**Executive Summary**

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**Chapter 1**

**Introduction, Scope and Objectives**

**1.1 About the State (Landscape – L1)**

**1.1.1 Introduction**

Mizoram was earlier a part of the British India since 1895. In 1898, the district called “Lushai Hills” was created with Aizawl as its headquarter. After independence in 1947, the district was renamed as “Mizo District” and also the autonomous Mizo District Council was established on 25th April, 1952. Subsequently, Mizoram was made a Union Territory in 1972 and finally, it became the 23rd State of India on 20th February, 1987.

* + 1. **Location, Extent and Topography**

Mizoram, which is one of the Seven Sister States in the North-Eastern India, is located between 21o56` and 24o35` N Latitude and 92o16` and 93o26`E Longitude. It shares the boundary with Assam and Manipur on the North, Myanmar on the East and the South, and Tripura and Bangladesh on the West. The long international boundary (about 630 miles) of Mizoram with Myanmar and Bangladesh makes it strategically located.

 The geographical area of the State is 21,087 sq. km. with mostly hilly terrains. Most of the hills have moderate to steep slopes and are separated by rivers flowing either to the North or South direction. These rivers have created deep gorges between several hill ranges. In fact, Mizoram is “a land of rolling hills, valleys, rivers, and lakes” (Environment & Forest Department, 2010, p.5). The plains occupy comparatively a very small portion of the total geographical area and are mostly located at places such as Champhai, North Vanlaiphai etc. on the eastern part of the State.

* + 1. **Climate**

The whole of Mizoram enjoys a pleasant climate with cool summer and moderate winter. The temperature varies from 11oC to 21oC during winter and 18oC to 29oC in summer. The State gets rainfall from both the North-East and the South-West Monsoon. It receives heavy rains from May to September. The average annual rainfall is about 254 cm. As such, the climate in Mizoram is conducive to conservation and sustainable development of forests.

* + 1. **Soil**

The soil in Mizoram, in general, is fertile and rich in organic contents. However, the soil depth is found less at few places, particularly at very steep slopes, due to the effect of heavy run-off in degraded forests. The contents of potash and phosphorus in the soil are low, whereas the content of nitrogen is normally high because of the accumulation of organic matters over the years. The fertile soil is generally found at low to moderate slopes, on river banks and in the valleys. The soil at such places is responsive to the vigorous and healthy growth of the forests and thus supports rich biodiversity.

**1.1.5 Demography**

The population of the State was 10,91,014 as per 2011 census, of which 5,52,339 (51 percent) are male and 5,38,765 (49 percent) are female. The population density has increased from 33 to 52 persons per sq. km. during the decade, 1999 - 2011. Most of the people in the State belong to several culturally-linked ethnic tribes which are collectively called “Mizos” (Mi: People, Zo: Hill). These people are highly educated. Mizoram has a literacy rate of 91.58 %, which ranks it second among States in India. “Mizo” and “English” are the main languages spoken by the majority of the people.

**1.1.6 Socio-economic life of the people**

Since signing the “Peace Accord” on 30th June 2006, the State has effectively implemented several developmental schemes. Peace and development have resulted into comparatively better Human Development Index (HDI). The HDI in Mizoram was found 0.67, the highest among the north-eastern States and more than the national average (Government of Tripura, 2007, p.28).

 Agriculture is the dominant source of income and employment for the people in Mizoram. As per 2001 census, 61 percent of the working population in the State was dependent on agriculture. In rural areas, most of the people are engaged in “Jhumming” (shifting cultivation). 89,454 households, 57.85 percent of total 1, 54,643 households, were cultivators and further, 78,195 households, 87 percent of all cultivator households, were practicing shifting cultivation (Government of Mizoram, 2004, p.17). The “Jhumming” practice has adversely affected the rich forest cover of the State. Planned efforts are now being made to control and transform the practice of shifting cultivation into settled agriculture. Technical and financial assistance is being given to the rural people enabling them to leave the practice of shifting cultivation and get engaged in other sustainable livelihood activities such as horticulture, piggery, settled cultivation etc.

**1.2 The forests in Mizoram**

**1.2.1 Forest cover**

A large area - 19,277 sq. kms. (91.44 percent of the State’s total geographical area) - is covered under forests i.e. Forest and Tree cover (Forest Survey of India, 2013). However, the forests have suffered serious depletion and degradation due to the traditional practice of shifting cultivation, uncontrolled fire, unregulated felling etc. As per the “India State of Forest Report 2013” published by the Forest Survey of India, the State has 13,016 sq. kms. open forests which is 67.70 % of the total forest cover and 61.74 % of the total geographical area. The density-class of forests found in the State has been shown below graphically in Figure 1.

Figure - 1

Source: Forest Survey of India, 2013

* + 1. **Forest types**

The forests in Mizoram are very rich in biodiversity. As many as 6 important forest types have been reported to occur in the state (Forest Survey of India, 2011). These are:-

* **Cachar Tropical Semi-Evergreen Forest (2B/C2):** Mostly found in all districts of the State. The important species are *Dipterocarpusturbinatus, D. tuberculatus, Terminaliachebula, Emblicaspp, Careyaarborea etc.*
* **Secondary Moist Bamboo Brakes (2/2S1):** Dominant species of bamboo like *Melocannabambusoides, Dendrocalamushamiltonii etc.* are present.
* **Pioneer Euphorbiaceous Scrub (2B/2S1):** It is generally found in degraded forests and exposed lands present on higher slopes and on top of the hills. It has quick growing species like *Macaranga* spp., *Mallotus* spp. etc. This type is found in all districts except Kolasib.
* **East Himalayan Moist Mixed Deciduous Forest (3C/C3b) :***Schimawallichii, Syzigium cuminii, Albizziaprocera, Dilleniapentagyna, Artocarpuslakoocha, Terminaliaballerica, T. chebula, Lagerstroemia parviflora, Anthocephalouskadamba* etc. are the characteristic species of this type. It is found in all districts of Mizoram.
* **East Himalayan Subtropical Wet Hill Forest (8B/C1):** Major characteristic species are *Quercusvercus, Q. serrata, Castanopsisspp, Litsea spp. Machilusspp* etc. This forest type is found in Kolasib district.
* **Assam Subtropical Pine Forest (9/C2):** It is mostly dominated by the species *Pinus kesiya* with other associates like *Quercus*spp, *Schimawallichii, Rhododendron*spp etc. This forest type is found mainly in Champhai district of the State.
	+ 1. **Bamboo Resources**

Nature has endowed Mizoram with valuable Bamboo Forests. Bamboos - Green Gold for the State - are one of the most important natural resources which provide immense economic and environmental benefits for the local people. Bamboos are used for multiple purposes as the culms are straight and strong but light. These are used extensively in house construction particularly in the rural areas, as food, and for making various household items such as stools, benches, kitchen utensils, agricultural implements, and fishing devices. Further, bamboo acts as an effective soil binder protecting the slopes from erosion through its deep and extensive root system.

Bamboos are found abundantly in the State mainly along river banks and on abandoned jhumland. Both the clump forming and the non-clump forming species occur naturally in most parts of the State except on the higher altitudes of its eastern region. A large area of about 9,245 sq. kms., which is 44 percent of the State’s geographical area, is covered under “Bamboo Forests” (Forest Survey of India, 2011, p.61). In spite of being small in size, Mizoram contributes significantly to the country’s growing stock of bamboos.

 Bamboo resources of the country have been assessed by the Forest Survey of India (FSI), Dehradun. As per the India State of Forest Report 2011 (Chapter 6) published by the FSI, total number of culms in recorded forests of Mizoram has been estimated to be 2,205 million as against 23,297 million estimated at the national level. Similarly, the total estimated green weight of bamboo culms has been estimated to be 13,187,000 tonnes for the recorded forests of Mizoram as against 1, 69,312,000 tonnes for the whole country. The growing stock of bamboos in recorded forests of Mizoram as against the same for the whole country has been shown below graphically.

 No. of culms (million)

 Green Weight (million tonnes)

Area under “pure bamboo brakes” in Mizoram was found the highest among all the States/Union Territories of the country (226 sq.kms.). The dense bamboo forests also cover a large area in the State of Mizoram. The dense bamboo across all the States was found maximum in Arunachal Pradesh (8,681 sq. kms.) followed by Mizoram (6,116 sq.kms.).

The bamboo forests in Mizoram are also rich in bio-diversity. 35 species of bamboos under 9 genera have been reported to grow in the State (E & F Department, 2010). *Melocanna baccifera* (locally called “Mautak”), a non-clump forming species, is the prominent species found in the State. Other dominant species are *Dendrocalamus hamiltonii* (Phulrua), *D. longispathus* (Rawnal), *Bambusa tulda* (Rawthing), *B. longispiculata* (Rawthing chi), and *Arundinaria callosa* (Phar). These species do not occur in large proportions like Mautak but are commercially valuable.

