DISTRICT DISASTER MANAGEMENT PLAN
2022
KOLASIB DISTRICT

DISTRICT DISASTER MANAGEMENT AUTHORITY
KDDMA
KOLASIB DISTRICT : KOLASIB

Prepared by

District Disaster Management Authority

MESSAGE

Deputy Commissioner
&
Chairman,
District Disaster Management Authority
Kolasib District: Kolasib
03837-220001/221063(fax)

सत्यमेव जयते

I am happy that a new edition of District Disaster Management Plan (DDMP) is yet again published with a whole lot of new input. The chief aim of this plan is to updated any disaster that may occur at any time and at any place. This plan consists of vulnerable areas within Kolasib district also the potential hazards and risk and assign various roles and responsibilities to different stakeholders and mapping such stakeholders and other resources within the district so as to prevent and respond to any kind of disaster that is likely to occur.

The entire district falls under Zone V in which the chances of occurring earthquake is the highest. The district is also vulnerable to cyclone, landslide thunderstorms, very strong wind etc. We are fortunate that a severe disaster has not occurred. However, we should not be oblivious towards disaster preparedness as we are unable to predict when it will occur. Therefore, we should be prepared as though disaster will occur any time. A well prepared plan will mitigate the chances of huge loss when disaster actually occurs.

I request all the stakeholders the government officials, NGO's and the community to go through this plan so that they are well verse with their roles and responsibilities to respond to disaster swiftly and smoothly. It is desirable that no disaster occurs in our district and elsewhere but we cannot take chances. My sincere thanks to all the officers and staff who have put in great effort to publish the new edition of DDMP which will benefit to all the reader.

Date: 18.04.2023 **JOHN LT SANGA**

INTRODUCTION

1.1 Aims and objectives of the DDMP:

Section 31 of Disaster Management Act 2005 (DM Act), makes it mandatory to have a disaster management plan for every district. DDMP shall include Hazard Vulnerability Capacity and Risk Assessment (HVCRA), prevention, mitigation, preparedness measures, response plan and procedures. An indicative list with possible plan objectives is given below:

i. To identify the areas vulnerable to various types of the hazards in the district.

ii. To adopt proactive measures at district level by all the govt. departments to prevent disaster and mitigate its impact.

iii. To define and assign the different tasks and responsibilities to stakeholders during the pre-disaster and post-disaster phases of the disaster.

iv. To enhance disaster resilience of the people in the district by way of capacity building.

v. Reduce the loss of public and private property, especially critical facilities and infrastructure, through proper planning.

vi. Manage future development to mitigate the effect of natural hazards in the district.

vii. To set up an Emergency Operations Centre at the District level to function effectively in search, rescue, response.

viii. To develop the standardized mechanism to respond to disaster situation to manage the disaster efficiently.

ix. To set up an early warning system so as to prepare the community to deal with the disaster and responsive communication system based upon fail-proof proven technology.

x. To prepare a response plan based upon the guidelines issued in the State Disaster Management Plan so as to provide prompt relief, rescue and search support in the disaster affected areas.

xi. To adopt disaster resilient construction mechanism in the district by way of using Information, Education and Communication for making the community aware of the need of disaster resilient future development. xii. To make the use of media in disaster management.

xiii. Rehabilitation plan of the affected people and reconstruction measures to be taken by different govt. departments at district level and local authority. The District Disaster Management Plan (DDMP) is the guide for achieving the objective i.e. mitigation, preparedness, response and recovery. This Plan needs to be prepared to respond to disasters with sense of urgency in a planned way to minimize human, property and environmental loss.

1.2 Authority for DDMP:

The Disaster Management Act, 2005 envisage a wide range of power and authority to the District Disaster Management Authority to counter all forms of disasters. The DDMA who is headed by Deputy Commissioner is legally empowered to order demolition of the endanger construction, acquisition of property including public and private and call for the services of any person towards disaster response for the implementation of the DDMP.

1.3 Evolution of DDMP:

Formulation and planning of the DDMP rest in the hands of District Organiser who coordinates with line departments, stakeholders, local self-government and other NGO's. The draft plan is laid before DDMA who after thorough examination of its feasibly and prospect of the contents approved it and hereby send it to the State Disaster Management Authority.

1.4 Stakeholders and their responsibilities:

At the District level, District Disaster Management Authority, with the Deputy Commissioner designated as Response Officer (RO), and other line departments at district HQ are responsible to deal with all phases of disaster management within district. Other technical institutions, community at large, local self-governments, NGOs etc. are also stakeholders of the District Disaster Management Pan. The role of the stakeholders has been prepared with the sole objective of making the concerned organizations understand their duties and responsibilities regarding disaster management at all levels and accomplishing them.

The Deputy Commissioner has the following duties:

i. To facilitate and coordinate with local Government bodies to ensure that pre and post disaster management activities in the district are carried out.

ii. To assist community training, awareness programmes and the installation of emergency facilities with the support of local administration, non-governmental organizations and the private sector.

iii. To function as a leader of the team and take appropriate actions to smoothen the response and relief activities to minimize the adverse impact of disaster.

iv. To recommend the Commissioner of Relief (CoR) and State Government for declaration of disaster.

Local Authorities have the following duties:

i. To provide assistance to the Deputy Commissioner in disaster management activities.

ii. To ensure training of its officers and employees and maintenance of resources so as to be readily available for use, in the event of a disaster.

iii. To undertake capacity building measures and awareness and sensitization of the community

iv. To ensure that all construction projects under it conform to the standards and specifications laid down.

v. Each department of the Government in a district shall prepare a disaster management plan for the district. The local authorities need to ensure that relief, rehabilitation and reconstruction activities in the affected area, within the district, are carried out.

vi. Trust / Organisations managing Places of Worships & Congregation a) Each establishment / organisation identified as ―critical infrastructure and key resource, b) Including places of congregation in a district shall prepare ―on-site and off-site c) Disaster management plan. Carry out mitigation, response, relief, rehabilitation and d) Reconstruction activities.

Private Sector:

i. The private sector should be encouraged to ensure their active participation in the predisaster activities in alignment with the overall plan developed by the DDMA or the Collector.

ii. They should adhere to the relevant rules regarding prevention of disasters, as may be stipulated by relevant local authorities.

iii. As a part of CSR, undertake DRR projects in consultation with district collector for enhancing district‘s resilience.

Community Groups and Volunteer Agencies:

i. Local community groups and voluntary agencies including NGOs normally help in prevention and mitigation activities under the overall direction and supervision of the DDMA or the Collector.

ii. They should be encouraged to participate in all training activities as may be organized and should familiarise themselves with their role in disaster management.

Citizens:

It is the duty of every citizen to assist the District Collector or such other person entrusted with or engaged in disaster management whenever required for the purpose of disaster management activities.

1.5 How to use the Plan:

i. Section 31 of DM Act 2005 makes it mandatory for every district to prepare a disaster management plan, for the protection of life and property from the effects of hazardous events within the district.

ii. In significant emergencies or disasters, District Magistrate or the chairperson of DDMA will have the powers of overall supervision direction and control as may be specified under State Government Rules / State Disaster Management Plan guidelines.

iii. The district EOC will be staffed and operated as the situation dictates. When activated, operations will be supported by senior officers from line departments and central government agencies; private sector and volunteer organizations may be used to provide information, data and resources to cope with the situation.

iv. The DDMA may recommend for action under Sec 30 of DM Act.

v. Facilities that have been identified as vital to operation of the district government functions have been identified.

vi. The DM or his designee will coordinate and control resources of the District.

vii. Emergency public information will be disseminated by all available media outlets through the designated media and information officer.

viii. Prior planning and training of personnel are prerequisites to effective emergency operations and must be considered as integral parts of disaster preparations.

ix. Coordination with surrounding districts is essential, when an event occurs, that impacts beyond district boundaries. Procedure should be established and exercised for inter district collaboration.

x. Departments, agencies and organizations assigned either primary or supporting responsibilities in this document must develop implementation documents in order to support this plan.

xi. When local resources prove to be inadequate during emergency operations, request for assistance will be made to the State or higher levels of government and other agencies in accordance with set rules and procedures.

xii. District authority will use normal channel for requesting assistance and/or resources, i.e., through the District Emergency Operations Center (DEOC) to the State EOC. If state resources have been exhausted, the state will arrange to provide the needed resources through central assistance.

xiii. The District EOC will coordinate with the State EOC, Agencies of the Govt. of India like IMD / CWC to maintain upto-date information concerning potential flooding, cyclones etc. As appropriate, such information will be provided to the citizens of the affected areas in the district.

xiv. Upon receipt of potential problems in these areas, DEOC / designated officials will appropriately issue alert and notify action to be taken by the residents.

xv. Disaster occurrence could result in disruption of government functions and, therefore, all levels of local government and their departments should develop and maintain procedures to ensure continuity of Government action.

It is necessary that for suo-moto activation of the agencies involved in the disaster management, the institutional trigger mechanism should be there so that every agency takes its assigned role at the time of such disaster.

1.6 Approval Mechanism of DDMP:

As defined in Section 30 of DM Act 2005, DDMA shall act as the district planning; coordinating and implementing body for disaster management and take all measures for the purpose of disaster management in the district in accordance with the guidelines laid down by the National Authority and the State Authority. Accordingly, the District DM plan shall be prepared by the District Authority, after consultation

with the local authorities and having regard to the National DM Plan and the State DM Plan.

1.7 Plan review and updation: Periodicity:

Training- After developing a plan, it must be disseminated and managers must be required to train their personnel so that they have the knowledge, skills and abilities needed to perform the tasks identified in the plan. Personnel should also be trained on the organization-specific procedures necessary to support those plan tasks.

Exercise the Plan - Evaluating the effectiveness of plan involves a combination of training and mock exercises to determine whether the goals, objectives, decisions, actions and timing outlined in the plan led to a successful response. The purpose of an exercise is to enhence preparedness of all the stakeholders.

Revise and Maintain – The Plan is updated in annual basis. It may be reviewed and updated after the following events: i) A major incident. ii) A change in operational resources (e.g., policy, personnel, organizational structures, Management processes, facilities, equipment). iii) A formal update of planning, guidance or standards. iv) Each activation. v) Major exercises. vi) A change in the district‘s demographics or hazard or threat profile. vii) The enactment of new or amended laws or ordinances. Following these incidence, the planner team will identify the soft corner of the plan and make rectification by updating the plan.

CHAPTER - II

HAZARD, RISK, VULNERABILITY AND RISK ASSESMENT

2.1.1 SOCIO-ECONOMIC PROFILE

According to 2011 census, the district has a population of 83054 in which 42456 are male and 40598 are female. The district has a sex ratio of 956 and the population density is 60 per sq.km. The total number of household is 15,709. The district has agriculture dominated economy with some government job. More than half of its population are engaged in agriculture activities in order to earn their livelihood. The chief agriculture products in the district are rice, sugarcane, fruits, vegitables, arecunut, red oil palm etc. The district is scantily industrialised but it has some small-scale industry of dyes, shawl, handicrafts etc.

The occupational structure, level of urbanisation, distribution of infrastructures/ assets signifies economic and social development of Kolasib District. Table No. 2.1 shows the socio-economic status of the whole district and Table No. 2.2 shows Village wise Socio Economic Status within Kolasib District:-

Table No. 2.1: Socio Economic Status of Kolasib District (Census 2011)

Name	Region	No. of Households	Population		Below 6 age population		SC Population		ST Population		Literate population		Illiterate population		Total Worker		Main worker		Cultivator		Agri. Labour		Household Industrial worker		Other worker	
Kolasib District	Rural	7608	T	37077	T	6681	T	17	T	32582	T	27270	T	9807	T	17701	T	14672	T	11006	T	1275	T	160	T	2231
			M	19097	M	3387	M	12	M	16585	M	14387	M	4710	M	10537	M	9699	M	7240	M	775	M	123	M	1561
			F	17980	F	3294	F	5	F	15997	F	12883	F	5097	F	7164	F	4973	F	3766	F	500	F	37	F	670
	Urban	9662	T	46878	T	6801	T	67	T	41027	T	38625	T	8253	T	18971	T	15025	T	4474	T	2066	T	183	T	8302
			M	23821	M	3423	M	47	M	20332	M	19760	M	4061	M	12196	M	10314	M	2924	M	1327	M	130	M	5933
			F	23057	F	3378	F	20	F	20695	F	18865	F	4192	F	6775	F	4711	F	1550	F	739	F	53	F	2369

Table No. 2.2: Village wise Socio Economic Status within Kolasib District (Census 2011)

Name	Region	No. of Households	Population		Below 6 age population		SC Population		ST Population		Literate population		Illiterate population		Total Worker		Main worker		Cultivator		Agri. Labour		Household Industrial worker		Other worker	
N. Kawnpui (NT)	Urban	1726	T	7732	T	1178	T	6	T	7126	T	6380	T	1352	T	3495	T	2957	T	1468	T	113	T	24	T	1352
			M	3892	M	590	M	3	M	3534	M	3211	M	681	M	2079	M	1906	M	898	M	75	M	18	M	915
			F	3840	F	588	F	3	F	3592	F	3169	F	671	F	1416	F	1051	F	570	F	38	F	6	F	437
Vairengte(NT)	Urban	1931	T	10554	T	1441	T	26	T	8550	T	8633	T	1921	T	4651	T	3658	T	1449	T	391	T	40	T	1778
			M	5649	M	716	M	21	M	4231	M	4698	M	951	M	3312	M	2874	M	1032	M	250	M	24	M	1568
			F	4905	F	725	F	5	F	4319	F	3935	F	970	F	1339	F	784	F	417	F	141	F	16	F	210
Bairabi (NT)	Urban		T	4320	T	754	T	12	T	3892	T	3237	T	1083	T	1421	T	872	T	153	T	328	T	1	T	390
			M	2178	M	378	M	9	M	1946	M	1669	M	509	M	914	M	563	M	114	M	178	M	1	M	270
			F	2142	F	376	F	3	F	1946	F	1568	F	574	F	507	F	309	F	39	F	150	F	0	F	120
Kolasib (NT)	Urban	5142	T	24272	T	3428	T	23	T	21459	T	20375	T	3897	T	9404	T	7538	T	1404	T	1234	T	118	T	47822
			M	12102	M	1739	M	14	M	10621	M	10182	M	1920	M	5891	M	4971	M	880	M	824	M	87	M	31800
			F	12170	F	1689	F	9	F	10838	F	10193	F	1977	F	3513	F	2567	F	524	F	410	F	31	F	16002
N.Hlimen	Rural	214	T	1065	T	151	T	0	T	1020	T	896	T	169	T	610	T	554	T	498	T	0	T	5	T	51
			M	542	M	65	M	0	M	516	M	470	M	72	M	322	M	311	M	271	M	0	M	4	M	36
			F	523	F	86	F	0	F	504	F	426	F	97	F	288	F	243	F	227	F	0	F	1	F	15
Thingthelh	Rural	107	T	456	T	71	T	0	T	439	T	362	T	94	T	264	T	264	T	245	T	0	T	0	T	19
			M	243	M	34	M	0	M	231	M	203	M	40	M	158	M	158	M	144	M	0	M	0	M	14
			F	213	F	37	F	0	F	208	F	159	F	54	F	106	F	106	F	101	F	0	F	0	F	5
N.Thing	Rur	688	T	311	T	44	T	1	T	30	T	25	T	52	T	1	T	81	T	53	T	4	T	9	T	2

dawl	al			1		7		1		45		86		5		566		9		7		6				27
			M	1581	M	214	M	7	M	1540	M	1333	M	248	M	909	M	650	M	446	M	39	M	8	M	157
			F	1530	F	233	F	4	F	1505	F	1253	F	277	F	657	F	169	F	91	F	7	F	1	F	70
Rajtali	Rural	90	T	405	T	104	T	0	T	390	T	170	T	235	T	183	T	183	T	181	T	0	T	0	T	2
			M	200	M	48	M	0	M	192	M	108	M	92	M	110	M	110	M	109	M	0	M	0	M	1
			F	205	F	56	F	0	F	198	F	62	F	143	F	73	F	73	F	72	F	0	F	0	F	1
Dilzau H	Rural	35	T	164	T	35	T	0	T	158	T	86	T	78	T	83	T	76	T	76	T	0	T	0	T	0
			M	89	M	19	M	0	M	87	M	59	M	30	M	49	M	47	M	47	M	0	M	0	M	0
			F	75	F	16	F	0	F	71	F	27	F	48	F	34	F	29	F	29	F	0	F	0	F	0
Hortoki	Rural	490	T	2544	T	435	T	2	T	2508	T	2076	T	468	T	1199	T	948	T	788	T	12	T	13	T	135
			M	1288	M	214	M	2	M	1261	M	1058	M	230	M	725	M	674	M	567	M	5	M	11	M	91
			F	1256	F	221	F	0	F	1247	F	1018	F	238	F	474	F	274	F	221	F	7	F	2	F	44
Sethawn	Rural	43	T	168	T	20	T	0	T	94	T	133	T	35	T	124	T	116	T	16	T	2	T	0	T	98
			M	111	M	9	M	0	M	50	M	90	M	21	M	96	M	93	M	7	M	1	M	0	M	85
			F	57	F	11	F	0	F	44	F	43	F	14	F	28	F	23	F	9	F	1	F	0	F	13
Bukpui	Rural	242	T	1077	T	141	T	0	T	1054	T	895	T	182	T	548	T	519	T	443	T	1	T	13	T	62
			M	562	M	79	M	0	M	553	M	469	M	93	M	319	M	311	M	268	M	0	M	10	M	33
			F	515	F	62	F	0	F	501	F	426	F	89	F	229	F	208	F	175	F	1	F	3	F	29
N. Chaltlang	Rural	218	T	1053	T	208	T	0	T	1036	T	811	T	242	T	537	T	520	T	488	T	2	T	1	T	29
			M	553	M	105	M	0	M	542	M	429	M	124	M	305	M	300	M	278	M	1	M	0	M	21
			F	500	F	103	F	0	F	494	F	382	F	118	F	232	F	220	F	210	F	1	F	1	F	8
N. Mualvum	Rural	199	T	986	T	138	T	0	T	898	T	842	T	144	T	208	T	208	T	1	T	0	T	2	T	205
			M	502	M	63	M	0	M	454	M	433	M	69	M	197	M	197	M	0	M	0	M	2	M	195
			F	484	F	75	F	0	F	444	F	409	F	75	F	11	F	11	F	1	F	0	F	0	F	10
Zanlawn	Rural	228	T	1079	T	176	T	0	T	1051	T	881	T	198	T	633	T	450	T	425	T	0	T	0	T	25
			M	546	M	97	M	0	M	526	M	441	M	105	M	322	M	311	M	291	M	0	M	0	M	20

			F	533	F	79	F	0	F	525	F	440	F	93	F	311	F	139	F	134	F	0	F	0	F	5
Phainuam	Rural	306	T	1727	T	350	T	0	T	1234	T	1152	T	575	T	757	T	708	T	601	T	61	T	1	T	45
			M	868	M	177	M	0	M	627	M	602	M	266	M	473	M	459	M	389	M	33	M	1	M	36
			F	859	F	173	F	0	F	607	F	550	F	309	F	284	F	249	F	212	F	28	F	0	F	9
Saihapui V	Rural	63	T	368	T	64	T	0	T	223	T	295	T	73	T	215	T	168	T	92	T	66	T	0	T	10
			M	184	M	32	M	0	M	112	M	151	M	33	M	109	M	103	M	88	M	8	M	0	M	7
			F	184	F	32	F	0	F	111	F	144	F	40	F	106	F	65	F	4	F	58	F	0	F	3
N. Chhimluang	Rural	65	T	314	T	64	T	0	T	297	T	175	T	139	T	163	T	157	T	149	T	2	T	0	T	6
			M	130	M	28	M	0	M	118	M	80	M	50	M	72	M	69	M	65	M	1	M	0	M	3
			F	184	F	36	F	0	F	179	F	95	F	89	F	91	F	88	F	84	F	1	F	0	F	3
Saiphai	Rural	356	T	2052	T	371	T	0	T	1913	T	1603	T	449	T	833	T	818	T	707	T	9	T	5	T	97
			M	1072	M	171	M	0	M	967	M	875	M	197	M	541	M	533	M	436	M	5	M	3	M	89
			F	980	F	200	F	0	F	946	F	728	F	252	F	292	F	285	F	271	F	4	F	2	F	8
Saipum	Rural	448	T	2359	T	439	T	0	T	2304	T	1830	T	529	T	1089	T	737	T	663	T	5	T	25	T	44
			M	1232	M	232	M	0	M	1194	M	968	M	264	M	692	M	637	M	572	M	4	M	25	M	36
			F	1127	F	207	F	0	F	1110	F	862	F	265	F	397	F	100	F	91	F	1	F	0	F	8
N.Chawnpui	Rural	75	T	389	T	66	T	0	T	336	T	313	T	76	T	257	T	112	T	86	T	2	T	17	T	7
			M	193	M	34	M	0	M	171	M	155	M	38	M	125	M	92	M	77	M	2	M	6	M	7
			F	196	F	32	F	0	F	165	F	158	F	38	F	132	F	20	F	9	F	0	F	11	F	0
Bilkhawthlir	Rural	1100	T	5385	T	908	T	1	T	4588	T	4043	T	1342	T	2633	T	2037	T	1461	T	178	T	27	T	371
			M	2735	M	451	M	1	M	2304	M	2058	M	677	M	1517	M	1296	M	888	M	142	M	22	M	244
			F	2650	F	457	F	0	F	2284	F	1985	F	665	F	1116	F	741	F	573	F	36	F	5	F	127
Phaisen	Rural	113	T	602	T	141	T	0	T	524	T	385	T	217	T	193	T	185	T	168	T	0	T	0	T	17

			M	305	M	71	M	0	M	258	M	198	M	107	M	142	M	137	M	128	M	0	M	0	M	9
			F	297	F	70	F	0	F	266	F	187	F	110	F	51	F	48	F	40	F	0	F	0	F	8
Buhchangphai	Rural	282	T	1401	T	307	T	2	T	765	T	826	T	575	T	560	T	553	T	331	T	197	T	17	T	8
			M	733	M	167	M	1	M	395	M	453	M	280	M	345	M	339	M	216	M	106	M	13	M	4
			F	668	F	140	F	1	F	370	F	373	F	295	F	215	F	214	F	115	F	91	F	4	F	4
N. Thinglian	Rural	69	T	359	T	85	T	0	T	352	T	98	T	261	T	101	T	93	T	70	T	5	T	0	T	18
			M	183	M	40	M	0	M	179	M	73	M	110	M	72	M	70	M	63	M	3	M	0	M	4
			F	176	F	45	F	0	F	173	F	25	F	151	F	29	F	23	F	7	F	2	F	0	F	14
Bukvannei	Rural	107	T	543	T	124	T	0	T	361	T	313	T	230	T	274	T	261	T	162	T	60	T	0	T	39
			M	293	M	63	M	0	M	194	M	172	M	121	M	153	M	141	M	102	M	36	M	0	M	3
			F	250	F	61	F	0	F	167	F	141	F	109	F	121	F	120	F	60	F	24	F	0	F	36
Saihapui K	Rural	266	T	1295	T	342	T	0	T	693	T	537	T	758	T	556	T	503	T	454	T	38	T	0	T	11
			M	689	M	191	M	0	M	362	M	327	M	362	M	339	M	327	M	296	M	23	M	0	M	8
			F	606	F	151	F	0	F	331	F	210	F	396	F	217	F	176	F	158	F	15	F	0	F	3
Builum	Rural	44	T	323	T	72	T	0	T	319	T	245	T	78	T	100	T	100	T	97	T	0	T	0	T	3
			M	166	M	38	M	0	M	164	M	123	M	43	M	87	M	87	M	84	M	0	M	0	M	3
			F	157	F	34	F	0	F	155	F	122	F	35	F	13	F	13	F	13	F	0	F	0	F	0
Pangbalkawn	Rural	162	T	792	T	188	T	0	T	678	T	402	T	390	T	417	T	338	T	296	T	10	T	1	T	31
			M	427	M	104	M	0	M	366	M	245	M	182	M	230	M	202	M	179	M	8	M	0	M	15
			F	365	F	84	F	0	F	312	F	157	F	208	F	187	F	136	F	117	F	2	F	1	F	16
S Chhimluang	Rural	86	T	359	T	87	T	0	T	358	T	161	T	198	T	146	T	146	T	131	T	2	T	0	T	13
			M	176	M	36	M	0	M	175	M	95	M	81	M	90	M	90	M	81	M	1	M	0	M	8
			F	183	F	51	F	0	F	183	F	66	F	117	F	56	F	56	F	50	F	1	F	0	F	5
Meidum	Rural	217	T	1073	T	253	T	0	T	666	T	522	T	551	T	597	T	423	T	243	T	158	T	4	T	18
			M	573	M	142	M	0	M	346	M	308	M	265	M	307	M	284	M	181	M	90	M	2	M	11
			F	500	F	111	F	0	F	320	F	214	F	286	F	290	F	139	F	62	F	68	F	2	F	7

Khamrang	Rural	163	T	633	T	136	T	0	T	590	T	489	T	144	T	188	T	170	T	67	T	66	T	1	T	36
			M	331	M	74	M	0	M	308	M	255	M	76	M	164	M	152	M	59	M	59	M	1	M	33
			F	302	F	62	F	0	F	282	F	234	F	68	F	24	F	18	F	8	F	7	F	0	F	3
Lungmuat	Rural	164	T	645	T	112	T	0	T	604	T	487	T	158	T	363	T	335	T	185	T	77	T	7	T	66
			M	348	M	56	M	0	M	316	M	271	M	77	M	208	M	205	M	110	M	48	M	6	M	41
			F	297	F	56	F	0	F	288	F	216	F	81	F	155	F	130	F	75	F	29	F	1	F	25
Nisapui	Rural	181	T	822	T	117	T	0	T	794	T	700	T	122	T	433	T	414	T	391	T	0	T	1	T	22
			M	414	M	63	M	0	M	394	M	349	M	65	M	258	M	247	M	229	M	0	M	0	M	18
			F	408	F	54	F	0	F	400	F	351	F	57	F	175	F	167	F	162	F	0	F	1	F	4
Serkhan	Rural	167	T	802	T	134	T	1	T	672	T	661	T	141	T	392	T	391	T	321	T	0	T	0	T	70
			M	417	M	59	M	1	M	334	M	353	M	64	M	263	M	262	M	216	M	0	M	0	M	46
			F	385	F	75	F	0	F	338	F	308	F	77	F	129	F	129	F	105	F	0	F	0	F	24
Mualkhang	Rural	106	T	388	T	69	T	0	T	326	T	317	T	71	T	230	T	211	T	137	T	1	T	1	T	72
			M	206	M	36	M	0	M	173	M	170	M	36	M	133	M	126	M	89	M	0	M	0	M	37
			F	182	F	33	F	0	F	153	F	147	F	35	F	97	F	85	F	48	F	1	F	1	F	35
Sentlang	Rural	101	T	470	T	76	T	0	T	468	T	386	T	84	T	311	T	234	T	76	T	128	T	3	T	27
			M	246	M	46	M	0	M	244	M	197	M	49	M	154	M	132	M	40	M	73	M	2	M	17
			F	224	F	30	F	0	F	224	F	189	F	35	F	157	F	102	F	36	F	55	F	1	F	10
Lungdai	Rural	413	T	1868	T	250	T	0	T	1824	T	1592	T	276	T	938	T	921	T	420	T	147	T	7	T	347
			M	959	M	129	M	0	M	932	M	816	M	143	M	551	M	547	M	224	M	87	M	7	M	229
			F	909	F	121	F	0	F	892	F	776	F	133	F	387	F	374	F	196	F	60	F	0	F	118

2.1.2 LAND USE/ LAND COVER

The major land use /land cover classes within the district can be broadly categorized into built-up land, agricultural land/horticultural land, forests, bamboo forest, forest plantations, shifting cultivation, scrubland and river/water body. In which agriculture land holds 28.5 sq.km measuring 1.89%

and the current shifting cultivation area is 68.58 sq.km which is 4.66% of the total land. The land use/land cover statistics is given in the following table and the map is shown in Figure No. 6 of Annexure 10

Table No 2.3 Land use/land cover statistics

Sl. No	Category	Area (Sq.Km)	%
1	**Built-up Land**		
	Town	7.89	0.54
	Village	5.18	0.35
2	**Agriculture Land**		
2.1	Cropland Kharif	26.55	1.8
2.2	Plantation		
	Coffee	0.18	0.01
	Areca nut	0.72	0.05
	Citrus Woodland	0.43	0.030
3	**Forest**		
3.1	Dense	142.79	9.7
3.2	Medium Dense	121.66	8.26
3.3	Less Dense	218.22	14.83
3.4	Bamboo	700.01	47.55
3.5	Forest Plantation		
	Teak	6.13	0.42
	Gmelina	0.34	0.02
	Miscellaneous	0.23	0.02
4	**Shifting Cultivation**		
4.1	Current Shifting Cultivation	68.58	4.66
4.2	Abandoned Shifting Cultivation	144.85	9.84
5	Scrub Land	18.72	
6	Water Body	9.59	0.65
Total		1472.12	100

2.2.1 Hazard analysis:

Hazards are potentially damaging physical events, natural phenomenon or human activity that may cause the loss of life, injury, property damages, social and economic disruption or environmental degradation. Hazards could be single, sequential or combined in their origin and effects. They are part of the environment in which we live and do not discriminate between people or countries. In fact, these hazards are of global phenomenon and Mizoram is also experiencing either one or more of these hazards at a regular interval.

