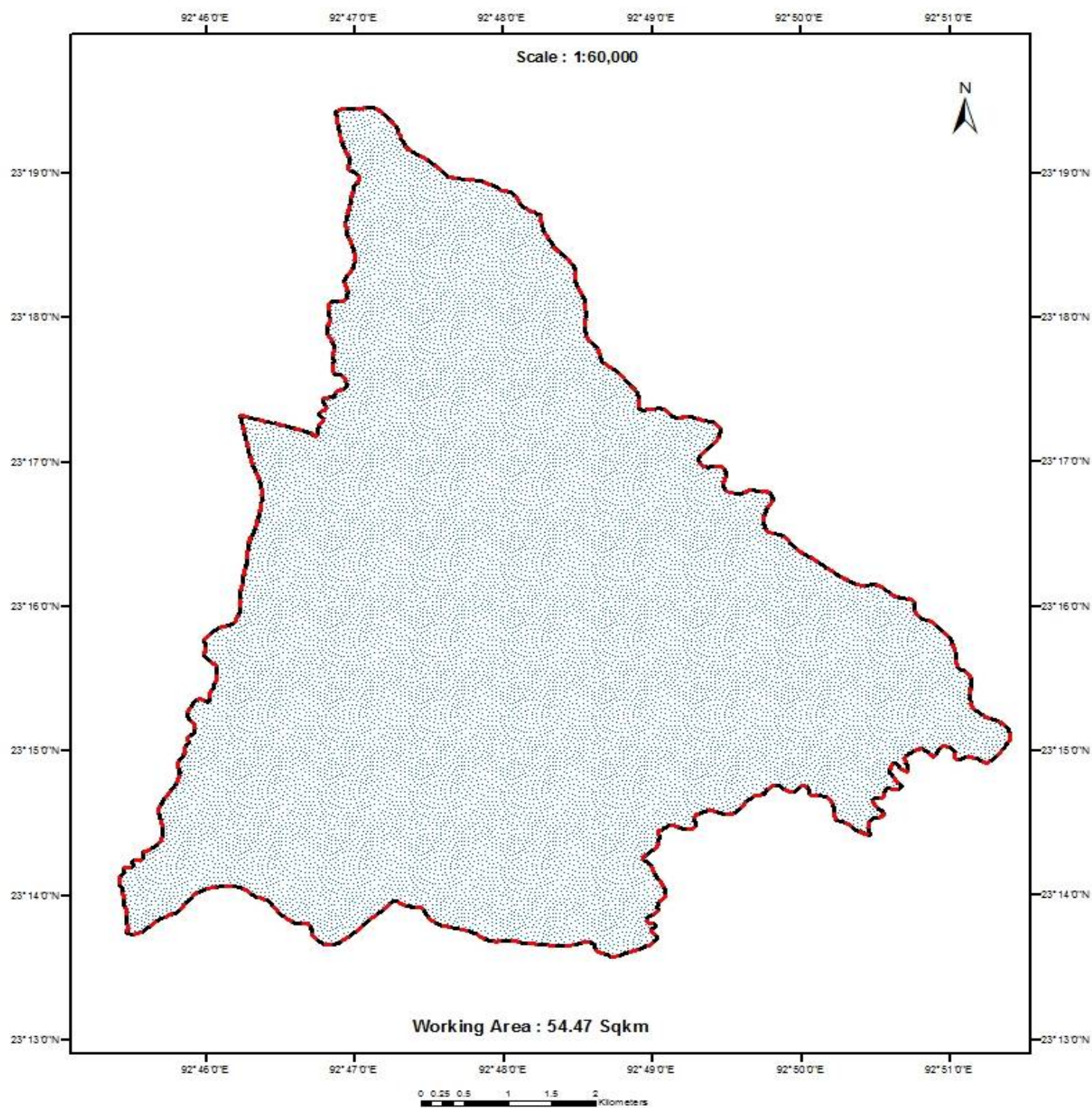
Abstract

Table 27

Table 27				
1. Name of L1 landscape		The State of Mizoram		
2. Name of L2 landscape		Thenzawl		
3. Name of L3 landscape		Thenzawl ‘E’		
4. Forest and non-forest area in L3		Forest area – 45.35 sq km Non-forest area – 9.12 sq km		
4. Drivers of degradation in the landscape		Traditional practice of shifting cultivation, Lack of strategic and participatory land-use planning, excessive population pressure on the forests for fuel-wood, fodder, timber etc., inadequate scientific management of watersheds including rainwater harvesting.		
5. Results of problem analysis				
6. Existing scheme implemented in the landscape		NAP,NBM,MGNREGS,RKVY,IAY etc.		
7. Implementing agencies under GIM		Revamped VFDC Thenzawl ‘E’		
8. GIM Activities				
A- Cost norms for Sub-Missions and Interventions				
Sub-Missions	Categories	Proposed Area	Proposed Cost (in lakhs)	Funding Received (CSS plus SMS)(in lakhs)
1: Enhancing quality of existing forest cover & improving ecosystem service	a)Moderately dense forest cover, but showing degradation	160 Ha.	@40,500/Ha.= 64.80	4.32+0 =4.32
	b)Eco-restoration of degraded open forest.	160 Ha.	@43,200/Ha.= 69.12	5.184+0 =5.184
	i) 200 plants per Ha.(Type A) ii) 2500 plants per Ha.(Type C)	120 Ha.	@1,35,000/Ha=162.00	8.10+0.648 =8.748
2: Eco-system restoration and increase in forest cover	a)Rehabilitation of shifting cultivation areas	240 Ha.	@81,000/Ha. = 194.40	5.508+0.648 =6.156

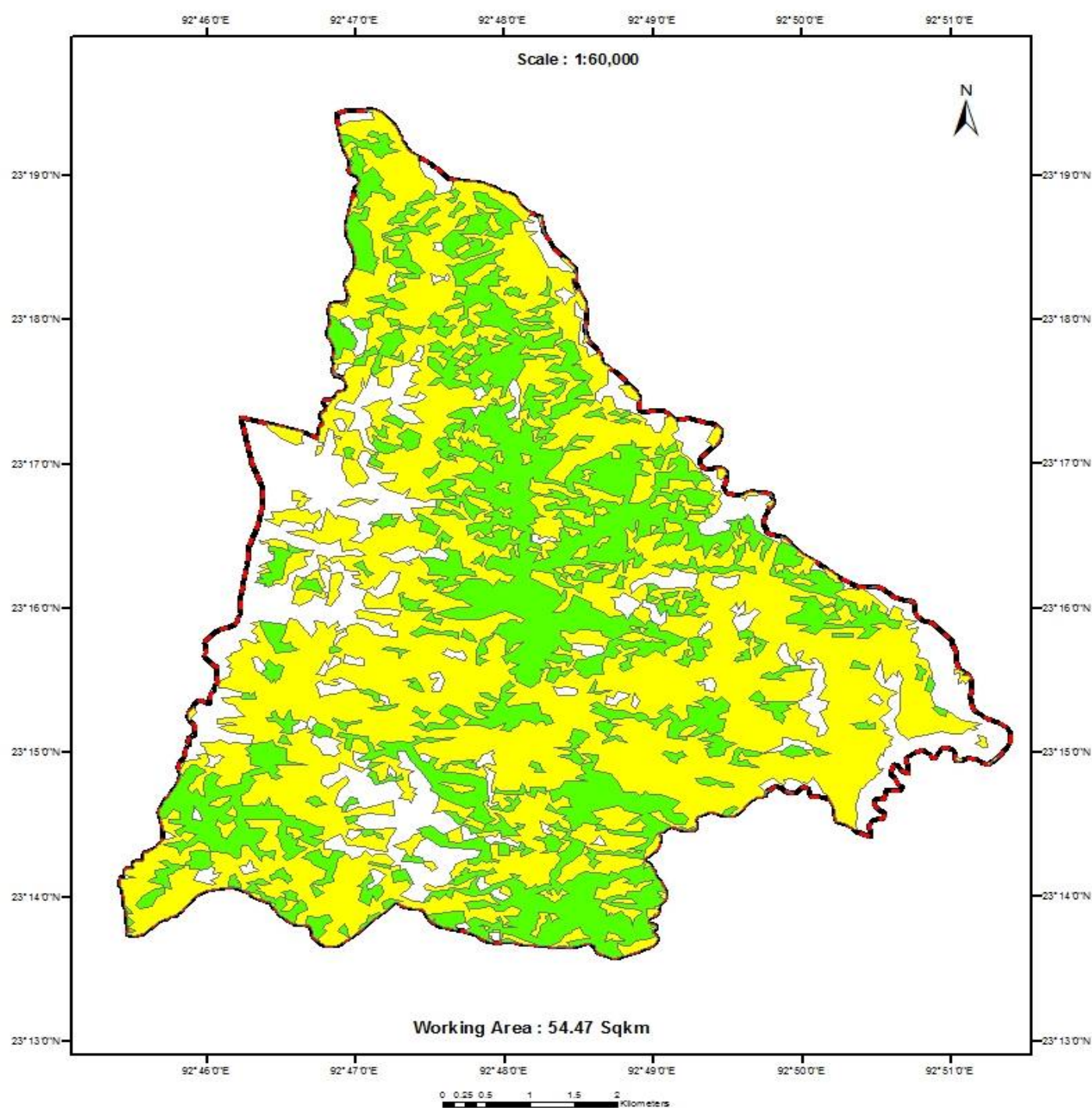
3: Agro-Forest & Social Forestry (increasing biomass & creating carbon sink)	a)Farmers' land including current fallows	170 Ha.	@54,000/Ha. = 91.80	6.426+0.7225 =7.1485
	b)Highways /Canals/Rural roads/Canals/Tanks/Bunds	75 Ha.	@1,89,000/Ha. = 141.75	9.315+0.219 =9.534
4: Promoting alternative fuel energy	Biogas, solar device, LPG, Biomass based systems, improved stoves	280 fly.	@3300/fly. = 9.24	nil
Total of A			733.11	41.0905
B-For Support Activities				
	Activities Cost			
1	Research (2% of A)		14.6622	-
2	Publicity/Media/Outreach activities (1% of A)		7.3311	-
3	Monitoring & Evaluation (1% of A)		7.3311	-
4	Livelihood Improvement activities (17% of A)		124.6287	-
5	Strengthening local – level Institutions (5% of A)		36.6555	0.07714
6	Strengthening FDs (5% of A)		36.6555	-
7	Mission Organisation, operation and maintenance, contingencies and overheads (4% of A)		29.3244	-
Total of B			256.5885	0.07714
Grand Total (A + B)			989.6985	41.16764