* + 1. **Areas under Notified Forests in the State**

The notified forests include (1) Riverine Reserve Forests (1832.50 sq.kms), (2) Innerline Reserved Forests (570 sq. kms.), (3) Roadside Reserve Forests (97.20 sq.kms.), (4) Other Reserve Forests (1963.63 sq. kms.) and (5) Protected Areas (1240.75 sq.kms) under the ownership of the State Government as well as 2562 sq. kms. under the ownership of District Councils. Thus, about 39 percent of the total geographical area (8266.08 sq.kms.) is covered under “notified forests” in the State of Mizoram.

**1.2.5 Protected Areas**

The Environment and Forest Department, Govt. of Mizoram has taken praiseworthy initiatives for preservation of wildlife by constituting one Tiger Reserve, two National Parks and seven Wildlife Sanctuaries. These are (1) Dampa Tiger Reserve, (2) Murlen National Park, (3) Phawngpui National Park, (4) Ngengpui Wildlife Sanctuary, (5) Lengteng Wildlife Sanctuary, (6) Khawnglung Wildlife Sanctuary, (7) Tawi Wildlife Sanctuary, (8) Thorangtlang Wildlife Sanctuary, (9) Pualreng Wildlife Sanctuary, and (10) Tokalo Wildlife Sanctuary. The area set aside for long-term wildlife conservation is 1728.75 sq. km. which is more than 8 % of the State’s geographical area.

The network of protected areas provides healthy habitats for many wild animals, birds, and reptiles. Some important species of mammals found in the State are Tiger, Elephant, Malayan Sun Bear, Wild dog, Brush Tailed Porcupine, Gour, Leopard Cat, Marbled Cat, Golden Cat, Clouded Leopard, Serow etc. The forests of Mizoram also provide habitats for primates such as Assamese Macague, phyare Leaf Monkey, Slow Loris, Pig Tailed Macaque, Stump Tailed Macaque, Rhasus Macaque, and Capped Langur and also for Hoolock Gibbon, the only ape found in India.

Important bird species found in the State are Black Stork, Oriental Darter, Serpent Eagle, Black Eagle, Humes Bartailed Pheasant, Blyth’s Tragopan, Green Burmese Peafawl, Grey Peacock, Fufous Patridge, Brushed Patridge, Yellow-legged Button quill etc. The Hornbill species include Great Indian Hornbill, Wreathed Hornbill, Oriental Pied Hornbill, Brown Hornbill, and Rufous-necked Hornbill.

**1.3 Bio-geographical importance**

The forests in Mizoram are ecologically significant as the region represents an important part of the Indo Myanmar bio-diversity hotspot which is one of the 25 global biodiversity hotspots recognized across the globe. Several hot-spots in the State carrying diverse flora and fauna have been identified for protection. Further, the region is part of biologically distinctive eco-system (Mizoram-Manipur-Kachin Rainforests Eco-region). As such, conservation of the forests in the State is a necessity for arresting the progress of climate change and mitigating the impact of changing climate on the people.

**1.4 Expectations of people from the forests**

**1.4.1 People’s Participation in Conservation of the Forests**

The State of Mizoram moved from State regulation to people’s participation for managing its rich forest wealth by adopting the “Joint Forest Management” (JFM) through a notification issued in 1998. The introduction of JFM established a new mutually-beneficial relationship between the forests, the people and the State. The basic objective for adopting the mechanism of JFM in the State was to encourage active involvement of the local people in enrichment, protection and sustainable management of the forests.

 It was envisaged to impart sense of ownership over the forest areas covered under JFM to the villagers. Guidelines for managing the forests with people’s participation were framed. As per these guidelines, the local people participating in managing the forests and the State would share the forest produce, which may be extracted from the areas covered under JFM by applying scientific principles of sustainable management.

 The organizational structure for managing the forests with constructive participation of the local people, at present, consisted of three levels in the State i.e. (1) State Forest Development Agency (SFDA) at the State level, (2) Forest Development Agencies (FDAs) at the divisional level, and (3) Village Forest Development Committees (VFDCs) at the village level. Eco-Development Committees (EDCs) have been constituted for the villages located near the protected areas. The existing guidelines for JFM included (1) the procedures for constituting SFDA, FDAs and VFDCs/EDCs, (2) their duties and responsibilities, (3) methodology of preparing micro-plans, their effective implementation, and timely monitoring, (4) fund flow mechanism, and (5) disposal of forest produce and sharing of benefits.

 For involving the local people in planning, implementation, and monitoring of schemes for forest management, one SFDA, 21 FDAs and 598 VFDCs/EDCs have been constituted in Mizoram. These committees i.e. VFDCs/EDCs have 2, 75,435 members belonging to 80,728 families. Memorandum of Understandings (MoUs) has been signed between SFDA and FDAs and also between various FDAs and VFDCs/EDCs.

 Works under centrally sponsored scheme - “National Afforestation Programme” (NAP) - are mainly taken up by VFDCs/EDCs through FDAs. Revised operational guidelines for implementing NAP through JFM were issued in the year 2009 by the Ministry of Environment and Forests, Government of India. These guidelines were aimed at (1) strengthening institutional arrangements for project implementation (capacity building), (2) treatment of highly degraded lands (problem lands), (3) application of latest nursery and plantation techniques, (4) generation of additional sustainable income for members of VFDCs/EDCs through value addition to forest produce and linkage to better markets for forest-based products. The Government of Mizoram has adopted these revised guidelines by issuing notification in March, 2010.

The scheme - NAP - is being implemented effectively in Mizoram through the mechanism of JFM. Suitable tree species have been planted over an area of 57540 ha. under NAP during the period 2003-04 to2013-14. These plantations are being protected through joint efforts of the local people and the Government agencies. It is expected that enrichment, protection, and sustainable management of the forests through JFM will provide substantial benefits to the local people while contributing significantly to ecological equilibrium and environmental stability.

**1.4.2 Stakeholder’s expectations**

The local people particularly those living nearby forest areas expect sustainable livelihood support from the forests through extraction of permissible yield, value addition to forest produce and marketing of value-added products. They also expect to meet their needs for constructional timber at economical cost from the forests. However, they are also concerned for ecological stability in the region. Expectations of various stakeholders from the Environment and Forests department are given as under:-

|  |
| --- |
| Table 1 |
| Slno. | Name of Stakeholder | Expectations from the Department |
| 1 | The Indian citizens living in Mizoram including the indigenous people. | 1. Ecological balance and environmental stability.
2. Bonafide forest-based needs - constructional timber, fuel wood, and fodder – as per the Mizoram Forest Act,1955.
3. Constructive participation in afforestation, enrichment, and protection of forests.
4. Easy access to information on uses and economic benefits of the forest products including Non-Timber Forest Products (NTFPs) and Medicinal Plants.
5. Availability of technical know-how as well as other facilities for raising private plantations.
 |
| 2 | The State Government | 1. Effective implementation of the planned schemes achieving the desired outcomes.
2. Satisfaction of the local people.
 |
| 3 | The Government of India | 1. Conservation of environment and forestry resources as envisaged in the National Forest Policy, 1988.
2. Balance between conservation and development by implementing the provisions of the Forest (conservation) Act, 1980 as well as other National and State acts and rules related to management of the forests and the wildlife.
 |
| 4 | The forest officials working in the State | 1. Healthy working conditions.
2. Adequate facilities at par with our counterparts in other departments/services.
3. Awards and recognition for good works.
 |
| 5 | Non-Government Organizations (NGOs) | 1. Increase in forest cover.
2. Enrichment and protection of the existing forests.
3. Preservation of wildlife by creating and maintaining healthy habitats for them.
4. Generating awareness towards the importance of forests and wildlife.
5. Eliciting active participation of public in conservation and protection efforts.
 |
| 6. | Private tree/bamboo growers | 1. Technical knowhow.
2. Logistic and financial support for raising and managing the plantations.
3. Mechanism to facilitate harvesting and transportation of timber and bamboos.
 |

 Accordingly, the Department of Environment & Forests, Government of Mizoram is committed to provide a variety of services, both tangible as well as intangible, to the citizens by scientifically managing the rich forest cover existing in the State. The tangible services include (1) arranging forest products of economic importance such as constructional timber, fodder, fuel-wood, sand, gravels etc. at reasonable costs, (2) offering gainful employment while implementing various schemes for enrichment and protection of the forests, (3) creating opportunities for additional income through the mechanism of “Joint Forest Management”, (4) disseminating information on importance and economic benefits of the forests including Non-Timber Forest Products and medicinal plants, (5) building and maintaining eco-friendly recreation sites and trails, (6) making technical know-how available for raising and managing private forests/plantations, and (7) assisting private tree-growers in silvicultural harvesting and transporting of timber inside as well as outside the State. The intangible services include (1) stabilizing the climate, (2) enriching the soil fertility, (3) recharging ground water, (4) regulating the water flow, and (5) offsetting the air pollution.

**1.5 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, Thirteen 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.