Kolasib District is prone to natural hazards like landslide, earthquake, wind & cyclone and flood. Various geological and geophysical settings, climatic, meteorological and hydrological condition of the area enable the occurrence of these natural hazards. Anthropogenic processes such as developmental activities i.e., construction of buildings, roads and other infrastructures can influence the natural forces to manifest as hazards. The natural hazards which are prevalent within Kolasib District are analysed as follows:

2.2.1.1 LANDSLIDE

Mizoram, being a hilly terrain, is prone to landslides. Every year a number of landslides are reported from various localities especially during monsoon season. These cause a lot of problem to public, resulting in loss of life and property, disrupting vehicular traffic at many places and snapping power lines and communication network and also cause economic burden to the society. Landslide is primarily attributed to high slope and relief, immature geology, neo-tectonic activity, heavy rainfall and unplanned and improper land use practice. Landslide incidents are more prominent during the rainy/monsoon season as the soil structure gets soften by heavy and continuous downpour, especially in high degree of slope. There can be many factors that make an area vulnerable to landslides, both induced by human activities as well as inherent natural composition of the soil. However, in most cases, the former factor is a contributing factor, especially in areas where development activities are higher and drainage facilities are neglected.

Landslide is one of the natural disasters, which involves sliding of mass of earth or rock down the slope along a definite zone or surface. Landslides attain specific significance because of their widespread occurrence resulting in great loss to public due to both direct and indirect consequences. Their occurrence becomes more vexatious because of its unpredictability in both time and space. Hence, due attention should be given in combating this natural hazard. Preparation of Landslide Hazard Zonation (LHZ) map is one of the first steps in this direction.

Landslide Hazard Zonation may be defined as a technique of classifying an area into zones of relative degrees of potential hazards by ranking various causative factors operative in a given area based on their influence in initiation of landslides. Thus, the Landslide Hazards Zone of an area aims at delineating the landslide potential zones and ranking them in order of the degree of hazard

from landslides. Landslide Hazards Zone maps are very helpful for planners, engineers, etc., in identifying and delineating unstable hazard-prone areas, selecting viable sites for carrying out developmental schemes and evolving database for the risk analysis of landslides in the area.

Kolasib District is characterized by the presence of two major lineaments, both major and minor faults oriented in same directions, and very steep slopes at the eastern side. The lithology is mainly represented by soft sedimentary rocks, such as shale, silty shale, sandstone and their admixture in varying proportions. Besides, loose and unconsolidated sediments form a dominant composition on the exposed surface, particularly in built-up areas. This, together with the aforesaid factors makes it susceptible to landslides. Therefore, for the safety of life and property, we need to overcome the problem of this geo-hazard and hence hazard zonation is necessary for the district. Landslide is also experience in varying magnitude in Kolasib District, not only it affects the transportation system, sometime; it induced dismantling of dwelling houses and death.

METHODOLOGY AND DATA USED

Landslide Hazard Zonation map is prepared based on the integration of data acquired from various geo-environmental thematic databases. Of the several methods, Qualitative method is found suitable and has been employed for carrying out Landslide Hazards Zone mapping. A qualitative approach essentially depends on expert opinion in dividing an area into different zones of varying landslide susceptibility. The methodology involves several steps which includes detailed geological survey of the area from satellite imagery, SOI topographic maps and also from the ground. It is well known that the occurrence of landslide is mainly governed by the geo-environmental factors of the terrain. As such, these geo-environmental parameters, viz., lithology, geological structures like lineaments and faults, soil type, drainage density, geomorphology, slope and land use/land cover were first mapped from satellite imagery and other ancillary data using visual interpretation techniques. Geological features like faults, lithology and lineaments were extracted from satellite imagery using basic principles of image interpretation involving colour, tone, texture, pattern, shape, size and association.

The different thematic layers are then subsequently integrated using ArcInfo GIS Software. The table indicating the weightage value (on the scale of 1-10) of parameters for landslide is shown in Table No. 2.4.

Table No. 2.4 : Parameters for landslide

Parameters	Category	Weight
Lithology	Sandstone	4
	Siltstone & Shale	8
	Shale & Siltstone	9
	Crumpled Shale	10
Land-use/land cover	Heavy Vegetation	3
	Light Vegetation	5
	Scrubland	6
	Barren land	7
	Built-up	8
Slope morphology	0 - 15	1
	15-25	3
	25-30	4
	30-35	5
	35-40	6
	40-45	7
	45-60	8
	> 60	5
Structure(faults & Lineaments	Length of Buffer distance on either side	8
Geomorphology	High Structural Hill	4
	Medium Structural Hill	3
	Low Structural Hill	2
	Valley Fill	0

Each individual thematic layer is carefully analysed so as to establish its relation to landslide susceptibility. For example, in lithology layer, the crumpled shale unit offers more chance of slope failure than the hard and compact sandstone unit. Similarly, areas located within the vicinity of fault zones and other geological structures are more vulnerable to landslides and other mass movements. For this, areas of 100 m on both sides of all the lineaments including faults are buffered. Likewise, due considerations are given for the relation between landslides and other thematic layers. In addition, proximity to road cutting, location of both old and active landslides, dip amount and dip direction of the rock beds are also considered. Combining all the above controlling parameters by giving different weightage value for all the themes, the final map is derived in a GIS environment on 1:50,000 scale.

The map is then classified into Very high, High, Moderate, Low and Very low hazard zones. The area statistics of the landslide hazard zones of Kolasib District is given in Table No. 2.5 and the land distribution with reference to landslide zonation is shown in Figure No. 2.1. The Landslide Hazard Zonation map of Kolasib District is shown in Figure No.23 of Annexure 10

Table No. 2.5 : Area Statistics of Landslide Hazard Zonation of Kolasib District

LHZ Code	Hazard Class	Area (Sq. Km)	%
1	Very High	103.73	07.05
2	High	286.17	19.44
3	Moderate	609.79	41.42
4	Low	330.58	22.46
5	Very Low	110.82	07.53
6	Water Body	31.04	2.11
	Total	1472.12	100.00

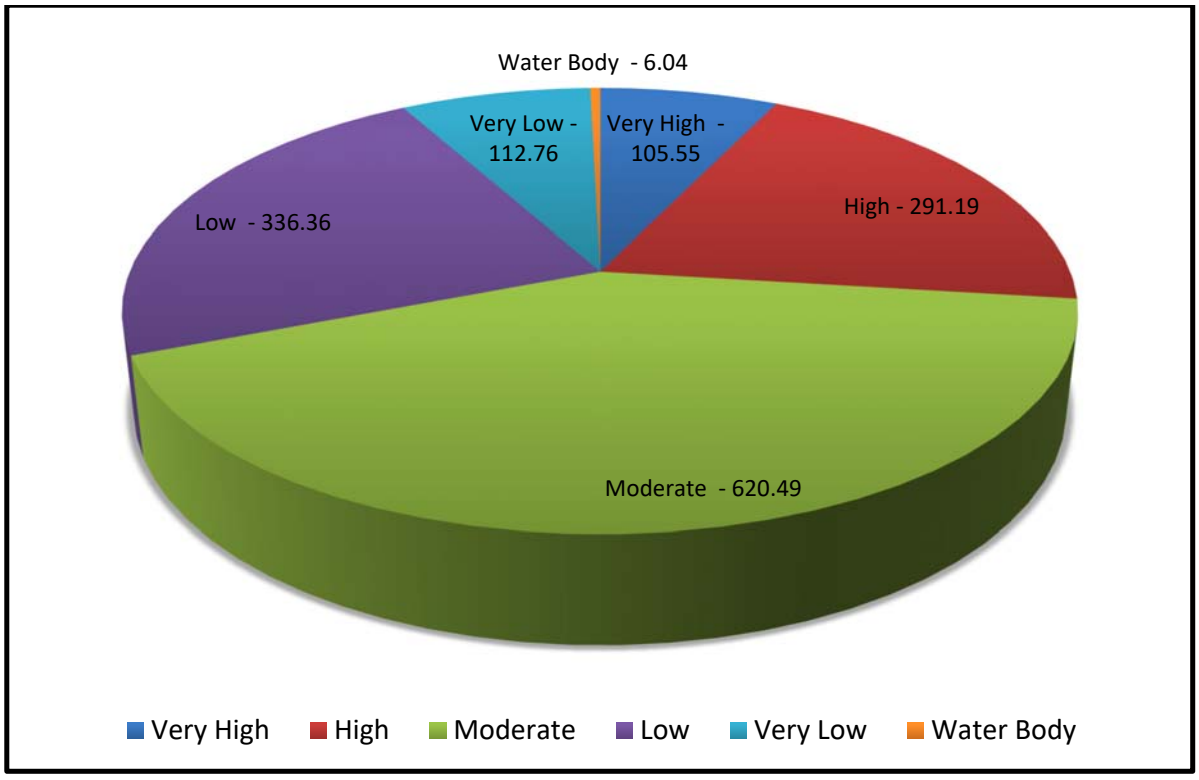


Figure No. 2.1: Land Distribution with reference to landslide zonation

LANDSLIDE HAZARD ZONATION

Very High Hazard Zone: This zone is highly unstable and is at a constant threat of landslides, especially during and after an intense spell of rain. This is because the area forms steep slopes with loose and unconsolidated materials. Besides, it

includes areas located near faults and tectonically weak zones. It also includes areas where unplanned quarrying, road cutting and other human activities are extensively undertaken. The vegetation is generally sparse. The exposed rocks are characterized by numerous bedding and joint planes which facilitate the chance of sliding down along the slope. Therefore, it is best to avoid this zone as far as possible, except if unavoidable. This zone constitutes an area of 103.73 sq.km and forms 07.05% of the total district area.

High Hazard Zone: It includes areas where the probability of sliding debris is at a high risk due to weathered rock and soil debris covering steep slopes which when disturbed are prone to landslides. Most of the pre-existing landslides fall within this category. This zone comprises areas where the slope aspect and dip direction of the rocks, which are usually very steep, are parallel to each other. This makes them susceptible to slide along the slope. Two lineaments, fractured zones and fault planes also traverse the high hazard zone. Areas which experience constant erosion by streams because of the soft nature of the lithology and loose overlying soil, fall under this class. Vegetation is generally either absent or sparse. Owing to the above reasons, this zone is also geologically unstable and should be avoided. This zone occupies a large area about 286.17 sq. km which accounts 19.44% of the total district area.

Moderate Hazard Zone: This zone is generally stable, though it may contain unstable zones in some areas. Moreover, seismic activity and continuous heavy rainfall may reduce its stability. Though this zone may include areas such as cliffs that have steep slopes (more than 45 degree), the orientation of the rock bed and absence of overlying loose debris and human activity make them less hazardous. In general, this zone comprises areas that have moderately dense vegetation, moderate slope angle and relatively compact and hard rocks. This zone is predominantly high in terms of areal extend. It spreads over an area of about 609.79 sq.km and occupies 41.42 % of the total district area.

Low Hazard Zone: This includes areas where the combination of various controlling parameters is unlikely to adversely influence the slope stability. In other words, this zone comprises areas where the chance of slope failure is low or unlikely to occur. Vegetation is relatively dense, though some areas may not have vegetative cover. Although some of the areas may be covered with soft and unconsolidated sediments, the slope angles are generally low, about 30 degrees or below. This zone extends over an area of about 330.58 sq.km and forms 22.46% of the total district area.

Very Low Hazard Zone: This zone mainly comprises vegetative areas and is located away from human settlement. As such, it is assumed to be free from present and future landslide hazards. The dip and slope angles of the rocks are fairly low. Although the lithology may comprise soft rocks and overlying soil debris in some areas, the chance of slope failure is minimized by low slope angle and vegetation present within its vicinity. This zone covers an area of about 110.82 sq.km and forms 7.53% of the total district area. Apart from the various hazard classes, some areas are covered by water bodies which are not included in the hazard classes. Such water bodies cover an area of 6.04 sq.km i.e. 0.41% in addition to 25 sq.km of Serlui Hydel project reservoirs as such the water body consist of 2.11% of the total district area.

2.2.1.2 EARTHQUAKE

Earthquake is the result of a sudden release of energy in the Earth's crust that creates seismic waves. The occurrence of earthquake is a global phenomenon. They are generated due to the accumulation of stress within rocks which results in movements along the faults that have evolved through geological and tectonic processes. Earthquakes produce various effects to the area they act upon. The effect of the vibration produce by earthquake usually leads to destruction of structures such as buildings, bridges and dams. Amongst the natural hazards, earthquake is the most devastating phenomenon resulting in disruption of public property and loss of human life. Earthquake can also trigger landslides and those that take place under the ocean can sometimes cause Tsunami.

North-east India, including Mizoram is seismically one of the six most active regions of the world. The region has been placed in Zone V, the highest level of seismic hazard potential, according to the Seismic Zonation Map of India prepared by Bureau of Indian Standards (BIS) in 2002. As such, the region has experienced 18 large earthquakes (M >7) during the last hundred years including the devastating earthquakes of Shillong (M = 8.1) in 1897 and Assam (M = 8.7) in 1950. Besides, several hundred small and micro earthquakes have also been recorded in the region. The high seismicity in the region is attributed to the collision tectonics between the Indian plate and the Eurasian plate in the north and subduction tectonics along the Indo-Myanmar range (IMR) in the east. Subduction is still continuing in the IMR, which is evident from the intermediate to deep focused earthquakes in this range. Incidentally, maximum seismic activity has also been recorded in this range.

Mizoram lies to the southern end of the Purvanchal Himalayan range. Tectonically, the region is related to the eastward subduction of the Indian plate along the Arakan Yoma suture during Eocene time and the subsequent development of the Indo-Burman Orogenic belt. It is a part of the Neogene Surma Basin comprising a belt of elongated folds having sub-meridional trend and arcuate shape with westward convexity. The fold belt is elongated in the N-S direction almost parallel to the suture zone of the Arakan Yoma subduction. Structural complexity and also the intensity of deformation gradually increase from west to east. Several lineaments and faults of varying lengths criss-cross the area. Most of these are local in nature and are not important from the seismological viewpoint. However, a strike-slip Mat fault orienting in NW-SE direction in the central part of Mizoram is found to be tectonically active, and research is going on to understand the nature and rate of the movement.

Till now, there has not been any record of significant tremors of high intensity within Mizoram. Earthquakes of low intensity, on the other hand, have been felt from time to time. Those occurring within Mizoram were generally of low to moderate in terms of magnitude, and no damage and casualties have been reported. No disastrous effects have been reported. The Cachar earthquake of March 21, 1869 (M = 7.8) was known to produce some significant effects within Mizoram. Similarly, although no fatalities were reported, the tremors produced by earthquake that occurred in the Indo-Myanmar border near Manipur on August 6, 1988 (M = 7.5) were felt from the southern part of Mizoram. It should be kept in mind that, although no disastrous effects were reported within Mizoram so far, the chance of confronting earthquakes of high intensity cannot be ruled out completely. This is because the subduction tectonic activity still continues to operate in the region where known and concealed seismogenic faults are in close proximity to Mizoram.

The year 2020 witnessed a series of seismic activities which took place in the eastern part of Mizoram within Khawbung RD block of Champhai district. These events occurred within a span of 6 months with a total number of more than 30 times. Some of these tremors were felt from Kolasib District. The first recorded incident that shook the area took place on 14th June, 2020 (Sunday) at 1105 hrs (IST). The magnitude was 5, with epicenter located within Myanmar. From that time onwards, a series of jolts have taken place at irregular intervals. National Centre for Seismology (NCS), IMD, MoES recorded around 35 after shock and the last recorded event by National Centre for Seismology (NCS) took place on 20th Dec., 2020 (Sunday) with a magnitude 3.4 on the Richter scale. Of the many

tremors felt, a magnitude of 5.5 that occurred on 22nd June, 2020 at 0410 (IST) was the largest and was mainly responsible for damage of buildings, fracture on the ground and rock falls along the road. Apart from damage to property, these earthquake events left indelible psychological shocks and nightmare to the people in the affected area.

There has been a steady growth of population density and development programmes and gradual progress in other towns within the district. Kolasib town has witnessed a gradual growth in prearranged multi-storied buildings in haphazard manner in the recent years. The same pattern is likely to happen in future to townships in other parts of the district, where building codes and bye-laws are not strictly imposed. This has resulted into increasing vulnerability of human population and physical structures to earthquakes. Thus, it becomes essential to make assessment for the condition and status relating to seismic activities in the district. One of the first steps in this direction is preparation of Seismic Hazard Zonation map. This will provide a sound database for earthquake disaster mitigation.

METHODOLOGY AND DATA USED

The effects of earthquake spread in all directions from the point of origin to a certain extent of area, irrespective of political boundaries. As such, one cannot be exclusively confined to a specific area of interest while assessing a seismic hazard of that particular area. Keeping this in view, seismic hazard analysis of Kolasib District is done using Probabilistic approach with a wider perspective, considering the regional seismo-tectonics of north-east India and past earthquake incidences in the region. Consequently, Seismic Hazard Zonation map for the entire Mizoram is prepared, from which the Hazard Zonation map for the district is finally generated.

Seismic hazard zonation is defined as the technique of classifying an area into zones of relative degrees of potential seismic hazards. It involves the quantitative estimation of ground shaking hazards at a particular area. Seismic hazards can be analysed either by the older and traditional deterministic approach or by the new and emerging Probabilistic approach. While the uncertainties in earthquake size, location and time of occurrence are explicitly considered in the probabilistic method, the deterministic method, on the other hand, concentrates on a particular earthquake scenario capable of producing maximum credible earthquake (MCE). The fundamental difference between deterministic and probabilistic analyses is that deterministic analysis does not

consider the probability associated with the earthquake hazard, whereas probabilistic analysis incorporates the hazard probability. Probabilistic and deterministic analyses play mutually supportive roles in earthquake risk mitigation. A proper probabilistic analysis must include all credible deterministic scenarios. A deterministic scenario must be rational enough to be included in a probabilistic analysis, to give rationality to determinism. A good earthquake risk mitigation study will use both analyses to the maximum benefit.

The earthquake catalogue and database makes the first essential input for the delineation of seismic source zones and their characterisation. A catalogue encompassing for a period of 248 years (from 1762 to 2010) for an area within 21° to 26°N latitude and 90° to 96°E longitude is prepared. An earthquake catalogue data from historical to recent times using three temporal categories were compiled (1) Since 1964, the modern instrumentation-based data are available, (2) 1900–1963, encompasses the era of early instrumental data and (3) pre-1900 include pre-instrumental data based primarily on historical and macro-seismic information. In the present analysis, the minimum magnitude was assigned as 4.0 for all the source zones because it is the lower level of magnitude which would cause hazard of a significant level. Several catalogues of historical and instrumental seismicity of the studied region have been analysed to delineate and characterise the seismogenic source zones. The earthquake catalogue for our study has been prepared by extracting data from different sources such as India Meteorological Department (IMD) and from several sources compiled by NEIST, Jorhat. The tectonic setting of north-east India and surroundings by Evans (1964) and by Krishnan (1960) combined together is found to be most comprehensive for the present study, and has been used.

A seismicity map thus plotted on the tectonic map of NE India shows maximum concentration of seismic activity in the eastern part along the Indo-Myanmar border. This area has been traversed by Kabaw Fault and the Indo-Burmese arc which further extends towards Mishmi and Lohit thrusts in the north. Another concentration has been observed within Manipur state, where the northward extension of Tapu thrust and active local faults traverse the area. It has also been noticed that the activity has been concentrated around the Indo-Bangla border near Assam and Meghalaya, where the strike slip Dauki fault and Sylhet fault are in close proximity. Some seismic activities has also been observed along Kopili lineament, along the southern tip of Naga-Disang thrusts, and also within Mizoram.

EARTHQUAKE HAZARD ZONATION

There can be no difference in Seismic Hazard map of Kolasib District with Mizoram as per prepared by NDMA-BMTPC which had shown the whole district as Zone V; very high damage zone. This zonation shows regional/ localization similarities in hazard level. The hazard level is maximum in the eastern part, mainly because of two fault transverse through the eastern mountain ridges. It gradually decreases towards the western part of the district because of tapering of the fault. However, there is only one epicenter of earthquake which is detected by IMD in 2007 at the magnitude of 4.1 near Hortoki village. This situation shows that the potential occurrence of seismic activities in Kolasib District is very high level, which is enhanced by the dam construction at Serlui River due to increase gravity of land at the regional level. The delineation of seismic source zones are primarily guided by the occurrence of large earthquakes, neo-tectonic activity and regional tectonic frame work. The different seismic hazard classes and their respective area coverage are given in Table No. 2.6 and Seismic Hazard map of Kolasib District as shown in Annexure 10 Figure No. 24

Table No. 2.6 : Area statistics of earthquake Hazard Zones of Kolasib District

PGA Value (g)	Area (sq km.)	Area %
0.52 – 0.54	258.06	17.53
0.50 – 0.52	652.15	44.30
0.48 – 0.50	343.30	23.32
0.46 – 0.48	129.40	8.79
0.44– 0.46	81.85	5.56
0.42 – 0.44	7.36	0.50
Total	**1472.12**	**100**

2.2.1.3 WIND AND CYCLONE

Wind and cyclone hazard mapping is necessary task due to the fact that cyclone induces huge damage caused by occurrence of depression which is prevalent in Kolasib District as the whole State is under the influence of both South West monsoon and North East monsoon every year. The name 'Cyclone' was first coined by Henry Paddington at Calcutta in 1848. It was derived from the Greek word 'Kyklos' which signifies among other things - the coil of a snake. Cyclone is a violent storm, resembling a whirlpool, occupying a circular or nearly circular area of low pressure. A cyclone begins to form when moist air heated by the sun

rises from the surface of the warm tropical seas and is funnelled upwards in a natural updraft. As this moist air rises, it cools and condenses into rain. This condensation feeds back into the air large amount of heat, which adds to the force of the storm's updraft and which strokes the power of the cyclone. Air continues to spiral up, and hot moist air rushes in from all sides to replace it and to feed the updraft. The winds spiral around an "eye", an area of calm and light rains a few kilometers across. The cyclone itself may be between 100 and 200 km (60-125 miles) in diameter with a vertical depth of 11-19 km (7-12 miles). Cyclones are low-pressure systems or depressions around which the air circulates in an anti-clockwise direction in the northern hemisphere, but in a clockwise direction in the southern hemisphere. Since both the Bay of Bengal and the Arabian Sea lie in the tropical region of northern hemisphere, cyclone in this region moves in counter clockwise direction. The Indian sub-continent often experiences Tropical Cyclones, which are more destructive than their temperate region counterpart 'Temperate Cyclones'.

The general characteristics of Cyclone may be summarized as follows:

a) Cyclones are formed and developed over seas/oceans.
b) Their isobars are usually complete circle.
c) The pressure gradient is steep.
d) The wind speed often exceeds 116 km/h and may even exceed 250 km/h.
e) They are associated with heavy rainfall.
f) They are usually more common in summer than in winter.
g) The difference of the densities of air masses does not contribute to the energy of the cyclone. Its energy is the latent heat of condensation.
h) They develop over large bodies of warm water, and lose strength if they move over land i.e. 'Landfall'.
i) Tropical cyclones cannot survive over land for long due to increased surface friction and loss of the warm ocean as the source of energy.

METHODOLOGY AND DATA USED

ESRI World Map was used for deriving buffered coastline. IRS-1D Panchromatic (Stereo) satellite data was used for derivation of contours from which slope-aspect map and altitudes were derived. Data from Cyclone Risk Assessment System, MOSDAC (Indian Space Research Organization), IMD (Indian

Meteorological Department) are also incorporated along with other scientific literatures.

Kolasib District is classified into various zones of relative degrees of wind and cyclone hazard by ranking of various factors operative in a given area and based on their influence. There are three main parameters considered viz., distance from the coastline, aspect and elevation. The buffered distance from the coastline is taken as 60 km intervals, assuming that the nearest coastline is around that figure and the whole State is covered by three classes viz., 0 -120, 121 - 180 and above 180 km. Each of them is given weightage of 3, 2, and 1 respectively. The second parameter is slope-aspect where slopes are divided into two classes taking 180^0 from NW to SE quadrant into one class and the rest into another class. The first class is given weightage value of 2 along with flatland and water bodies and the latter class is given weightage 1. The third parameter is altitude which is divided into three classes 0-500, 500-800 and above 800m and they are given weightage value of 3, 2 and 1 respectively. The three main parameters mentioned are given an influence of 2:1:1 ratio in percentage. The Table No. 2.7 indicating the weightage value of parameters for wind and cyclone is shown below:

Table No. 2.7 : Weightage value of parameters for Wind and Cyclone

Parameters	Influence (%)	Category	Weight
Distance from the coastline	50	0 – 120 km	3
		121 – 180 km	2
		> 180 km	1
Slope Aspect	25	NW – SE quadrant	2
		Other	1
Elevation (from MSL)	25	0 – 500 m	1
		501 – 800 m	2
		>800 m	3

WIND AND CYCLONE HAZARD ZONATION

As already mentioned, BMTPC Vulnerability Atlas of India depicts Mizoram within single class in a very small scale map i.e., Very High Damage Risk Zone. Therefore, it is necessary to further divide the whole State including Kolasib District into various wind and cyclone susceptibility zones. For this Hazard Risk & Vulnerability Analysis study, other parameters like distance from the coastline, slope-aspect and altitude data are considered along with other data like damage report. The final output is validated with damage reports wherever

practicable. Kolasib District is divided into Very high, High and Moderate zones based on Wind and Cyclone hazard as follows:-

Very High Hazard Zone: This zone occurs mostly within the southern part of the district comprising high elevated areas with NW-SE slope aspect. Very high hazard zone covers an area of 529.48 sq. km which is 35.96% of the total district area. Occurrence of high wind velocity and cyclone is more prevalent during monsoon period.