GEOGRAPHICAL MAP OF L3 LANDSCAPE THENZAWL EAST



Prepared By:
GIS CELL EF&CC Deptt, Mizoram

VEGETATION MAP OF L3 LANDSCAPE THENZAWL EAST

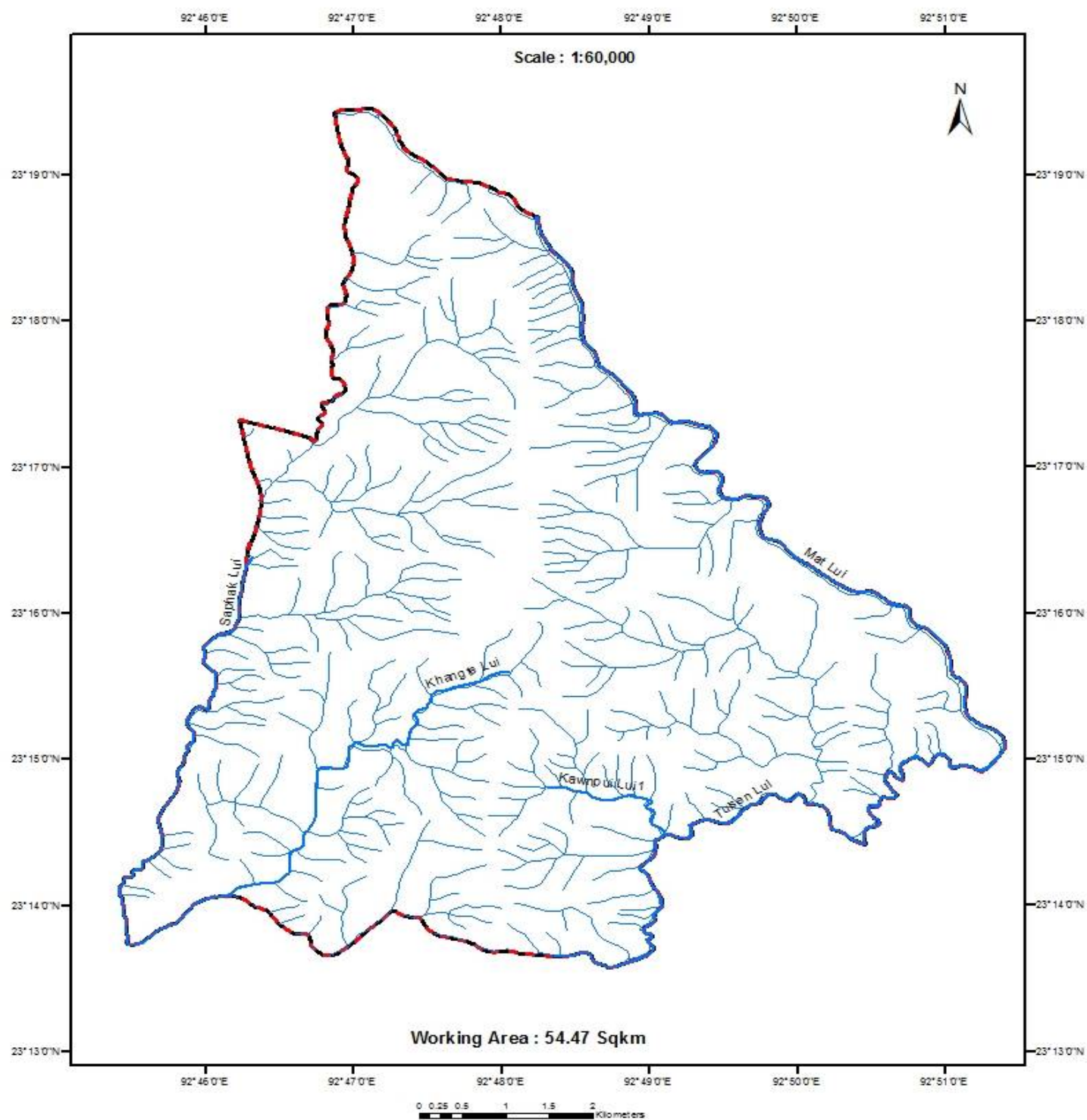


Moderately Dense Forest : 16.24 Sqkm
Open Forest : 29.11 Sqkm



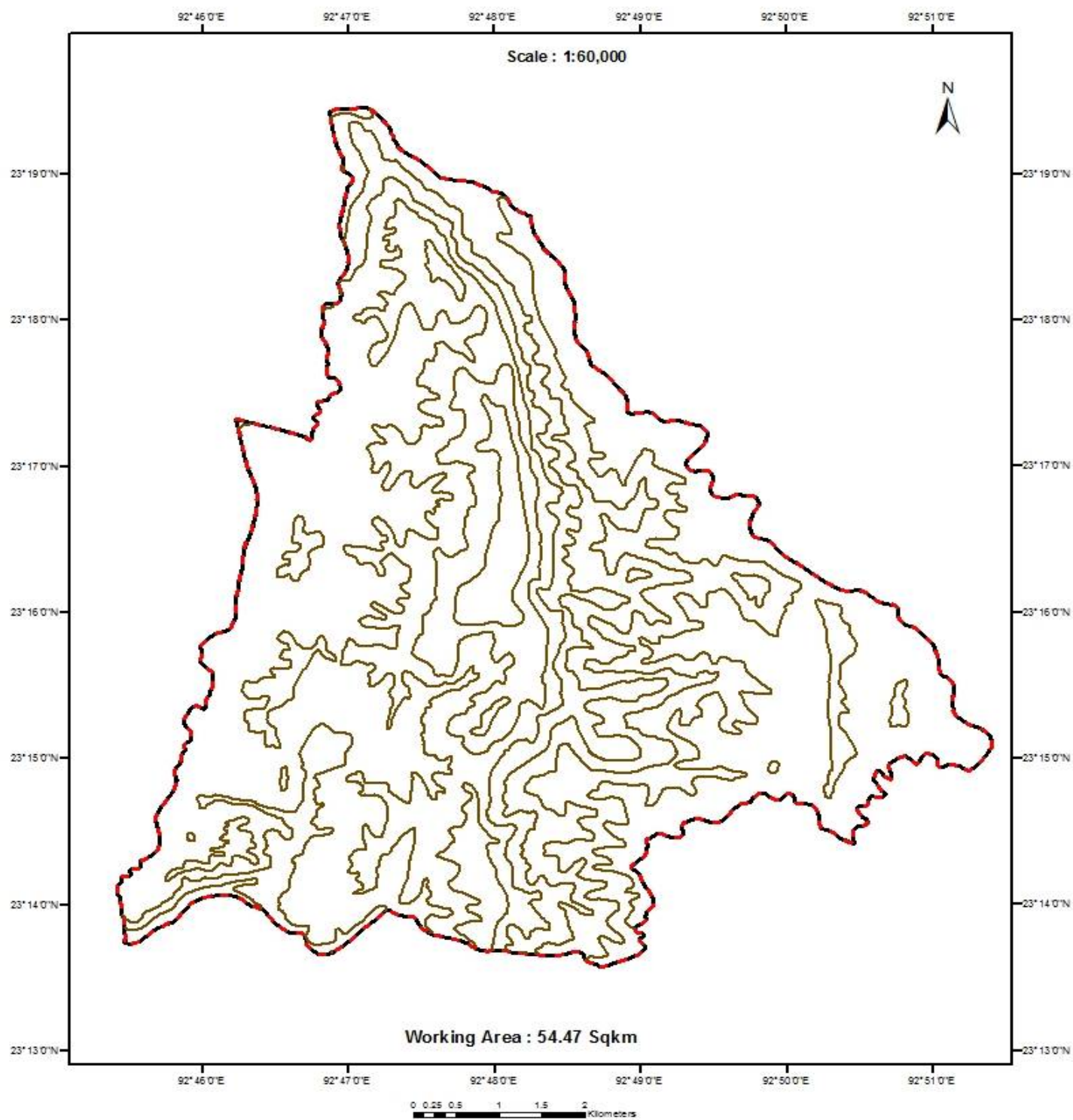
Prepared By:
GIS CELL EF&CC Deptt, Mizoram