**1.6 Scope of implementing planned interventions under GIM**

The GIM, which aims at providing sustainable livelihood support to the people in a stable eco-system, would be implemented initially in 51 villages of eight identified L2 landscapes. 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 Criteria for selection of L1 Landscape**

Criteria, which were adopted for identification of L1 landscape, are given below:-

|  |
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| Table 2 |
| Details of Criteria |
| Item | Criteria | Details | Details of the source of data, maps etc. appended |
| 1. Forest cover and degradation | 1a) Forest cover | 19,277 sq. kms. (91.44% of the State's geographical area).  | India State of Forest Report 2013, Forest Survey of India, Dehradun.  |
| 1b) Bio-diversity | The State is rich in Bio-diversity, having six major forest types, namely i) Cachar Tropical Semi-Evergreen Forest, ii) Secondary Moist Bamboo Brakes, iii) Pioneer Euphorbiaceous Scrub, iv) East Himalayan Moist Mixed Deciduous Forest, v) East Himalayan Subtropical Wet Hill Forest, vi) Assam Subtropical Pine Forest. | India Forest Atlas prepared by Forest Survey of India, Dehradun  |
| 1c) Wastelands | 6021.14 sq km (28.56% of the State’s total geographical area) is wasteland including jhumland. | Wastelands Atlas of India, 2010.  |
| 2. Projected Forest vulnerability to climate change | 2a) Vulnerability maps and attribute data | Although the State is having a large area under forest cover, the forests are not good in quality. The State has 13,016 sq km open forest which is 67.70% of the total forest cover and 61.74% of the total geographical area. It is expected that a large extent of open forests, particularly in the hilly terrain, may adversely affect not only the forest eco-system but adjoining areas as well. The situation is likely to be further aggravated in Mizoram by the prevalence of shifting cultivation and other biotic interferences. | As indicated above in column 1. |
|  |  | Effect of climate change in the State is (1) irregular behavior of rainfall, (2) rise in mean maximum and mean minimum temperatures, (3) gradual and progressive increase in humidity, and (4) increased frequency of extreme climate events (heavy rainfall, flash floods, etc.). Forests are highly vulnerable to these changes in climatic conditions. Impact of climate change on the forests coupled with biotic interferences is characterized by (1) degradation (a large extent of open forests), (2) loss of biodiversity, (3) increased incidence of invasive species, and (4) loss of forest environmental functions (water conservation, soil conservation, flood control etc.). | (1) Programme Design Document for North East Climate Change Adaptation Programme presented to KfW Germany, DoNER, and State Govts. (2) Field observations by Forest Officers.  |
| 3.Vulnerable Population / Communities | 3a) ST/SC Total population, ratio | The majority of the population in the State - over 95% - belongs to STs. | 2011 Census data, Govt. of India. |
| 3b) Scheduled areas |

**2.2 Importance of L1 Landscape**

Based upon the criteria given in para 2.2, 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. The bio-geographical importance of the L1 landscape has been given in para 1.3.

**2.3 Criteria for selecting 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. The criteria for selection of L2 Landscapes are given below in detail:

|  |
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| Table 3 |
|  | Criteria | Details | Details of the Source of data – Maps etc appended |
| Extent of open forests  | Extent of degraded forests i.e. forests having very less canopy density | Aizawl, Champhai, Lawngtlai, Lunglei, and Mamit districts have larger area under open forests. | FSI, Dehradun |
| Forest Dependence | Forest areas (sq. kms.) per 1000 population | Aizawl, Champhai, Kolasib, and Serchhip districts have less forest areas per 1000 population. Therefore, it is expected that these districts may witness more biotic pressure on the forests. | Data for forest areas: FSI data and for population: census data. |
| Drainage Pattern  | Catchment areas of major and important rivers | After identifying the divisions on the basis of first two criteria, the operational units have been identified within these divisions on the basis of these two criteria. | Maps obtained from MIRSAC (Mizoram Remote Sensing Application Centre) |
| Prevalence of shifting cultivation | Areas including Abandoned Jhumland and Current Jhumland  | Maps obtained from MIRSAC (Mizoram Remote Sensing Application Centre) |
| Formation of Compact Block  | All identified L2 landscapes to form a compact block for better outcomes. | Aizawl, Champhai, Darlawn, Kolasib and Thenzawl divisions form a compact block in the State. | Map of the State. |

* 1. **Reasons for selecting this L2 landscape among other possible L2 landscapes within L1:**

A meeting (brainstorming session) of senior forest officers was held in March, 2012 to discuss various issues and formulate suitable strategies for the preparation of Bridge Plan/Perspective Plan under GIM. The views presented by the senior officers in the meeting are summarized below:

* The operational units should be from the districts which satisfy either of the two criteria i.e. extent of open forests or biotic pressure on the forests. Further, this unit should be strategically important for i) treatment and management of catchment areas and ii) engagement of the local people in settled agriculture or other sustainable livelihood options i.e weaning them away from jhum cultivation.
* The operational units, so selected, should form a compact block.
* The forest divisions, where activities similar to those proposed under GIM (KfW sponsored North East Climate Change Adaptation Programme) are being carried out, may not be taken up as operational units.
* Aizawl city, which carries maximum concentration of population (26% of the State’s population), has the significant impact on the climate and the eco-system in the State. Therefore, forest-based interventions inside and outside the city of Aizawl may be taken up under GIM.

Considering the above views, it was decided in the meeting that 8 nos. of operational units in 5 forest divisions namely Darlawn, Champhai, Thenzawl, Kolasib, and Aizawl (for Aizawl division limited to inside and outside Aizawl city) may be taken in the initial five years of GIM. Other areas/divisions may be taken up subsequently under GIM.

**2.5 Importance of L2 Landscapes**

The identified landscapes are selected based on the criteria given in para 2.3. They are of ecologically important for rejuvenating hydrological system, soil fertility, stabilization of landscapes and for mitigation of climate change in the area. As per the guidelines for implementation of Green India Mission, the areas of the selected landscapes varies from 5000 ha. to 10000 ha. Treatment of these landscapes under GIM would ensure regular and adequate water supply for all biotic components of the landscapes. Well-stocked and good-quality forests in the area will also stabilize the ecological equilibrium which provides secured livelihood of the locals.

In the past, most of the land in Mizoram were 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 tress. 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.

**2.6 Extent of L1 landscape**

Name of the L1 landscape: The entire State of Mizoram (map enclosed as annexure IA)

Location of the landscape: State: Mizoram

 District: All Districts

 Forest Division: All Forest Divisions

Extent (area, boundaries, geo-references) :

* Geographical area of the State is 21,087 sq. kms.
* The State shares its boundary with Assam and Manipur on the North, Myanmar on the East and the South, Tripura and Bangladesh on the West.
* It is located between 21°56’ and 24°31’ N latitude and 92°16’ and 93°26’ E longitude.

**2.7 Extent of L2 landscape : See table 4**

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| --- |
| Table 4 |
| **Sl. No.** | **Name of landscapes** | **Forest Divisions** | **Area (in sq.km)** | **Geo-coordinates** |
| 1 | Aizawl | Aizawl Forest Division | 207.58 | 1) N 23°52’14.248” E 92°49’35.709” 2) N 23°44’38.737” E 92°39’14.498” 3) N 23°46’4.663” E 92°48’35.829”  |
| 2 | Champhai (Khawzawl) | Champhai Forest Division | 221.68 | 1) N 23°38’46.07” E 93°08’01.58” 2) N 23°25’33.68” E 93°05’07.72” 3) N 23°28’31.79” E 93°13’7.94” 4) N 23°31’29.22” E 93°09’43.89” |
| 3 | Champhai (Kawlkulh) | Champhai Forest Division | 442.73 | 1) N 23°51’30” E 93°7’00” 2) N 23°24’00” E 93°3’00” 3) N 23°40’00” E 93°1’30” 4) N 23°40’00” E 93°9’30” |
| 4 | Darlawn  | Darlawn Forest Division | 227.56 | 1) N 23°53’42.358” E 92°48’44.163” 2) N 23°55’5.038” E 92°58’44.436” 3) N 23°48’16.189” E 93°00’33.64” 4) N 23°47’14.157” E 92°52’59.681” |
| 5 | Kolasib (Kolasib & Bairabi) | Kolasib Forest Division |  |  |
| 6 | Kolasib (Kawnpui & Bukpui) | Kolasib Forest Division | 200.31 | 1) N 23°57’00” E 92°45.30’55” 2) N 24°1.0’03” E 92°41.55’20” 3) N 24°7.11’04” E 92°42.12’10” 4) N 24°7.5’15” E 92°47’50”  |
| 7 | Thenzawl (Serchhip) | Thenzawl Forest Division | 80.76 | 1) N 23°26’28” E 92°51’40” 2) N 23°25’15” E 92°53’30” 3) N 23°21’15” E 92°50’52” 4) N 23°21’45” E 92°52’12” |
| 8 | Thenzawl  | Thenzawl Forest Division |  |  |