High Hazard Zone: This zone also covers the areas between high elevated slope and low lying areas. It comprises elevation ranging from 501-800 m from MSL with NW-SE slope aspect. High hazard zone extends over 651.90 sq. km which comprises 44.28% of the total district area.

Moderate Hazard Zone: This zone covers mostly low lying areas within the district and covers 290.75 sq. km which constitutes 19.75% of the total district area.

Area Statistics of Wind and Cyclone Hazard Zonation of Kolasib District is given in Table No. 2.8 and Wind and Cyclone Hazard map of Kolasib a district is shown in Annexure 10 Figure No. 25

Table No 2.8 : Area Statistics of Wind and Cyclone Hazard Zonation of Kolasib District

Hazard Class	Area (Sq. Km)	%
Very High	529.48	35.96
High	651.90	44.28
Moderate	290.75	19.75
Total	**1472.12**	**100.00**

2.2.1.4 FLOOD

In Mizoram, as a whole, floods occur in river valleys, when the flow exceeds the capacity of the river channel, particularly at bends or meanders. Compared to other hazards like Landslides and Cyclones, the damage caused by floods within the district is the least. Floods often cause damage to homes, public places and crop lands if they are found in natural flood plains of rivers. In Kolasib District, some villages and cropped land are lying in close proximity to the river and hence drowning often happens due to unplanned activities at a nearby the river. Besides, flash-flood occurred in the vicinity of streams and drainage with the village and roadside; this may be the result of improper management of drainage and stream within inhabitant. Owing to heavy torrential rainfall, flash

flood become inevitable, which often caused loss of life and property. This happens especially during the monsoon period. In general, most significant damages occur only to the crops and erosion of cropland lying in the fluvial flood plains of Tlawng, Tut, Tuirial, Serlui, Tuivai and Tuirini. It can be said that incidence of floods are more or less connected with location of the villages close to water bodies (rivers) and villages close to the major rivers mentioned above are often vulnerable to damages caused by flood.

The Bairabi town, located on the bank where two major rivers viz., Tlawng and Teirei river of Mizoram confluent suffered flooding almost every year. These two rivers, due to their length and vast catchment area, even a small intensity rainfall can cause flooding downstream and abruptly change river discharge. Due to high turbulence at the junction of these two rivers during monsoon, the level of the river expands unpredictably. This disturbs the habitant, low land agricultural activities, communication network and other economical activities. In addition to this, highly turbulent flow of river and breaching of the bank erodes cultivable and habitable land resulting loss large portion of land along the stream every year since long back.

METHODOLOGY AND DATA USED

To study the flood prone areas of Kolasib District, all the important rivers were mapped with the help of Survey of India Toposheets and two seasons satellite imagery of IRS LISS III at 1:50,000 scale. Each of the river regimes were delineated from the SOI Topo-sheets and then incorporated with the satellite imagery. The level of river water regime at lean period and peak period were first delineated. Flood prone areas were then delineated using the following parameters: Elevation of flood plain from the water regime, slope, nearness to the river and past incidences of flood.

FLOOD PRONE AREA

The study indicates that the occurrence of flood is confined in flood plain along the main rivers during peak monsoon period. Therefore, these areas along the rivers covering about 5.01 sq. km, i.e. 0.34% of the district area are categorised as flood prone areas and the remaining areas as non-flood prone areas. Some areas of about 6.04 sq. km are covered by water bodies like river water, fish pond etc and Serlui Hydel Project cover about 25sq.km and that the reservoir may swell due to rainfall during monsoon inundating the bank of the reservoirs. The flood prone area coverage is shown in Table No. 2.9. Flood prone area map of Kolasib District is shown in Annexure 10 Figure No. 26. As the average

elevation of Kolasib Town is 573m (1790 feet), hence the district capital is not affected by riverine flood.

Table No. 2.9: Flood Prone Area of Kolasib District

District Area	River Regime (Sq.Km) and water bodies	Flood Prone Area (%)
1472.12	Area along the rivers = 5.01 Water body = 6.04 Serlui reservoirs = 25 approx. Total = 36.05 sq km	2.44

2.2.1.5 CLOUDBURST/FLASH FLOOD

Cloudburst may be defined as an extreme form of rainfall, sometimes mixed with hail and thunder. Rain from a cloudburst is usually of the shower type with a fall rate 100mm (3.94inches)/hour. The rainfall may be less than this rate but if it rained continuously for a longer duration, it can have serious consequences. This kind of phenomena was recorded in 1929 – where it rained continuously from 1 – 10 June, 1929 resulting in large number of Landslide all over Mizoram including Kolasib District, thus the year 1929 was known as Minpui Kum (Year of Landslide). On May, 1995, an extensive rain was recorded for many days caused very severed landslide as the soil get saturated by continuous heavy downpour resulting in large scale destruction of houses and blockade of roads to in southern part of Mizoram especially Saiha and Lawngtlai towns.

However, the incident of flash flood in minor volume but disturbing the traffic flow of vehicles in the transportation lines forms minor hazards in Mizoram. The hilly terrain and dissected by small stream, heavy down pour of rainfall and high tendency of mass movement of the land surface cause higher degree of frequency for the incidence of flash flood in the high altitude. The heavy volume of surface runoff water in a small course of stream tends to erode the bank. The velocity of running water increases the erosive power due to high inclination angle of slope. The lower part of landform especially in the western section of Kolasib District had been induced by the heavy load of sediment of the rivers and streams.

Apart from these mentioned circumstances, Kolasib District had experience numbers of landslide due to heavy downpour of rainfall during rainy season every year. However, the western side of the district is consisted of low relief features which indicated rare incident of landslide but heavy amount of

sediment deposited brought forward from adjacent areas by the stream of Chhimluang. The eastern part of the district is drained by Serlui and Tuirial river, due to the wide range of watershed areas, these rivers brought heavy load of sediments through soil erosion.

2.2.1.6 HAILSTORM

Hailstrom usually occur during monsoon. The size of the hail ranges from 5mm to 60mm which is big enough to penetrate tin roof. Every year, hailstorm damages large numbers of houses and crops. The southern part of the district particularly Lungdai, Sentlang, Nisapui, Zanlawn, Bukpui and Khamrang are more often affected by hailstorm.

2.2.1.7 FIRE

Every year, the district has witnessed numbers of forest and house fires. While the house fire is mostly destructive, the forest fire, on the other hand, is not much destructive or hazardous as it occurs away from human settlement.

Wild fire/ Forest fire: A wildfire or forest fire is a fire in an area of combustible vegetation that occurs in the countryside or rural area. Depending on the type of vegetation where it occurs, a wildfire can also be classified more specifically as a brush fire, bush fire, desert fire, forest fire, grass fire, hill fire, peat fire, vegetation fire. Meanwhile, Forest are a major natural resources and they play an important role in maintaining ecological balance. At present, with increasing population and urbanisation, forests are threatened by both anthropogenic and wild fire. Basically, forest fires have been categorised into three, viz., Ground fire, surface fire and crown fire. Ground fires spread within rather than top of the organic matter and it consumes organic matter like duff, musk or peat present beneath the surface litter of the forest floor. Ground fires are most hard to handle and there should be proper policy and practice of control agency. Surface fire is characterised by a fast moving fire that produced flaming fronts, which consume needles, moss, lichen, herbaceous vegetation, shrubs, small tree and saplings. Surface fires can ignite large woody debris and decomposing duff, which can burn (glowing Combustion) long after surface flames have moved past and high severity surface fire kill most trees. Crown fires advances from top to top of trees or shrub and is fastest to spread and most destructive for tree and wildlife. Crown fires are strongly influenced by wind, topography and tree density.

Mizoram has a mild climate, comfortable in summer season and seldom freezing during winter. The major forest type include Tropical semi ever green (71.94%) Tropical Moist Deciduous (27.4%), subtropical Broadleaf hill (0.04%) and sub-tropical pine forest (0.62%) and the record forest areas in the state is 16717sq.km, which is 79.30% of its geographical area. Forest fire is occurred in the dry season from November to May, mainly caused by shifting cultivation and the negligence of fire line creation. Most of the forest areas in Mizoram are cover by the mixture of Tropical dry deciduous and evergreen vegetation. The undecomposed leaf litter, dry herb due to loss of moisture tend to burn during dry season. Besides, it has been noticed that for want of new generation of herb for wild animal, hunters used to fire the leaf litter under the forest cover. A massive volume of forest fire is one of the hazards in term of ecological and economic issues. It caused huge loss of crops, resources and other natural assets. It also caused imbalance of ecological condition and increased capacity of soil erosion.

Table No 2.10: Type of forest in Kolasib District

SI	Type of forest	Area	Percentage
1	Dense forest	134.10	11.82
2	Medium dense forest	114.25	10.07
3	Less dense	204.94	18.06
4	Bamboo	657.40	57.94
5	**Forest plantation**		
	(a) Teak	5.76	0.51
	(b) Gmelina	0.32	0.03
	(c) Miscellaneous	0.22	0.02
6	Scrub/ Grassland	17.62	1.55

Table No. 2.11: Forest fire vulnerability zones in Mizoram with corresponding areas

Fire vulnerability class	Area (Sq.Km)	% of areas
Very low	322.7	1.5
Low	2599.3	12.5
Moderate	10068.4	48.4
High	7735.4	37.2
Very high	93.2	0.4

2.2.1.8 MULTI-HAZARD MAPPING

An integral part of disaster risk reduction undertaken by this project is the Geographic Information System (GIS) -based multi-hazard mapping. The

process of multi-hazard mapping integrates different hazard related information for specific areas to convey a composite picture of natural hazards in varying magnitude, frequency and areas affected. In this particular project, hazards like landslide, earthquake, wind & cyclone and flood which are natural hazards are studied and maps are produced through the integration of spatial data and local knowledge. The availability of reliable multi-hazard maps are important risk assessment tools providing relevant information essential for community planning and decision making especially in disaster preparedness and mitigation.

When an area is exposed to more than one hazard, a Multi-hazard map helps the planning team to analyze all of them for vulnerability and risk. By facilitating the interpretation of hazard information, it increases the likelihood that the information will be used in the decision-making process. In either the planning of new development projects or the incorporation of hazard reduction techniques into existing developments, the Multi-hazard map can play an important role. The main purpose of Multi-hazard map is to integrate in one map the different hazard-related information for a study area to produce a composite map of the natural hazards of varying magnitude, frequency, and area of effect. A Multi-hazard map may also be referred to as a 'composite', 'synthesized', and 'overlay' hazard map. One area may suffer the presence of a number of natural hazards. Using individual maps to convey information on each hazard can be troublesome and confusing for planners and decision-makers because of their numbers and their possible differences in area covered, scales, and detail. However, the multi-hazard map is not used for risk analysis. Instead, risk analysis is done using individual hazard map separately.

METHODOLOGY AND DATA USED

For preparing Multi-hazard map, the four different hazard maps previously prepared namely - landslide, earthquake, wind & cyclone and flood maps are combined and different influence values are given on the basis of frequencies of their occurrence and intensity of their effect. Weightage values in each classes for all the hazards are assigned on the scale of 1-5. The highest score i.e. 5, is assigned to Very high hazard class, High hazard class is assigned 4 and so on. This method of assigning weightage values is carried out for all the hazards. The assignments of influence and weightage values for the different hazards and different classes in each hazard is done in accordance to their assumed or expected importance as well as a priori knowledge of the experts for deriving

Multi-hazard map. The frequency and impact of each hazards are analysed as follows:

Landslide: Landslide is the most frequently occurring hazard within the district. Every year landslide incidences are reported from various parts of the district. Hence, landslide is given the highest score in terms of frequency. On the impact scale of high to low, landslide in the district is given moderate as its occurrence is usually localised but scattered throughout the district.

Earthquake: Frequency of earthquake hazard is given low as there is no significant incidence recorded. However, as the entire district falls within seismic zone V, the impact of this particular hazard will be high.

Wind & Cyclone: The frequency of this hazard is moderate as its incidences are quite common but does not occur annually. The impact of Wind & Cyclone hazard is also moderate as the entire district does not come under its influence.

Flood: The frequency and impact of this particular hazard is low as it is not prevalent and confined to areas along major riverbanks.

Based on the frequency and impact of each hazards, priorities of the hazards are also given and the same is taken inconsideration for analysis. The influence is given in percentage. Landslide is assigned 40%, Earthquake is given 35% on the influence scale, Wind & Cyclone is assigned 20%, while flood is assigned only 5%. The map prepared is then classified into High, Moderate and Low multi-hazard zones. Relative priorities of the four natural hazards, their influence and weightage is given in Table No.2.12.

Table No. 2.12 : Relative priorities of the natural hazards, their influence and weightage

Hazard	Frequency	Impact	Influence (in %)	Hazard Class	Weight
Landslide	High	Moderate	40	Very High	5
				High	4
				Moderate	3
				Low	2
				Very Low	1
Earthquake	Low	High	35	Very High	5
Wind &	Moderate	Moderate	20	Very High	5

Cyclone				High	4
				Moderate	3
Flood	Low	Low	05	Prone Area	5

The area statistics of Multi-hazard zones of Kolasib District is given in Table No. 2.13. The Multi-hazard map of Kolasib District is shown in Annexure 10 Figure No. 27.

Table No. 2.13 : Area statistics of Multi-hazard zones of Kolasib District

Multi Hazard class	Area (Sq. Km)	% of areas
Low	595.59	40.46
Moderate	318.08	21.61
High	558.45	37.94
Total	**1472.12**	**100.00**

2.2.2 VULNERABILITY ANALYSIS

Vulnerability is a concept which describes the factors or constraints of an economic, social, physical or geographic nature, which reduce the ability of a community to prepare for and cope with the impact of hazards. Disasters affect population where there is physical, infrastructural, environmental or socio-economic vulnerability. For a multi-hazard prone district like Kolasib etc., it is essential to ensure that vulnerability and risk reduction aspects are taken into account for all developmental plans and programmes. Hazard maps without vulnerability analysis are not meaningful for effective decision making. A small hazard in a densely populated location may cause disaster many times greater than that at sparsely populated area.

2.2.2.1 PHYSICAL VULNERABILITY INDICATOR

Physical vulnerability is determined by conditions of housing, infrastructure and other physical factors. In this analysis, house/building type is considered as the main indicator. House type's data are collected from all the villages and town within the district. BMTPC (Building Materials & Technology Promotion Council) classification divides different house types into category A, category B, category C and category X. Category A refers to buildings made of field-stone, un-burnt bricks and clay. Category B refers to ordinary brick building, buildings of the large block, prefabricated type and half-timbered structures. Semi-concrete buildings are included within this category and are mainly found in urban areas. Category C refers to well-built wooden structures.

Category X comprises all the other houses which are made up of other materials not covered in category A, B and C. The materials are generally light and mainly comprises of bamboo, thatch and grass. However, for the present analysis, the types of house were categorized following indigenous house type and accordingly they were termed RCC, Assam type buildings and Kutcha houses. The data collected are analyzed and depending on the percentage of the house type, habitations were classified into High, Moderate and Low vulnerable classes for each hazard type. Quality and design specifications of houses as well as materials used for housing have a bearing on the vulnerability of houses to landslide, earthquakes, high wind and floods. The concrete and semi-concrete houses account for 12.71%, indicating that is highly vulnerable to severe damage in MSK (Medvedev-Sponheuer-Karnik) IX of earthquake intensity. Since, there was no building regulation to be followed prior to the introduction of the Mizoram Urban & Regional Development Act (MURD Act) in 1990; most of the private concrete buildings are considered to be vulnerable to earthquake hazard. The fact that there were no proper stringent building regulations prior to introduction of MURD Act could have resulted in the construction of buildings with low grade building materials like cement, steel, stones, etc. With time, such constructions have gone through the process of wearing out and in an event of any disaster, maybe more vulnerable to naturally occurring hazards. Assam type with well-built wooden structures with GI roof and tile wall is another type. The other house type is a kutcha type with thatch roof and bamboo wall. These suffer little to moderate damage in earthquake, and do not pose threat to life as much as the other house types. Table showing level of damage risk (vulnerability to natural hazards) of house types as per the classification is given in Table No. 2.14:

Table No. 2.14 : Level of Risk of Different House Types

House Type		Level of vulnerability under			
		Earthquake	Wind and cyclone	Landslide	Flood
A	Reinforced Cement Concreted (RCC)	High	Low	Low	Low
C	Assam type building	Moderate	High	High	Moderate
X	Kutcha	Low	Very High	Very high	Very high

Table No. 2.15: Vulnerability statistics of House type in earthquake

Level of risk	Types	Villages cover

High	More than 20% of the total buildings are in the form of RCC and less than 5 percent are belong to Kutcha	Vairengte, Kolasib, Bilkhawtlir and Lungdai
Medium	Between 10% to 19% of the total buildings are RCC, and more or less 35-50 building are belongs to Assam type.	Phaisen, Meidum, Saiphai, Bualpui North, Nisapui, Thingdawl, North Chhimluang, Buhchangphai, Kawnpui, Bairabi
Low	Less than 5% of the building are RCC	New Builum, North Chawnpui, North Thinglian, Thingthelh, Saipum, Saihapui K, North Chaltlang, Zanlawn, Pangbalkawn, Mualkhang, Khamrang, Lungmuat, Hortoki, Saihapui V, Serkhan, Bukvannei, Phainuam

Table No. 2.16: Vulnerability statistics of House type in landslide

Level of risk	Types	Villages cover
Low	More than 20% of the total buildings are in the form of RCC and less than 5 percent are belong to Kutcha	Vairengte, Kolasib, Bilkhawtlir and Lungdai
Medium	Between 10% to 19% of the total buildings are RCC, and more or less 35-50 building are belongs to Assam type.	Phaisen, Meidum, Saiphai, Bualpui North, Nisapui, Thingdawl, North Chhimluang, Buhchangphai, Kawnpui, Bairabi
High	Less than 5% of the building are RCC	New Builum, North Chawnpui, North Thinglian, Thingthelh, Saipum, Saihapui K, North Chaltlang, Zanlawn, Pangbalkawn, Mualkhang, Khamrang, Lungmuat, Hortoki, Saihapui V, Serkhan, Bukvannei, Phainuam

Table No. 2.17: Vulnerability statistics of House Types in Wind and Cyclone

Level of risk	Types	Villages cover
Low	More than 20% of the total buildings are in the form of RCC and less than 5 percent are belong to Kutcha	Vairengte, Kolasib, Bilkhawtlir and Lungdai
Medium	Between 10% to 19% of the total buildings are RCC, and more or less 35-50 building are belongs to Assam type.	Phaisen, Meidum, Saiphai, Bualpui North, Nisapui, Thingdawl, North Chhimluang, Buhchangphai, Kawnpui, Bairabi
High	Less than 5% of the building are RCC More than 50% of the house are belongs to Assam type More than 30% of the houses are belongs to Kutcha type	New Builum, North Chawnpui, North Thinglian, Thingthelh, Saipum, Saihapui K, North Chaltlang, Zanlawn, Pangbalkawn, Mualkhang, Khamrang, Lungmuat, Hortoki, Saihapui V, Serkhan, Bukvannei, Phainuam

Table No. 2.18: Vulnerability statistics of House type in flood

Level of risk	**Types**	**Villages cover**
Low	More than 20% of the total buildings are in the form of RCC and less than 5 percent are belong to Kutcha	Vairengte, Kolasib, Bilkhawtlir and Lungdai
Medium	Between 10% to 19% of the total buildings are RCC, and more or less 35-50 building are belongs to Assam type.	Phaisen, Meidum, Saiphai, Bualpui North, Nisapui, Thingdawl, North Chhimluang, Buhchangphai, Kawnpui, Bairabi
High	Less than 5% of the building are RCC	New Builum, North Chawnpui, North Thinglian, Thingthelh, Saipum, Saihapui K, North Chaltlang, Zanlawn, Pangbalkawn, Mualkhang, Khamrang, Lungmuat, Hortoki, Saihapui V, Serkhan, Bukvannei, Phainuam

Table No. 2.19: Statistics of house type of Kolasib District

Name of village	Percentage of RCC	Percentage of Assam type	Percentage of Kutcha
Bairabi	17.18	47.31	35.51
Bilkhawthlir	23.14	72.75	4.12
Bualpui North	6.67	61.59	31.75
Buhchangphai	12.11	37.67	50.22
Bukvannei	4.31	78.43	17.25
Hortoki	3.39	22.03	74.58
Kawnpui	15.92	64.46	19.62
Khamrang	3.21	92.51	4.28
Lungdai	24.25	75.19	0.56
Lungmuat	3.30	60.99	35.71
Meidum	5.83	25.56	68.61
Mualkhang	1.94	81.94	16.13
New Builum	0.00	36.73	63.27
Nisapui	6.95	71.66	21.39
North Chaltlang	1.63	67.48	30.89
North Chawnpui	0.00	52.81	47.19
North Chhimluang	9.35	48.60	42.06
North Thinglian	0.00	0.00	100.00
Pangbalkawn	1.91	21.53	76.56
Phainuam	4.96	5.79	89.26
Phaisen	5.19	85.19	9.63
Saihapui K	1.62	5.41	92.97
Saihapui V	3.77	20.75	75.47
Saiphai	6.64	46.45	46.91
Saipum	1.39	59.72	38.89
Serkhan	4.05	94.80	1.16
Thingdawl	8.23	74.07	17.70
Thingthelh	0.79	84.25	14.96
Vairengte	20.89	55.67	23.44
Zanlawn	1.87	80.84	17.29
Whole district average	12.71	59.05	28.24

Table No. 2.20: Different House Types of Various Village Council Area within Kolasib Town

Name of village	RCC	RCC in %	Assam type	% of Assam type	Kutcha	% of Kutcha
Kolasib College veng	71	24.32	170	58.22	51	17.47
Kolasib Diakkawn	163	20.12	406	50.12	241	29.75
Kolasib Electric Veng	63	27.51	166	72.49	-	-
Kolasib Gosen veng	2	02.13	35	37.23	57	60.64
Kolasib Hmar veng	191	32.82	292	50.17	101	17.35
Kolasib Khuangpuilam	72	25.53	135	47.87	75	26.60
Kolasib New Diakkawn	74	22.42	246	74.55	10	3.03
Kolasib Project Veng	74	22.70	225	69.02	27	8.28
Kolasib Saidan/Tuitha veng	22	5.15	182	42.62	223	52.22
Kolasib Tumpui	58	18.35	258	81.65	-	-
Kolasib Venglai	319	27.29	613	52.44	237	20.27
Kolasib Vengthar	129	22.40	396	68.75	51	8.85
Kolasib Rengtekawn	26	9.52	54	19.78	193	70.70
Total	1264	**22.14**	3178	**55.68**	1266	**22.18**

2.2.2.2 SOCIO-ECONOMIC VULNERABILITY INDICATORS

The term social vulnerability reflects the degree to which societies or socio-economic groups are affected by stresses and hazards, whether brought about by external forces or intrinsic factors – internal and external – that negatively impact the social cohesion of a municipality (United Nations Development Programme, 2000). For the purpose of this analysis, vulnerability is also defined as the ability of an individual within a household to recover from a natural hazard impact. The factors which are taken into consideration for societal vulnerability analysis are population density, sex ratio (male-female ratio), elders' population, children's population, literacy rate, average number of pregnant women and number of Low Income families and number of physically challenged people in the District

POPULATION

A more vulnerable group is defined as a group which has some special needs in a disaster and cannot comfortably or safely access; and use the standard resources offered in disaster preparedness, relief and recovery. Vulnerable

Group includes young children, old aged, people with disabilities (physically and mentally challenged), women like pregnant & lactating women, people with critical needs, poor, minority etc. The vulnerable groups are those that also find it hardest to reconstruct their livelihoods following disaster:

a) **Population Density** *:* The number of persons living in one square kilometer of an area is termed as population density. The population density of Kolasib District as a whole is 60 (Census 2011). Population data are collected from all the villages and town within the district and the calculation of population density at village level is very complicated because of land acquisition area of the village become controversial issue especially in the border of Assam state and Manipur state. Besides border issue, land distribution, settlement and allotment to the village also induce the problem of calculation of population density at village level. However, as far as vulnerability concern, the availability of the space between houses and opened space is the most important factor to determine vulnerability; accessibility of tract of forest and cultivable land lead nothing for vulnerability. Hence, there is another assumption of population density at village level, the whole population strength and density by using mean deviation, the average population density in the district is 60 persons per sq.km. The following villages and towns- Kolasib, Vairengte, Kawnpui, Bairabi and Bilkhawthlir exceed the average of the population (in percentage distribution) at village level. It indicated that only those five villages shared 63% of the total population of the district, which means these five villages exceed the density of the district. And the village such as Saiphai, Lungdai, Saipum, Hortoki, Thingdawl and Phainuam are more or less the average of the district, which mean their density of population should be around 40 person per sq.km. In the same way, other 23 villages should have a high gap of the average density of population. After analysing the data, population density is then divided as High, Moderate and Low density. Areas having higher population density are considered more vulnerable to disaster then those which are having low density.