DRAINAGE MAP OF L3 LANDSCAPE THENZAWL EAST



Prepared By:
GIS CELL EF&CC Deptt, Mizoram

CONTOUR MAP OF L3 LANDSCAPE THENZAWL EAST

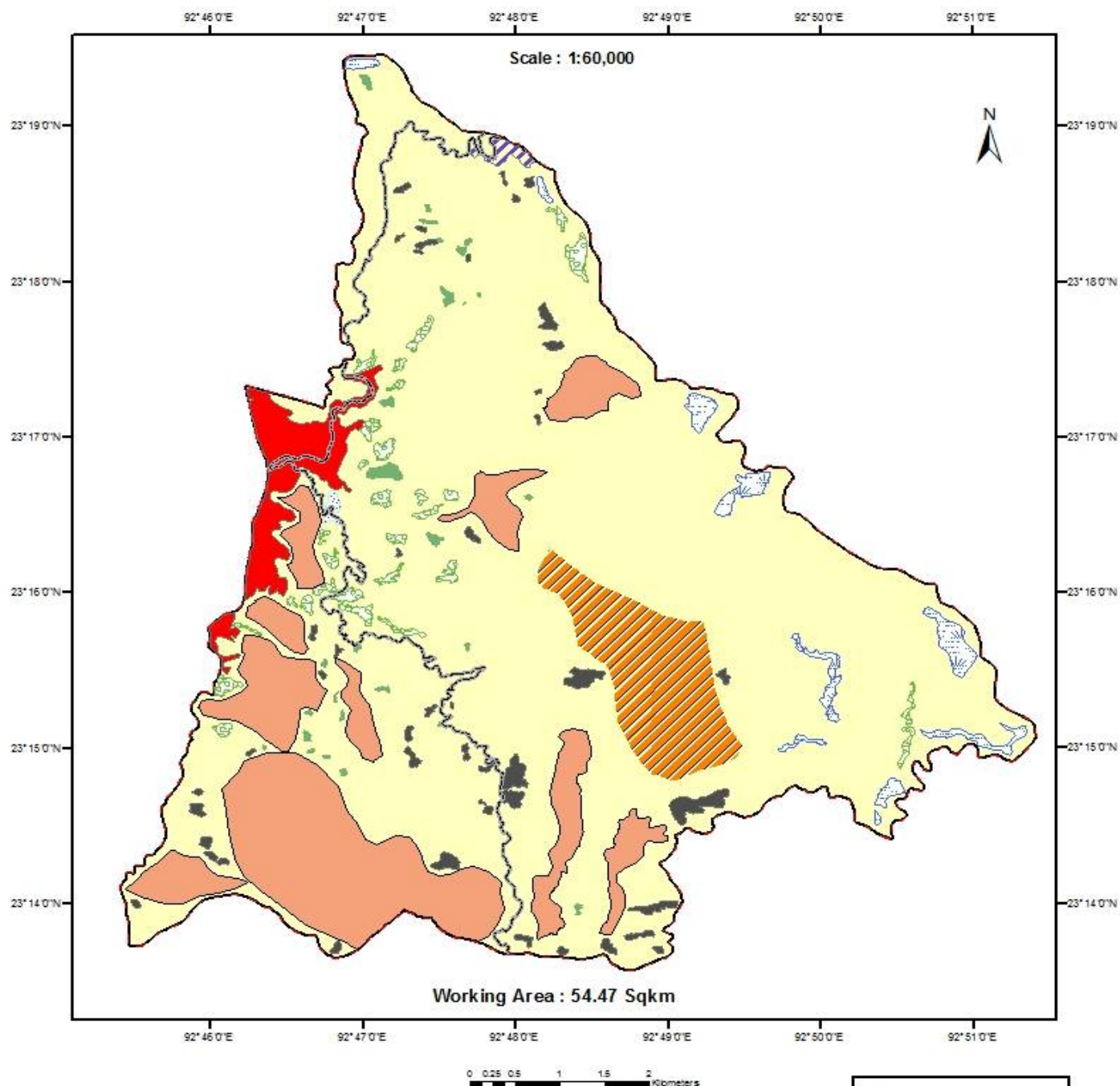
**Legend**

- Working Area
- Contour

Prepared By:
GIS CELL EF&CC Deptt,Mizoram

LANDUSE MAP OF L3 LANDSCAPE THENZAWL EAST

Annexure-V

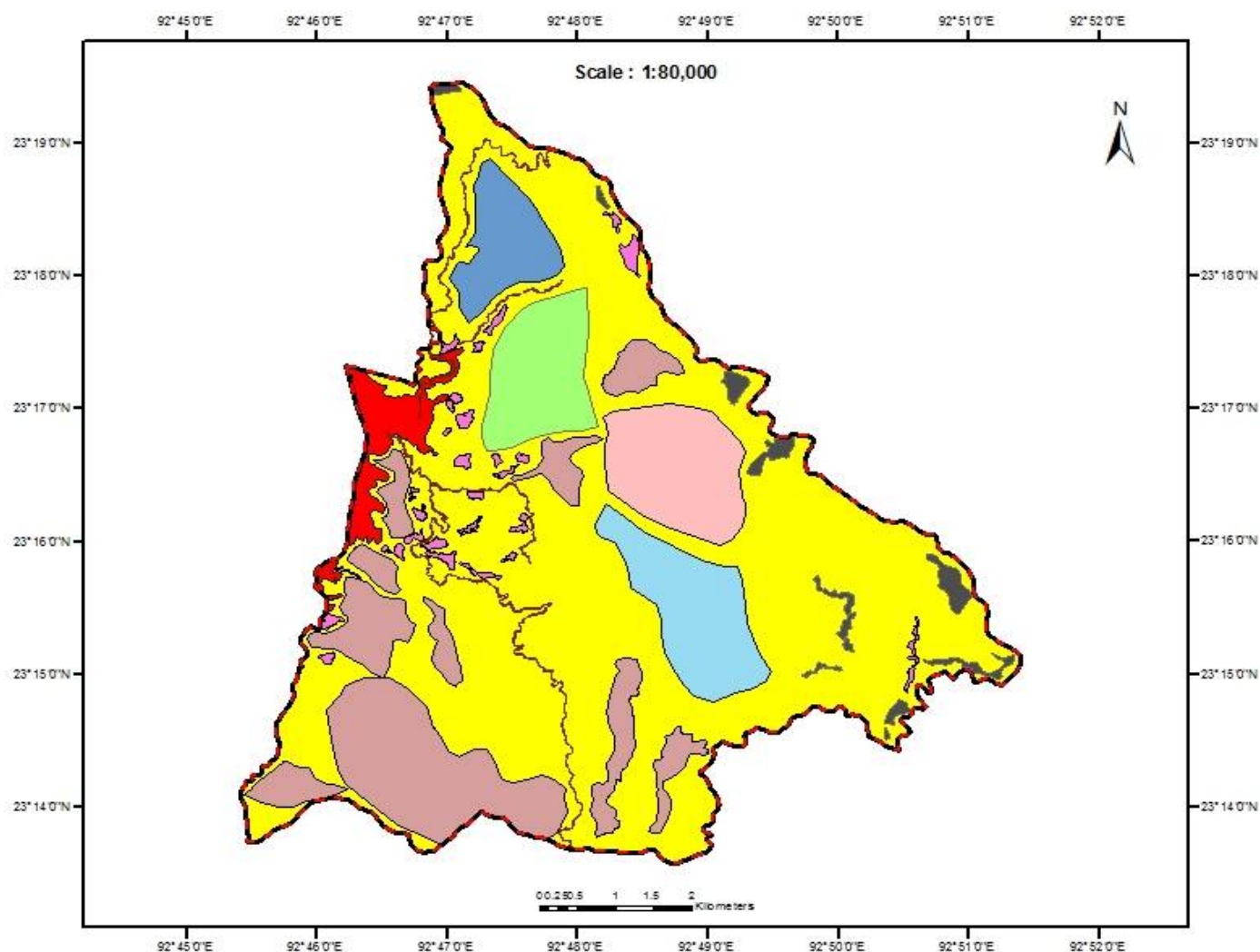


1. working Area	: 54.47 Sqkm
2. Current Jhum Land	: 0.27 Sqkm
3. Abandoned Jhum Land	: 0.79 Sqkm
4. horticulture	: 0.72 Sqkm
5. WRC	: 0.75 Sqkm
6. Supply Safety Reserve	: 2.72 Sqkm
7. VFDC Plantation	: 0.04 Sqkm
8. Department Plantation	: 0.09 Sqkm
9. Private Land	: 8.03 Sqkm
10. Community Land	: 39.66 Sqkm
11. Settlement	: 1.40 Sqkm

Legend	
	Working Area
	Private Land
	Abandoned Jhum Land
	Current Jhum Land
	Department Plantation
	Horticulture
	Supply Safety Reserve
	VFDC Plantation
	WRC
	Community Land
	Human Settlement
	Roads

Prepared By:
GIS CELL EF&CC Deptt,Mizoram

PROPOSED LANDUSE MAP OF L3 LANDSCAPE THENZAWL EAST



1. Working Area : 54.47 Sq.Km
2. Shifting Cultivation
Rehabilitation Areas : 2.40 Sqkm
3. Horticulture Land : 0.67 Sqkm
4. Supply & Safety Reserve :
I) Moderately Dense Forest Cover
But Showing Degradation : 2.72 Sqkm
5. Agro & Social Forestry :
I) Farmer's Land : 1.70 Sq.km
II) Highways / Rural Roads : 0.75 SqKm
7. Private Land : 6.83 Sqkm
8. Community Land :
I) Eco-Restoration of Degraded Open Forest : 2.80 Sqkm
II) Community Land : 34.51 Sqkm
9. WRC : 0.69 Sqkm
10. Settlement : 1.40 Sqkm

Legend

- Working Area
- Shifting Cultivation Rehabilitation Areas
- Horticulture Land
- Farmer's Land
- Moderately Dense Forest but Showing Degradation
- Eco-Restoration of Degraded Open Forest
- Private Land
- Highways/Rural Roads
- WRC
- Settlement
- Community Land

Prepared By:
GIS CELL EF&CC Deptt, Mizoram

(159)

GUIDELINES FOR IMPLEMENTATION OF GREEN INDIA MISSION IN MIZORAM

For successful implementation of Green India Mission (GIM) in the State of Mizoram in a transparent and participatory manner, the following simplified and step by step guidelines (extract of important conditions laid down in the GIM Implementation Guidelines of MoEF&CC and Sanction Order) are issued for compliance by the implementing FDAs, VFDCs (JFMCs), other Committees and officials concerned.

I. Village Level

1. **Revamped VFDC** – Since the Mission activities at the village level are to be implemented by the revamped VFDCs mandated by the Village Council, the existing VFDCs shall be revamped or re-constituted as per JFM Guidelines in consultation with or mandated by the Village Council concerned (Formation of VFDC to be approved by the Village Council).
2. **Exclusive and separate bank account of VFDC** will be opened in a Nationalized Bank/ Cooperative Bank or Post Office to be jointly operated by the President and Member Secretary of the VFDC.