**2.8 Demographic statistics of L2 Landscape**

|  |
| --- |
| Table 5 |
| Sl. No. | Name of L2 landscape | Population | Poverty (BPL families) | Forest dependency | Drivers of degradation | JFMCs/ other institutions of Gram Sabha |
| Total | SC | ST |
| 1 | Aizawl | 42984 | - | 42984 | 2083 | Shifting cultivation, fuel-wood, food, timber/poles, bamboo, for construction of houses, furniture, NTFP etc. | Dealt in para 2.11 | Village Forest Development Committee (VFDC) is active in all these villages. |
| 2 | Champhai (Khawzawl) | 2500 | 7 | 2493 | 212 |
| 3 | Champhai (Kawlkulh) | 11265 | 34 | 10099 | 955 |
| 4 | Darlawn  | 8863 |  - | 8863 | 457 |
| 5 | Kolasib (Kolasib & Bairabi) | 11366 | 685 | 10681 | 659 |
| 6 | Kolasib (Kawnpui & Bukpui) | 11087 | 12 | 11075 | 410 |
| 7 | Thenzawl (Serchhip) | 9100 | 39 | 9061 | 709 |
| 8 | Thenzawl  | - | - | - | - |

*Source: Census data 2011*

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

|  |
| --- |
| Table 15 |
| Sl. No.  | Name of Scheme | Implementing Agency | Forestry and Wildlife activities | Other components like SMC | Details of livelihood component | Landscape (L2) covered |
| 1 | NLUP (New Land Use Policy) | Different line department s such as-Soil Conservation,Horticulture,Agriculture,Forest,Sericulture,Fisheries,Indusries,AH&Vety etc | Plantation of bamboos and other indigenous 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  | Aizawl, Champhai (Khawzawl), Champhai (Kawlkulh), Darlawn, Kolasib (Kolasib & Bairabi), Kolasib (Kawnpui & Bukpui), Thenzawl (Serchhip) |
| 2 | NAP (National Afforestation Programme) | FDA Kolasib/concernedVFDC | Sustainable management of forests with people’s participation. 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 | Aizawl, Champhai (Khawzawl), Champhai (Kawlkulh), Darlawn, Kolasib (Kolasib & Bairabi), Kolasib (Kawnpui & Bukpui), Thenzawl (Serchhip) |
| 3 | NBM(National Bamboo Mission) | FDA Kolasib/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 | Aizawl, Champhai (Khawzawl), Champhai (Kawlkulh), Darlawn, Kolasib (Kolasib & Bairabi), Kolasib (Kawnpui & Bukpui), Thenzawl (Serchhip) |
| 4 | MIDH(Mission for Integrated Development of Horticulture | DHO Kolasib | Rubber plantation | Terracing, Rain water harvesting structures | Technical &Financial support to promising farmers only. | Kolasib (Kolasib & Bairabi), Kolasib (Kawnpui & Bukpui), |
| 5 | MGNREGS | DRDA, Kolasib 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  | Aizawl, Champhai (Khawzawl), Champhai (Kawlkulh), Darlawn, Kolasib (Kolasib & Bairabi), Kolasib (Kawnpui & Bukpui), Thenzawl (Serchhip) |
| 6 | IWMP(Integrated Watershed Management Prgrramme) | DRDA Kolasib,BDO Thingdawl | Rubber plantation | Terracing Checkdam, contour & staggered trenching, Public water point, Rain water harvesting structures Farm ponds, Fish ponds | Support to SHGs  | Kolasib (Kolasib & Bairabi), Kolasib (Kawnpui & Bukpui), |
| 7 | RKVY(Rastria Krishi Vikaas Yojona) | DHO(Horti),DAO(Agri),DFDO(Fishery, DO(Sericulture)Kolasib dist | Planting of Mulberry cuttings under sericulture, Oil palm plantation under Agriculture(OPAE) | Terracing(WRC-II),Rain water harvesting unit, Fish/Farm ponds | Provision of financial and material support to selected promising farmers. | Individuals/cluster selected from all L2 landscapes  |
| 8 | RADP(Rainfed Area Development Programme) | DAO Kolasib | 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, Kolasib | Nil | Nil | Construction of houses for the poor  | Aizawl, Champhai (Khawzawl), Champhai (Kawlkulh), Darlawn, Kolasib (Kolasib & Bairabi), Kolasib (Kawnpui & Bukpui), Thenzawl (Serchhip) |

**2.10 Gaps/Strategies identified under GIM**

|  |
| --- |
| Table 16 |
| Sl. No.  | Village | Forestry activities proposed | Other activities like SMC | Livelihood activities proposed | Any others |
| 1 | Kawnpui | 1)Enhancement of quality in existing forests(with limited root stock and open blanks)2)Ecosystem restoration(Rehabilitation of Shifting cultivation)3)Agro forestry4)Social forestry5)Support to community conserved areas | Interventions in catchment areas of hydrological importance | Community livelihood enhancement. | Promoting alternate energy sources |
| 2 | Zanlawn | 1)Enhancement of quality in existing forests(with limited root stock and open blanks)2)Ecosystem restoration(Rehabilitation of Shifting cultivation)3)Agro forestry4)Social forestry5)Support to community conserved areas | Interventions in catchment areas of hydrological importance | Community livelihood enhancement. | Promoting alternate energy sources |
| 3 | Lungmuat | 1)Enhancement of quality in existing forests(with limited root stock and open blanks)2)Ecosystem restoration(Rehabilitation of Shifting cultivation)3)Agro forestry4)Social forestry5)Support to community conserved areas | Interventions in catchment areas of hydrological importance | Community livelihood enhancement. | Promoting alternate energy sources |
| 4 | Bukpui | 1)Enhancement of quality in existing forests(with limited root stock and open blanks)2)Ecosystem restoration(Rehabilitation of Shifting cultivation)3)Agro forestry4)Social forestry5)Support to community conserved areas | Interventions in catchment areas of hydrological importance | Community livelihood enhancement. | Promoting alternate energy sources |
| 5 | N Chaltlang | 1)Enhancement of quality in existing forests(with limited root stock and open blanks)2)Ecosystem restoration(Rehabilitation of Shifting cultivation)3)Agro forestry4)Social forestry5)Support to community conserved areas | Interventions in catchment areas of hydrological importance | Community livelihood enhancement. | Promoting alternate energy sources |

**2.11 Drivers of degradation and deterioration in the forest eco-system**

|  |
| --- |
| Table 17 |
| Sl. No. | Village | Drivers of degradation |
| 1 | Kawnpui | 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. |
| 2 | Zanlawn | Illicit felling for fuel-wood, fodder, timber etc,Traditional practice of shifting cultivation,fire,Lack of strategic and participatory land-use planning, excessive population pressure on the forests for NTFPs., inadequate scientific management of watersheds including rainwater harvesting. |
| 5 | Lungmuat | 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 |
| 6 | Bukpui | Forest fire, 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 |
| 7 | N Chaltlang | Forest fire, 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 |

**2.12 Brief note on the demographic, forest dependencies of drivers of degradation of the L2 landscape:**

Demographically, the people in and around this chosen landscape mostly belong to Scheduled Tribe (ST). For rural villages like Kawnpui ,Zanlawn,Bukpui , Lungmuat and N Chaltlang, the % of ST in the Working Unit/Village population is beyond 90% (Census of India 2011).

Being the inhabitants of rural area, dwellers in the abovementioned working units are still very much depending on forest for their livelihood. Collection of foods, fodder for cattle, fuelwood, timber, ethno-medicinal plants, etc from nearby forest is inevitable.

Since the people from all the above working units/villages still practice shifting cultivation, the same is the prime factor leading to forest degradation. Other important factors are forest fire, Illicit felling for fuel wood & timber, collection of NTFPs such as bamboo, Cane, honey, thatch grass, fodder, medicinal plants, edible leaves, fruits and inflorescent etc.

**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, conservation-oriented NGOs (YMA, MHIP and MUP), forest officers and other prominent citizens of the village and as per recommendations made in the meeting; a Micro-Plan Working Group was constituted for facilitating preparation of micro-plan.