Table No. 2.21: Statistics of Vulnerability Based on Population Density of Kolasib District

Level of risk	Index of population density	Village covered	No of Village	% of Population shared
Low	Less than	N. Chhimluang, Builum, N	23	19.35

risk Village	20 person per sq.Km	Thinglian, S Chhimluang, Saihapui V, Mualkhang, N. Chawnpui, Zodin (Rajtali), Thingthelh, Bukvannei, Phaisen, Khamrang, Lungmuat, Pangbalkawn, Serkhan, Nisapui, N. Chaltlang, N Hlimen, Meidum, Bukpui, Zanlawn, Saihapui K, Buhchangphai		
Medium risk village	20-40 person per sq.km	Phainuam, Saiphai, Lungdai, Saipum Hortoki, Thingdawl	6	17.23
High risk village	More than 40 person per sq.km	Bairabi, Bilkhawthlir, Kawnpui, Vairengte Kolasib	5	63.43

Table No. 2.22: Children, Literacy and Sex ratio of Kolasib District

Name of village	Total Population	Population below 6 age	% of Population below 6 age	Literacy %	Sex ratio
Bairabi (NT)	4320	754	17.45	82.55	983
Bilkhawthlir	5385	908	16.86	83.14	969
Buhchangphai	1401	307	21.91	78.09	911
Builum	323	72	22.29	77.71	946
Bukpui	1077	141	13.09	86.91	916
Bukvannei	543	124	22.84	77.16	853
Dilzau H	164	35	21.34	78.66	843
Hortoki	2544	435	17.10	82.90	975
Khamrang	633	136	21.48	78.52	912
Kolasib (NT)	24272	3428	14.12	85.88	1006
Lungdai	1868	250	13.38	86.62	948
Lungmuat	645	112	17.36	82.64	853
Meidum	1073	253	23.58	76.42	873
Mualkhang	388	69	17.78	82.22	883

N. Kawnpui (NT)	7732	1178	15.24	84.76	987
N.Chaltlang	1053	208	19.75	80.25	904
N.Chawnpui	389	66	16.97	83.03	1016
N.Chhimluang	314	64	20.38	79.62	1415
N.Hlimen	1065	151	14.18	85.82	965
N.Mualvum	986	138	14.00	86.00	964
N.Thingdawl	3111	447	14.37	85.63	968
N.Thinglian	359	85	23.68	76.32	962
Nisapui	822	117	14.23	85.77	986
Pangbalkawn	792	188	23.74	76.26	855
Phainuam	1727	350	20.27	79.73	990
Phaisen	602	141	23.42	76.58	974
Zodin (Rajtali)	405	104	25.68	74.32	1025
S' Chhimluang	359	87	24.23	75.77	1040
Saihapui K	1295	342	26.41	73.59	880
Saihapui V	368	64	17.39	82.61	1000
Saiphai	2052	371	18.08	81.92	914
Saipum	2359	439	18.61	81.39	915
Sentlang	470	76	16.17	83.83	911
Serkhan	802	134	16.71	83.29	923
Sethawn	168	20	11.90	88.10	514
Thingthelh	456	71	15.57	84.43	877
Vairengte (NT)	10554	1441	13.65	86.35	868
Zanlawn	1079	176	16.31	83.69	976

b) Total Population : The total population within each village or town is recorded and depending on the number of the total population they are divided

into the three classes of vulnerability. Areas with higher total population are considered more vulnerable to disaster than those which are having low population. The statistics of population density of Kolasib District given in Table No. 2.21 and total population in Table 2.23 and the map is shown in Annexure 10 Figure No. 12

Table No. 2.23 : Vulnerability statistics based on total population of Kolasib District

Level of Risk	Popula-tion	No of Villages	Village cover	Total population cover	Percentage of population
Low	Below 1000	20	Dilzau H, Sethawn, N. Chhimluang, Builum, N. Thinglian, S' Chhimluang, Saihapui V, Mualkhang, N.Chawnpui, Rajtali, Thingthelh, Sentlang, Bukvannei, Phaisen, Khamrang, Lungmuat, Pangbalkawn, Serkhan, Nisapui, N. Mualvum	9988	11.89
Moderate	1000-2000	9	N. Chaltlang, N. Hlimen, Meidum, Bukpui, Zanlawn, Saihapui K, Buhchangphai, Phainuam, Lungdai	11638	13.86
High	Over 2000	9	Saiphai, Saipum, Hortoki, N. Thingdawl, Bairabi, Bilkhawthlir, N. Kawnpui, Vairengte, Kolasib	62329	74.24

2.2.2.3 SEX-RATIO

Sex-ratio is defined as the number of females per 1000 males. The sex-ratio of Kolasib District as a whole is 956 females per 1000 males (Census 2011) as shown in Table No. 2.22. Male and female population of all the villages and town within Kolasib District are collected and the ratio is then calculated. After analysing the data, sex-ratio is divided into High, Moderate and Low classes. Areas having female population 1000 and above per 1000 males are assigned high sex-ratio class. Those which are having sex-ratio 900-1000 areas signed moderate class while the areas having sex-ratio below 900 are assigned low class. Since, females are considered more vulnerable to disaster; areas having higher sex-ratio will be more vulnerable in case of disaster. The vulnerability statistics based on sex-ratio of Kolasib District is given in Table No. 2.24 and the map is shown in Annexure 10 Figure No. 13

Table N o. 2.24: Vulnerability statistic based on sex ratio of Kolasib District

Level of Risk	Population	No of Villages	Villages cover	Percentage of population
Low	Below 900	10	Sethawn, Dilzau H, Bukvannei, Lungmuat, Pangbalkawn, Vairengte (NT), Meidum, Thingthelh, Saihapui K, Mualkhang	19.15
Medium	900-1000	22	N. Chaltlang, Sentlang, Buhchangphai, Khamrang, Saiphai, Saipum, Bukpui, Serkhan, Builum, Lungdai, N. Thinglian, N. Mualvum, N. Hlimen, N.Thingdawl, Bilkhawthlir, Phaisen, Hortoki, Zanlawn, Bairabi (NT), Nisapui, N. Kawnpui (NT), Phainuam	49.75
High	Above 1000	6	Saihapui V, Kolasib (NT), N. Chawnpui, Rajtali, S Chhimluang , N.Chhimluang	31.09

2.2.2.4 ELDER POPULATION

A population with age group of 70 years and above are categorised under elders' population. Numbers of elders are recorded from all the villages and town within the district as per Electoral Roll 2015 as shown in Table No. 2.25 which indicates that there are 2921 senior citizen (above 70yrs) i.e. 3.48 % of the total population. The percentage to elder citizen is calculated from the total population. Base on this calculation, villages and town are divided into High, Moderate and Low classes of elders' population. The age group of 70 years and above lack physical strength and mobility and are thus considered more vulnerable during disaster situation. Therefore, areas having high elders' population will be more vulnerable to disaster than those which are having low elders' population. The statistics of elders' population of Kolasib District given in Table No. 2.25 and Table No. 2.26 and the map is shown in Annexure 10 Figure No. 14.

Table No. 2.25: Vulnerability statistics based on elder population of Kolasib District

Level of Risk	Index of elder population %	Village cover	No. of Village covered	No. of Person	Percentage
Low risk	0.00-1.99	Zodin, N Thinglian, Saihapui K Khamrang, N. Chawnpui, Phainuam, N. Chhimluang	7	76	9.80
Medium risk	2.00-3.99	Zanlawn, Bukvannei, Meidum, Saihapui V, Mualkhang, Vairengte, Pangbalkawn, Saipum, N. Chaltlang, Saiphai, Bairabi, Thingdawl, Kawnpui, Serkhan, Builum, Lungmuat, Phaisen, Kolasib	18	2133	54.60
High Risk	4.00-5.50	Bilkhawthlir, Buhchangphai, S Chhimluang, Nisapui, Lungdai, N Hlimen, Bukpui, Thingthelh, Hortoki	9	712	41.84
Kolasib District			34	2921	Average: 3.48

Table No. 2.26 : Numbers of Old Aged Population in Kolasib District

SI No	Veng/Khua	Total	Total Population	% of population
1	Kawnpui (Bualpui+Mualvum)	290	8718	3.33
2	Bukpui	52	1077	4.83
3	Hortoki (+ Dilzau)	153	2708	5.65
4	Khamrang	9	633	1.42
5	Lungdai (+Sentlang)	103	2338	4.41
6	Lungmuat	24	645	3.72
7	Mualkhang	10	388	2.58
8	N. Chaltlang	33	1053	3.13
9	Nisapui	36	822	4.38
10	Serkhan	28	802	3.49
11	Thingdawl (+Sethawn)	109	3279	3.32
12	Zanlawn	22	1079	2.04
13	Zodin (Rajtali)	3	405	0.74
14	Bilkhawthlir	220	5385	4.09
15	Buhchangphai	58	1401	4.14
16	Builum	12	323	3.72
17	Bukvannei	12	543	2.21
18	N Hlimen	50	1065	4.69
19	N Thinglian	3	359	0.84
20	N. Chawnpui	7	389	1.80
21	N.Chhimluang	6	314	1.91
22	Phainuam	32	1727	1.85
23	Phaisen	23	602	3.82
24	Saihapui K	16	1295	1.24
25	Saihapui V	9	368	2.45
26	Saiphai	66	2052	3.22
27	Saipum	65	2359	2.76
27	Thingthelh	25	456	5.48
29	Vairengte	276	10554	2.62
30	Bairabi	140	4320	3.24
31	Meidum	25	1073	2.33
32	S Chhimluang	15	359	4.18
33	Pangbalkawn	21	792	2.65
34	Kolasib (+Rengtekawn)	968	24272	3.99
Total		2921	83955	

2.2.2.5 CHILDREN POPULATION

Children below the age of 6 years are considered in children's population. 2011 Census data were used for analyzing children's population. Numbers of Children in the district is shown in Table No. 2.22 and 2.27 which also indicates that there are 13482 children (6810 males and 6772 females below 6yrs) i.e. 16.05 % of the total population. It is important to have an accurate statistical data of this age group as they are too young to save themselves and also for framing policies and programmes in education sector, health sector, etc. The data are analyzed and the villages are divided into High, Moderate and Low classes of children's population. Areas having high children's population are considered more vulnerable to disaster.. Statistics of children's population is given in Table No. 2.27 and the map is shown in Annexure 10 Figure No. 15

Table No. 2.27: Vulnerability statistic based on children percentage of Kolasib District

Level of Risk	Index of children Percentage	No of Villages	Village cover	Total children cover	Percentage of children
Low	Below 15%	9	Sethawn, Bukpui, Lungdai, Vairengte (NT), N. Mualvum, Kolasib (NT), N. Hlimen, Nisapui, N. Thingdawl	6133	45.490
Medium	15%-20%	15	N. Kawnpui (NT), Thingthelh, Sentlang, Zanlawn, Serkhan, Bilkhawthlir, N. Chawnpui, Hortoki,	5061	37.539

			Lungmuat, Saihapui V, Bairabi (NT), Mualkhang, Saiphai, Saipum, N. Chaltlang		
High	Above 20%	14	Phainuam, N. Chhimluang, Dilzau H, Khamrang, Buhchangphai, Builum, Bukvannei, Phaisen, Meidum, N. Thinglian, Pangbalkawn, S' Chhimluang, Rajtali, Saihapui K	2288	16.971
Average		38		13482	16.059

2.2.2.6 LITERACY RATE

Literacy rate is the percentage of literates to population aged 7 years and above. The literacy rate of Kolasib District as per Census 2011 is 93.50 %. (94.57% for male and 92.38% for female) as shown in Table No. 2.28. The literacy rate within Kolasib District is calculated for each village and town, and divided into High, Moderate and Low classes. The literacy rate have a positive impact on vulnerability analysis as the areas having high literacy rate are considered less vulnerable to disaster than those which are having low literacy rate. Statistics of literacy rate classes for Kolasib District is given in Table No. 2.28 and the map is shown in Annexure 10 Figure No. 16.

Table No. 2.28: Vulnerability statistic based on literacy rate of Kolasib District

Level of Risk	Literacy Index	No of Villages	Village cover (in descending order)	Population Cover	Percentage of population

Low	Above 85	9	N. Thingdawl, Nisapui, N. Hlimen, Kolasib (NT), N. Mualvum, Vairengte (NT), Lungdai, Bukpui, Sethawn	43923	52.32
Medium	80-85	15	N. Chaltlang, Saipum, Saiphai, Mualkhang, Bairabi (NT), Saihapui V, Lungmuat, Hortoki, N. Chawnpui, Bilkhawthlir, Serkhan, Zanlawn, Sentlang, Thingthelh, N. Kawnpui (NT)	30042	35.78
High	Below 80	14	Saihapui K, Rajtali, S' Chhimluang , Pangbalkawn, N. Thinglian, Meidum, Phaisen, Bukvannei, Builum, Buhchangphai, Khamrang, Dilzau H, N.Chhimluang, Phainuam	9990	11.90

2.2.2.7 AVERAGE NUMBERS OF PREGNANT WOMEN

During pregnancy, women are more vulnerable towards any kind of natural hazards. Therefore, number of pregnant women in any village and habitation is an important factor for analyzing the vulnerability of an area. The data is collected from HMIS, National Health Mission, Health & Family Welfare, Government of Mizoram report to Ministry of Health & Family Welfare, Gov't of India during 2012 – 13 to 2020 – 2021 as shown in Table No. 2.29. These were further categorized to incorporate in analyzing the vulnerability parameter. According to the average numbers of pregnant women all the villages were

divided into High, Moderate and Low classes as shown in Table No. 2.30 and Annexure 10 Figure No. 17.

Table No. 2.29: Numbers of Pregnant women in Kolasib District during 2012-2013 to 2020 – 2021

PHC/CHC/ Hospital	Sub-Centre	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21
Bairabi PHC	Bairabi SC	107	79	108	88	80	92	117	97	124
Bilkhawthlir PHC	Bilkhawthlir SC	79	79	77	69	262	260	236	256	272
	N Chawnpui SC	8	13	3	18					
	Saiphai SC	42	43	60	70					
	Saipum SC	73	83	79	92					
	Vengchep Clinic	23	48	54	34					
Bukpui PHC	Bukpui SC	18	17	17	27	73	97	79	99	84
	N Chaltlang SC	36	41	23	32					
	N Hlimen SC	45	35	35	38					
Kawnpui PHC	Bualpui SC	33	45	29	29	269	251	255	299	261
	Hortoki SC	79	78	83	67					
	Kawnpui Clinic	92	100	103	51					
	Kawnpui SC	93	99	107	99					

Kolasib MC	Buhchangphai SC	53	76	84	49	756	695	729	735	745
	College Veng Clinic	23	34	31	33					
	Diakawn SC	118	103	111	98					
	Hmar veng Clinic	87	75	90	50					
	Khuangpuilam Clinic	36	22	26	34					
	New Builum SC	66	61	67	66					
	Pangbalkawn SC	41	40	37	32					
	Salem Clinic	92	74	83	39					
	Thingdawl SC	77	76	67	70					
	Tuithaveng SC	65	60	48	63					
	Tumpui SC	43	35	36	103					
	Venglai Parkkawn Clinic	137	138	176	118					
Lungdai PHC	Lungdai SC	57	48	52	54	120	120	124	130	98
	Lungmuat SC	18	27	20	21					
	Nisapui SC	17	17	20	13					
	Serkhan SC	27	29	21	14					
	Zanlawn SC	26	33	22	22					

Vairengte CHC	IOC Clinic	43	59	45	34	245	234	290	302	301
	Phainuam SC	44	53	28	53					
	Phaisen SC	18	19	13	24					
	Vairengte SC	180	160	160	158					
Total		**1996**	**1999**	**2015**	**1862**	**1805**	**1749**	**1830**	**1918**	**1885**

Table No. 2.30: Vulnerability statistics based on average pregnant women of Kolasib District

Level of Risk	Pregnancy number Index	No of Villages	Village cover (in descending order)	Population Cover	Percentage of population
High	Over 40	14	Phainuam, Lungdai, Saiphai, Tuithaveng, New Builum , Buhchangphai, Thingdawl, Bilkhawthlir, Hortoki, Saipum, Bairabi, Vairengte, Kolasib, Kawnpui	1690	85.86
Medium	20-40	7	Lungmuat, Serkhan, Zanlawn, N Chaltlang, Bualpui, Pangbalkawn, N Hlimen	213	10.81
Low	Below 20	4	N Chawnpui, Nisapui, Phaisen, Bukpui	65	3.33

2.2.2.8 ECONOMY

The vulnerability of an area is also determined by its economic structures. An analysis of the vulnerability of the socio-economic factors and the capability of the community to cope with disasters will show the resilience of the society to impact of disaster. Within the villages of Kolasib District, an age old system of farming – jhum cultivation is still prevalent. At present the district's economy

continues to be characterised by poverty, unemployment, low per-capita income and inadequate socio-economic development.

However, in some towns and villages of the district, a fraction of families are engaged in Government services and other commercial sectors. Type of houses also reflects the economy of an area, and as far as Kolasib District is concerned, the dominant materials used for construction of houses are GI/Metal and asbestos sheet, the second prominent materials are grass/thatch/bamboo and wood which shows the poor economic condition of the district.

AAY, PHH & Non-NFSA : The data on various levels of families on the basis of different types of Public Distribution System cards for Kolasib District are collected from the Directorate of Food, Civil Supply and Consumer Affairs and their websites, which is shown in Table No. 2.31A & Table No 2.31B.

The department enrolled 22226 families of 91575 population in the district during the year 2021. There are 10029 Non FSA card holder/family consisting of 41615 population; and 2329 AAY and 9868 PHH card holding families consisting of 6887 and 43073 population respectively. These data were utilized to create what is termed as 'Low Income group'. The percentile of this Low Income Group from each habitation was calculated. All the villages were divided into High, Moderate and Low classes according to the percentage of low income group present. Areas having high percentage of low income group are considered more vulnerable while those with low percentage of low income group are considered less vulnerable in case of disaster. Based on their economy, each village within the district are categorised into High, Moderate and Low economic vulnerability classes. Statistics of economic vulnerability classes for Kolasib District is given in Table No. 2.32 and the map is shown in Annexure 10 Figure 18

Table No 2.31A : Data of BPL Families in Kolasib District

BPL FAMILIES (FCS&CA)										
Sl No	EPS Name	Name of Centre	Total Cards	Total Units	NFSA				Non-FSA	
					AAY		PHH			
					Cards	Unit	Cards	Unit	Cards	Unit
1	***2***	***3***	***4***	***5***	***6***	***7***	***8***	***9***	***10***	***11***
1	Bairabi 1	Bairabi	357	1408	37	178	92	387	228	843
2	Bairabi 2	Bairabi	404	1552	70	172	101	442	233	938

3	Bairabi 3	Bairabi	334	1182	33	85	116	449	185	648
4	Meidum	Bairabi	216	855	17	33	179	771	20	51
5	Rasdali	Bairabi	117	466	3	9	44	194	70	263
6	Bukpui	Bukpui	257	1084	88	241	121	616	48	227
7	N Chaltlang 1	Bukpui	188	891	27	65	108	585	53	241
8	N Chaltlang 2	Bukpui	102	492	20	50	52	278	30	164
9	Bualpui	Kawnpui	382	1554	30	94	122	487	230	973
10	Hortoki 1	Kawnpui	320	1498	58	181	188	987	74	330
11	Hortoki 2	Kawnpui	283	1372	56	184	179	957	48	231
12	Kawnpui 1	Kawnpui	437	1785	33	92	155	623	249	1070
13	Kawnpui 2	Kawnpui	460	1918	41	122	124	496	295	1300
14	Kawnpui 3	Kawnpui	420	1747	38	109	203	847	179	791
15	Kawnpui 4	Kawnpui	261	966	20	50	114	408	127	508
16	Kawnpui 5	Kawnpui	224	791	21	64	90	337	113	390
17	Khamrang	Kawnpui	173	590	27	49	135	509	11	32
18	Mualkhang	Kawnpui	121	422	10	18	83	296	28	108
19	Mualvum	Kawnpui	149	679	0	0	77	362	72	317
20	College Veng	Kolasib	350	1520	24	77	104	498	222	945
21	Diakkawn 1	Kolasib	469	1266	21	51	149	69	299	1146
22	Diakkawn 2	Kolasib	298	1203	15	36	76	276	207	891
23	Electric Veng	Kolasib	296	1119	9	19	125	455	162	645
24	Hmar veng	Kolasib	776	3100	32	105	281	1150	463	1845
25	New Diakkawn	Kolasib	535	2008	40	108	153	559	342	1341
26	Parkkawn	Kolasib	227	799	14	24	89	308	124	467
27	Project veng	Kolasib	376	1501	33	98	149	559	194	844
28	Rengtekawn	Kolasib	540	2315	53	164	170	882	317	1269
29	S Chhimluang	Kolasib	137	647	17	67	55	290	65	290
30	Saidan	Kolasib	191	782	10	34	78	344	103	404
31	Salem Veng	Kolasib	276	1054	22	59	108	426	146	569
32	Tuitha veng	Kolasib	332	1256	19	68	99	413	214	775
33	Tumpui	Kolasib	545	2196	35	105	176	706	334	1385
34	Venglai 1	Kolasib	465	1565	30	62	148	509	287	994
35	Venglai 2	Kolasib	477	1696	28	72	166	618	283	1006
36	Venglai E	Kolasib	293	1176	19	54	161	694	113	428
37	Vengthar 1	Kolasib	497	1854	33	79	163	588	301	1187
38	Vengthar 3	Kolasib	184	748	17	53	70	275	97	420
39	Vengthar 2	Kolasib	384	1518	24	90	148	611	212	817

40	Buhchangphai	Kolasib Sub	225	931	48	149	142	658	35	124
41	Bukvannei	Kolasib Sub	245	1157	43	188	90	468	112	501
42	Pangbalkawn	Kolasib Sub	224	1018	24	69	147	710	53	239
43	Phaisen	Kolasib Sub	137	625	34	115	72	372	31	138
44	Saihapui	Kolasib Sub	178	832	22	88	141	684	15	60
45	Thingdawl 2	Kolasib Sub	456	1790	36	103	311	1269	109	418
46	Thingdawl 1	Kolasib Sub	444	1777	29	72	279	1202	136	503
47	Lungdai	Lungdai	516	2169	48	130	340	1384	128	655
48	Lungmuat	Lungdai	180	751	38	112	95	447	47	192
49	Nisapui	Lungdai	239	1064	59	181	102	472	78	411
50	Sentlang	Lungdai	94	378	28	80	54	236	12	62
51	Serkhan	Lungdai	215	973	40	122	95	482	80	369
52	Zanlawn 1	Lungdai	167	653	29	86	68	311	70	256
53	Zanlawn 2	Lungdai	127	642	20	71	67	382	40	189
54	Thingthelh	N Hlimen	117	435	46	113	39	158	32	164
55	N Hlimen	N Hlimen	260	1106	84	236	122	524	54	346
56	Saipum 1	Saiphai	263	1229	39	107	140	716	84	406
57	Saipum 2	Saiphai	316	1567	62	191	138	769	116	607
58	Saiphai 2	Saiphai	298	1385	36	102	124	571	138	712
59	Saiphai 1	Saiphai	249	1185	35	131	109	573	105	481
60	N Chawnpui	Saiphai	110	495	26	62	43	225	41	208
61	Bilkhawthlir 3	Vairengte	227	1054	14	58	140	704	73	292
62	Bilkhawthlir 4	Vairengte	441	1970	21	42	303	1419	117	509
63	Bilkhawthlir 1 & 2	Vairengte	597	2535	36	103	436	1910	125	522
64	N Chhimluang	Vairengte	109	433	19	60	39	175	51	198
65	Phainuam	Vairengte	378	1761	49	193	247	1283	82	285
66	Vairengte 1	Vairengte	276	1221	30	100	129	591	117	530

67	Vairengte 2	Vairengte	287	1245	33	98	118	511	136	636
68	Vairengte 3	Vairengte	215	905	28	84	77	346	110	475
69	Vairengte 4	Vairengte	184	727	14	30	58	223	112	474
70	Vairengte 5	Vairengte	238	1023	19	55	102	413	117	555
71	Vairengte 6	Vairengte	328	1438	23	67	141	654	164	717
72	Vairengte 7	Vairengte	213	809	22	58	58	283	133	468
73	Vairengte IOC Veng	Vairengte	314	1443	28	79	140	686	146	678
74	Vairengte 8	Vairengte	272	1186	15	46	99	440	158	700
75	Vairengte 9	Vairengte	234	1088	28	85	112	561	94	442
		TOTAL	**22226**	**91575**	**2329**	**6887**	**9868**	**43073**	**10029**	**41615**

Table No. 2.31B : Summary of Data of BPL Families

BPL	Card	Unit
AAY	2329	6887
PHH	9868	43073
N-NFSA	10029	41615
Total	**22226 (6+8+10)**	**91575 (7+9+11)**

Table No 2.32: Index of Economic Vulnerability

Index	% cover	Village/Town cover
Low	0-15	Meidum, Thingdawl, Rastali, Bilkhawthlir, Kolasib, Pangbalkawn, Khamrang, Mualkhang, Buhchangphai Saihapui k
Moderate	15-30	Bairabi, Vairengte, Phainuam, Lungdai, Nisapui, Saiphai, Serkhan, Kawnpui, Bukvannei, Lungmuat, Saihapui v, Bukpui, Phaisen, Hortoki + Dilzau, N. Chaltlang, Saipum
High	30 above	N. Chhimluang, Zanlawn, N. Hlimen, S. Chhimluang Thingthelh, N. Chawnpui, N. Builum, N. Thinglian

2.2.2.9 PEOPLE WITH PHYSICAL DISABILITY

Natural and man-made disasters tend to have a disproportionate impact on people with disabilities (PWD). This issue is recognised and addressed by Article 11 of the United Nations Convention on the Rights of Persons with Disabilities which states that "States Parties shall take, in accordance with their obligations under international law, including international humanitarian law and international human rights law, all necessary measures to ensure the

protection and safety of persons with disabilities in situations of risk, including situations of armed conflict, humanitarian emergencies and the occurrence of natural disasters". There is limited research knowledge, but many anecdotal reports, on what happens when disasters impact people with disabilities. Individuals with disabilities may be greatly affected by natural disasters. Those with physical disabilities can be at risk when evacuating if assistance is not available. Individuals with cognitive impairments may struggle with understanding instructions that must be followed in the event a disaster occurs. Those who are blind, hearing impaired, etc. may have difficulty communicating during the emergency. All of these factors can increase the degree of variation of risk in disaster situations with disabled individuals. Some research studies have found discrimination against individuals with disabilities during all phases of the disaster cycle. The most common limitation is that people cannot physically access buildings or transport, as well as access disaster-related services. The exclusion of these individuals is caused in part by the lack of disability-related training provided to emergency planners and disaster relief personnel.

The numbers of People with Physical Disability within Kolasib District as per Statistical Handbook, Mizoram 2020 is given in the Table No. 2.33A which shows that there are 1385 peoples (out of total population of 83955) i.e. 1.65% people with physical disability in the district. Number of Persons with Disability from Kolasib District that are Registered on Unique Disability ID portal are shown in Table No. 2.33B as below :

Table No. 2.33A: Number of Disabled Person in Kolasib District as per Statistical Handbook, Mizoram 2020

Disability	Seeing	Hearing	Speech	Movement	Mental Retardation	Mental Illness	Others	Multiple Disability	**Total**
Numbers	298	374	78	142	117	77	171	128	**1385**

Table No. 2.33B: Number of Persons with Disability Registered on Unique Disability ID portal from Kolasib District

Sl No	Type of Disability	Number of persons
1	Blind	51
2	Cerebral Palsy	21

3	Hearing impairment	91
4	Locomotors disability	68
5	Intellectual disability	45
6	Low vision	9
7	Mental illness	27
8	Muscular Dystrophy	10
9	Dwarfism	4
10	Chronic Neurological Conditions	10
12	Multiple disability	21
Total		**357**

2.2.3 RISK ANALYSIS

The probability of harmful consequences or expected losses (deaths, injuries, damaged property, disrupted livelihoods, economic activity or environmental damage) resulting from interaction between natural hazards and vulnerable conditions is referred as Risk. Risk assessment is the function of two broad parameters-

a) Hazard Analysis
b) Vulnerability Analysis.

The Risk factor is derived by integrating Hazard Analysis and Vulnerability Analysis.

The process of conducting a risk assessment is based on a review of both the technical features of hazards such as their location, intensity, frequency and probability; and also the analysis of the physical, social, economic and environmental dimensions of vulnerability and exposure, while taking particular account of the coping capabilities pertinent to the risk scenarios.

The elements at risk are the population, properties, infrastructure, economic activities and others. Risk map is prepared by overlaying physical and socio-economic vulnerability maps on the hazard map and based on the combination of different classes from these thematic maps, the district is divided into High risk, Moderate risk and Low risk zones.

2.2.3.1 RISK BASED ON LANDSLIDE AND VULNERABILITY

Landslide hazard zones are well distributed in all parts of the district. Location of settlement area with respect to hazard zones is taken into account for risk analysis. Risk analysis based on landslide hazard and vulnerability is done

using the landslide hazard zones and physical and socio-economic vulnerabilities.

As the physical and socio-economic vulnerabilities are categorized into three classes, the landslide hazard zones are also categorised into high, moderate and low classes. Numerical scores ranging from 1 to 3 are assigned to the different classes of landslide hazard and at the same time numerical scores are also given to different vulnerability classes. From these parameters, the final risk score is calculated using Raster Calculator in ArcInfo GIS software as shown in Table No. 2.34. Villages and town within the district are then categorized in to high, moderate and low risk zones as in Table No 2.35 and the corresponding map is shown in Annexure 10 Figure No. 19.