3. **Village Level GIM Committee (VLGC)** will be formed by the DFO (CEO) in consultation with the heads of departments concerned in the district, specifying the names/designation of the members as per the following composition under intimation to the Chairman of the FDA and DLSC:-
 - a) Chair person : Range Forest Officer concerned
 - b) Member Secretary : Beat Officer (Forester or Forest Guard) concerned
 - c) Members : Field officers/staff in charge of the area from Agriculture, Horticulture, Soil & Water Conservation, Sericulture, AH & Vetty, Fisheries, Rural Development, Social Welfare Departments, two (2) members of VFDC, two representatives of Village Council and two representatives of prominent NGOs concerned.
4. As soon as approval of the project or release of the fund is intimated to the VLGC, the Member Secretary will convene a **meeting of VLGC** to discuss or review the micro-plan/ perspective plan to see the possibility of convergence with other programmes and also discuss how the GIM is to be implemented as per the prescription in the approved micro-plan with active participation of the local people. Minutes of the meeting should be properly recorded in the Minute Book and a copy of the meeting minutes should be given to the FDA and DLSC who may give advice as deemed necessary, particularly with regard to convergence.
5. **Revision of micro-plans** of L3 landscapes and corresponding APO already prepared will be re-visited and revised in conformity with the State Level Perspective Plan and APO approved by MoEF&CC, and in the revised micro-plans of L3 level landscapes,

All the activities/interventions to be implemented with the funds available from various sources/complementary schemes are duly taken into account to ensure requisite investment through convergence. The financial micro-planning shall include detailed breakup of the funds from various sources e.g. GIM, CAMPA, MNREGS, NAP etc.

A baseline data on forest cover, biodiversity, carbon sequestration, potential status of wildlife corridors, annual income of forest dependent communities, socio-economic profile of the villages, and status of wetlands shall be recorded.

The timeframe within which each L3 landscape shall be saturated with GIM interventions should also be clearly stated.

Geo-coordinates of each landscape/area where the activities under GIM or convergence activities are proposed with any other complementary scheme shall be recorded.

In addition, it shall be indicated in the micro-plans, the species and number of seedlings to be raised in the nurseries in consultation with the stakeholders in the L3 landscapes.