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. 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 18 |
| 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(33 participants) | Suggestions were mainly given for strengthening institutions responsible for GIM implementation in the State | Principal Secretary,Environment and ForestGovt of Mizoram | Minutes of the meeting enclosed at Annexure –IV |
| 2 | District/L2 level |  Representatives of VFDCs,VCs, and NGOs such as YMAs,MHIPs & MUP.(66 participants) | More trainings are to be given at all levels.GIM guidelines in local dialect be distributed to locals/trainees. | 1)ShriDr SB SinghJoint DirectorICAR Research Complex for NEH Region,Mizoram CentreKolasibPh-03837-220041Fax-03837-2205602)Shri Lalrosanga KhiangteProg CoordinatorKVK,KolasibTele Fax: 03837-220360 | Minutes of the meeting enclosed at Annexure –V |
| 3 | Village/L3 level at Bairabi  | Representatives of VFDCs,VCs, and NGOs such as YMAs,MHIPs & MUP attended.(90 participants) | GIM guidelines in local dialect be distributed.Rural outreach activity for data collection be done at the earliest | 1)ShriDr SB SinghJoint DirectorICAR Research Complex for NEH Region,Mizoram CentreKolasibPh-03837-220041Fax-03837-2205602)Shri Lalrosanga KhiangteProg CoordinatorKVK,KolasibTele Fax: 03837-220360 | Minutes of the meeting enclosed at Annexure –VI |
| 4 | Village/L3 level at Kolasib | Representatives of VFDCs,VCs, and NGOs such as YMAs,MHIPs & MUP attended.(91participants) | -do- | 1)ShriDr SB SinghJoint DirectorICAR Research Complex for NEH Region,Mizoram CentreKolasibPh-03837-220041Fax-03837-2205602)Shri Lalrosanga KhiangteProg CoordinatorKVK,KolasibTele Fax: 03837-220360 | Minutes of the meeting enclosed at Annexure –VII |
| 5 | Village/L3 level at Zanlawn | Representatives of VFDCs,VCs, and NGOs such as YMAs,MHIPs & MUP attended.(65 participants) | -do- | 1)ShriDr SB SinghJoint DirectorICAR Research Complex for NE Region,Mizoram CentreKolasibPh-03837-220041Fax-03837-2205602)Shri Lalrosanga KhiangteProg CoordinatorKVK,KolasibTele Fax: 03837-220360 | Minutes of the meeting enclosed at Annexure-VIIIA |

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

|  |
| --- |
| Table 19 |
| 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 | Kawnpui | Kolasib FDA& Microplan Working Group as in para 3.1 of Microplan | Representatives of Govt departments,Conservation oriented NGOs,VFDCs,VCs, and local public. | Approved by Village Council,Kawnpui | 1)ShriDr SB SinghJoint DirectorICAR Research Complex for NEH Region,Mizoram CentreKolasibPh-03837-220041Fax-03837-2205602)Shri Lalrosanga KhiangteProg CoordinatorKVK,Kolasib Fax: 03837-220360 |
| 2 | Zanlawn | Kolasib FDA& Microplan Working Group as in para 3.1 of Microplan | Representatives of Govt departments,Conservation oriented NGOs,VFDCs,VCs, and local public. | Approved by Village Council,Zanlawn | 1)ShriDr SB SinghJoint DirectorICAR Research Complex for NEH Region,Mizoram CentreKolasibPh-03837-220041Fax-03837-2205602)Shri Lalrosanga KhiangteProg CoordinatorKVK,Kolasib Fax: 03837-220360 |
| 3 | Lungmuat | Kolasib FDA& Microplan Working Group as in para 3.1 of Microplan | Representatives of Govt departments,Conservation oriented NGOs,VFDCs,VCs, and local public. | Approved by Village Council,Lungmuat | 1)ShriDr SB SinghJoint DirectorICAR Research Complex for NEH Region,Mizoram CentreKolasibPh-03837-220041Fax-03837-2205602)Shri Lalrosanga KhiangteProg CoordinatorKVK,Kolasib Fax: 03837-220360 |
| 4 | Bukpui | Kolasib FDA& Microplan Working Group as in para 3.1 of Microplan | Representatives of Govt departments,Conservation oriented NGOs,VFDCs,VCs, and local public. | Approved by Village Council,Bukpui | 1)ShriDr SB SinghJoint DirectorICAR Research Complex for NEH Region,Mizoram CentreKolasibPh-03837-220041Fax-03837-2205602)Shri Lalrosanga KhiangteProg CoordinatorKVK,Kolasib Fax: 03837-220360 |
| 5 | N Chaltlang | Kolasib FDA& Microplan Working Group as in para 3.1 of Microplan | Representatives of Govt departments,Conservation oriented NGOs,VFDCs,VCs, and local public. | Approved by Village Council,N Chaltlang | 1)ShriDr SB SinghJoint DirectorICAR Research Complex for NEH Region,Mizoram CentreKolasibPh-03837-220041Fax-03837-2205602)Shri Lalrosanga KhiangteProg CoordinatorKVK,Kolasib Fax: 03837-220360 |

**3.7 Details of involvement of district level committee in preparation of perspective plan especially of convergence mechanism**

 **-** District Level Committee in its meeting discussed the Convergent items proposed under GIM by different implementing agencies and finalized the items of works to be executed under convergence.

* 1. **Details of the meetings/consultations with other departments in finalizing the convergence issues and perspective plan**

-As above.

**Chapter 4**

**Activities proposed to be undertaken in the Sub-landscape (L2)**

**4.1 Treatments proposed**

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

**Submissions:**

|  |
| --- |
| Table19C  |
| Sl. No. | Village | Submission/category |
| Enhance quality of forest cover | Ecosystem restoration & increase in forest cover | Agro forestry | Social forestry |
| 1 | Kawnpui | Stock enrichment planting to increase the quality of existing forests | Plantation of indigenous spp to improve ecosystem and provisional services | Raising of plantation alongwith agri-crops for generating additional income sources | Afforestation activities with active people’s participation of locals along the roads, in school premises etc |
| 2 | Zanlawn | Stock enrichment planting to increase the quality of existing forests | Plantation of indigenous spp to improve ecosystem and provisional services | Raising of plantation alongwith agri-crops for generating additional income sources | Afforestation activities with active people’s participation of locals along the roads, in school premises etc |
| 3 | Lungmuat | Stock enrichment planting to increase the quality of existing forests | Plantation of indigenous spp to improve ecosystem and provisional services | Raising of plantation alongwith agri-crops for generating additional income sources | Afforestation activities with active people’s participation of locals along the roads, in school premises etc |
| 4 | Bukpui | Stock enrichment planting to increase the quality of existing forests | Plantation of indigenous spp to improve ecosystem and provisional services | Raising of plantation alongwith agri-crops for generating additional income sources | Afforestation activities with active people’s participation of locals along the roads, in school premises etc |
| 5 | N Chaltlang | Stock enrichment planting to increase the quality of existing forests | Plantation of indigenous spp to improve ecosystem and provisional services | Raising of plantation alongwith agri-crops for generating additional income sources | Afforestation activities with active people’s participation of locals along the roads, in school premises etc |

**Cross-cutting interventions:**

|  |
| --- |
| Table19D  |
| Sl. No. | Village | Cross-cutting interventions |
| Alternate energy sources | Livelihood enhancementCommunity | Community conserved areas and sacred groves | Watershed management |
| 1 | Kawnpui | Provision of Solar devices, LPG connection to BPL families in all villages | Support to forest based cottage industries for value addition of forest produce and marketing of value added products andSupport 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 |
| 2 | Zanlawn |
| 3 | Lungmuat |
| 4 | Bukpui |
| 5 | NChaltlang |

**4.2 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

**4.3 Village-wise details of submissions proposed for treatment (Action plan)**

|  |
| --- |
| Table 20 |
| Sr. No. | Village | Sub-mission | Categories | Proposed area | Proposed cost(Rs in lacs) | Livelihood activities proposed based on Micro-Plan |
| 1 | Kawnpui | Enhancing quality of existing forest cover | With limited root stocks and open blanks | **800ha** | 240.00@Rs300,00/ha | Support to Cottage industries |
| Ecosystem restoration and increase in forest cover | Rehabilitation of shifting cultivation | 250ha | 75.00@Rs 300,00/ha |  |
| Social Forestry | Plantation in Govt. offices/School compounds | 300ha | 210.00@ Rs70,000/ha |  |
| Agro forestry | Plantation along with agri-crops | 200ha | 40.00@Rs 20,000/ha |  |
| 2 | Zanlawn | Enhancing quality of existing forest cover | With limited root stocks and open blanks | 800ha | 240.00@Rs30,000/ha | Support to Cottage industries |
| Ecosystem restoration and increase in forest cover | Rehabilitation of shifting cultivation | 200ha | 60.00@Rs 30,000/ha |  |
| Social Forestry | Plantation in Govt. offices/School compounds | 150ha | 105.00@Rs70,000/ha |  |
| Agro forestry | Plantation along with agri-crops | 150ha | 30.00@Rs 20,000/ha |  |
| 3 | Lungmuat | Enhancing quality of existing forest cover | With limited root stocks and open blanks | 700ha | 210.00@Rs30,000/ha | Support to Cottage industries@17% of submission cost |
| Ecosystem restoration and increase in forest cover | Rehabilitation of shifting cultivation | 200ha | 60.00@Rs 30,000/ha |  |
| Social Forestry | Plantation in Govt. offices/School compounds | 150ha | 105.00@Rs 70,000/ha |  |
| Agro forestry | Plantation along with agri-crops | 150ha | 30.00@Rs 20,000/ha |  |
| 4 | Bukpui | Enhancing quality of existing forest cover | With limited root stocks and open blanks(Type B) | 800ha | 240.00@Rs30,000 /ha | Support to Cottage industries@17% of cost of submissions |
| Ecosystem restoration and increase in forest cover | Rehabilitation of shifting cultivation | 250ha | 75.00@Rs 30,000/ha |  |
| Social Forestry | Plantation in Govt offices and School compounds/highways/rural roads | 200ha | 140.00@70,000/ha |  |
| Agro forestry | Farmers land including current fallows | 200ha | 40.00@20,000/ha |  |
| 5 | N Chaltlang | Enhancing quality of existing forest cover | With limited root stocks and open blanks | 800ha | 240.00@Rs30,000/ha | Support to Cottage industries@17% of Submission cost |
| Ecosystem restoration and increase in forest cover | Rehabilitation of shifting cultivation | 250ha | 75.00@Rs 30,000/ha |  |
| Social Forestry | Plantation in Govt. offices/School compounds | 200ha | 140.00@Rs70,000/ha |  |
| Agro forestry | Plantation along with agri-crops | 200ha | 40.00@Rs 20,000/ha |  |