Table No. 2.34: Table showing risk factors and their numerical scores

Parameters	**Category**	**Weight**
Landslide Hazard	High	3
	Moderate	2
	Low	1
Physical vulnerability	High	3
	Moderate	2
	Low	1
Socio-economic vulnerability	High	3
	Moderate	2
	Low	1

Table No 2.35: Villages and town within Kolasib District that are categorized in to high, moderate and low landslide risk zones

The following villages/town are in High risk class based on Landslide Hazard combined with vulnerability					
Sl. No	**NAME**	**Vulnerability Weightage**	**Hazard (Landslide) weightage**	**Risk Weightage (Vulnerability *Hazard)**	**Class**
1	Mualkhang	18	3.00	54	**HIGH**
2	Phaisen	18	3.00	54	
3	N. Thingdawl	17	3.00	51	
4	Bilkhawthlir	16	3.00	48	

5	Bukpui	16	3.00	48	
6	Meidum	16	3.00	48	
7	Nisapui	21	2.00	42	
8	Bukvannei	19	2.00	38	
9	N. Chaltlang	19	2.00	38	
10	Pangbalkawn	19	2.00	38	
11	Buhchangphai	17	2.00	34	
12	New Builum	17	2.00	34	
13	N. Hlimen	17	2.00	34	
14	Phainuam	17	2.00	34	
15	Saipum	17	2.00	34	
16	Vairengte	14	2.00	28	
The following villages/town are in Moderate risk class based on Landslide Hazard combined with vulnerability					
Sl. No	**NAME**	**Vulnerability Weightage**	**Hazard (Landslide) weightage**	**Risk Weightage (Vulnerability *Hazard)**	**Class**
1	Lungmuat	21	1.00	21	**MODERATE**
2	Thingthelh	21	1.00	21	
3	N.Thinglian	20	1.00	20	
4	Saihapui V	20	1.00	20	
5	Serkhan	20	1.00	20	
6	Zanlawn	20	1.00	20	
The following villages/town are in Low risk class based on Landslide Hazard combined with vulnerability					
Sl. No	**NAME**	**Vulnerability Weightage**	**Hazard (Landslide) weightage**	**Risk Weightage (Vulnerability *Hazard)**	**Class**
1	Bairabi	19	1.00	19	**LOW**
2	N. Chawnpui	19	1.00	19	
3	Khamrang	18	1.00	18	
4	Kolasib	**18**	1.00	18	
5	N. Chhimluang	18	1.00	18	
6	Rastali	18	1.00	18	
7	S. Chhimluang	18	1.00	18	

8	Saihapui K	18	1.00	18	
9	Saiphai	18	1.00	18	
10	Hortoki	16	1.00	16	
11	Lungdai	16	1.00	16	
12	N.Kawnpui	13	1.00	13	

The risks involved in Landslide disaster include loss of human lives, partial or complete damage of houses in some areas. Disruption of power supply, drinking water supply and communication network in some areas will also be some of the major impacts of landslide disaster. Road transport network may be disrupted in many places which in turn will affect supply of food and other daily necessities. The impact also contributes to the physical deterioration of land and downgrading of land value.

2.2.3.2 RISK BASED ON EARTHQUAKE AND VULNERABILITY

It has been found that the entire district falls within seismic zone V, the highest seismic zone in the country. Therefore, in earthquake hazard zonation, Kolasib District is categorized into a single class i.e. high hazard zone. For earthquake and vulnerability based risk analysis, separate physical vulnerability map is prepared as the vulnerability of house type under earthquake hazard is different from those of the other hazards. Hence, concrete and semi-concrete buildings are considered highly vulnerable to earthquake hazard within Kolasib District.

On the other hand, Assam type buildings and other houses made of bamboo, thatch, grass and other light materials are considered less vulnerable to earthquake hazard. These factors are taken into consideration while analyzing the risk. Numerical scores ranging from 1 to 3 are assigned to different classes within physical and socio-economic vulnerabilities. The single earthquake hazard class is then combined with different classes of both physical and socio-economic vulnerabilities using Raster Calculator in ArcInfo GIS software to assign High, Moderate and Low risk zones. Risk factors and their numerical scores are shown in Table No. 2.36 and the corresponding map is in Annexure 10 shown in Figure No. 20. Villages and town within Kolasib District that are categorized in to high, moderate and low risk zones are shown in Table No 2.37.

Table No. 2.36: Table showing risk factors and their numerical scores

Parameters	Category	Weight

Earthquake Hazard	High	3
Physical vulnerability	High	3
	Moderate	2
	Low	1
Socio-economic vulnerability	High	3
	Moderate	2
	Low	1

Since the entire district falls in seismic zone V, there is a probability of magnitude 7 to 8 earthquake occurrence. The impact may induce loss to thousands of human lives as well as casualties, particularly in urban areas. Well-built concrete houses may suffer partial damage. However, many private concrete buildings may suffer partial or total destruction. The other impacts may range from disruption of power supply, drinking water supply and telecommunication network.

Road transport network may suffer a set back as many of the bridges within the district may be partially or completely damaged. Industrial sectors may suffer major setback due to loss of power supply. If this happens, many economic activities will also be hindered. In rural areas, the dominant house types are wooden structures. Hence, they may only suffer little to moderate damage during an earthquake, and do not pose threat to human lives as compared to the other house types.

Table No 2.37: Villages and town within Kolasib District that are categorized in to high, moderate and low earthquake risk zones

The following villages/town are in High risk class based on Earthquake Hazard combined with vulnerability					
SlNo	**NAME**	**Vulnerability Weightage**	**Hazard (Earthquake) weightage**	**Risk Weightage (Vulnerability *Hazard)**	**Class**
1	N. Chhimluang	21	3	63	**HIGH**
2	New Builum	20	3	60	
3	Kolasib	20	3	60	
4	S. Chhimluang	20	3	60	
5	N. Hlimen	19	3	57	

6	Saiphai	19	3	57	
7	Bukvannei	18	3	54	
8	Pangbalkawn	18	3	54	
9	Saihapui K	18	3	54	
10	Bukpui	17	3	51	
11	Saipum	17	3	51	
12	Thingthelh	17	3	51	
13	N.Chawnpui	16	3	48	
14	N.Thingdawl	15	3	45	
The following villages/town are in Moderate risk class based on Earthquake Hazard combined with vulnerability					
Sl. No	**NAME**	**Vulnerability Weightage**	**Hazard (Earthquake) weightage**	**Risk Weightage (Vulnerability *Hazard)**	**Class**
1	Hortoki	21	2	42	**MODERATE**
2	Buhchangphai	20	2	40	
3	Phainuam	20	2	40	
4	Phaisen	19	2	38	
5	Zanlawn	19	2	38	
6	Meidum	18	2	36	
7	N.Chaltlang	18	2	36	
8	Nisapui	18	2	36	
9	Saihapui V	18	2	36	
10	Lungmuat	17	2	34	
11	Rastali	17	2	34	
12	Bairabi	16	2	32	
13	Bilkhawthlir	16	2	32	
14	N.Kawnpui	16	2	32	
The following villages/town are in Low risk class based on Earthquake Hazard combined with vulnerability					
Sl. No	**NAME**	**Vulnerability Weightage**	**Hazard (Earthquake) weightage**	**Risk Weightage (Vulnerability *Hazard)**	**Class**
1	N. Thinglian	15	2	30	**LOW**
2	Vairengte	12	2	24	

3	Khamrang	18	1	18	
4	Serkhan	18	1	18	
5	Lungdai	14	1	14	
6	Mualkhang	13	1	13	

2.2.3.3 RISK BASED ON WIND & CYCLONE AND VULNERABILITY

Risk analysis is done by combining wind & cyclone hazard and physical and socio-economic vulnerabilities. Numerical scores are assigned to the different classes of cyclone hazard zonation and different classes of both physical and socio-economic vulnerabilities. In term of physical vulnerability to wind & cyclone hazard, concrete and semi-concrete buildings are considered less vulnerable. Building made up of timbers, asbestos and other light materials are considered more vulnerable to wind & cyclone hazard. These parameters are taken into consideration in risk analysis. As the physical and socio-economic vulnerabilities are categorised into high, moderate and low classes, wind & cyclone hazard zones are also categorised into the same classes. Numerical scores ranging from 1 to 3 are assigned to the different classes of wind & cyclone hazard and at the same time numerical scores are also given to different vulnerability classes. From these parameters the final risk score is calculated using Raster Calculator in ArcInfo GIS software. Villages and town within the district are then divided into High, Moderate and Low risk zones. Risk factors and their numerical scores are shown in Table No. 2.38 and the corresponding map is shown in Annexure 10 Figure No. 21.

Table No 2.38: The table showing risk factors and their numerical scores based on Wind and Cyclone

Parameters	Category	Weight
Wind and Cyclone Hazard	High	3
	Moderate	2
	Low	1
Physical vulnerability	High	3
	Moderate	2
	Low	1
Socio-economic vulnerability	High	3
	Moderate	2
	Low	1

Since, the entire state falls within Very high wind hazard zone as per BMTPC classification, there can be loss of human lives and casualties due to this hazard. Particularly in rural areas, majority of the houses are made up of timber, GI

sheets, asbestos-tiles and other lightweight materials. Hence, the impact will be partial or complete damage to houses and loss of human lives in many villages. Agriculture sector may suffer major setback due to loss of paddy cultivation and other cash crops. The impacts of wind &cyclone hazard, like other hazards, also include disruption of power supply and telecommunication network.

2.2.3.4 RISK BASED ON FLOOD AND VULNERABILITY

Risk analysis is done based on flood hazard and physical and socio-economic vulnerabilities. Scores are assigned to the flood prone areas, non-flood prone areas and different physical and socio-economic vulnerability classes. From these parameters, the final risk score is calculated using Raster Calculator in ArcInfo GIS software. In fact, most of the settlement areas of the villages and town are not located at flood hazard zone.

However, a few of the low lying areas within the jurisdiction of some villages and town are prone to flood. Therefore, villages and town within the district are categorized into Low risk zones and No risk zones. Risk factors and their numerical scores are shown in Table No. 2.39 and the corresponding map is shown in Annexure 10 Figure No. 22.

Table No 2.39: The table showing risk factors and their numerical scores

Parameters	Category	Weight
Flood Hazard	Prone Area	3
	No Flood Zone	0
Physical vulnerability	High	3
	Moderate	2
	Low	1
Socio-economic vulnerability	High	3
	Moderate	2
	Low	1

The risks involved in flood hazard in the present study are mainly loss of paddy cultivation and other crops. As the district area is a hilly terrain, the flood hazard is negligible as compared to plain areas in other parts of the country. It also has less significance as compared to other hazards and may not create setback to daily life in the district.

Table No 2.40: Villages and town within Kolasib District that are categorized in to high, moderate and low Flood risk zones

The following villages/town are in High risk class based on Flood Hazard combined with vulnerability					
Sl. No	**NAME**	**Vulnerability Weightage**	**Hazard (Flood) weightage**	**Risk Weightage (Vulnerability* Hazard)**	**Class**
1	Hortoki	0	3.00	0	**HIGH**
2	N. Chawnpui	0	3.00	0	
3	Phainuam	0	3.00	0	
4	Phaisen	0	3.00	0	
5	Saihapui V	0	3.00	0	
6	Bairabi (NT)	0	3.00	0	
7	Buhchangphai	0	2.00	0	
8	S. Chhimluang	0	2.00	0	
9	Saiphai	0	2.00	0	
10	Bukvannei	0	2.00	0	
11	N. Thinglian	0	2.00	0	
12	Pangbalkawn	0	2.00	0	
13	Saihapui K	0	2.00	0	
14	Rajtali	0	2.00	0	
15	Saipum	0	2.00	0	
16	Meidum	0	2.00	0	
The following villages/town are in Moderate risk class based on Flood Hazard combined with vulnerability					
Sl. No	**NAME**	**Vulnerability Weightage**	**Hazard (Flood) weightage**	**Risk Weightage (Vulnerability* Hazard)**	**Class**
1	Vairengte (NT)	0	2.00	0.0	**MODERATE**
2	N. Chhimluang	0	1.00	0.0	
The following villages/town are in Low risk class based on Flood Hazard combined with vulnerability					
Sl. No	**NAME**	**Vulnerability Weightage**	**Hazard (Flood) weightage**	**Risk Weightage**	**Class**

				(Vulnerability* Hazard)	
1	New Builum	0	1.00	0.0	**LOW**
2	Lungmuat	0	1.00	0.0	
3	N. Chaltlang	0	1.00	0.0	
4	N. Hlimen	0	1.00	0.0	
5	Nisapui	0	1.00	0.0	
6	Zanlawn	0	1.00	0.0	
7	Khamrang	0	1.00	0.0	
8	Serkhan	0	1.00	0.0	
9	Bukpui	0	1.00	0.0	
10	Thingthelh	0	1.00	0.0	
11	Bilkhawthlir	0	1.00	0.0	
12	Kolasib (NT)	0	1.00	0.0	
13	Lungdai	0	1.00	0.0	
14	Mualkhang	0	1.00	0.0	
15	N. Kawnpui (NT)	0	1.00	0.0	
16	N.Thingdawl	0	1.00	0.0	

2.2.4 CAPACITIES AND RESOURCES ANALYSIS:

2.2.4.1 MEDICAL FACILITIES

There are one District Hospital and one private Hospital at Kolasib, one Community Health Centre at Vairengte, five numbers of Primary/ Urban Health Centres at Lungdai, Kawnpui, Bukpui, Bairabi and Bilkhawthlir, twenty five numbers of Health Sub-Centres and six numbers of Sub-Centre Clinics. The medical disaster management plan of Kolasib District contains Hospitals, Community Health Centres, Primary Health Centres, Urban Health Centres, Health Sub-Centres and Sub-Centre Clinics. Medical facilities is shown in Annexure 4.

2.2.4.2 MIZORAM POLICE

Kolasib District was created by bifurcation of erstwhile Aizawl District in 1998. The District covers the Northern region of the state, sharing Inter-State Boundary with Cachar and Hailakandi District of Assam and District boundary with Aizawl and Mamit Districts. Consequent upon the creation of Kolasib, the existing Police set up of Sub-Divisional level was upgraded into a District Police under Superintendent of Police. However, the infrastructure of Sub-Divisional set up was not enhanced at the initial stage.

The Man power and infrastructure of the Sub-Divisional Police set up of the then Aizawl District was transferred to the new District under order of Police Headquarters, Mizoram. The present Kolasib District Police set up comprises of S.P., Addl. SP, SDPO, Kolasib, SDPO, Vairengte and 4 (four) Police Stations at Kolasib, Kawnpui, Bairabi, Vairengte and 1 (one) Out-Post at Bilkhawthlir. The Kolasib District Police jurisdiction extends from Lungdai to Vairengte on South to North direction and from river Tlawng to River Tuirial on West to East direction.

Table No 2.41: Police Station / Outpost in Kolasib District

Sl No	Name of Police Station/ Outpost	Area covered
1	Kolasib Police Station	Kolasib, Thingdawl, Builum, Saihapui, Bukvannei, N. Thinglian, Sethawn, N. Hlimen, Thingthelh
2	Kawnpui Police Station	Kawnpui, Bualpui, Hortoki, Khamrang, Lungdai, Serkhan, Zanlawn, Nisapui, Lungmuat, N. Chaltlang, Mualvum, Bukpui.
3	Vairengte Police Station	Vairengte, Phaisen, Buhchangphai, Sesih, Phainuam, Saihapui 'V', N. Chhimluang.
4	Bairabi Police Station	Bairabi, Pangbalkawn, Meidum, S. Chhimluang, Bethani (deserted), Rasdali, Lenhmuikawn, Awrpuara veng
5	Bilkhawthlir Out-Post	Bilkhawthlir, Chemphai, N. Chawnpui, Khawzawl

2.2.4.3 FIRE AND EMERGENCY SERVICES

Table No 2.42: Fire Stations in Kolasib District

Sl No	Rank	Kolasib Fire Station		Vairengte Sub-Fire Station	
		Strength	Contact No.	Strength	Contact No.

1	Sub Station officer	1	7627966100 03837-222322 03837-220101		9366651918
2	Leading Firemen	1		1	
3	Firemen	5		2	
4	Volunteer	2		7	

2.2.4.4 MIZORAM POLICE RADIO ORGANISATION

There are fifteen (15) permanent Mizoram Police Radio Station such as SP Office Kolasib, Kolasib Police Station, Kawnpui Police Station, 1st IR Bn Mualvum, Vairengte Police Station, Bilkhawthlir Police Station, Bairabi Police Station, Saipum BOP, Saihphai BOP, Tuirial BOP, Serlui B BOP, Phaisen BOP, Zophai BOP, Vairengte IR Camp, Saihapui V BOP, three (3) temporary Police Radio Station such as Aitlang, High School Tuikhuah and Buarchep in the District and 1 permanent Police Radio Station at Deputy Resident Commissioners Office, Silchar.

2.2.4.5 1st BATTALION INDIAN RESERVE POLICE

The 1st Battalion Indian Reserve Police, Mizoram was approved and sanctioned by the Government of India, Ministry of Home Affairs, New Delhi Vide Memo No. II.27011/3/91-FP.III dated New Delhi, the 11th June, 1993 and various posts were subsequently created by the Government of Mizoram vide Home Department Memo No. 12028/5/92-MHP dated 1st Dec. 1993. The Battalion presently manned 8 (eight) B.O.Ps in Northern Belt and 3 (three) Static Guards. Under the good command and control of the Commandant and other Officers, the Battalion is well functioning smoothly and is trying to win the best battalion amongst the Mizoram Armed Battalions.

Sl.No	**Rank**	**Sanctioned Strength**	**Sl.No**	**Rank**	**Sanctioned Strength**
1	Commandant	1	2	Dy. Commandant	3
3	Asstt. Commandant	7	4	Inspector	9
5	Sub-Inspector	24	6	Havildar	120
7	Naik	75	8	Constable	600
9	Driver	45	10	IV Grade	68
11	Inspector (M)	1	12	Steno (SI)	1
13	Sub-Inspector (M)	6	14	ASI (M)	6
15	Medical Officer	1	16	Staff Nurse	3
17	Health Worker	1	18	Pharmacist	2
19	Lab. Technician	1	20	N/Constable	5
21	Hospital IV Grade	3	**TOTAL**		**982**

2.2.4.6 STATE DISASTER RESPONSE FORCE:

The SDRF stationed at 1st Bn. Mualvum, Kawnpui about 30 kms from the district headquarter are the trained human resources available in the District for disaster response. There are as many as 75 personnel who were trained for SDRF including 2 Inspectors, 4 Sub Inspectors 24 Havildar and 12 Naik in this battalion. They are specially trained to conduct search and rescue, evacuation and give first aid and pre hospital treatment. Adequate numbers of equipment are also kept at their battalion headquarter. List of trained SDRF personnel and the equipment are given in Annexure 9

2.2.4.7 HELIPAD AND PLAYGROUNDS

Helipads which are maintained properly and which are not maintained and playgrounds which can be used as helipad in time of emergency are listed and plotted in a map. Playgrounds may also serve as dropping zones for food and other supplies in case of emergency and also suitable for setting up of Makeshift Hospital as well as relief shelter. Their location are shown in Table No. 2.43. Helipad and playground are shown in Figure no. 28 of Annexure 10.

Table No 2.43: Helipad in Kolasib District:

Sl No	Name of helipad	GPS Coordinates	Remarks
1	Tumpui, Helipad Kolasib	24°13'55.5"N 92°40'19.6"E	Hard Surface
2	CIJW School Vairengte	24°28'44.3"N 92°45'14.1"E	Hard Surface
3	Kawnpui	24°02'48.1"N 92°40'16.9"E	Soft Surface
4	Bairabi	24°11'15.8"N 92°32'09.5"E	Soft Surface, Not Maintained
5	North Hlimen	24°14'07.9"N 92°48'20.2"E	Soft Surface, Not Maintained
6	Bukpui	24°05'20.0"N 92°47'49.2"E	Soft Surface, Not Maintained
7	Meidum	24°10'41.6"N 92°34'35.6"E	Soft Surface, Not Maintained
8	Hortoki	24°03'51.9"N 92°35'36.2"E	Soft Surface, Not Maintained

2.2.4.8 TUIRIAL HYDEL PROJECT

Tuirial dam is an earthfill and gravity dam on the River Tuirial in Kolasib District which was commissioned on 25th August, 2017. The primary purpose of the dam is hydroelectric power production. The 60 MW Tuirial Hydro Electric Project (THEP) project is the biggest power project located in Mizoram which is being managed by the North Eastern Electric Power Corporation Ltd. The Project was inaugurated by Hon'ble Prime Minister Shri. Narendra Modi (using a remote control from AR Ground) on 16th December 2017. Tuirial Hydel Project is the 2nd largest earthen dam in India with a catchment area of 1860 sq.km. The height of the dam is 75 m and its length is 250 m. The dam has 3 split gates, 2 Turbine and 200 metre long tunnel. Tuirial Hydro Electric Project has has two 30MW Turbines. The annual energy generation from the Project is estimated to be 250.63 Million Units in a 90 percent dependable year.

2.2.4.9 SERLUI B HYDEL PROJECT

Serlui B dam, is an earthfill and gravity dam on the Serlui river in Kolasib District which was commissioned on 30th April, 2010. Construction on the dam with 12 MW hydroelectric power station began in 2003 and was completed in 2009 but there were some leakages which delayed commissioning of the Hydel Project. The Construction of Serlui B dam submerged the village of Builum and they were rehabilitated in Bawktlang village. Serlui B Dam has been constructed by Bharat Heavy Electricals Limited and Metallurgical Electrical Consultant India Ltd.

Serlui B Dam has three units, each with a capacity to generate 4 MW of power. The Dam of the Hydel Project is called an earthen dam with a catchment area of 397sq.km. The dam is 51.30 metres high from the river bed, 293 metres long, 8 metres narrow at the top and 394.2 metres wide at the bottom.

Mizoram Tourism Department developed tourist infrastructure near the dam which is thickly forested with a scenic lake in the middle of it. The tourist Lodge is Serlui B Dam was inaugurated on 23rd June 2018. The tourist Lodge building is 367.90 sq.mtrs. with a plot are of 2198.81 sq.mtrs. Serlui B Dam is also being developed as a pisciculture center with lakhs of fishes released into the dam in 2009 which is a good source of revenue for the Government of Mizoram.

2.2.4.9 COUNTER- INSURGENCY AND JUNGLE WARFARE SCHOOL

The Counter Insurgency and Jungle Warfare School (CIJW) in Vairengte, Mizoram, India is a training and research establishment of

the Indian Army specializing in unconventional warfare, especially counter-insurgency and guerrilla warfare. CIJW is one of the premier counter-insurgency training institutions in the world. The school's motto is to "fight the guerrilla like a guerrilla".

The normal schedule is about six weeks, during which a soldier undergoes strenuous drills that make him conversant with guerrilla warfare and low-intensity conflicts. The training module is non-conventional and once a soldier undergoes training here, he can face deadly situations anywhere in the world in all-weather terrain, eat and sleep like a guerrilla and strike as silently as a guerrilla. The training module includes lectures, seminars and mock operations in the rugged jungles in Mizoram. The trainees are also exposed to media interaction, civic actions plus fraternisation, human rights and collection of intelligence and their analysis. Soldiers undergoing a course here not only go through rigorous physical training, but also tough mental training through lectures and problems posed by instructors of the school. An importance placed in the top list of this school is how to avoid collateral damage as much as possible. With precision shooting, the soldiers engage in exercises where live rounds are used to shoot down plywood terrorists inside homes and stores without hitting the civilian population. CIJW has hosted visiting military units for training from the United States, Singapore, Nepal, Bhutan, Russia, United Kingdom, Israel, France, Bangladesh and many other nations.

2.2.4.10 ICAR

The ICAR Research Complex for North Eastern Hill Region (ICAR RC NEH) was established on 9th January, 1975 under the aegis of the Indian Council of Agricultural Research (ICAR). This is the first of its kind set up by ICAR, which encompasses all the disciplines of agriculture, horticulture, animal sciences, agricultural engineering, agro-forestry, fishery and social sciences to cater to the research needs of the tribal areas of NEH Region including Sikkim. The headquarter (HQ) of the institute is located in Meghalaya (Barapani), while its regional centres are located at Basar (Arunachal Pradesh), Imphal (Manipur), Kolasib (Mizoram), Jharnapani (Nagaland), Lembucherra (Tripura) and Gangtok (Sikkim). The institute has 15 Krishi Vigyan Kendras (KVKs) attached to different centres and HQ for providing on/off campus training to the practising farmers, school dropouts and farm women in the field of agriculture and allied sectors.

2.2.4.11 BAIRABI RAILWAY STATION

Bairabi railway station is located in the Kolasib District. Bairabi is the gateway to the Mizoram State. The Bairabi Railway Station is connected to the Katakhal Junction in Assam by 84.25 kilometers long broad-gauge line and was completed on 21st March 2016. The Bairabi railway station has three platforms with four tracks which serve the whole State because it is the only railway station in the State. The Station Code of the Bairabi Railway Station is BHRB. The Bairabi railway station comes under the Northeast Frontier Railway zone.

Sairang-Bairabi line places Aizawl on railway map : Mizoram's capital Aizawl is all set to be on the railway map with the construction of the 51.38 km long broad-gauge railway line between Sairang and Bairabi. The project is expected to be commissioned by December 2023. Sairang is about 20 km from Aizawl and the work on the project is currently in full swing. There are 32 tunnels (12. 67 km total length), 16 cut and cover tunnels (2. 58 km total length) along 51.38 km long stretch of the broad-gauge railway line. There are 55 major bridges of which six are tall bridges having a height of more than 70 m (the tallest being 101. 4 m), 87 minor bridges, five road over bridges and eight road under bridges. Apart from Bairabi, the railway line will pass through four stations - Hortoki, Mualkhang (Kolasib District) and Sairang(Aizawl District).

2.2.4.12 CIVIL SOCIETY ORGANIZATIONS

The Non-Governmental Organizations (NGOs) working in Kolasib District like Young Mizo Association (YMA), Mizo Upa Pawl (MUP), Mizo Hmeichhe Insuihkhawm Pawl (MHIP) plays a significant role in educating the public on various social issues and their rights. Disaster Management is one of the major subjects for them and the District Administration has already started collaboration with such organization for community level disaster management planning. Branches of Young Mizo Association, the largest NGO in the District is shown in Table No. 5.8.

Table No. 2.44: No of Branch YMA in Kolasib District

SI No.	Village	No of Branch YMA
1	Kolasib	15
2	Thingdawl	4
3	Sethawn	1
4	Kawnpui	5
5	Hortoki	3
6	Khamrang	1

7	Bualpui N	1
8	Mualkhang	1
9	Mualvum	1
10	Zanlawn	1
11	Lungdai	1
12	Lungmuat	1
13	Nisapui	1
14	Sentlang	1
15	Serkhan	1
16	Bilkhawthlir	4
17	Vairengte	10
18	Buhchangphai	2
19	N. Chawnpui	1
20	Phainuam	1
21	Phaisen	1
22	Saiphai	2
23	N. Chhimluang	1
24	Saihapui V	1
25	Saipum	1
26	Tuirial	1
27	Bukpui	1
28	N. Chaltlang	1
29	N. Hlimen	1
30	Thingthelh	1
31	Bairabi North	1
32	Meidum	1
33	Pangbal Kawn	1
34	Bukvannei	1
35	Saihapui K	1
	Total	**72**

2.2.4.13 OIL FILLING STATION

There are 11(eleven) Oil filling stations within the whole District. These oil depots are owned and run by different companies with variable storage capacity of petrol and diesel.