6. **Micro-plan approval** – The L3 level micro-plans and APO so revised as per the approved State level Perspective Plan and APO have to be approved by the Village Council and then submitted to the Member Secretary of the FDA for compilation as L2 Perspective Plan.
7. **The funds received by VFDC from the FDA shall be deposited in the joint bank account for utilization to carry out the approved GIM activities in L3 landscapes.**
8. **Implementation of GIM activities** - As soon as approval of the project or release of the fund is intimated to the VFDC, the Member Secretary will convene a meeting of VFDC to discuss how and where the approved activities will be taken up with the fund received/to be received by them and in conformity with the prescription in the approved micro-plan. Minutes of the meeting should be properly recorded in the Minute Book and a copy of which shall be given to the FDA, DLSC, VLGC and the VC who will monitor the implementation of the Mission and who may give guidance and advice as deemed necessary.
9. **Before taking up any work/activity, photographs (with date) of the site/area where work is to be taken up shall be taken from a particular point(s) which shall be marked by fixing permanent pillar(s), and photographs of the same site/area will be taken from the same point(s) after the works are completed. In this way, photographs will be taken of the same site/area every year from the same point(s) just before and after taking up the works. The hard and soft copies of those photographs (with date) shall be kept under safe custody of the VFDC Secretary for record and also for submission to higher authorities.**

I. District/Division Level

1. On receipt of approval of the project/release of fund from SFDA, meeting of District Level Steering Committee (DLSC) and of the FDA will be convened to appraise the members of the approval/sanction of the project and also to facilitate convergence with any other schemes in the selected L2 landscapes and also to render advice to the FDA and VFDC for successful implementation of the project as deemed necessary.
2. Since the General Body and Executive Body of the FDA constituted by the Government vide No.B.11016/16/2011-FST dt. 11.11.2014 does not specify the names/designation of some of the members, the DFO/Member Secretary of the FDA concerned will make nomination/obtain nomination from the concerned authority as the case may be, and send the same to the Conservator of Forests/Chairman of the FDA for issue of final notification/order to this effect.
3. L2 level Perspective Plan and the corresponding APO will be prepared/ revised by compiling the revised and/or approved L3 level micro-plans received from VFDCs and the same has to be approved by the FDA and also by the DLSC after which it will be sent to SFDA for approval.
4. Exclusive and separate bank account of FDA will be opened in a Nationalized Bank to be jointly operated by the Chairperson and Member Secretary of the FDA, and funds for implementation of GIM activities shall be received through Electronic Clearance System (ECS) and deposited in such joint bank account.
5. The funds received by the FDA will be released to the concerned VFDC within fifteen days of receipt of the fund from the SFDA preferably by ECS with proper intimation and instruction in writing as to how the fund should be utilized indicating the items of works/ activities to be taken up with the fund so released. Copy of such communication (release of funds) should be given to the Chairperson of VFDC, Village Level GIM Committee, Village Council and DLSC.
6. The FDA shall be responsible for guidance, coordination, supervision, periodical reporting and monitoring the implementation of the project by their constituent JFMCs/ VFDCs.
7. The FDA shall ensure that there is no diversion of earmarked funds from one L3 landscape to another one except in case of unavoidable circumstances and only with the prior approval of Mission Directorate.
8. Except for supervening impossibilities, the Chairperson and Member Secretary of the FDA shall be solely responsible and accountable for successful implementation of the project.
9. The FDA shall follow strict corruption mitigation strategies while utilizing the funds.

10. FDA shall take necessary steps to ensure raising of quality seedlings and maximum survival of plants under the GIM Scheme. The survival percentage of plantation shall be reflected in the subsequent QPR submitted to the Ministry along with the details on the progress of activities carried out under the Mission.


11. FDA shall also submit a certificate to the effect that all conditions laid down in the Implementation Guidelines and the Sanction Order are being followed each time a request for release of grant is made.

III. Monitoring and audit

1. The project shall be monitored periodically by the local community, implementing organization and the State Forest Department, by an external agency/third party of randomly selected sites, by the Forest Survey of India (FSI) using remote sensing based forest cover monitoring. Besides, pilot areas will be intensively monitored to assess the impact and efficacy of different old and new practices by the implementing agency, the Forest Department and a support organization. In addition, the Gram Sabha/Village Council will carry out social audit of the Mission activities at the village level. The MoEF&CC shall also supervise the project, as and when deemed required.

2. Any agency/ officer (s) authorized by GIM shall have the right of access to the books and accounts of the FDA/JFMCs and VFDCs for funds received under the project.

3. The Mission accounts will be subject to audit by Principal Accountant General, Mizoram and also by reputed Chartered Accountant who is in the panel of C&AG or any person/agency authorized by C&AG on his behalf.


Principal Chief Conservator of Forests
Mizoram : Aizawl

GOVERNMENT OF MIZORAM
OFFICE OF THE RANGE FOREST OFFICER
THENZAWL FOREST RANGE
THENZAWL, MIZORAM.

NO.TFR/25/GIM/2015 – RO(Tzl)/ 7c/

Dated, Thenzawl the 26th Sept. 2016.

To
The Divisional Forest Officer
Thenzawl Forest Division
Thenzawl, Mizoram.

Subj. – 2016-17 Thenzawl 'E' Revamped VFDC(GIM) Managing Committee members.

Ka pu,

2016-17 Thenzawl 'E' Revamped VFDC(GIM) Managing Committee members tur inthlanna dt.20.9.2016 khan Thenzawl 'E' VC House ah tluang taka neih a ni a. A hnuaia hming tarlante hi Managing Committee member te chu anni –

1. Chairman : Pu Lalenglina
2. Secretary : Pu C.Lalkhawthanga F/R
3. Veng aiawh :
Thenzawl Vengthlang – Pu R.Lalrinpuia
Thenzawl Field Veng – Pu C.Vanlalmunga
Thenzawl Venghlun – Pu H.Biakropuia
Thenzawl Farm Veng – Pi Lalhmuakliani
4. MHIP aiawh – Pi Zarzoliani
5. YMA aiawh – Pu Lalropuia Sailo
6. VC aiawh :Pi Biaknghinglovi VC Member
Pu B.Laldingngheta VC Member

I rintlak

7/26/26
(C.LALKHAWTHANGA)
Range Forest Officer
Thenzawl, Forest Range
Thenzawl, Mizoram.

Memo NO.TFR/25/GIM/2015 – RO(Tzl)/ 7c/
Copy to – All committee members for kind information.

Dated, Thenzawl the 26th Sept. 2016.

7/26/26
Range Forest Officer
Thenzawl, Forest Range
Thenzawl, Mizoram.

GOVERNMENT OF MIZORAM
OFFICE OF THE RANGE FOREST OFFICER
THENZAWL FOREST RANGE
THENZAWL, MIZORAM.

No.TFR-25/GIM/2015-RO(TZI)/ 706

Dated, Thenzawl the 27th Sept.2016

To,
The Divisional Forest Officer
Thenzawl Forest Division
Thenzawl, Mizoram.

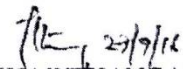
Subj. – Formation of Village Level GIM Committee(VLGC) under L₃ Landscape – Thenzawl 'E'

Sir,

I have the honour to state that Village Level GIM Committee(VLGC) under L₃ Landscape – Thenzawl 'E' has been formed. Committee Members are as below for your kind information and necessary action –

Sl.No	Designation	Name
1.	Chairperson	– Pu C.Lalkhawthanga R.O Thenzawl
2.	Member Secretary	– Pu Zoramawia F/G
3.	Members :	1. Pu. T.Lalremruata, Gram Sevak (Agriculture Dept. representative)
		2. Pi Maggie Zosangpuii, Horticulture Demonstrator (Horticulture Dept. representative)
		3. Pu H.Lalremthanga R.O Soil (Soil & Water Conservation Dept. representative)
		4. Pi Rosangzuali, Sericulture Demonstrator (Sericulture Dept. representative)
		5. Pu Vanlalaupa, VFA (AH & Vety. Dept. representative)
		6. Pu.C.Lalhminghluia, Fisheries Demonstrator (Fisheries Dept. representative)
		7. Pi RC Lalramthangi, LDC (Rural Development Dept. representative)
		8. Pi Rochhungi, (Social Welfare Dept. representative)
		9. Pu PL Chhuana, VFDC representative
		10. Pu R.Thanngura, -do-
		11. Pu Lalengliana, Village Council representative
		12. Pu Lalropuia Sailo, -do-
		13. Pu K.Lalmuanpuia, YMA representative
		14. Pi Zimunsangi, MHIP representative

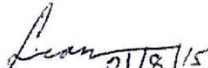
Yours faithfully


 (C.LALKHAWTHANGA)
 Range Forest Officer
 Thenzawl Forest Range
 Thenzawl, Mizoram.

**OFFICE OF THE VILLAGE COUNCIL/COURT : THENZAWL EAST
THENZAWL : MIZORAM**

APPROVAL

Thenzawl East Village Council ram chhunga Green India Mission hmalakna
hi, Village Council chuan kan pawmin kan remti (approve) e.