**4.4 Treatment area under the landscape unit**

|  |
| --- |
| Table 21A |
| Sl. No. | Sub-mission | Category | Proposed area | Proposed cost(Rs in lakhs) | Livelihood activities | Proposed cost(Rs in lakhs |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 1 | Enhancing quality of existing forest cover | With limited root stocks and open blanks |  3900ha | 1170.00 | Financial support to forest based cottage industries | 17% of Sub-mission cost |
| **Sub Total** | **3900ha** | **1170.00** | **66 units** | **418.58** |
| 2 | Ecosystem restoration | Rehabilitation of shifting cultivation | 1150ha | 345.00 |   |  |
| **Sub total** | **1150ha** | **345.00** |  |  |
| 3 | Social Forestry | Plantation in Govt. offices compounds/Highway/Rural roads. | 1000ha | 700.00 |  |  |
| **Sub total** | **1000ha** | **700.00** |  |  |
| 4 | Agro Forestry | Plantation along with agri-crops | 900ha | 180.00 |  |  |
| **Sub total** |  **900ha** | **180.00** |  |  |
| **TOTAL** |  | **2395.00** | 66 units | **418.58** |

**4.5 Whether Map showing details of the area proposed village-wise and submission-wise enclosed**

***-****Attached in Microplan of each Working units (L3).Further, consolidated maps of L2 covering all the 5 working(L3) units are enclosed in Annexure X to XV*

**4.6 Whether the geo-references of the treatment locations enclosed in the prescribed format**

***NA***

**4.7 Details of support activities proposed in the landscape including proposed cost and village-wise details wherever applicable**

Under GIM, the livelihood support given to locals within L2 landscape (Serlui hnar-Serlui catchment area) will be Technical and financial support to 66 units of forest based cottage industries. The proposed cost for this activity will be Rs 418.58 lakhs

**4.8 Details of each cross-cutting intervention proposed under the mission with area details, geo-references, activities etc.**

|  |
| --- |
| Table 21B |
| **Sl/no** | **Cross cutting interventions proposed** | **Activities** | **Unit** | **Total Cost(Rs in lakhs** | **Geo-references** |
| 1 | Alternate energy sources | 1)Provision of LPG connection | 250 families | 25.00 |  |
| 2)Solar device | 220 families | 44.00 |  |
| 2 | Community livelihood enhancement | Financial support to micro cottage industries | 66 families | 418.58 |  |
| 3 | Community conserved areas and sacred groves | Improvement planting with protection activities | 1500Ha@Rs30,000/ha | 450.00 |  |
| 4 | Watershed management | Construction of Checkdam/Retaining wall  | (750x3m2)@Rs8006/Rm | 60.00 |  |
| Construction/Development of RCC public water points | 22nos@Rs30000/unit | 6.60 |  |

**Note: *For provision of alternate energy sources, GIM Cost norms @Rs 3300/HH is found to be less and hence, local Cost index viz.Rs 10,000/HH and Rs 20,000/HH have been used for the cost of Provision of LPG connection and Solar device respectively****.*

**4.11 Promotion of alternative fuel energy**

|  |
| --- |
| Table 22 |
| Sl. No. | Village | Schemes proposed  | No. of beneficiaries in each scheme proposed | Total cost under each scheme(Rs in lakhs) |
| No. of family | No. of beneficiary |
| 1 | Kawnpui | LPG connection to BPL families | 60 | 60 | 6.00@Rs10,000/unit |
| Solar devices | 30 | 30 | 6.00@Rs20000/unit |
|  |  | **Village sub-total** |  |  | **12.00** |
| 2 | Zanlawn | LPG connection to BPL families | 40 | 40 | 4.00 |
| Solar devices | 40 | 40 | 8.00 |
|  |  | **Village sub-total** |  |  | **12.00** |
| 3 | Lungmuat | LPG connection to BPL families | 50 | 50 | 5.00 |
| Solar devices | 50 | 50 | 10.00 |
|  |  | **Village sub-total** |  |  | **15.00** |
| 4 | Bukpui | LPG connection to BPL families | 50 | 50 | 5.00 |
| Solar devices | 50 | 50 | 10.00 |
|  |  | **Village sub-total** |  |  | **15.00** |
| 5 | N Chaltlang | LPG connection to BPL families | 50 | 50 | 5.00 |
| Solar devices | 50 | 50 | 10-.00 |
|  |  | **Village sub-total** |  |  | **15.00** |
|  |  | **Grand Total** |  |  | **69.00** |

**Chapter 5**

**Activities proposed under convergence**

**5.1 Activities proposed under convergence**

|  |
| --- |
| Table 23  |
| Sl. No. | Village | Scheme | Implementation Agency | Area (Natural Resource Development Activities) | Other Activities (Social Sectors) |
| Works | Proposed funding( in lakhs) | Activities proposed | Proposed funding (Social sectors)Rs in lakhs |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | Kawnpui | MGNREGS | BDO,Thingdawl | 1.Roadside plantation(1km approx) | 20.00 | 1.Construction of check dam(3units) | 12.00 |
|  |  | 2.Construction of water harvesting tank(1no) | 16.00 |
|  |  | 3.Renovation of Traditional water harvesting unit(4units) | 8.00 |
|  |  | 4.Construction of Individual Household latrines(Including IAY beneficiaries)10 nos | 6.00 |
| 2 | Zanlawn | MGNREGS | BDO Thingdawl | 1.Roadside plantation | 20.00 | 1.Construction of Checkdam for developing water bodies(3nos) | 12.00 |
| 2.Afforestation at MGNREGS Park | 6.00 | 2.Construction of water harvesting tank | 10.00 |
| 3.Renovation of traditional water harvesting bodies(3nos) | 6.00 |
| 4.Construction of individuals HH latrines including IAY families(10nos) | 6.00 |
| 3 | Lungmuat | MGNREGS | BDO Thingdawl | 1.Roadside plantation | 20.00 | 1.Construction of checkdam(3units) | 12.00 |
| 2.Afforestation at Thlanmual Ram | 6.00 | 2.Construction of water harvesting tank at Builum Road(1unit) | 16.00 |
| 3.Renovation of Traditional water harvesting bodies(3units) | 6.00 |
| 4.Construction of individual HH latrines(including IAY beneficiaries) 10nos | 6.00 |
| 4 | Bukpui | MGNREGS | BDO,Thingdawl | 1.Roadside plantation(1km approx) | 20.00 | 1.Construction of checkdam(3units) | 12.00 |
| 2.Afforestion at Zotlang Ram(20ha) | 6.00 | 2.Construction of water harvesting tank(1no) | 16.00 |
|  |  | 3.Renovation of Traditional water harvesting unit(4units) | 8.00 |
|  |  | 4.Construction of Individual Household latrines(Including IAY beneficiaries)10nos | 10.00 |
| 5 | N Chaltlang | MGNREGS | BDO,Thingdawl | 1)Roadside plantation | 20.00 | 1.Construction of checkdam for developing water bodies at 2 locations | 8.0 |
|  |  | 2)Construction of water harvesting tank  | 16.00 |
|  |  | 3)Renovation of Traditional water harvestingBodies(2nos) | 6.00 |
|  |  | 4)Construction of Individual HH latrine including IAY families(10nos) | 6.00 |

 ***Note: It may be mentioned here that the proposed amount for Convergent works in colm 6 and 8 of the above table are to be equally (50:50) shared and contributed by the two implementing agencies. i.e 50% of the proposed amount are to be met from GIM.***

**5.2 Activities proposed for overall improvement of the landscape to be taken up through convergence** (details regarding each scheme of the forest/non-forest departments proposed and the village-wise activities along-with expected outcomes and funding during the project to be given)