Table No. 2.45: Oil filling stations in Kolasib District

Sl No	Petrol Pump	Contact No
1	Mizofed (POL), Kolasib	8974144726

2	ATS (POL), Khuangpuilam, Kolasib	9436143024
3	Mizofed (POL) Vairengte	9435371658
4	VEES (POL) Bualpui	8974638523
5	AREM (POL) N Chhimluang	8638476209
6	Dawngliana F/S (POL) Serkhan	6009607499
7	Ramhlun Filling Station, Bilkhawthlir	7005242788
8	BTS F/S, Bairabi	9402112141
9	TR Filling R/O, Bilkhawthlir	
10	JKL F/S, Vairengte	
11	Dengro Rozika F/S, Khuangpuilam, Kolasib	8259949110

2.2.4.14 LPG (LIQUIFIED PETROLEUM GAS) AGENCIES

There are four cooking gas agencies of Liquified Petroleum Gas (LPG) in the district such as MIZOFED (Mizoram State Cooperative Marketing and Consumers Federation Ltd) at Kolasib town, Auva Gas Agency at Vairengte town, Ramliana LPG Agency at Kawnpui Village and Bairabi Indane Gramin Vitrak at Bairabi. Their godown could store about 1000 cylinders and is equipped with fire-fighting material fire extinguishers and sand bucket that may not be sufficient in case of fire breakout.

Table No. 2.46: LPG agencies in Kolasib District

Sl No	LPG Agency and Location	Contact No
1	Mizofed (LPG), Kolasib	9862383266
2	Auva Gas, Vairengte	9910916295
3	Ramliana (LPG), Kawnpui	9862860286
4	Bairabi Indane Gramin Vitrak, Bairabi	8974976223

2.2.4.15 MUALKHANG GAS BOTTLING PLAN

Mualkhang LPG Bottling Plan belonging to Indian Oil Corporation. Ltd. located inside the district which was commissioned in the year 2006 has a bottling capacity of 5000 Million Ton Per Annum. This plant received the LPG through bullets trucks and refills the LPG cylinders and further supplies LPG to various agencies in the state. They have a well-planned disaster management including fire fighting facilities and conducted regular mock fire drill to assess the preparedness of the employee in handling situation of the exigencies and trained all the personals in the plants to make them aware of their role and responsibilities in case of any eventuality. Any leakage of gas in the bottling plant and godown in all the LPG agencies and vehicular accident may result in

fire and blasting of huge number of LPG cylinder simultaneously which might further damages the surrounding environment. Meanwhile the operator of vehicles transporting this LPG from the Mualkhang Bottling Plant (Kolasib District, Mizoram) to the agents are sensitised of the do's and don'ts in case of any accident while on transit.

2.2.4.16 GODREJ AGROVET LIMITED BUKVANNEI

The rapid increase of land degradation due to jhumming, deforestation, loss of biodiversity and productivity, increasing flood are leading to an ecological crisis affecting livelihood options for Jhumia families. This suggests inter-alia policy to encourage and support plantation of Oil Palm to overcome these constraints. Oil Palm stands as an ideal crop capable of achieving conservation of soil and moisture, repair of degraded land, provide ecological balance, food and security of rural and urban poor. The Government of Mizoram aims to implement and action Programme with an objective of placing Oil Palm as a key component in the plan to generate employment and mitigate environmental degradation and to strengthen the process of Oil Palm Development.

The Government of Mizoram signed Memorandum of Understanding with Godrej Agrovet Limited for Oil Palm Development on 14th September, 2005. Godrej Agrovet Limited has completed establishment of Oil Palm Mill at Bukvannei, Kolasib District and started processing Fresh Fruit Bunches of Oil Palm at the plant since 14th April, 2014

2.2.4.17 FOOD SUPPLY AND GODOWN

There are 7(seven) Food Civil Supplies & Consumer Affaira godown and 3(three) Food Corporation of India godown in various locations. The location, quantities and name and contact no of the official in charge is indicated in Table No. 2.47 and Table No. 2.48 respectively.

Table No. 2.47: Food Civil Supplies & Consumer Affairs Godown in Kolasib District

Godown	Capacity in Quintals	Name of i/c	contact no.
Kolasib Godown	750	F Vanlalpeka	9436158770
Vairengte Godown	600	Lalthankima	9856442673
Kawnpui Godown	350	Vanlalhuma	9436143572
Lungdai Godown	350	HC Lalthawmmawia	5413895779

Bairabi Godown	450	F Lalhungliana	8258879345
Bukpui Godown	250	Vanlalmuani	9612639711
N. Hlimen Godown	350	SP Zamuana	9436198095
Saiphai Godown	60	Laltana	8575137365

Table No 2.48: Storage Facilities of Food Corpration of India Godown

Godown	Capacity in Metric ton	Name of i/c	contact no.
Bualpui	4640	II Choudhury	9101311035
Bairabi	5000	F Lalhungliana	8258879345
Rengtekawn (Gosenveng)	5000	Joseph Lalnuntluanga	9402173753

2.2.4.18 FINANCIAL INSTITUTION IN KOLASIB DISTRICT

There are 10 financial instirution having 17 branches in various towns and villages. The detail list of such financial institution and their contact no is given in Table No. 2.49

Table No. 2.49: List of branches of financial institution and contact no

Name of Institution	Name of branch	Contact No
State Bank of India	Kolasib Branch	03837-220042
State Bank of India	Vairengte Branch	03837-261298
State Bank of India	Bairabi Branch	8730003940
Mizoram Rural Bank	Kolasib Branch	03837-220114
Mizoram Rural Bank	Hmarveng Branch	03837-221818
Mizoram Rural Bank	Vairengte Branch	03837-261298
Mizoram Rural Bank	Lungdai Branch	03837-271252
Mizoram Rural Bank	Kawnpui Branch	03837-266460
Mizoram Rural Bank	Thingdawl Branch	8131823847
Canara Bank	Kolasib Branch	03837-220042
Mizoram Apex Bank	Kolasib Branch	03837-220081
UCO Bank	CIJW School, Vairengte	9435303510
Bandhan Bank	Kolasib Branch	03837-220413
NABARD	Kolasib	9615585651
UBI	Kolasib Branch	03837-220099
Axis Bank	Kolasib Branch	03837(221368/222133) 8257080822
HDFC Bank	Kolasib Branch	

2.2.4.19 TRANSPORTION AND TRANSPORT DEPARTMENT/ASSOCIATION

District Transport Authority and Leaders of Transport Association with their contact no is indicated in Table No. 2.50 and list of government and private person operating bus services is indicated in Table No. 2.51 and morque van operating within the district is given in Table No. 2.52

Table No 2.50: Transport Authority and Transport Association

Sl No	Name of Association/ Authority	Contact Person & No.	Class/Nos. of Vehicle
1	Mizoram State Transport	B Lalchuangkima, DTO, Kolasib 9862303717(M) 03837-221436(O)	Bus 2 Nos.
2	Maxi Cab Owner Association	Lalthandinga, President, Diakkawn, Kolasib, 9436143834	60 nos.(Approx.)
3	Truck Owner Assn.	Pahnuna (President) Venglai, Kolasib 8014245960	NA
4	Pickup/207 Owner/Driver	PC Lalrammawia, President, College Veng, Kolasib, 9612177441	80 nos. (Approx.)

Table No 2.51: Buses

Sl No	Name of Dept/ Person	Contact No.	Class/Nos. of Vehicle
1	Laltanpuii, Principal School of Nursing, Thingdawl	8837259791	2 Buses
2	T Zahmingliana, Principal Govt. Kolasib College	9436143132	1 Bus
3	Vanzarzoliana Sailo Principal, Susanne Down Bording School	7005312238	1 Bus
4	Rotluanga, Vengthar	8974881613	1 Bus
5	Lalrinchhana	9612656443	1 Bus
6	Tluanga	9862561448	1 Bus

Table No 2.52: Morque van services

Sl No	Name of Association/	Contact Person & No.	Class/Nos. of Vehicle

	Authority		
1	Sub Hqtr. YMA Kolasib	C Liankunga, Vice President 8575981522	1

2.2.4.20 EARTHMOVERS AND TRUCK:

The Government owned earthmover and trucks with the concerned authority are shown in Table No. 2.53 and private earthmovers is shown in Table No 2.54

Table No 2.53: Government owned earthmovers and trucks:

Sl No	**Name of Department**	**Concerned officer**	**Nos. and Class of vehicles**
1	Public Works Department	Sr. Executive Engineer, PWD	1- JCB, 2-Trucks
2	Public Health Engineering Department	Sr. Executive Engineer	1-Truck 909
3	District Urban Development Office	DUDO	4- Truck 407 1- TATA Ace
4	AH&Vety Dept	DVO	1-Pickup
5	Horticulture Department	DHO	1-Pickup
6	P&E Dept.	Sr. Executive Engineer, P&ED	1-Truck
7	Police	Superintendent of Police	1-Bolero Camper
8	ICAR	Joint Director, ICAR	1-Pickup

Table No 2.54: Details of Private Earthmovers

Sl No	**Contact Person**	**Address**	**Description**	**Contact No.**
1	Lalchanhlua Pachuau	Diakkawn Kolasib	Hydrolic Excavator and 3DX SUPER	9862315003
2	Laldinpuia	Hmarveng, Kolasib	3DX SUPER	8416079783
3	Lalrammawii	Diakkawn Kolasib	3DX SUPER (two nos)	8794490192
4	Lalrammawia Ngente	Kawnveng Bilkhawhtlir	Hydrolic Excavator	9862500546
5	K Lalpari	Zalenveng Vairengte	TATA JD	-

6	David Lalhmingmmawia	Project veng, Kolasib	3DX SUPER	9862243615
7	Lianhmingthanga	Lungdai	4DX SUPER	9436372512 8132842431
8	Lalzawmliani	Bairabi Rail Station veng		8974962075
9	Vartlingi	Bairabi Zohlun Veng		8974419155
10	CJ Lianchungnunga	Bairabi Rimawi Veng	4DX (2 Nos)	8974419842
11	Laldinpuia Ralte	Bairabi		8974419228

2.2.4.21 MAJOR DRUGS STORE

Major drug store in town area and their address and contact no is shown in Table No. 2. 55

Table No 2.55: Drugs Store in Major Townships

Sl No	Name of Drug Store	Address	Contact details
1	Timothy Medical Store Wholesale & Retail	Diakkawn, Kolasib	03837-221353
2	ELCE Medical Store Wholesale and Retail	Diakkawn Bazar, Kolasib	9612319001/ 7085488997
3	Elrea Pharmacy (District Hospital Canteen) General Retail	Banglakawn, Kolasib	8729946530
4	Buanglei Pharmacy General Retail	Diakkawn, Kolasib	
5	Shalom Drug Store General Retail	Diakkawn, Kolasib	9862603815
6	Vankal Pharmacy General Retail	Diakkawn, Kolasib	8415881178
7	S.S Pharmacy General Retail	Banglakawn, Venglai, Kolasib	9538832203/ 8974253733
8	MS Drug Store	Khawlsiami, Kawnpui, Vengthar	9862536924
9	LK Drug Store	Lallawmkimi, Kawnpui, Vengthar	9862316613
10	Mama Drug Store	Zothansiama, Kawnpui, Venglai	9774088699

11	TK Drug Store	Selthuama, Kawnpui, Venglai	9856723469
12	LRM Drug Store	Lalremmawia Ralte, Kawnpui, Hmarveng	
13	Hrahsel Drug Store	Lalhruaitluanga, Kawnpui, Hmarveng	8014334799
14	Kim Kim Medical Store	C. Lalmuankimi, Kawnpui, Vengthar	9612041037/ 8731068040
15	Muantei Drug Store	H Lalmuanpuii, Kawnpui, Bangla veng	9862313517
16	LNP Drug Store	Zalenveng, Vairengte	09837-261547/ 9863754433
17	G.C Drug Store	Venglai, Vairengte	8974709921/ 8974709926
18	Zion Medical Drug Store	Zion Lalremruata, Kawngthar, Vairengte	9862783089
19	LT Drugs Store	Zalen veng, Vairengte	8974881456

2.2.4.22 EX-SERVICEMEN: The Ex-Servicemen between the age group of 18 to 40 years of age who have attained experience and knowledge directly or indirectly in the field of disaster management during their service within Kolasib District have been identified. They would be pivotal for search and rescue, evacuation etc. in times of disaster. At present 36 personnel have been identified from various location within the District. (*Please see Annexure 8*)

2.2.4.23 DISTRIBUTION OF GOVERNMENT AND PUBLIC ASSETS IN THE DISTRICT

Government and Public assets available in various villages that can be mobilised and utilised as resources in case of emergency were identified as shown below in Table No. 2.56.

Table No. 2.56: Government and Public assets within Kolasib District

Village/Town	Education Institution	Public assets that can be used as Relief camp	Health	Financial facilities	Other Public office	Other infrastructures
Bairabi (NT)	Ag-5, Ps-5	Hall-3	Hospital	SBI-1	Agri.-2,	Tank-3,

	Ms-5 Hs-3	RH-1 TL-1 IB-1, PG-1	-1 SC-1		AH&V, E&F, P&E-2, PHE, PWD, RD PO, Train Station	Reservio ur-1 Godown-4, Rail Station Thermal Plant, Gas Agency
Bilkhawthlir North	Ag-5 Ps-3 Ms-4 Hs-1	PG-1 RH-1	SC-2	MRB	Agri., P&E, PO, WS	Tank-3 MPRO-1
Bilkhawthlir South	Ag-3, Ps-2 Ms-2, Hs-1	Hall-1	Hospital -1		AH. &Vety., E&F, PHE, PWD, RD, SW, SWC	Ice Plant-1 MR-1
Buhchangphai	Ag-2, Ps-1 Ms-1, Hs-1	R.H-1, Hall-1 PG-1, TL-1	SC-1		E&F	
Bukvannei	Ag-2 Ms-1	Hall-2 PG-1	SC-1			Oil Palm Plant
Saihapui K & Saihapui V	Ag-3, Ps-2 Ms-2	PG-2 Hall-2				Tank-1 Wireless station-1
Meidum	Ag-2, Ps-1 Ms-1, Hs-1	PG-1 Hall-1				
North and South Chawnpui	Ag-1 , Ps-2, Ms-2	Hall-1, PG-2	SC-1			Tank-1
N. Chhimluang	Ag-1 , Ps-1, Ms-1	PG-1, Hall-1				Tank-1
N. Thinglian	Ag-1, Ps-1,	Hall-1, PG-1				Tank-1

	Ms-1					
Pangbalkawn	Ag-2, Ps-2 M/s-1	PG-2 Hall-2	SC-1		E&F	Tank-1
Phainuam	Ag-3, P/s-2 Ms-1, Hs-1	Hall-1 PG-1	SC-1			Tank-3
Phaisen	Ag-3, Ps-2 Ms-1, Hs-1	PG-1	SC-1		E&F	Tank-1, MPRO-1 IROP-1
Saiphai	Ag-3, Ps-3 Ms-2, Hs-2	RH-1, PG-2 Hall-1	SC-1		E&F, wireless station	Tank-3, Godown-1 MPRO-1 Substation Electric-1
Saipum	Ag-3, Ps-2 Ms-3, Hs-1	TL-1, RH-1 PG-1, Hall-1	SC-1			Tank-2, Godown-1 Pump House-1
Vairengte	Ag-11, Ps-5 Ms-7, Hs-3, Hss-1	IB-3, TL-1 PG-2, Hall-3 Helipad-1	Hospital-1 SC-1	MRB, SBI	Agri. AH&Vety, BSNL, CIJW, P&E RD, District jail	IAY-1, SS-1, Tank-1, Storage-1, Godown-2, Steel Ind.-1, Fuel Station-2 Gas Agency
Bualpui	Ag-3, Ps-2 Ms-1, Hss-1	PG-2, Hall-1 Park -1	SC-1		Coffee board, BSNL	Fuel station, MDTC, Tank-1 Godown ,

						Heritage
Bukpui	Ag-2 Ps-2 Ms-2 Hs-1	IB-2 PG-2 Hall-2	SC-1, PHC-1			Tank-2, SS-1 Godown-2
Hortoki and Dilzau	Ag-5, Ps-4 Ms-3, Hs-1	IB-1, PG-1 Hall-1	SC-1			Bamboo Ind. Tank-1 Godown-1
Kawnpui & N. Mualvum	Ag-7, Ps-7, Ms-10 Hs-3, Hss-1	Hall-8 PG-4 Helipad-1	Hospital-2 SC-2 PHC-1	MRB	Agri., BSNL, SDO (C) AH &Vety., E&F, I.R, P&E, PHE, PWD, School Edn, Police, Post Office, Wireless station	Horti farm, Godown Tank, SS-1, Gas-1
Khamrang	Ag-1, Ps-1, Ms-1, Hs-1	PG-1, Hall-1	SC-1		Sericulture Farm-2	Tank-1
Lungmuat	Ag-2, Ps-1, Ms-1, Hs-1	Pg-1, Hall-1	SC-1			Tank-1
Lungdai	Ag-3 Ps-3, Ms-3, Hs-2	Pg-2, Hall-1	Hospital-1 SC-1	MRB-1	Sericulture, AH&vety, P&E, Horticul	Tank-1, SS-1 Godown-2

					ture, Post Office, PHE	
Mualkhang	Ag-1 Ps-1 Ms-1 Hs-1	PG-1, Hall-1				Godown-1, Tank-1 Gas bottling -1
Nisapui	Ag-2 Ps-1 MS-1 Hs-1	PG-1 Hall-1	SC-1			Tank-1, Godown-1
N. Chaltlang	Ag-2, Ps-2, Ms-1, Hs-1	PG-2 hall-1	SC-1			Tank-2
N. Hlimen	Ag-3, Ps-3 Ms-1, Hs-1	Pg-1 Hall-2 IB-1	SC-1			Tank-1, Godown-1 Pump house-1
Rajtali	Ag-1 Ps-1	Hall-1, PG-1				Tank-1
Serkhan	Ag-2 Ps-1 Ms-2 Hs-1	Hall-1 PG-1	SC-1			Godown-1 Tank-1 Fuel Station-1
N. Thingdawl & Sethawn	Ag-8 Ps-6 Ms-4, Hs-1 Poly Tech. -1 OT-1	Hall-2 Pg-2 IB-2 Park-1	SC-1		Agri., AH & Vety, RD, SW, Post office, Base station, BSNL, Mushroom cult.,	Tank-1, Farm-5 Godown-2

					Bamboo Chip Soap ind.	
Thingthelh	Ag-1, Ps-1, Ms-1	Pg-1, Hall-1, IB-1				Tank-1
Zanlawn	Ag-3, Ps-2, Ms-2, Hs-1	Pg-1, Hall-2	SC-1			Tank-1
Kolasib (NT)	Ag-25, Ps-18 Ms-20, Hs-10, Hss-1 College-1, DIET-1 Others Ints.-3	PG-11, Hall-16 IB-4, TL-1 Helipad-1	Hospital-3 SC-9 VetyHospital-1	MRB-1 SBI-1 Canara-1 MCAB-1	Jail-1, Radio-1, Wireless station-3 Lib-1, Fire-1, Police -1 and Govt. Office-46	Tank-5, Godown-4 Farm-5, Lab-3 Fuel Station-2 SS-1, Gas Agency

{*Ag-Anganwadi, Ps- Primary school, Ms-Middle School, Hs- High School, Hss, Higher Secondary School, Other Ints- Other institutions, DIET- District Institution of Education Training, Hospital=Hospital, PHC= Primary Health Centre, SC- Sub-Centre, PG- playground, R.H- Rest House, MRB-Mizoram Rural Bank, SBI- State Bank of India, MCAB= Mizoram Cooperative Apex Bank*}

2.2.4.24 Youth Adventure Clubs: Adventure Clubs are essentail human resources for rescue operations especially in hilly terrain and high rise building which requires special technic and skills. Bilkhawthlir Youth Adventure Club and GKC Adventure Club are very active YAC in the District. They are trained in alpine rescue and high rise building rescue etc. They will be mobilized in when their services are required. The equipments at DEOC will be provided to suppliment their needs.

2.2.4.25 IDRN Portal: All the resources including public and private resources are updated in the web portal known as Indian Disaster Resource Network (IDRN). All

the resources including mechanical, engineering and human resources are entered and updated in this portal. The location of resources, authorized person, mode of operation is categorically specified.

CHAPTER III
INSTITUTIONAL ARRANGEMENTS FOR DISASTER MANAGEMENT

3.1 DM Organizational structure at the National level:

3.1.1 National Crisis Management Committee (NCMC):

At the National Level, the Command, Control and Coordination of the disaster response will be overseen by the National Crisis Management Committee (NCMC) under the Cabinet Secretary. NCMC will issue guidelines from time to time as required for effective response to natural disasters. All Ministries/Departments/Agencies at the national level shall comply with the instructions of NCMC. The NPDM prescribes that NCMC shall deal with major disasters that have serious or national ramifications.

3.1.2 Ministry of Home Affairs (MHA):

The Ministry of Home Affairs is the nodal agency at the National level for coordination of response and relief in the wake of natural disasters (except drought, pest attack & hailstorm). MHA will provide financial and logistic support to the State Governments, keeping in view, their resources, the severity of the natural disaster and the capacity of the State Governments to respond in a particular situation.

3.1.3 National Executive Committee (NEC):

Section 10(2) (k) of the Disaster Management Act stipulates that the NEC under the Union Home Secretary will 'coordinate response in the event of any threatening disaster situation or disaster'. NEC may give directions to the concerned Ministries/Departments of the Govt. of India, the State Governments and the State Authorities regarding measures to be taken by them in response to any specific threatening disaster situation or disaster.

3.1.4 National Disaster Management Authority (NDMA):

National Disaster Management Authority (NDMA) is an agency of the Ministry of Home Affairs whose primary purpose is to coordinate response to natural or man-made disasters and for capacity-building in disaster resiliency and crisis response. NDMA was established under Disaster Management Act, 2005. Prime Minister is the ex-officio chairperson of NDMA. The agency is responsible for framing policies, laying down guidelines and best-practices and coordinating with the State Disaster Management Authorities (SDMAs) to ensure a holistic and distributed approach to disaster management.

NDMA is operationally organized into the following divisions:

- Policy & Planning
- Mitigation
- Operations & Communications

- Administration
- Capacity Building

3.2 DM Organisational structure at the State level:

3.2.1. State Disaster Management Authority:

The Government of Mizoram in pursuant to the provision under Sec. 14 of the Disaster Management Act, 2005 constituted the State Disaster Management Authority for Mizoram vide letter No.B.13011/102/2015-DMR on the 3rd April 2019. Chief Minister is the Chairman of SDMA and Deputy Chief Minister as Vice Chairman. Other member includes ministers of various line departments. Chief Secretary is appointed as Chief Executive Officer and Member Secretary and other 2 expert member is also appointed. This is the highest body for policy formulation and taking appropriate decision with regards to disaster management activities in the State. The composition of the SDMA is as follows:

1. Chief Minister : Chairman
2. Deputy Minister : Vice-Chairman
3. Minister, Finance, GAD, Planning & PI, PWD : Member
4. Minister, DP&AR, PHE : Member
5. Minister, DM&R, Home : Member
6. Minister, Health & Family Welfare : Member
7. Minister, Power & Electricity : Member
8. Minster of State, FCS&CA : Member
9. Minister of State, EF&CC : Member
10. Chief Secretary/Chairman SEC : CEO & Member Secretary
11. Dr. P Rinawma, Professor Department of Geography & Head Center for Disaster Management, Mizoram University : Expert Member
12. Dr. C Vanlalhruaia, Associate Professor, Govt. Aizawl College : Expert Member

3.2.2 State Executive Committee: The Government of Mizoram in pursuant to the proviso under Sec. 20 of the Disaster Management Act, 2005 constituted the State Executive Committee in order to assist the State Disaster Management Authority in the performance of its functions and to coordinate actions in accordance with the guidelines laid down by the State Authority and ensure compliance of directions issued by the State Government under the said Act vide notification dated 20th December, 2010 and renotified vide No.B.13012/83/2010-DMR on the 3rd April 2019.

SEC shall give directions to any Department of the State Government or any other authority or body in the State regarding actions to be taken in any matter relating to disaster management. Composition of the SEC is as follows:

1. Chief Secretary : Chairman
2. Secretary Home : Member
3. Finance Commissioner : Member
4. Secretary, Planning : Member
5. Secretary, DM&R : Member Secretary

Note: Commandant Assam Rifle was added as Special Invitee vide order no.B.13012/83/2017-DMR Dated 4th May, 2018.

3.2.3 State Crisis Management Committee: The State Crisis Management Committee (SCMC) would be the apex body of high level Officials of the Government of Mizoram for dealing with a major crisis which has serious ramifications.

The composition of the Committee would be as follows:

a) Chief Secretary - Chairman
b) Principal Secretary/ Secretary, DM & R - Member Secretary
c) Commissioner/Secretary, Finance - Member
d) Principal Secretary / Secretary GAD - Member
e) Principal Secretary/ Secretary Home - Member
f) DGP, Mizoram - Member
g) Engineer-in-Chief, PWD - Member
h) Director, DM&R - Member
i) Director, H&FW - Member
j) Director, I&PR - Member

The SCMC shall form 'working group' which shall be called "State Crisis Management Group" depending on the nature of crisis, as and when required. Each department is required to establish a Crisis Management Group in the form of Emergency Support Function and Standard Operating Procedure in their respective Department to deal with the crisis which falls within the ambit of its responsibility and to provide emergency support in the events of disasters.

Members of The State Crisis Management Committee

Sl No	Designation & telephone numbers of the present incumbent.	Designation & telephone numbers of the alternate members (present incumbent).
1	Chief Secretary, Mizoram Phone No:0389-2322411/2322429(O)/ 2322745 (F) 2322412/2323467(R)	Additional Chief Secretary, Mizoram Phone No:0389-2323224 (O) 2322763 (F)

2	Secretary, DM & R Phone No:0389-2322558/2322671(O) 2334337(F), 9840356044 (M)	Deputy Secretary, DM & R Phone No: 0389- 2322252(O)
3	Commissioner, Finance Phone No:0389-2322516(0)/2335131(F)	Secretary, Finance Phone No: 0389-2326038(O)/ 2301484 (F) Addl. Secy. 2336008/2318106
4	Joint Secretary, GAD Phone No: 0389-2328739 (O)	Dy. Secretary, GAD Phone No : 0389- 2336133(O)
5	Joint Secretary, Home Phone No: 0389-2311014(O)(F)	Deputy Secretary, Home Phone No: 0389-2336003/2336009 (O) OSD - 0389-2336663
6	DGP, Mizoram Phone No: 0389-2334682 (O) 2334027/2333495(R)/2334310(F)	Addl. DGP, Mizoram Phone No: 0389-2334858(O) 2333752 (R)
7	Engineer-in-Chief, PWD Phone No: 0389- 2322176(O)/2323349(F), 9436140776 (M)	Chief Engineer, Highway Phone No: 0389- 2326205(O)/2323347(F) 2326207(R) / 9436147322 (M)
8	Director, DM &R, Mizoram Phone No : 0389-2345943/2306332/ 2342520(O), 9612158734 (M)	Jt. Director, DM&R, Mizoram Phone No: 0389- 2306332(O) 9436960325 (M)
9	Director, Health Services Phone No: 0389- 2323452(O)/2320169(F) 9436142059 (M)	Joint Director, Health Services Phone No: 0389-2328061(O) 2300267, 9436152842 (M).
10	Director, I&PR, Mizoram Phone No: 0389-2323190(O)/ 2323192(F)/ 2335262(R)	Jt. Director, I&PR Phone No:0389-2322651(O) 2344533(R), 2323192 (F) Jt. Director, I&PR Telephone No: 0389-2323188(O) 2341345 (R) 2323192 (F)

3.2.4 Department of Disaster Management and Rehabilitation: The Department of Disaster Management and Rehabilitation is the nodal department for all disaster related matters. They are mandated with pre-disaster management such as prevention and mitigation of disaster including capacity building and impart training of officials

and NGOs and also provision of relief and rehabilitation to affected families. The responsibilities of the department as per the allocation of business issued by Government of Mizoram are:-

1. Natural Calamity/Drought and Flood Relief.
2. Gratuitous Relief.
3. Disaster Management:

a) Pre-disaster management as pro-active strategy including preparedness, prevention and mitigation, wherein every Department has important roles.

b) Post-disaster management as re-active strategy including relief, rehabilitation and reconstruction.