(LALENGLIANA)

President
Village Council/Court
Thenzawl East \$ Serchhip District

SAMPLE PLOT ENUMERATION			
L2 Landscape : Thenzawl - Thenzawl L3 Landscape : Thenzawl 'E' Forest Area : 4535 Ha.			
Sl No	Sample Plot No.	Growing stock / Ha.	Remarks
1	SP - 18	7.5047	
2	SP - 19	17.9307	
3	SP - 23	64.91799	
4	SP - 24	10.4938	
5	SP - 25	14.9714	
6	SP - 26	23.7185	
7	SP - 27	10.6923	
8	SP - 29	24.3504	
9	SP - 34	5.1417	
10	SP - 35	8.095	
11	SP - 38	2.8001	
12	SP - 39	20.2867	
13	SP - 40	6.7726	-
14	SP - 41	9.3596	-
15	SP - 42	7.2293	-
16	SP - 43	10.01887	-
17	SP - 49	11.8779	-
18	SP - 55	7.5224	-
19	SP - 52	10.1764	-
20	SP - 53	8.5579	-
21	SP - 54	8.7198	-
22	SP - 55	8.4498	-
23	SP - 56	8.47264	-
24	SP - 57	6.3199	-
25	SP - 58	6.7333	-
26	SP - 59	6.75972	-
27	SP - 60	6.8908	-
28	SP - 63	35.7388	-
29	SP - 70	5.1751	-
30	SP - 71	12.9206	-
31	SP - 72	13.6278	-
32	SP - 73	14.1951	-

33	SP - 74	8.2751	-
34	SP - 75	6.7905	-
35	SP - 76	11.7546	-
36	SP - 77	12.7943	-
37	SP - 90	14.8782	-
38	SP - 91	24.90636	-
39	SP - 92	12.4223	-
40	SP - 93	18.9839	-
41	SP - 96	5.0371	-
42	SP - 97	24.0131	-
43	SP - 98	75.6704	-
44	SP - 99	88.0502	-
45	SP - 160	8.5794	
46	SP - 161	7.8494	
47	SP - 162	8.716	
48	SP - 163	5.9888	
49	SP - 164	7.3649	
50	SP - 165	6.0056	
51	SP - 166	19.2107	
52	SP - 167	13.2974	
53	SP - 168	6.3669	
54	SP - 169	13.6099	
55	SP - 170	6.395	
56	SP - 171	13.6726	
57	SP - 172	10.4329	
58	SP - 173	11.167	
59	SP - 174	5.0539	
60	SP - 175	8.2089	
61	SP - 176	5.30587	
62	SP - 177	6.0035	
63	SP - 178	4.7974	
64	SP - 179	8.821	
65	SP - 180	3.2606	
66	SP - 181	5.6062	
67	SP - 182	5.5469	
68	SP - 183	12.21	
69	SP - 184	12.6026	

70	SP - 185	6.8543	
71	SP - 186	6.0955	
72	SP - 187	9.08	
73	SP - 188	7.3466	
74	SP - 189	7.6881	
75	SP - 190	10.2488	
76	SP - 191	5.3888	
77	SP - 192	4.7296	
78	SP - 193	13.8566	
79	SP - 194	14.0728	
80	SP - 195	16.2586	
81	SP - 196	9.3803	
82	SP - 197	5.0428	-
83	SP - 198	8.8285	-
84	SP - 199	5.0979	-
85	SP - 200	6.2579	-
86	SP - 201	6.2231	-
87	SP - 202	8.8283	-
88	SP - 203	7.0746	-
89	SP - 204	16.9183	-
90	SP - 205	17.5968	-
TOTAL		1128.93925 m³ / Ha	

$$1128.93925 \times 2.41 = 2720.74 \text{ tonnes / ha}$$

$$2720.74 \text{ tonnes / ha.} \div 90 = 30.23 \text{ tonnes / ha.}$$

Therefore, GS = 30.23 tonnes / ha.

**TOTAL CARBON STOCK IN L3 LANDSCAPE- THENZAWL 'E'
UNDER L2 LANDSCAPE – THENZAWL**

Carbon in Above Ground Biomass (C_{ABG})

$$\begin{aligned} C_{ABG} &= GS_{ABG} \times BCEF \times CF \\ &= 30.23 \times 0.95 \times 0.47 \\ &= 13.49 \text{ tonnes/ha} \end{aligned}$$

Carbon in Below Ground Biomass (C_{BGB})

$$\begin{aligned} GS_{BGB} &= 0.24 \times GS_{ABG} \\ &= 0.24 \times 30.23 \\ &= 7.25 \text{ tonnes/ha} \end{aligned}$$

$$\begin{aligned} C_{BGB} &= GS_{BGB} \times CF \\ &= 7.25 \times 0.47 \\ &= 3.40 \text{ tonnes/ha} \end{aligned}$$

Carbon in Dead Wood Biomass (C_{DWB})

$$\begin{aligned} C_{DWB} &= 0.11(C_{ABG} + C_{BGB}) \\ &= 0.11(13.49 + 3.40) \\ &= 0.11 \times 16.89 \\ &= 1.85 \text{ tonnes/ha} \end{aligned}$$

Carbon in Leaf Litter Biomass (C_L)

$$= 3.271 \text{ tonnes/ha (Constant)}$$

Carbon in Soil (C_s)

$$= 57.14 \text{ (Constant) for Tropical Moist Deciduous Forests}$$

$$\begin{aligned} \text{Total Carbon Stock in 1 Ha.} &= C_{ABG} + C_{BGB} + C_{DWB} + C_L + C_s \\ &= 13.49 + 3.40 + 1.85 + 3.271 + 57.14 \\ &= 79.151 \text{ tonnes/ha} \end{aligned}$$

Therefore, Total Carbon Stock (C) in 4535 Ha.(Forest Area in L3 landscape Thenzawl 'E')

$$\begin{aligned} &= 4535 \times 79.151 \\ &= 3,58,949.785 \text{ tonnes} \end{aligned}$$

SHANNON DIVERSITY INDEX
L3 Landscape - Thenzawl 'E'

Species	Ni	Pi	LnPi	- (Pi x LnPi)
1	2	3	4	5
Castanopsis tribuloites (Thingsia)	79	0.099	-2.364	0.222
Castanopsis lanceifolia (Vawmbuh)	11	0.013	-4.343	0.056
Schima wallichii (Khiang)	152	0.191	-1.655	0.316
Aporosa octandra (Chhâwntual)	36	0.045	-3.101	0.14
Eugelhardtea spicata (Hnûm)	5	0.006	-5.116	0.031
Lithocarpus xylocarpus (Then)	34	0.042	-3.170	0.133
Castanopsis indica (Schawr)	8	0.01	-4.605	0.046
Callicarpa arborea (Hnahkiah)	56	0.07	-2.659	0.186
Gmelina arborea (Thlanvawng)	16	0.02	-3.912	0.078
Alseoclaphue petiolaris (Bûl)	8	0.01	-4.605	0.046
Vitex peduncularis (Thingkhawihlu)	16	0.02	-3.912	0.078
Albizia chinensis (Vang)	21	0.026	-3.649	0.095
Neonauclea purpurea (Lungkhup)	18	0.022	-3.817	0.084
Macaranga indica (Hnahkhar)	63	0.079	-2.538	0.201
Bauhinia variegata (Vaube)	5	0.006	-5.116	0.031
Alstonia scholaris (Thumriat)	1	0.001	-6.908	0.007
Ficus prostrata (Theitit)	9	0.011	-4.510	0.05
Ilex ummellulata (Thinguihahni)	1	0.001	-6.908	0.007
Derris robusta (Thingkha)	11	0.013	-4.343	0.056
Artocarpus chaplasi (Theitat)	2	0.002	-6.215	0.012
Emblia officinalis (Sunhlu)	8	0.01	-4.605	0.046
Spondias pinnata (Tawitaw)	8	0.01	-4.605	0.046
Duabanga grandiflora (Zuang)	25	0.031	-3.474	0.108
Parkia roxburghii (Zawngtãh)	1	0.001	-6.908	0.007
Bischofia javanica (Khuangthli)	7	0.008	-4.828	0.039
Wendlandia grandis (Batling)	16	0.02	-3.912	0.078
Toona ciliata (Teipui)	9	0.011	-4.510	0.05
Trema orientalis (Belphuar)	13	0.016	-4.135	0.066
Tetramelus nudiflora (Thingdawl)	6	0.007	-4.962	0.035
Elaeocarpus lanceifolius (Kharuan)	6	0.007	-4.962	0.035