 - As above

**5.3 Approval of district level committee for proposed convergence**

 -Attached at Annexure-VIIIB

**Chapter 6**

**Institutional Set-up for implementation in the landscape**

**6.1 GIM Committee:**

Various committees have been constituted by the State government vide Notification No.B 11016/16/2011-FST Dt 11.11.2014 for effective implementation of GIM in the State of Mizoram. A copy of notification is attached at Annexure II

The names of these committees are as under:-

1) State Forest Development Agency for “Green India Mission”/State Mission Directorate

2) State Level Steering Committee for Green India Mission

3) GIM Cell under Environment & Forest Department/Nodal Agency

4) Revamped FDA for Green India Mission

5) District Level Steering Committee

6) Village Level GIM Committee

**6.2 Institutional Set-up for implementation in the landscape**

|  |
| --- |
| Table 24 |
| Sl. No. | Village | Institutions proposed for implementation | Submission of area | Details of other activities | Remarks |
| Submission | Category | Area |
| 1 | Kawnpui | Revamped VFDC | Enhancing quality of existing forest cover | With limited root stocks and open blanks | 800Ha | Provision of support to small scale cottage industries | Financial support for Livelihood will be given during exit yrs |
| Ecosystem restoration and increase in forest cover | Rehabilitation of shifting cultivation | 250Ha |  |  |
| Social Forestry | Plantation in Govt. offices compounds | 200ha |  |  |
| Agro-forestry | Plantation alongwith agri-crops  | 200ha |  |  |
| Alternate energy source | LPG connection to BPL families | 60Families |  |  |
| Solar devices | 30Families |  |  |
| 2 | Zanlawn | Revamped VFDC | Enhancing quality of existing forest cover | With limited root stocks and open blanks | 800Ha | Provision of support to small scale cottage industries | Financial support for Livelihood will be given during exit years. |
| Ecosystem restoration and increase in forest cover | Rehabilitation of shifting cultivation | 200Ha |  |  |
| Social Forestry | Plantation in Govt. offices compounds/highways | 150ha |  |  |
| Agro-forestry | Plantation alongwith agri-crops  | 150ha |  |  |
| Alternate energy source | LPG connection to BPL families | 40Families |  |  |
| Solar devices | 40Families |  |  |
| 3 | Lungmuat |  | Enhancing quality of existing forest cover | With limited root stocks and open blanks | 700ha | Provision of support to small scale cottage industries | Financial support for Livelihood will be released during exit yrs. |
| Revamped VFDC | Ecosystem restoration and increase in forest cover | Rehabilitation of shifting cultivation | 200ha |  |  |
| Social Forestry | Plantation in Govt. offices compounds | 150ha |  |  |
| Agro-forestry | Plantation alongwith agri-crops  | 150ha |  |  |
| Alternate energy source | LPG connection to BPL families | 50Families |  | Alternate energy source |
|  | Solar devices | 50Families |  |  |
| 4 | Bukpui | Revamped VFDC | Enhancing quality of existing forest cover | With limited root stocks and open blanks | 800Ha | Provision of support to small scale cottage industries | Financial support for Livelihood will be given during the last 3 yrs |
| Ecosystem restoration and increase in forest cover | Rehabilitation of shifting cultivation | 250ha |  |  |
| Social Forestry | Plantation in Govt. offices compounds | 200ha |  |  |
| Agro-forestry | Plantation along with agri-crops  | 200ha |  |  |
| Alternate energy source | LPG connection to BPL families | 50Families |  |  |
| Solar devices | 50Families |  |  |
| 5 | N Chaltlang | Revamped VFDC | Enhancing quality of existing forest cover | With limited root stocks and open blanks | 800Ha | Provision of support to small scale cottage industries | Financial support for Livelihood will be given during exit years |
| Ecosystem restoration and increase in forest cover | Rehabilitation of shifting cultivation | 250Ha |  |  |
| Social Forestry | Plantation in Govt. offices compounds | 200ha |  |  |
| Agro-forestry | Plantation alongwith agri-crops  | 200ha |  |  |
| Alternate energy source | LPG connection to BPL families | 50Families |  |  |
| Solar device | 50families |  |  |

**Chapter 7**

**Livelihood Issues**

**7.1 Brief note on the forest dependency and livelihood issues village-wise**

**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 25  |
| 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 | Kawnpui | 1726 | 0.98 | 1691.48 | 2155.94 | Source:Kolasib WP data&Field verification |
| 2 | Zanlawn | 228 | 2.8 | 638.4 | 2001.5 | Source:Kolasib WP data&Field verification |
| 3 | Lungmuat | 164 | 2.50 | 410.00 | 809.34 | Source:Kolasib WP data&Field verification  |
| 4 | Bukpui | 242 | 3.2 | 774.4 | 2549.98 | Source:Kolasib WP data&Field verification  |
| 5 | N Chaltlang | 218 | 3.0 | 654 | 1408.59 | Source:Kolasib WP data&Field verification  |

**7.1.2 Availability and Requirement of NTFPs.**

Bamboo, cane, thatch, honey etc. are some of the important NTFP (s) which are extracted by the villagers from the forests . 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 26 |
| Sl . No. | Village | No. of house-holds | Average timber requirement per household (cum.) | Annual timber requirement (cum.) | Timber availability (cum.) | Remarks |
| 1 | Kawnpui | 1726 | 0.23 | 396.98 | 5030.51 | Source: Kolasib WP data |
| 2 | Zanlawn | 228 | 0.16 | 36.48 | 4670.06 | Source: Kolasib WP data |
| 3 | Lungmuat | 164 | 0.65 | 106.6 | 1888.46 | Source: Kolasib WP data |
| 4 | Bukpui | 242 | 0.18 | 43.56 | 5949.97 | Source: Kolasib WP data |
| 5 | N Chaltlang | 218 | 0.16 | 34.88 | 3286.73 | Source:Kolasib WP data |

**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.**

|  |
| --- |
| Table28 |
| Sl. No. | Village | Proposed livelihood activities | Role of facilitators, if any engaged | Beneficiaries | Proposed cost(Rs in lakhs) | Remarks |
| Family | No. |  |  |
| 1 | Kawnpui | Technical & Financial support to cottage industries | Provision of technical knowledge to improve quality and quantity of production as well as assistance in marketing | 15 | 15 | 98.09 | Cottage industries are producing different handicraft-items like gasket,pot,local carriers,Zampher(Mat)etc made from bamboo &cane |
| 2 | Zanlawn | 12 | 12 | 75.99 |
| 3 | Lungmuat | 11 | 11 | 71.40 |
| 4 | Bukpui | 14 | 14 | 86.70 |
| 5 | N Chaltlang | 14 | 14 | 86.70 |

**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 29 |
| Sl. No. | Village | Scheme | ImplementingAgency/ department | Proposed livelihood activities | Beneficiaries | Proposed cost | Remarks  |
| Family | No. |  |  |
| 1 | Kawnpui | NRLM | BDO,Thingdawl | NIL | - | - | - |  At present,financial support given to 52 SHGs in the form of revolving fund@Rs15000/SHGs.No forestry activities have been included |
| 2 | Zanlawn |  |  | NIL |  |  |  | At present,financial support given to 13 SHGs in the form of revolving fund@Rs15000/SHGs.No forestry activities have been included  |
| 3 | Lungmuat |  |  | NIL |  |  |  | Nil |
| 4 | Bukpui |  |  |  |  |  |  | Nil |
| 5 | N Chaltlang |  |  | NIL |  |  |  | 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:-

Serlui hnar (Serlui Catchment areas (L2):

|  |
| --- |
| Table 30 |
| Parameters | Indicator | Baseline Status(As on 15.6.2014) |
| 1. Forest/tree cover on forest/ non-forest lands in the Mission Target Area (MTA)
 | 1. % of area with forest cover
 | 95.95% (Total forest cover 192.20 sq. km. out of 200.31 sq. km.) |
| 1. % area in various forest density classes
 | 1. Very Dense = 0.0%
2. Moderately Dense = 29.99 % (60.08 sq. kms.)
3. Open Forest = 65.90 % (132.12 sq. km.)