3.3 DM Organisational structure at the district level:

3.3.1 District Disaster Management Authority (DDMA): Section 30(2)(xvi) of the Disaster Management Act stipulates that the DDMA under the chair of the Collector or District Magistrate or Deputy Commissioner, as the case may be. They are mandated to coordinate response to any threatening disaster situation or post-disaster. The Collector/District Magistrate/ Deputy Commissioner, as the head of administration at the district, shall be the focal point in the command and control for disaster response at the district level, in accordance with the policies/guidelines/instructions from the national and state levels.

At the District level, every District has their respective Disaster Management Authority under the Chairmanship of the Deputy Commissioner/District Magistrate. The Authority is responsible for preparation of DM Plan at the District level and ensures the DM activities at the Block and the Village levels including the formation of Disaster Management Committees and Teams at the District, Block and Village/Community level. In every office of the Deputy Commissioners at the District, a Disaster Management & Rehabilitation Branch is created with some clerical staff. This Branch is looked after by one of the officers in the Deputy Commissioner's office and designated as Nodal Officer. Composition of the District Disaster Management Authority Vide No.B.13011/102/2015-DMR Dt. 25th October, 2019 is as follows:

1. Chairperson : Deputy Commissioner(Ex-officio)
2. Co-Chairperson : Project Director, DRDA
3. Members
   1. Superintendent of Police(Ex-officio)
   2. Chief Medical Officer(Ex-officio)
   3. Executive Engineer, PWD
   4. Executive Engineer, PHE

All the Departments/Agecies of the Central and State Governments in the District involved in response and relief will work in accordance with the directions of DDMA.

3.3.2 District Disaster Advisory Committee: The District Disaster Advisory Committee is formed to advice the district authority in all matter relating to disaster. The following are the members of the DDAC.

Chairman : Deputy Commissioner

Members
1. The Addl Deputy Commissioner, Kolasib
2. The Project Director, DRDA, Kolasib
3. The Superintendent of Police, Kolasib
4. The Chief Medical Officer, Kolasib
5. The EE, P&E/PWD/PHE, Kolasib
5. Commandant, 1st IR Battallion, Mualvum
6. The DIPRO, Kolasib
7. The Station Officer, Fire Service, Kolasib
8. The President, Sub Headquarter, YMA Kolasib

3.3.3 District Advisory Committee on School Safety: As mandated in Section 5.3(III) of School Safety Policy, 2016 the District Advisory Committee on School Safety is constituted for implementation of Guidelines on School Safety Policy, 2016 at the District level Vide No.B.13012/132/2017-DMR Dated 3rd January, 2018 with the following composition

Chairman : Deputy Commissioner

Members
1. Superintendent of Police
2. District Programme Officer
3. District Education Officer
4. Executive Engineer, PWD
5. Executive Engineer, PHE

3.3.4 IRS in the District: In 2003, the Ministry of Home Affairs adopted Incident Command System (ICS) of the United States in collaboration with the USAID to streamline response to disasters. However, while implementing this system, it was realized that it was not in harmony with our administrative set-up. To adapt the best practices of the ICS to our administrative set-up, NDMA issued Guidelines for Incident Response System (IRS). Additional concepts such as setting up of Relief Camps, Rail Transport, Water Transport, a process for obtaining air support and establishment of a proper Emergency Operation Centre were added. District officials who should perform the different Command, Operations, Planning and Logistics functions have also been identified. Incident Response Teams are to be set up right from the State to the District, Sub-division and Block level.

The State of Mizoram adopted the IRS system and notification was issued with respect to IRS position and its suitable officers for each task. IRS at Kolasib district is at initial phase, the first training of its kind was held on 27th January, 2016 where all concerned officers in IRS team was trained with strategic command system and their role and responsibilities. The IRS Team for Kolasib District is as follows.

IRS POSITION	SUITABLE OFFICERS
RESPONSIBLE OFFICER	Deputy Commissioner
INCIDENT COMMANDER	Addl. Deputy Commissioner
Deputy IC	Superintendent of Police
Information & Media Officer	District Information & Public Relations Officer
Liaison Officer	SDO (Sadar)
Safety Officer	SDC i/c Disaster Management
OPERATIONS SECTION CHIEF	Superintendent of Police
Staging Area Manager	SDO (Sadar)
Response Branch Director	Commandant 1st Bn. IR/SDRF
Division Supervisor/Group-in-charge	Addl. Superintendent of Police/SDPO
Task Force/Strike Team	Commander/Leaders of SDRF, MRP, MAP, IR, Fire & Emergency Services, YMA
Single Resources	DMS-Health & Family Welfare Department SDO-PWD/P&E/PHE, SO-Fire & Emergency Services, Major-MHG&CD
Transportation Branch	District Transport Officer
ROAD GROUP	
Group-in-Charge	Executive Engineer, PWD
Vehicle Coordinator	Addl. District Transport Officer
Loading-in-charge/ Unloading-in-charge	Motor Vehicle Inspector, Transport Department
RAIL GROUP	
Group-in-charge	Not relevant in district Level in Mizoram
Vehicle Coordinator	Not relevant in District Level in Mizoram
Loading-in-charge Unloading-in-charge	Not relevant in District Level in Mizoram
WATER GROUP	
Group-in-charge	Executive Engineer, PHE
Vehicle Coordinator	Sub Divisional Officer (TC) PHE
Loading-in-charge	

Unloading-in-charge	Sub-Divisional Officer, (Urban) PHE
AIR OPERATIONS GROUP	
Group-in-charge Air Operations	Addl. Deputy Commissioner, PWD
Helibase/ Helipad-in-charge	Sub Divisional Officer (TC) PWD
Loading-in-charge/ Unloading-in-charge	Sub Divisional Officer (Project) PWD
PLANNING SECTION CHIEF	Project Director, DRDA
Resource Unit,	Executive Engineer, Minor Irrigation
Check-in-Status Recorder	DFO, Environment & Forests
Situation Unit	Sub Divisional Police Officer
Display Processor	District Information & Public Relations Officer
Field Observer	Representative of Sub Hqrs YMA/YLA/MTP
Weather Observer	DAO, Agriculture Department
Documentation Unit	DEO, Education Department
Demobilization Unit	Sub Divisional Officer(Sadar)
Technical Specialist	Executive Engineer, P&E
LOGISTICS SECTION CHIEF	Addl. Deputy Commissioner
Service Branch Director	District Local Administrative Officer
Communication Unit	Inspector (Wireless), Police Department
Medical Unit	CMO, Health & Family Welfare Department
Food Unit	DCSO, FCS&CA Department
Support Branch Director	Executive Engineer, Minor Irrigation
Resource Provisioning Unit	Superintendent of Excise
Facilities Unit	Asst. Commissioner of Taxes
Ground Support Unit	District Transport Officer
Finance Branch Director	District Treasury Officer, Accounts & Treasuries Department
Time Unit	District Research Officer, Economics & Statistics
Compensation/Claim Unit	Settlement Officer/Asst. Settlement Officer, Revenue Department/Revenue Officer
Procurement Unit	DUDO, UD&PA
Cost Unit	SDC

3.3.4 EOC setup and facilities available in the district: EOC is operational in Kolasib District and is manned by District Organiser appointed by Disaster Management and Rehabilitation Department. He is responsible for all the equipments in the EOC, he will check all the equipment periodically, especially the mechanical equipments. All the equipments are ready to be use at any emergency.

The District EOC is the nerve centre for Disaster Management for the entire District. Its main purpose will is to monitor, coordinate and implement the actions for disaster management. It shall ensure that all warning, communication systems and instruments available in the district are in working conditions. The EOC control room will receive necessary information on a routine from the district departments on the vulnerability of various places in the district. A complete report on the preparedness of the district level departments and resources available at their disposal should be with the authorities at the control room. If required, it shall also arrange and supply requirements. The District Room shall also see to it that the disaster management plan is updated according to the changing scenario. It has to maintain an inventory of all resources and should be able to provide information to all those who are needy. It will also provide information at the district and local level and disaster prone areas through appropriate media. In order to do this, it will have to brief the media of the situations and give day to day reports during disasters. It will also maintain a record of the actual scenario and the action taken.

3.4 Forecasting and warning agencies:

Forecasting and warning agencies does not exist in the district. At present, Indian Meteorological Department(IMD) and State Meteriological Centre under Directorate of Science and Technology, Government of Mizoram are the only forecasting and warning agency for the District.

CHAPTER IV
PREVENTION AND MITIGATION MEASURES

4.1 Prevention Measures:

A progressive strategy in prevention measures can reduce loss of life and property in the event of disaster. In different phases of disaster management cycle, the period of prevention is much crucial as it is the golden period to avoid the effect of disaster. It is imperative to aware the vulnerable hazards and the plan to be adopted for prevention measures which should include identification of potential risks and the actions that can be taken before the occurance of disaster in order to reduce its impact.

4.1.1 Special projects for preventing disasters:

Construction of River Training Works for Protection of Tlawng River At Bairabi Phase-1:

A small town of Bairabi with a population of 4,320 as per 2011 cencus is located in the bank of Tlawng river and Teirei river. Tlawng river is the longest river in the State measuring 185.15 km in length with a catchment area of 399 sq km. After confluence with Tut and Teirei river, it eventually enters Cachar district of Assam. During monsoon, average discharge of these river are recorded as 19380 cumecs and 5971.36 cumecs repectively. Due to heavy rainfall during monsoon, a strong current is formed at the confluence of Tlawng and Teirei river and the water level rapidly increase unpredicatably causing flood situation in the low lying area of the town. As a result, a vast area of cultivable and habitable land has been eroded and not less than 10 residential houses were damaged and substansial portion of land was damaged.

Blue Hills Engineering was engaged to have a broad study on the occurance of flood and its impact. As per their study, it is estimated that a stretch of 1.5 km was assumed to require construction of preventive structure. A stretch of 300 meters will be covered under the phase 1 of Construction of River Training Works for Protection of Tlawng river Bank at Bairabi. The total estimate of this project is 11.111 cr funded by NABARD and State Govt. in a ratio of 90:10. It is espected to be completed by October 2023.

4.1.2 Specific projects for vulnerable group:

Vulnerable group includes physically disabled, old aged, children and lactating women. A lesson targeting vulnerable group is being included in the training program organized by DDMA. Awareness training is also being proposed to be organized for elementary school and anganwadi teachers and at the schools targeting the vulnerable groups.

4.2 Mainstreaming DRR in development plans and programs:

Any developemtal plans and programme should focused on mainstreaming Disaster Risk Reduction and this would invariably put into effect the prevention and mitigation of disasters. Checks and balances would be done at the District Development Coordination and Monitoring Committee *(now renamed as Disha)* under the Chairmanship of MP(LS) where Deputy Commisioner is the Member Secretary. They will monitor the implementation of flagship programme of central government in sync with disaster risk reduction at the District.

4.3 List of on-going and proposed projects addressing disaster prevention:

1. **Distribution of Tarpaulin:** To prevent landslide, tarpaulin are used in the landslide zone as well as the threatening areas. Tarpaulin are normally procured by DDMA at District level as per the requirement from fund allocated under SDRF from Directorate of Disaster Management & Rehabilitation Dept. Tarpaulin are crucial for prevention of landslide during monsoon season and it is proved effective to prevent landslide in a great extend. However, its has potential adverse effect on environmental degradation as it is manufactured from high density polyethylene which means hydrocarbon polymer prepared from ethylene/petroleum by a catalytic process but it may be rule out due to its cost effectiveness and competence.

2. **Fire Prevention:** Fire including forest fire and urban fire is one of the frequent hazards in Kolasib District. Fire Prevention Committee is set up at various level within Kolasib District. Various measures have been undertaken by the committee at their level to prevent outbreak of fire which includes observation of fire prevention week, Announcement to the public through FLS, Issue Prohibitory Order, conduct awareness at schools, Display of banner/hoarding, publish video clip through local TV and social media, distribution of pamphlets etc.

3. **Fixing date for burning of jhum**: Jhum cultivation is still prevalent in the District. Forests are cleared and burned when it became dry for cultivation usually during February-March. Most of the forest fire are attributed to jhum firing, hence the State Government annually declare the date -line for burning jhum to prevent the outbreak of forest fire. Consequently, the district administration enforces by issuing prohibitory orders. The culprits of this order are punished under appropriate law.

4. **Setting up of Fire Prevention Committee**: To check fire prevention measures specially forest fire, fire protection committee is formed at different level. This committee is entrusted to scrutinize fire prevention program and implement fire prevention method as they deem and proper and also take appropriate measures. Fire Prevention Committee at various levels are:-

A. District Level Fire Protection Committee

Chairman	:	Deputy Commissioner, Kolasib
Members Secretary	:	DFO, Kolasib
Members	:	S.P., DLAO, DEO & SDEO, Kolasib, Heads of Colleges and Schools Presidents, Sub-Hqrs. YMA, MUP, MHIP, MJA Presidents, Branch YMA, MUP, MHIP within Kolasib town Presidents, VCs within Kolasib town

B. Sub-Division/Block Level Fire Protection Committee:

Chairman	:	SDO/BDO
Members Secretary	:	R.O., Forest
Members	:	Presidents, Jt./Branch YMA, MUP, MHIP, Heads of Schools, VCPs

C. Village Level Fire Protection Committee :

Chairman	:	VCP
Members Secretary	:	R.O/Beat Officer (if any)
Members	:	Presidents,Branch YMA, MUP, MHIP, Head of Schools,VC Members & Secy. Church Leaders

5. **Green Mizoram:** Green Mizoram Day is annually organized by Government of Mizoram at different administrative level. The main agenda of this program is plantation of trees and replenishment the forest. Vast deforestation has indirect consequence of occuriing disaster such as landslide, flood etc. Afforestation is the main drive of this programme which inherently addressed prevention of disaster especially climate change induced disasters.

4.4 Mitigation measures:

Disaster mitigation measures are those that eliminate or reduce the impacts and risks of hazards through proactive measures taken before an emergency or disaster occurs. Mitigation can be done by structural and non-structural mitigation.

1. Structural mitigation: Since Kolasib district fall under highest zone for earthquake, the district administration obliged to focus on structural safety. Hence proposal has been made in collaboration with PWD department to conduct training of mason on structural safety. Since, building by law is not in place at the district, checks on structural mitigation of houses becomes problematic. Houses are

constructed at the preference of its owner and the mason without considering the structural safety, and most of the houses in the district are at risk against earthquake.

Identification of unsafe construction: The DDMA resolve to conduct assessment and inspection of the existing structure and other life line-buildings to identify unsafe structure and prevent the risk of hazards by suggesting demolition or retrofitting of such structure under the relevant section of DM Act, 2005. Inspection of several bulding was done by the Inspection team constituted and action were taken as per their reports.

2. Non-Structural Mitigation: Apart from structural mitigation, non-structural mitigation is also undertaken by the district administration. Under the school safety programme, non-structural safety measures are included. Students are trained on non-structural safety method while at schools and home. It will also be included in community based disaster training and other training programme etc.

3. Mass education through IEC etc: Towards educating and awareness measures of structural and non-structural mitigation, the district administration resort to distributing of pamphlet, poster, sticker etc and also erecting hording at public places.

CHAPTER V
PREPAREDNESS MEASURES

5.1 Identification of stakeholders involved in disaster response

Disaster response is dynamic and diverse; it requires proper coordination and cooperation of various stakeholders. Hence prior identification and allocation of task for each stakeholder is much imperative. The strength and activity of each stakeholder are as stated herein below:

SDRF: In Mizoram, State Disaster Response Force(SDRF) was constituted in line with National Disaster Response Force(NDRF) at the Central Govt. However, no stand alone force could not be established due to constrain of workforce in the police force. The state Govt. has identified by notification Memo No.A.12022/1/2011-HMP of Dt. 25.8.2014, one company each from the 8(eight) Bn. of MAP and IR Bn. to function as SDRF for the state. Training has been given to personnel designated as SDRF of various topics such as Search and Rescue, basic first aid and evacuation etc under the guidance of NDRF.

SDRF in Kolasib District are stationed at 1st IR Batallion Mualvum. The list of trained SDRF personnel are given in Annexure 8

CIJWS: Counter Insurgency Jungle Warfare School which is the in-service army training institute is located at Vairengte, 49 Kms away from district capital. The number of personnel is fluctual depending upon their training schedule. (*Their contact No. is given in Annexure 6)*

Police Force: Police force in Kolasib district is headed by Superintendent of Police with one Addl Superintendent of Police having its office at Khuangpuilam, Kolasib. There are two Sub Divisional Police Officers in the district one at Kolasib and the other at Vairengte.

The Kolasib District Police jurisdiction extends from Lungdai to Vairengte on South to North direction and from river Tlawng to River Tuirial on West to East direction. Villages falling under the respective Police Stations and Out Post of the District as declared by Govt. of Mizoram Notification No.A.11.20/1/88-HMP dated 3.10.02 are as under :-

Kolasib Police Station :-

1. Kolasib 2. Thingdawl 3. Builum 4. Saihapui 5. Bukvannei
6. N.Thinglian 7. Sethawn 8. N.Hlimen 9. Thingthelh

Kawnpui Police Station :-

1. Kawnpui 2. Bualpui 3. Hortoki 4. Khamrang 5. Lungdai
6. Serkhan 7. Zanlawn 8. Nisapui 9. Lungmuat 10. N.Chaltlang
11. Mualvum 12. Bukpui.

Vairengte Police Station :-

1. Vairengte 2. Phaisen 3. Buhchangphai 4. Sesih 5. Phainuam
6. Saihapui 'V' 7. N.Chhimluang.

Bairabi Police Station :-

1. Bairabi 2. Pangbalkawn 3. Meidum 4. S.Chhimluang
5. Bethani(deserted) 6. Rasdali 7. Lenhmuikawn 8. Awrpuaraveng

Bilkhawthlir Out-Post :-

1. Bilkhawthlir 2. Chemphai 3. N.Chawnpui 4. Kharzawl

Fire and Emergency Service: They are stationed at Electric veng, Kolasib. The total number of firemen is 5 and 2 Volunteer Fire Men(VFM) with two fire tenders headed by Station Officer. There is one Sub Station at Vairengte with 2 Firemen and 6 Voluntary Fire Men and one fire tender.

Home Guard and Civil Defence: Home Guards and Civil Defense department in the district is headed by Major. The total strength is about 70 posted in various town and villages within the district.

Power and Electric Deptt: Power and Electricity Department in the district is headed by Executive Engineer. They have three Sub Divisional Offices at Kolasib, Vairengte and Kawnpui.

BSNL: BSNL in the district has its main office at Project Veng, Kolasib headed by Divisional Engineer. They also have Office at Vairengte, Kawnpui, Bilkhawthlir, Thingdawl, Bairabi and Lungdai.

Local Administration Deptt. District LAD Department has its head office at Venglai, Kolasib and headed by District Local Administration Officer.

Public Works Deptt. Public Works Department(Kolasib Division) in the district is headed by Executive Engineer with one Sub Divisional Officer at Kolasib and Kawnpui. Highway Division ah a separate office at Thingawl headed by Executuve Engineer. There is one Project Sub Division at Kolasib headed by SDO.

Health Services: Health Services at the district is responsibility of Chief Medical Officer. There are 1 CHC, 5 PHC, 25 Sub Centre and 6 Sub Centre Clinic within the District. District Medical Superintendent is the head at District Hospital. District Hospital has currently 60 beds which is under construction to upgrade to 100 beds.

Public Health Engeneering: PHE Department in Kolasib district is headed by Executive Engineer with two Sub Divisional Officer viz urban and rural divisions. Further, it is divided into 7 sections headed by Section Officer

Department of Transport: Transport department is headed by District Transport Officer. One Addl. DTO and Motor Vehicle Inspector. Their office is located at Hmarveng, Kolasib.

Ex-Servicemen: The Ex-Servicemen within the district were identified. There are as many as 36 personnel between the age group of 35 to 40.*(Please see details of persons in annexure 8)*

The head of each department/office who is also the team leader of each ESF and the nodal officers of the supporting agencies are responsible to prepared potential hazards that might impact the district. These departments/agencies have clear identified roles and functions in accordance with the National Response Plan (NRP). They have been grouped in as ESFs as per their nature and type of assistance they can provide. When the team leader of these ESFs is located in the EOC, they would function for the overall district response.

VDMC: Communities are the first responder in times of disaster. Hence prepardness to respond any disaster is crucial at local level. Village Disaster Management Committee is being formed at each village council within the district to manage and formulate strategy for systematic respond.

Non-Government Organisations: NGO's are the spine of district administration in times of disasters. Among others, the participation of Young Mizo Association(YMA) is trustworthy. There exists a systematic hierarchical structure, Sub Headquarter being the apex body at the district level and under them is a Group, Branch and Section. At a sub-headquarter level, sub-committee on Disaster Management is formed to deal with all kinds of disaster and in some branches a committee on Disaster Management is also formed. They are one of the vital pieces in times of disaster.

5.1.1 Disaster Risk Reduction for Persons with Disabilities:

Persons with disabilities are vulnerable group. Natural and man-made disasters tend to have a adverse impact on persons with disabilities**.** Therefore, special attention and care must be given to them during the incidence of disaster. They must be given first preference when it comes to evacuation and rescue. They must also be given a proper rehabilitation as they are physically and mentally challaged. The following table shows the number of person with disabilities within Kolasib district.

Person with disabilities within Kolasib District								
Type of Disability	Seeing	Hearing	Speech	Move-ment	Mental Retarda-tion	Mental illness	Other Disabili-ties	Multiple Disabili-ties
No. of Disabled	298	374	78	142	117	77	171	128

**As per Statistical Handbook, Mizoram 2013.*

Before Disaster:

1) The District Disaster Management Authority will frame responsibilities among different stakeholders to provide due care and attention to persons with disability in the event of an occurance of disaster. It will also focus on strengthening implementation of measures on providing timely and appropriate support to such in times of disasters.

2) At present there are 529 schools across the district where persons with disability are taken care of and all these schools shall be advised to have ramp facility for disabled persons. In addition, government establishments in Kolasib district should have ramp facilities, which would provide easy mobility for locomotors.

3) Sensitisation of NGOs is an important aspect with regards to disaster risk reduction since the focus has now shifted to 'Community' and as such the district administration plans to organise training programs or include in other programs related to disaster risk reduction, for members of NGO so that the needs of persons with disabilities may be addressed.

During Disaster:

1) The victim of disabled persons will be first evacuated and rescued by the rescuers like NGO, SDRF or NDRF. They will be given first preference by the medical team as well.
2) A separate space, far from disaster site to treat wounded disabled persons will be made by Shelter Management and Sanitation Team.
3) Specialized team of medical personnel will be detailed to look after the victims

District Child Protection Unit, District Disability Rehabilitation Centre and Special Blind School at Kolasib shall take over all charge of prompt and immediate responce for care and rehabilitation of person with disability.

5.2 Formation of Teams:

Quick Response Team: Quick Response Team(QRT) is formed to perform search and rescue and evacuation of the victims in case of disaster. They shall be properly trainined to acquire more skills on search and rescue and pre hospital treatment.

Aapda Mitra: Training of volunteers of 100 person was conducted under the scheme of Upscalling of Aapda Mitra during 3.10.2022-14.10.2022 (first batch) and 17.10.2022 – 28.10.2022(second batch). They were trained in various search and rescue method and water rescue. They will be mobilized as per the requirement in times of need arises. The list of trained aapda mitra volunteers is given in Annexure 8

Diving Squad: Drowning it is a frequent phenomenon in the district due to existence of two hydro electricity dam i.e Serlui B HEP and Tuirial HEP and Tlawng River. Drowning is not among notified disaster however owing to civic sense; the district administration is accountable for rescue and evacuation of drowned person. Hence diving squad was formed in coordination with Kolasib Sub Hq. YMA. One week training was conducted during 16th-20th July, 2018 for the teams with full set of Breathing Apparatus by employing the expert104ise of Lalmuankima Ex Indian Navy.*(For team members please see annexure 8)*

5.3 Activation of IRS in the district

Immediately after the occurrence of disaster, Incident Response System (IRS) will be activated. Based on the severity of the impact, The Responsible Officer i.e Deputy Commissioner will decide if the whole or part of IRS is to be activated.

5.4 Protocol for seeking help from other agencies

If the impact of the disaster is so severe beyond the coping capacity of district authority, be it in terms of human resources, equipments and financial resources, and the District Authority is of opinion that assistance from other agency is required, the District Disaster Management Authority shall make a request help from the state government or other agencies.

5.5 Operational Check-up for EOC

Presently EOC is manned by District Organiser appointed by Disaster Management and Rehabilitation Department. He is responsible for all the equipments in the EOC and he will periodically check all the equipment, especially the electrical equipments. All the equipments should be place ready to be use at any emergency.

5.6 NGO's and other Stakeholder Coordination

NGO's more particularly YMA plays pivotal role in disaster management specially rescue and evcuation. Response to disaster is one of the prime objectives and they are committed to perform evacuation, search and rescue, and to collect donation for the victim and to arrange alternate shelter for those who lost one. The vibrant energetic youth are an asset which can be utilized with proper coordination with other agencies.

Other NGO's like Mizo Hmeichhe Insuihkhawm Pawl(MHIP) and Mizo Upa Pawl(MUP) etc are also an assets who can provide relief to the victims. Proper coordination is being maintained to cope with in case of major disaster.

To maintain coordination, contact details of all the leaders of NGO's at District level is given in Annexure 5. They may be mobilized for assisting SDRF, NDRF and other agencies for search and rescue, evacuation and relief and rehabilitation etc.

5.7 Seasonal preparedness for seasonal disaster

1. Seasonal disaster may include hazard such as landslide, wind & cyclone, flood and forest fire. Vulnerability mapping is prepared in HRVA which is highlighted in detail in chapter II.
2. Disaster Plan shall be prepared in such vulnerable areas and mock exercise shall be conducted as frequent as possible.
3. Mapping and updation of resource inventory, including identification of safe evacuation places and flood rescuers: Resource inventory is updated periodically, flood evacuation places are identified
4. Preparedness for provision of relief supplies, emergency medical services, Communication and prevention of epidemics: Medical department facilitate all the requirements.
5. Pre-monsoon de-siltation, clearing of water channels and removal of blockage and encroachment from the drainage systems and flood plains: This is yet to be implemented.
6. Unsafe trees and structures are being cut down or removed to alleviate the risk and avoid causing of death or injuries and loss of properties. Other vulnerable bill-boards and hording will be identified and action will be taken as DDMA deem necessary.
7. Do's and Dont's for general public in local language: Do's and Dont's are flashed through whatsapp and other social media.
8. Updation of State Disaster Management Plans (SDMPs) and District Disaster Management Plans (DDMPs) in the light of lessons learnt from the previous incisence of calamity: At district level DDMP is annually updated.

5.8 Community Preparedness:

5.8.1 Community warning system:

When the warning of disaster is received by the DDMA, it will be desiminated immediately to the public through the following means.

1. WhatsApp group: With technological advancement and exponential use of social media, an efforts has been made to utilize this trend into meaningful manner. A group is created in one of the social media-*WhatsApp* where Village Councils (Panchayat), NGO's and other important officials are included. All the warning so received shall be disseminated immediately.