1	2	3	4	5
Betula alnoides (Hriang)	1	0.001	-6.908	0.007
Lipsea monopetala (Nauthak)	6	0.007	-4.962	0.035
Anogeissus acuminata (Zairum)	7	0.008	-4.828	0.039
Eurya cerassifolia (Sihneh)	10	0.012	-4.423	0.053
Lannea grandis (Tawitaw suak)	9	0.011	-4.510	0.05
Rhus semialata (Khawmhma)	3	0.003	-5.809	0.017
Sapium baccatum (Thingvawkpui)	8	0.01	-4.605	0.046
Albizzia procera (Kângtek)	4	0.005	-5.298	0.026
Rhus succdanea (Chhimhruk)	1	0.001	-6.908	0.007
Elaeocarpus floribundus (Thinglung)	4	0.005	-5.298	0.026
Ficus semicordata (Theipui)	2	0.002	-6.215	0.012
Stereospermum colais (Zihngthal)	4	0.005	-5.298	0.026
Hibiscus macrophyllus (Vaiza)	1	0.001	-6.908	0.007
Lithocarpus elegans (Thingpui thing)	6	0.007	-4.962	0.035
Bombax insigne (Pâng)	1	0.001	-6.908	0.007
Syzygium cumini (Lenhmui)	2	0.148	-6.215	0.012
Glochidion khasicum (Thingpawnehhia)	3	0.005	-5.809	0.017
Cinnamomum verum (Thakthing)	2	0.032	-6.215	0.012
Colona floribunda (Hnahthap)	4	0.005	-5.298	0.026
Acer laevigatum (Thingkhim)	2	0.028	-6.215	0.012
Syzygium grandis (Theichhâwl)	1	0.001	-6.908	0.007
Litsea cubeba (Sernam)	2	0.013	-6.215	0.012
Protium serratum (Bil)	2	0.023	-6.215	0.012
Erythrina variegata (Farṭuah)	2	0.009	-6.215	0.012
Bruinsmia polysperma (Theipalingkawh)	1	0.001	-6.908	0.007
Eriobotrya bengalensis (Nghalchhun)	3	0.013	-5.809	0.017
Mangifera indica (Theihai)	1	0.001	-6.908	0.007
Tectona grandis (Teak)	32	0.04	-3.219	0.129
Anthocephalus chinensis (Banphar)	1	0.001	-6.908	0.007
Magnolia hodgsonii (Thingtumbu)	1	0.001	-6.908	0.007
Garcinia sopsopia (Vawmva)	2	0.002	-6.215	0.012
Sterculia villosa (Khaupui)	3	0.013	-5.809	0.017

<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>
Chukrasia tabularis (Zâwngtei)	1	0.001	-6.908	0.007
Hydnocarpus kurzii (Khawitûr)	1	0.001	-6.908	0.007
Ficus racemosa (Theichek)	2	0.002	-6.215	0.012
Olea salicifolia (Thingthiang)	1	0.001	-6.908	0.007
Ficus religiosa (Hmâwng)	1	0.001	-6.908	0.007
Mahonia borealis (Puâleng)	1	0.001	-6.908	0.007
Acrocarpus fraxinifolius (Nganbawm)	1	0.001	-6.908	0.007
Artocarpus chaplasi (Tatkawng)	1	0.001	-6.908	0.007
Oroxylum indicum (Archangkâwm)	1	0.001	-6.908	0.007
Mangifera sylvatica (Haidai)	1	0.001	-6.908	0.007
Kydia calycina (Thalteh)	1	0.001	-6.908	0.007
Albizzia odoratissima (Thingri)	1	0.001	-6.908	0.007
Total	795			II = 2.958

ANNUAL PLAN OF OPERATION FOR THE YEAR 2017 – 18 UNDER GIM

State : Mizoram Name of L2 Landscape : Thenzawl

Name of Division : Thenzawl Forest Division

Name of L3 : Thenzawl 'E'

Wage Rate : Rs.270 /-

Sl. No	Sub-Missions/Interventions	Category	Item of works	Target	Rate per unit (in Rs.)	Total cost per unit (in lakhs)
1	2	3	4	5	6	7
A						
1	1.Enhancing quality of forest cover and improving eco-system service	(a)Moderately dense forest cover, but showing degradation	Advance work	90 Ha.	9450	8.505
			Creation	70 Ha.	15660	10.962
			Advance work(Bal of 2016-17)	70 Ha.	4050	2.835
			Sub-total	160Ha		22.302
		(b)Eco-restoration of degraded open forest	Type A			
			Advance work	92 Ha.	8100	7.452
			Creation	68Ha.	15390	10.465
			Advance work(Bal of 2016-17)	68Ha.	1350	0.918
			Sub-total	160Ha		18.835
			Type C			
			Advance work	78Ha.	25650	20.007
			Creation	42Ha.	53460	22.453
			Advance work(Bal of 2016-17)	42Ha.	8640	3.629
			Sub-total	120Ha		46.089
2	2.Eco-system restoration and increase in forest cover	(a)Rehabilitation of Shifting Cultivation Areas	Advance work	68Ha.	18360	12.485
			Creation	52Ha.	36450	18.954
			Advance work(Bal of 2016-17)	52Ha.	7290	3.791
			Sub-total	120Ha		35.230
3	4.Agro-Forestry and Social Forestry (increasing Biomass & creating carbon sink)	(a)Farmers' land including current fallows	Advance work	98Ha.	13500	13.230
			Creation	72Ha.	20250	14.580
			Advance work(Bal of 2016-17)	72Ha.	5130	3.694
			Sub-total	170Ha		31.504
		(c)Highways/Rural roads/Canals/Tank Bunds	Advance work	47Ha.	29700	13.959
			Creation	28Ha.	83700	23.436
			Advance work(Bal of 2016-17)	28Ha.	4590	1.285
			Sub-total	75Ha.		38.680
			Total of A			192.640
B	Promoting alternative fuel energy	Biogas, Solar device, LPG, Biomass based systems, improved stoves	Per household	140 fly.	3300	4.620

C	For Support Activities	
1	Research (2% of A)	3.853
2	Publicity/Media/Outreach activities (1% of A)	1.926
3	Monitoring & Evaluation (1% of A)	1.926
4	Livelihood improvement activities (17% of A)	32.749
5	Strengthening local level institutions (5% of A)	9.632
6	Strengthening FDs (5% of A)	9.632
7	Mission Organisation, operation and maintenance, contingencies and overheads (4% of A)	7.706
	Total of C	67.424
	Grand Total of (A+B+C)	264.684

Abstract of Perspective Plan Under Green India Mission

Name of Division : Thenzawl Forest Division

Name of Landscape :Thenzawl

Name of L3 Landscape-Thenzawl ' E'