Source: GIS cell E&F dept.Govt of Mizoram |
| 1. Ecosystem services from targeted areas / landscapes
 | 1. Shannon-Weiner Index
 | 2.206  |
| 1. Biomass
 | Above Ground Biomass = 592,782 tonnesSource: Field Survey data |
| 1. Soil
 | 1. 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.  |
| 1. Soil quality
 |

|  |
| --- |
| 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 4.3 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 (0.73%). The available nitrogen is medium (0.63 kg/ha) while available phosphorus is found low (12.15 kg/ha). The available potash is found to be high (223 kg/ha). |

 |
| 1. Hydrology
 | 1. Wetland area
2. Stream beds/water discharge
3. Ground water, Table- water level in wells/ springs
 | 1. No wetlands in the Area
2. No data on stream water discharge
3. 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 48 ft.
 |
| 1. Annual sequestration of Co2
 | Carbon sequestered in the target area. | Baseline Carbon Stock = 576,146.20 tonnes  |
| 1. 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 5lakhs | 296 |
| 5 lakh> -- <50,000 | 1842 |
| Less than 50,000 | 440 |
| 1. Quality of forest cover & ecosystem services of forest / non-forests
 | 1. % of forest area naturally regenerating.
 |  69.20 %Source:GIS Cell,E&F Dept,Mozoram |
| 1. Moderately dense forests
 | 1. Biomass
 | 219078 tonnes (AGB) |
| 1. Open forests
 |  | 1386097 tonnes (AGB) |
| 1. Degraded grasslands
 |  | No Degraded Grasslands |
| 1. Wetlands
 |  | No wetland area |
| 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 | No urban area is there in the Mission Target Area |
| 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. | 54.72 % (38.10 sq. kms. out of 69.92sq. kms.)Source: GIS Cell,E&F Dept Mizoram |
| 5. Public forest/ non-forests areas (taken up under the Mission) are managed by the community institutions. | a) % of area under management of community institutions | 17.30 % (34.67 Sq km out of 200.31Sq km)Legally under the Village CouncilSource: 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 = 2578LPG users = 2322Fuel-wood users = 2137Fuel-wood only users = 529Solar Devices users = 168 |
| 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 | 336 |
| Jhumming  | 1147 |
| Horticulture including WRC | 622 |
| Business/Petty Trade | 246 |
| Daily Labourers | 125 |
| Others | 126 |

**Chapter 9**

**Status of reforms proposed**

**9.1 Role of Gram Sabha (Village Council) in project planning, implementation and monitoring**

Village level GIM committee has been constituted by the State Government vide notification No.B 11016/16/2011-FST Dt 11.11.2014 *(annexure-II)* for the following activities:-

1. To render support in the preparation of Perspective Plan,
2. To ensure implementation of planned and approved schemes (approved by the State Level Steering Committee and MoEFCC) with expected level of quality,
3. To promote active people’s participation in the implementation of “Green Indian Mission” and
4. To provide feedbacks timely to concerned authorities for further improvement in programme implementation.

Further, VFDC would play key rile in project planning, monitoring and implementation under GIM. Both the VFDC and the Village Level GIM Committee would work closely in coordination with Gram Sabha (Village Council).

* 1. **Revamping of FDAs and SFDAs**

SFDAs and FDAs (General Body as well as Executive Committee) have been revamped for formulating suitable plans and executing well-planned projects with people’s participation under GIM in Mizoram. The SFDA (General Body) will provide overall guidance for effective implementation of “Green Indian Mission” in the State. It will also oversee implementation of the broad policy framework in achieving Mission goals and objectives. The Executive Committee of revamped SFDA has been entrusted with the following functions:

1. Approval of Perspective Plan as well as Annual Plan of Operations;
2. Preparation of annual reports on GIM implementation in the Sates;
3. Programmatic convergence at the landscape level

The revamped FDA (General Body) will deal with policy issues pertaining to cohesion and convergence of different programmes at the Panchayat/Village Council level for better outcomes from the mission. The Executive Committee of revamped FDA will arrange for preparation of perspective plan/annual plan and convergence of various programmes.

* 1. **FRAs compliance in areas covered under L2 and L3s**

Claims for rights in the forests would be settled strictly as per the relevant acts applicable in the State of Mizoram.

* 1. **Easing out regulatory framework in felling and transportation of forest produce**

There is need to simply the procedure for issuing documents enabling felling and transportation of forest produce. The MoEFCC has recently taken initiative for simplifying rules and procedures for issue of permits and transit passes in respect of trees grown on non-forest private lands. The State of Mizoram would work in this direction in a proper way to motivate tree planters on non-forest private lands and also protect the valuable forest wealth existing in the State.

* 1. **Strengthening frontline formation of E&F department**

Under Necessary actions would be taken for “Capacity Building” of frontline forest staff engaged in implementation of GIM in the State. Suitable training as well as required facilities would be provided to them for executing the planned works efficiently. It is expected that well-trained forest staff with people’s participation would be able to deliver the desired output/outcomes GIM.

**Chapter – 10**

**Mission Cost**

**10.1 Cost of the Mission**

Year-wise cost of sub-missions, Cross cutting interventions and Abstract for various work items for L3 landscape has been given in the table placed in Annexure IIIA to IIIE and Year wise consolidated abstract of Cost of activities under L2 landscape is enclosed at Annexure IIIF .

**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 |
| 1. Name of L1 landscape | The State of Mizoram |
| 2. Name of L2 landscape | Serlui hnar (Serlui Catchment areas) |
| 3. Forest and non-forest area in L2 | Forest area-192.20 sqkm,Non-forest area- 8.11 sqkm |
| 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  | The analysis of survey data shows that the area is in need of proper scientific treatment to reduce or reverse the ongoing ecosystem degradation |
| 6. Existing scheme implemented in the landscape | NAP,NBM,MGREGS,RKVY,IAY,NRLM |
| 7. Implementing agencies under GIM | Revamped FDA,Kolasib |
|  |  |  | Proposed funding(Rs in lakhs) | Funding for first year |
| 8. GIM activities |
| **(a) Submission/Category** |
| 1.Enhancing quality of existing forest cover | 1170.00 |  |
| 2.Ecosystem restoration and increase in forest cover | 345.00 |  |
| 3.Social Forestry | 700.00 |  |
| 4.Agro forestry | 180.00 |  |
| 5. LPG connection to BPL families | 25.00 |  |
| 6. Solar devices | 44.00 |  |
| Sub Total A | 2464.00 |  |
| **(b) Other support activities** |  |  |
| 1.Research | 49.28 |  |
| 2.Publicity/Media/Outreach activities | 24.64 |  |
| 3. Monitoring and Evaluation | 24.64 |  |
| 4.Strengthening local-level institutions | 123.20 |  |
| 5.Strengthening FDs | 123.20 |  |
| 6.Mission organization,operation and maintenance,contingencies and overheads | 98.56 |  |
| Sub Total B | 443.52 |  |
| **(c) Livelihood activities** |  |  |
| 1. Support to cottage industries
 | 418.58 | - |
|  |  |  |
| Sub Total C | 418.58 | - |
| Total of Sub Total A+B+C | 3326.10 |  |
| 10 Convergence activities |  |  |
| **KAWNPUI** |
| ***SlNo*** | ***Scheme*** | ***Activities*** | ***Target*** | ***Cost (Rs in lacs)*** |
| 1. | MGNREGS | 1.Roadside plantation | 1km | 20.00 |
| 2.Construction of check dam | 3units | 12.00 |
| 3.Construction of water harvesting tank | 1unit | 16.00 |
| 4.Renovation of Traditional water harvesting unit | 4units | 8.00 |
| 5.Construction of Individual Household latrines(Including IAY beneficiaries) | 10nos | 6.00 |
| **ZANLAWN** |
| 1 | MGNREGS | 1.Roadside plantation | 1.00km | 20.00 |
| 2.Afforestation of MGNREGS Park | 20.00ha | 6.00 |
| 3.Construction of Checkdam for developing water bodies(3nos) | 3units | 12.00 |
| 4.Construction of water harvesting tank | 1unit | 10.00 |
| 5.Renovation of traditional water harvesting bodies(3nos) | 3units | 6.00 |
| 6.Construction of individuals HH latrines including IAY families(10nos) | 10nos | 6.00 |
| **LUNGMUAT** |
| 1 | MGNREGS | 1.Roadside plantation | 1km | 20.00 |
| 2.Construction of check dam | 3units | 12.00 |
| 3.Construction of water harvesting tank at Builum road | 1unit | 16.00 |
| 4.Renovation of Traditional water harvesting unit | 4units | 8.00 |
| 5.Construction of Individual Household latrines(Including IAY beneficiaries) | 10nos | 6.00 |
| **BUKPUI** |
| 1 | MGNREGS | 1.Roadside plantation | 1km | 20.00 |
| 2.Construction of Checkdam for developing water bodies | 3 unit | 12.00 |
| 3. Afforestation at Thlanmual Ram | 10ha | 6.00 |
| 4.Construction of water harvesting tank at Builum road | 1 unit | 16.00 |
| 5.Renovation of traditional water harvesting bodies | 3nos | 6.00 |
| **N CHALTLANG** |
| 1 | MGNREGS | Roadside plantation | 1.00km | 20.0 |
| 2 | MGNREGS | Construction of checkdam for developing water bodies at 2 locations | 2units | 8.0 |
| 3 | MGNREGS | Construction of water harvesting tank  | 1unit | 16.00 |
| 4 | MGNREGS | Renovation of Traditional water harvestingBodies(2nos) | 2nos | 6.00 |
| 5 | MGNREGS | Construction of Individual HH latrine including IAY families(10nos) | 10nos | 6.00 |
| 11. Activities proposed under other schemes |  |  |
| NIL | NIL | NIL | NIL | NIL: |
|  |  |  |  |  |

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