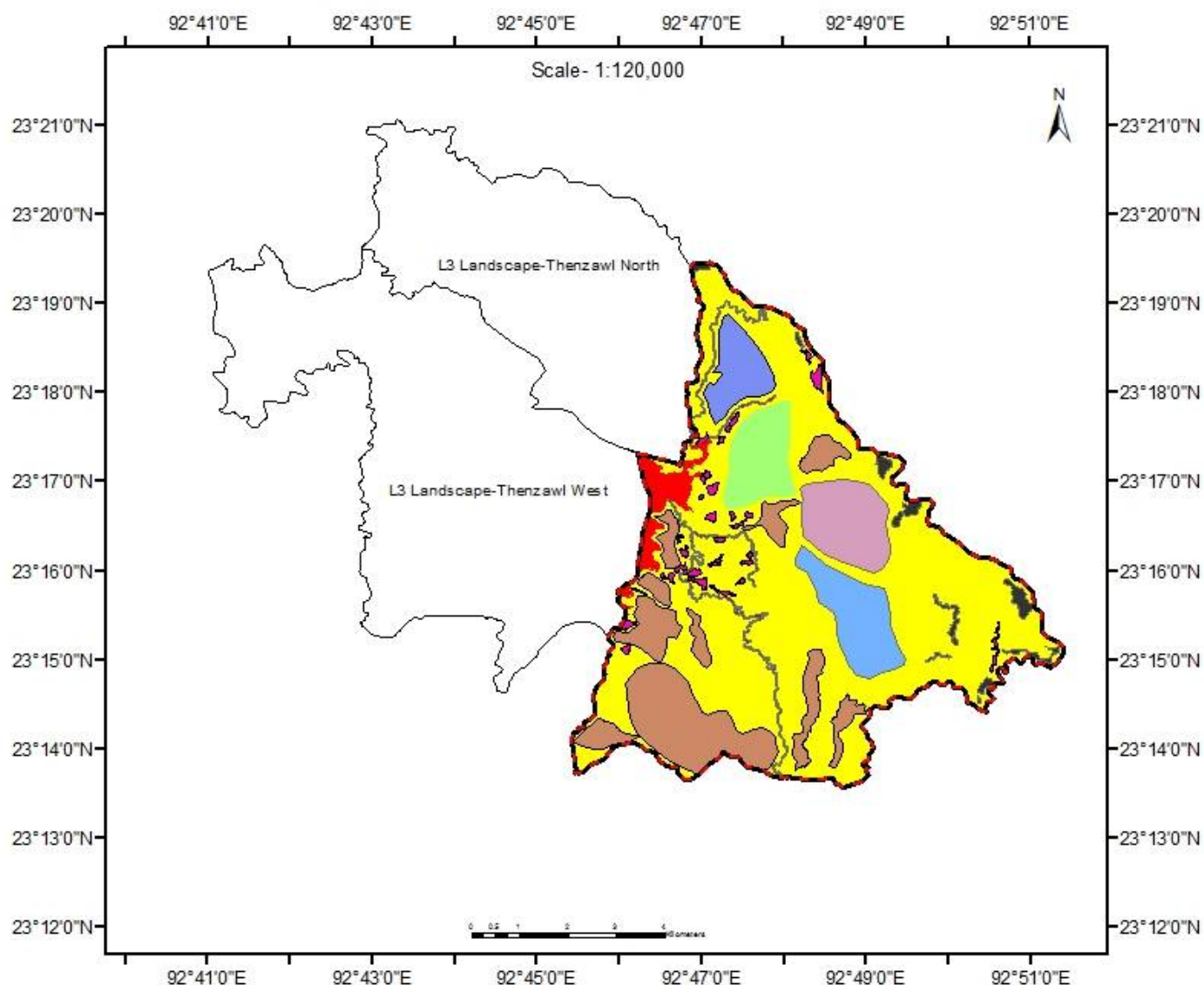
As per Wage Rate Rs 270/-

S. N.	Submission/Intervention	Category	Type	Admissible Cost (Rs./ha)	Yearwise Physical & Financial Target														
					1st		2nd		3rd		4th		5th		6th		Total		
					Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	Phy.	Fin.	
A. Cost norms for Sub Missions and Intervention																			
1	Sub Mission 1: Enhancing quality of forest cover and improving ecosystem services (4.9 m ha)	a) Moderately dense forest but showing degradation	ANR (Without Plantation)	40500															
			a) Advance Work	9450	160	15.12	0	0.00									160	15.12	
			b) Creation	15660			160	25.06	0	0.00								25.06	
			c) Maintenance I Year	9720				0.00	160	15.55	0	0.00						15.55	
			II Year	3510				0.00		0.00	160	5.62	0	0.00				5.62	
			III Year	2160				0.00		0.00		0.00	160	3.46	0	0.00		3.46	
		b) Eco-restoration of degraded open forests	200 Plants/Ha.(Type A)	43200															
			a) Advance Work	8100	160	12.96	0	0.00										160	12.96
			b) Creation	15390			160	24.62	0	0.00									24.62
			c) Maintenance I Year	8100				0.00	160	12.96	0	0.00							12.96
			II Year	6480				0.00		0.00	160	10.37	0	0.00				10.37	
			III Year	5130				0.00		0.00		0.00	160	8.21	0	0.00		8.21	
			2500 Plants/Ha.(Type C)	135000															
			a) Advance Work	25650	120	30.78	0	0.00										120	30.78
			b) Creation	53460			120	64.15	0	0.00									64.15
			c) Maintenance I Year	20250				0.00	120	24.30	0	0.00							24.30
			II Year	18090				0.00		0.00	120	21.71	0	0.00				21.71	
			III Year	17550				0.00		0.00		0.00	120	21.06	0	0.00		21.06	
2	Sub Mission 2: Ecosystem restoration and increase in forest cover (1.8 mha)	a) Rehabilitation of Shifting Cultivation Areas	1100 Plants/Ha.	81000															
			a) Advance Work	18360	120	22.03	120	22.03									240	44.06	
			b) Creation	36450			120	43.74	120	43.74								87.48	
			c) Maintenance I Year	11340				0.00	120	13.61	120	13.61						27.22	
			II Year	8100				0.00		0.00	120	9.72	120	9.72				19.44	
			III Year	6750				0.00		0.00		0.00	120	8.10	120	8.10		16.20	

3	Sub Mission 4: Agro-Forestry and Social Forestry (increasing biomass & creating carbon sink): 3 mha	a) Farmer's land including current fallows	Farmer's land	54000															
			a) Advance Work	13500	170	22.95	0	0.00										170	22.95
			b) Creation	20250			170	34.43	0	0.00									34.43
			c) Maintenance I Year	7020				0.00	170	11.93	0	0.00							11.93
			II Year	6750				0.00		0.00	170	11.48	0	0.00					11.48
			III Year	6480				0.00		0.00		0.00	170	11.02	0	0.00			11.02
		c) Highways/Rural roads/Canals/ Tank Bunds	roads/Canals/ Tank Bunds	189000															
			a) Advance Work	29700	75	22.28	0	0.00										75	22.28
			b) Creation	83700			75	62.78	0	0.00									62.78
			c) Maintenance I Year	32400				0.00	75	24.30	0	0.00							24.30
			II Year	21600				0.00		0.00	75	16.20	0	0.00					16.20
			III Year	21600				0.00		0.00		0.00	75	16.20	0	0.00			16.20
4	Promoting alternative fuel energy	Biogas, solar devices, LPG, Biomass-based systems, improved stoves	Per House Hold	3300	140	4.62	140	4.62	0	0.00	0	0.00	0	0.00	0	0.00	280	9.24	
Total (A)					805	130.74	925	281.42	925	146.39	925	88.70	925	77.76	120	8.10	925	733.11	
B. For Support Activities																			
	Activities Cost																		
1	Research (2% of A)					2.61		5.63		2.93		1.77		1.56		0.16		14.66	
2	Publicity/Media/outreach activities (1% of A)					1.31		2.81		1.46		0.89		0.78		0.08		7.33	
3	Monitoring and Evaluation (1% of A)					1.31		2.81		1.46		0.89		0.78		0.08		7.33	
4	Livelihood improvement activities. (17% of A)					22.23		47.84		24.89		15.08		13.22		1.38		124.63	
5	Strengthening local-level institutions (5 % A)					6.54		14.07		7.32		4.43		3.89		0.41		36.66	
6	Strengthening FDs (5% A)					6.54		14.07		7.32		4.43		3.89		0.41		36.66	
7	Mission Organisation, operation and maintenance, contingencies					5.23		11.26		5.86		3.55		3.11		0.32		29.32	
Total (B)					0	45.76	0	98.50	0	51.24	0	31.04	0	27.22	0	2.84	0	256.59	
Grand Total (A+B)					805	176.49	1065	379.92	925	197.63	925	119.74	925	104.98	120	10.94	925	989.70	

MAP OF L2 LANDSCAPE THENZAWL SHOWING PROPOSED LANDUSE MAP OF L3 THENZAWL EAST

Annexure XV



1. Working Area : 54.47 Sq.Km
2. Shifting Cultivation
Rehabilitation Areas : 2.40 Sqkm
3. Horticulture Land : 0.67 Sqkm
4. Supply & Safety Reserve :
I) Moderately Dense Forest Cover
But Showing Degradation : 2.72 Sqkm
5. Agro & Social Forestry :
I) Farmer's Land : 1.70 Sq.km
II) Highways / Rural Roads : 0.75 SqKm
7. Private Land : 6.83 Sqkm
8. Community Land :
I) Eco-Restoration of Degraded Open Forest : 2.80 Sqkm
II) Community Land : 34.51 Sqkm
- 9.WRC : 0.69 Sqkm
10. Settlement : 1.40 Sqkm

Legend	
	Working_Area
	Shifting_Cultivation_Rehabilitation_Areas
	Moderately_Dense_Forest_but_Showing_Degradation
	Horticulture_Land
	Farmer's_Land
	Highways/Rural Roads
	Private_Land
	Eco-Restoration_of_DegradedOpen_Forest
	Community_Land
	WRC
	Settlement

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