2. SMS Alert System: Due to fluctuation of internet facility in different corners of the district, internet based facility may not be wholly relied upon for dissemination of warning. Typical voice call/SMS is an option but it has to be rapid and far reaching. So we registered in govt. official portal called *@Gov.in* where Quick SMS is one of the option, through which sending multiple SMS's is enabled. The mobile numbers of all the stakeholder from government officials, SDRF personnel, Village Councils (Panchayat) NGO's and volunteers are added here. Any warning/forecast will be disseminated using this SMS alert.

3. Public address system: In all the villages within the district, there exist a public information system owned and maintained by YMA of the concened branch. It will be utilized for instantaneous spreading of warning/alert of any impending disaster to the general public.

5.8.2 Community awareness:

The awareness level among the community on disaster within kolasib district is very poor. To aware the community on disaster is the first requisite approach for disaster preparedness, hence conducting community awareness program is very much necessary. At various occasions, community awareness program is organized and more of such training will be conduted subject to availability of funds and they have been involved in the mock drill conducted at district and sub divisional level.

5.8.3 Community's responsibility:

Community are the first responder to any type of disaster before the arrival of the rescue team. Hence, to impart their responsibility during disaster is another challenge. For this purpose, it is necessary to capacitate them to inform them of their role and responsibility with required basic skills. So that many lifes and properties can be saved, before the rescue team and external help reaches the place of

incidence, if they are aware of their responsibility with basic knowledge of technique of search and rescue and first aid and pre hospital treatment.

5.8.4 Sensitization of community about the need of persons with disabilities:

The person with disabilities are the vulnerable group, they are not able to protect and sheltered all by themselves, so proper care and preference must be given to such persons during disaster with respect to evacuation, rescue and medical treatment and also relief and rehabilitation. Hence, awareness is being given to the community to identify if there are any disabled persons in their locality and to take a proper care and give priority to such persons among others in times of disaster.

5.9 Standard operating procedure

5.9.1 Protocol and arrangement for VIP visits:

During disaster, the VIPs often visit the incident site. In case of such visits by VIP, the circuit house will be reserved for VIP's only and arrangement shall be made by the Sub Divisional Officer (Sadar), who is also Liaison Officer in IRS. He will also make all the other necessary arrangement for such VIPs during their stay in the District.

5.10 Knowledge management:

5.10.1 Uploading of information of resources on IDRN:

All the equipments including government and public, which will be essential for disaster response are collected and categorically uploaded in the portal called as Indian Disaster Response Network(IDRN). Collecting and updating of data in IDRN portal is taken care by District Organiser.

5.10.2 Documentation of lesson learnt:

Documentation of incidence of disaster and any other relevant matter will be done by District Education Officer. This will be an official document and it may be referred in future to identify the loopholes is disaster preparedness.

5.11 Media management/information dissemination

District Information and Public Relation Officers(DIPRO) is the media officer and spokesperson for DDMA, all the vital information shall be dessiminated through him with prior approval of Responsible Officer i.e Deputy Commissioner. He shall hold media briefing as and when required. No journalist will be permitted to enter disaster site within the cordoned area. They are neither allowed to interview with the victim nor rescue workers to gather information. This will void fabricated news and false information to the public.

5.12 Medical preparedness and mass casualty management

Medical preparedness and mass casualty management is very much essential during disaster management because the work load is likely to increased considerably than normal times and construction of make shift hospital may be required and procurement of medicines and hiring of more skilled human resource may also be needed. Without proper pre-planning and medical arrangement medical rescue operation could be a flaw which could result in lost of lives.. Chief Medical Officer and District Medical Superintendent are responsible for medical preparedness and mass casualty management. (*For details please see Annexure 4).*

CHAPTER VI
CAPACITY BUILDING AND TRAINING MEASURES

6.1 Approach:

Approach to capacity building is to increase the capability of the community and all the stakeholders to respond any incidence of disaster effectively and efficiently. In pre-disaster, disaster management aims to formulate plans through which communities reduce the risk due to hazards and cope with disasters at their own level to a certain extend. Due to the paradigm shift, focus in on preparedness than response more particularly from post-disaster to pre-disaster in which capacity building and training is one of the tools for preparation. Occurance of natural disaster cannot be averted but the impact can be reduced with proper capacity building activity.

In Kolasib District more emphasis on capacilty building has been placed on the community for their role in disaster response, their acquaintance of the local area, active participation and support. It is logical that the community will be the first line of defence in preparing and responding in the event of a disaster.

In a community, a variety of groups exist with diverse skills and abilities combined with personal and professional experiences that are essential for effective preparation and response to disasters which include professional and trade skills for damage, control and assessment (engineers, environmental scientists, architects, contractors, and skilled laborers); disaster preparedness and response training (VFW, retired military/police); medical, psychological, and social service delivery experience (health practitioners, counselors, religious/civic groups). A mixed group

6.2 Capacity Building Plan:

Towards disaster risk reduction (DRR) capacity building and training are taken into account by DDMA. Training of various stakeholders and community is being conducted based on the fund availability.

Mega Mock Exercise: Mega Mock Exercise was conducted at Kawnpui on 10th – 11th June, 2019 and at Vairengte on 17th – 18th September, 2019 organised by DDMA and the concerned Sub Divisional Officers. Various stakeholders from the local area, SDRF from Mualvum, Medical team, Police Force and other stakeholders participated in these exercise. The details report is highlighted below:-

1 Kawnpui Sub Division

The Scenario:

Type of Drill : Earthquake Drill
Location : Kawnpui Town
Date of Drill : 11th June, 2019

Origin time : 2:00 pm (IST)
Magnitude : 7.5 Richter scale
Epicenter : 10 Kms N of Kawnpui Town
Depth : 8 kms
Areas affected : Kawnpui Town
Casualties : 8 dead and 15 injured

The havoc:
1. Kawnpui HSS Building collapsed resulting in multiple casualties:

Casualties:
The earthquake killed 8 students and injured 15 due to collapsed of school building

Task force:
1. School Search and Rescue team
2. YMA Search and Rescue team
3. SDRF team, Mualvum

Medical Response:
1. Makeshift hospital was established at Kawnpui HSS complex by MO Kawnpui PHC
2. Hospital Mass Casualty Management Plan activated to provide medical care to the injured. Triaging was done and treatment was given accordingly.

Staging Area: SDO(C) Office complex was earmarked as staging area where all the resources including human and material resourses was arrived and the staging manager made all the records of their time of arrival and mobilisation and demobilisation.

Emergency Operation Centre:
1. EOC was established at SDO(C) office and the incident commader monitored all the process of the drill.
2. Wireless communication system was set in place at the EOC and at the incident site with the police personnel to operate the set. Communication was made only through the wireless set and all the activity reports were communicated to EOC where the i/c put it on records.

Observers: The three VCPs of Kawnpui were appointed as observer. Each VCP were assigned different task and location such as VCP-I at Makeshift Hospital, VCP-II at Make Shift Hospital and VCP-III at the incident site.

Responsibility Matrix: IRS of the following was activated and the assigned responsibility is as given below.

Sl No	Designation/Name	Responsibility
1	Lalhruaitluangi SDO(C), Kawnpui	Incident Commander
2	SDO(PWD)	Staging Area Manager
3	Medical Officer, Kawnpui PHC	Medical i/c
4	Commander, SDRF Mualvum	Taskforce i/c
5	Principal, Kawnpui HSS	Site Incident Commander
6	VCP of Kawnpui I,II,III	Observer

Human Resources: Human resource involved in the drill and their assigned task were as incated below:-

Sl. No.	Type Human Resources	No of persons	Duty performed
1.	Medical team	1 team comprising 1 doctor, 2 nurse and 2 supporting staff with one ambulance	They established Make-Shift hospital at the school complex and they remain stationed at it. Triaging was done at the reception and treatment was done accordingly. The dead victims(Black Triaged) were shifted at temporary morgue
2.	Police	4 personnel	2 persons at the incident site and 2 persons at the SA. They cordoned the incident area and they manage traffic and law and order.
3.	SDRF	1 team comprising 9 member including the commander	They performed search and rescue and evacuate the victims from the debris and shited them to the make shift hospital.
4.	Local	6 persons	They reached the incident

	volunteer(YMA)		site before arrival of the all the other responders. They performed search and resue immediately and they assist SDRF personnel after their arrival.
5	MPRO	2 persons	They manage line of communication through wireless set

Tabletop and Debriefing Session: Table top exercise was held on 10th June, 2019 at 11:00 AM in the SDO(C) Kawnpui conference hall. All the stateholders were brief about their assigned task and duty to be performed by them. The Debriefing was held on 11th June, 2019 at 3:30PM after completion of the main exercise. Reports were given by observers and the leaders of each teams.

Remarks: The whole exercise lasted for 1 hours and 35 minutes. The performance of all the stakeholders was satisfactory. They were all responsive and acquainted with their targeted roles and responsibilities. The community is also well aware of the exercise and the participation of the local volunteer was extremely well.

2 Vairengte Sub Division

Scenario:

1. Type of Drill : Earthquake Drill
2. Location : Vairengte Town
3. Date : 18th September, 2019
4. Origin time : 1100 Hrs (IST)
5. Magnitude : 7.5 Richter scale
6. Epicenter : 5 Kms N of Vairengte Town
7. Depth : 3 kms
8. Areas affected : Vairengte Town
9. Casualties : 8 dead and 15 injured

The havoc:

1. Govt. Vairengte H/S Building collapsed resulting in multiple casualties.
2. Fire broke out at Govt. Vairengte H/S Building.

Casualties:

The earthquake killed 8 students and injured 15 due to collapsed of school building

Responders:

1. School Search and Rescue team
2. YMA Search and Rescue team
3. SDRF team
4. Fire & Emergency Services, Vairengte
5. Police
6. MPRO

Medical Response:

1. Makeshift hospital was established at Govt. Vairengte H/S complex by MO Vairengte CHC
2. Hospital Mass Casualty Management Plan was activated to attend the injured victims. Trianging done on the reception, Serious injury(Red triaged) were sent to Hospital intensive medical treatment was given.

Staging Area: Staging area was established at Old Police Station Complex where all the resources reported and mobilized by SAM then demobilized after completion of the rescue operation.

IRS: Sub Divisional IRS was activated as per Plans. A detail responsibility is given in the responsibity matrix.

Emergency Operation Centre:

3. EOC was established at SDO(C) office, Vairengte which was manned by i/c acted as command centre.
4. Wireless communication system to be set in place at EOC and the incident site operated by MPRO personnel. All the communication was made through this channel.

Responsibility Matrix:

Sl No	Designation/Name	Responsibility
1	Isaac Lalrempuia SDO(C), Vairengte	Incident Commander
2	SDPO, Vairengte	Dy Incident Commander
3	MVI (Transport)	Staging Area Manager
	Medical Officer I, Vairengte CHC	Site Incident Commander, Hospital
4	Medical Officer II, Vairengte CHC	Site Incident Commander, Make-Shift Hospital
5	O/C Police, Vairengte	Response Branch Director

6	Commander, SDRF	Taskforce i/c
7	Headmaster, Govt. Vairengte H/S	Site Incident Commander GVHS

Observers: Observer were appointed for each of the sites as indicated below in the table

Sl No	Incident site	Designation of Observer
1	Govt. Vairengte H/S	SDO PWD, Vairengte
2	Make Shift Hospital	Inspector, T&C Dept, Vairengte
3	Hospital Vairengte	Doctor, AH&Vety Vairengte

Human Resources: Human resource involved in the drill and their assigned task were as incated below:-

Sl. No.	Type Resources	No. of persons	Responsibility
1	Medical team I	Comprising 1 doctor, 2 nurses and 2 supporting staff with one ambulance	They established Make-Shift hospital at the school complex and they remain stationed at it. Triaging was done at the reception and treatment was done accordingly. The dead victims(Black Triaged) were shifted at temporary morgue
2	Medical team II	Comprising 1 doctor, 2 nurse and 2 supporting staff	They were stationed at Hospital, they gave intensive medical treatment to the victims who were transported from the incident site
3	Police	4 personnel	2 persons at the incident site and 2 persons at the SA. They cordoned the incident area and they manage traffic and law and order.
4	SDRF	1 team (not less than 8 personnel)	They performed search and rescue and evacuate

			the victims from the debris and shited them to the make shift hospital.
5	F&ES	1 team with fire tender	They were mobilized by SAM. They fought fire which broke out due to electric short circuit. Thereafter they assist SDRF personnel.
6	Local volunteer(YMA)	5 persons	They reached the incident site before arrival of the all the other responders. They performed search and resue immediately and they assist SDRF personnel after their arrival.
7	MPRO (if any)	2 persons	They manage line of communication through wireless set

Tabletop and Debriefing Session: Table top exercise was held on 17th September, 2019 at 11:00 AM in the SDO(C) Kawnpui conference hall. All the stateholders were brief about their assigned task and duty to be performed by them. The Debriefing was held on 18th September, 2019 at 1:00PM after completion of the main exercise. Reports were given by observers and the leaders of each teams.

Remarks: The whole exercise lasted for 1 hours and 40 minutes. The performance of all the stakeholders was satisfactory. They were all responsive and acquainted with their targeted roles and responsibilities. The community is also well aware of the exercise and the participation of the local volunteer was extremely well.

6.2.1 Institutional Capacity Building: No separate Disaster Management Training Institute exist in the District. However, an arrangement is being made with Extension Training Centre, SIRD&PR, Kolasib to conduct capacity building activity as a joint colllaboration. 1St and 2nd Batch of Upscalling of Appda Mitra training was conducted in collaboration with ETC, SIRD&PR, Kolaib during 3rd October, 2022 to 28th October, 2022.

6.2.1.1 Official/policy makers: DM&R Branch of Deputy Commissioner office is responsible for policy making in respect of capacity building subject to the approval of meeting of DDMA. Nodal officer DM&R and District Organiser are responsible for formulating policy and programme.

6.2.1.2 Professionals: Trained professionals are required to address critical and subjective approach. Hence professionals are engaged to carry out capacity building as a master trainer. Followings are their name and designation and their activity.
1. Er. Joseph Laldintluanga, SDO, Project Sub Division, PWD Kolasib for structural safety/mitigation
2. Dr C. Vanlalhlimpuia, MO District Hospital for Pre-hospital treatment and mass casualty management.

6.2.1.3 Fire & Emergency Services : Fire and Emergency Services occasionally conduct fire safety procedure and fire fighting mechanism and also fire mock exercise during their off season at schools and to the community.

6.2.1.4 FAMEX: Familiarization Exercise is being conducted by NDRF occationaly as per the calendar prepared by MHA. They conduct awareness training programme targeting community, teachers and students, NGO's.

6.2.2 Community Based Disaster Management: Community is the first responders and acknowledging their role. Village Disaster Management Committee was formed in each village council. Various team such as search and rescue, first aid, shelter management etc were formed by them. Plans have been made to conduct training to enhance the capacity of each team.

6.2.3 Training of Trainers:
Search and Rescue: Training of trainers programme on search and rescue was conducted at ATI in Aizawl in 2006 organized by DM&R Dept. and Central YMA in which 14 persons successfully attended the training in two batches Following are the list of persons who attend ToT
1st Batch:-

	Name	Address
3	Samuel Lalnunsanga	Kolasib
4	R.Lalmuanpuia	Thingdawl
5	Ch.Luna Kongsai,	Rengtekawn
6	Lalrokima	Hortoki
7	H.D Lawmzuala	Hortoki
8	Lalkrosshlua	Hortoki

9	Lalremsiama	Hortoki
10	Lalhunmawia	Hortoki

2nd Batch:-

	Name	Address
1.	Domain Lalthazuala	Hortoki
2.	Laledenthara	Hortoki
3.	Zonunsanga	Hortoki
4.	R.Lalvenhima	Kawnpui
5.	Lalzamliana	Hmar Veng, Kolasib
6.	F.Lalchhandama	Hmar Veng, Kolasib

School Safety: ToT on School Safety was conducted on 20.07.2017 at Directorate of Disaster Management and Rehabilitation Department. The following officials attended the programme.

	Name	Designation
1	Lalnunfela	District organizer, Kolasib
2	Lalthianghlima	Teacher, Govt. Diakkawn H/S
3	Zonunsanga	Teacher, JNV Thingdawl

Psycho-social care in disaster management: ToT on Psycho-social care in disaster management conducted organized by NIDM during 26-30 October, 2015 in New Delhi was attended by Lalnunfela District Organiser.

6.3 Disaster Management Education:

The School Education Department, Govt of Mizoram acknowledged the importance of inculcating the concept of disaster management among the young generation. Therefore, a topic of diasaster management has been included in the curriculum of secondary level. It is also being envisage to include in the elementary education as well. Disaster Management is one of the subject under Mizoram University

Training is being conducted at schools and colleges within the District to aware the student and teacher about the functionary of disaster management at various levels and also to aware various measure to be taken in case of disaster for prevention and mitigation and also to rescue others.

CHAPTER VII
RESPONSE AND RELIEF MEASURES

7.1 Response planning, preparedness and assessment

Response has to be quick to save the greatest number of lifes and properties for which proper planning is much necessary. Assesment of damage goes hand in hand with response to ascertain the extend of damage so as to enable to exert needs assessment for rescue operation.

7.1.1 Quick assessment of damages and need:

Quick assessment of damage is required to ascertain the actual extent of damage and also to figure out the requirement of resources and facilities and chalk out response plan. The entire district is divided into 7(seven) zones, the order with this regard is issued by deputy Commissioner Vide Order Dt 13th June, 2022. They will be the Incident Commander in their respective zones and they will be responsible for response and relief activities and assessed the damages in their respective Zones.

Zone	Name & Designation of Officer	Contact No.	Area
i	Pu Neng Thianlala, SDO (Civil), Vairengte	9436158966 7630081304	Vairengte, Saihapui 'V', N. Chhimluang, Phainuam
ii	Pi Rebecca Laldinmawii Hrahsel, SDO (Civil),	8974736278	Kawnpui, Bualpui, Hortoki, Khamrang, Mualkhang
iii	Pu Gaston Vanlalhriatpuia, BDO, Thingdawl	8974834840	Thingdawl, Zanlawn, Serkhan, Lungdai, Nisapui,
iv	Pu Timothy R. Lalhmangaiha, BDO, Bilkhawthlir	8974205531 8787897859	Bilkhawthlir, Phaisen, Buhchangphai, Saiphai, N. Thinglian, Bukvannei, Saihapui 'K', N. Chawnpui,
v	Pu Vanlalmuana, SDC, Bairabi	8415848210	Bairabi, Meidum, Pangbalkawn,S. Chhimluang, Zodin
vi	Pi Lalruatpuii Hnamte, SDC-I, DC Office, Kolasib	9862290658	Diakkawn, New Daikkawn, Vengthar, College Veng, Project Veng, Khuangpuilam, Venglai, Venglai East
vii	Pi Lalvenhimi Ralte, SDC-II, DC Office, Kolasib	8974761551	Tumpui, Electric Veng, Hmarveng, Saidan, Tuithaveng, Rengtekawn, New Builum, Gosen Veng

Link Zonal Officers:

1	Pu Neng Thianlala SDO (Civil), Vairengte	Pu Timothy R. Lalhmangaiha BDO, Bilkhawthlir
2	Pi Rebecca Laldinmawii Hrahsel SDO (Civil), Kawnpui	Pu Gaston Vanlalhriatpuia BDO, Thingdawl
3	Pu Timothy R. Lalhmangaiha BDO, Bilkhawthlir	Pu Vanlalmuana SDC, Bairabi
4	Pi Lalruatpuii Hnamte, SDC-I DC Office, Kolasib	Pi Lalvenhimi Ralte, SDC-II DC Office, Kolasib

Further, Pu Lallawmawma (9862533180) Addl. DC/CEO, KDDMA is hereby appointed as convener of Zone (i), (ii), (iii) & (iv) and Pu Vanlalchhuanawma Chawngthu (9436760963) SDO (Sadar)/Nodal Officer KDDMA is also appointed as convener for Zone (v), (vi), and (vii).

7.1.2 Response flow chart:

Response to disaster include search and rescue of victims trapped under the debris or collapse structure and evacuation of the victim to the temporary safe shelter/relief camp or shifting to nearest medical facilities depending upon their injury. The response flow has to be quick and swift to safe the maximum number of lives. It also includes restoration of essential public infrastructure such as roads and building and supply of public amenities such as electricity, drinking water, Communication etc.

Sl No	Action
1	Damage assessment by concerned Zonal Officer, VDMC
2	Activation of DEOC, IRS/ESF
3	Setting up of Staging Area, Command Post, Relief Camp.
4	Deployment of response team, medical team
5	Setting up of make shift hospital in case of mass casualty
6	Restoration of essential public infrastructure and supply of public amenities such as electricity, drinking water, Communication etc

7.1.3 Warning and Alert:

7.1.3.1 Early warning system: Indian Meterioogical Department(IMD) and State Meteriological Centre is the main source of information regarding warning and alert. Any update on warning is received on email and also whatsapp.

7.1.3.2 Warning dissemination: Any warning received shall be disseminated through Whatsapp group, SMS Alert or Public Address system of the concern local areas. In case of failure of normal communication lines, the MPRO's wireless communication system shall be utilised.

7.1.4 DDMA meeting:

On the occurrence of disaster, DDMA will meet in the DC office chamber or DEOC or any other place as the chairman may deem fit and proper. DDMA will take measures either of the followings:-

1. DDMA shall assess the situation and give directions to the concerned line Departments/Agencies at the District level regarding measures to be taken in response to any specific threatening disaster situation or disaster.
2. Disseminate warning/alert to the potential victims.
3. May issue direction for effective evacuation or restriction of movements of people in the probable disaster affected areas.
4. DDMA shall take such other action as may be necessary for coordinated response to natural disasters. These may include the following:

a. Assessing situations based on reports received from various sources and giving directions to different agencies for immediate response, relief and restoration of critical infrastructure.

b. Reviewing the resources and capacities of different agencies to deal with the situations and giving directions for pooling available manpower, equipments and resources available with different agencies for speedy and effective response.

c. Requisitioning of resources as per DM Act, 2005 section 65 & 66.

d. In case of shortage in respect of resources, facilities, mechanical equipments, water supply, sanitation, medicine and finance. They will seek help from state government or other outside agencies.

e. Coordinate with civil society, churches and Non-Governmental Organizations for supporting the efforts of government agencies.

f. Monitoring and reviewing the situations on a regular basis.

7.1.5 Activation of EOC

EOC will be activated on receipt of warning or as soon as incidence of disaster, as the case may be, for proper coordination and control during phases of evacuation and response activity

1. DEOC shall issue alerts/warning using available means to the public.

2. DEOC shall send First Information Report to SEOC, SEC and thereafter Daily Situation Report till situation normalizes.

3. DEOC shall collect all relevant information and appraise the status to the designated decision-making authorities.

4. It shall arrange Meetings of DDMA.

5. It shall activate ESFs of the district if the situation so warrants.

EOC will run 24x7 until demobilization or winding up of response phase. The existing staff may not be able to handle it. So more shall be deployed in such cases.

7.1.6 Resource mobilization

Resources available in EOC and from other public and private will be mobilized to the incident site. Proper record will be maintained in respect of time and place where it is mobilized. For any rented equipments, the period of its hiring is to be recorded as it will be required for settling the rent.

7.1.7 Seeking external help for assistance:

If the magnitude of the impact is so severe that it is or is likely to be beyond the coping capacity of the district administration. The DDMA shall seek aid from State Government and other appropriate outside agencies through the available means of communication.

7.1.8 Psycho social care:

In disaster, houses and properties are damaged and even lives are loss, a person who lost their house/properties or their relatives are mentally affected. If it is so severe, they can even have suicidal thought, Hence, they need special attention and care. Therefore, psychosocial care is much necessary for such persons. It may be difficult to identify the mild traumatized person but a person of severe traumatized person can be easily identified on their behaviour. There are various methods for treatment of such person. Some person can be cured with simple technic, in which spiritual guidance is practically effective for that the churches are pivotal.

It may be difficult to treat the severely affected persons, in such cases, they must be referred to specialist in mental heath. Their relative and friends should closely monitor their condition and they should bring them before mental health practitioner before they are getting worse. The following persons are mental health practitioner at District Hospital:-

Sl No.	Name	Designation	Contact No
1.	Helen Lalnunmawii Sailo	Clinical Psychologist	8131068695
2.	Ngaihawmi Khenglawt	Psychiatric Social Worker	8974156609
3.	Judithi Khawlhring	Community Nurse	8414008764
4.	Lalrinawmi	Psychiatric Nurse	8415846003

These mental health practisioner shall explore if there are any person who need psychosocial care and prepare themselves to provide mental health treatment to such persons in the aftermath of disaster.

7.1.9 First assessment report

First assessment report is a preliminary stage. Since community is the first responder, they are the first person who will able to resort the first assessment. So VDMC which was already formed in each village council will prepare the first assessment and report it to their zonal officer who will analyze and further report to DDMA.

7.1.10 Media management/coordination/ information dissemination:

During disaster situation, the dissemination of accurate information through electronic and print media is very essentials to avoid hoax and unwarranted news which can terrify and panic the public. Hence DDMA will coordinate media and journalist to hand out factual information. The DIPRO who is also a Media Officer in IRT is responsible to collect and disseminate press note to the media persons. Direct interview by the media person to the rescuers or victims shall be barred as far as possible. Regular press briefings shall be held by Responsible Officer/Media Officer or their authorized representative at the convenient time and place which shall be official record.

7.1.11 Development of SOP/check lists/formats related to ESF's etc:

ESF1 Information and Communications:

Primary Agency: I & PR Dept.

Support Agencies

i) MPRO iii)DDK iv) AIR v) NIC vi) BSNL & other Cellular phone providers, vii) Local Cable Network e.g CZS, KCN

Responsibilities:

- Coordination of actions to ensure the provision of telecommunication support to the Centre, State and District.
- Coordinate the requirement of temporary telecommunication to the affected areas.
- To provide and collect reliable information on the status of the disaster victims for effective coordination of relief work at State level.
- Not to intrude on the privacy of individuals and families while collecting information.
- Coordinate with the EOC's at the airports and railways for required information for international and national relief workers.
- Coordinate with all TV and Radio networks to send news flashes for specific needs of donation.
- Respect the socio-cultural and emotional state of the disaster victim while collecting information for dissemination.
- Use and place graphical information to guide people towards relief operation.
- Curb the spread of rumours.
- Disseminate deactivation message to all field workers.
- Apply GIS to speed other facilities of relief and search and rescue.
- Enable local authorities to establish contact with the state authorities.
- Coordinate planning procedures between the District and the State.
- Documentation of all procedures at state level.

- Provide ready formats for all reporting procedures as standby.
- Documentation of response/relief and recovery measures.
- Situation reports to be prepared and completed every 3-4 hours.

Planning Assumptions:

- Communication impaired.
- Most of the existing media network would have undergone heavy damage.
- It may not be possible to get accurate information from the affected area within the first few hours of the disaster.
- Immediate need for information for all officials, NGO's and the state at large.
- There will be a need for s central collection point where information can be compiled.
- Initial information centre may require at least 24 hours to be fully operational.

Activation:

- Radio communication with local EOC.
- Identify operational telecom facilities.
- Identify requirement of additional telecom facilities.
- Plan action of private telecom companies.
- Establish temporary mobile exchanges on priority.
- Temporary communication facilities to the public.
- Send news flashes of latest updates/donation requirements for disaster area all over the country.
- Assist the EOC in providing crisp and updated information to international as well as national level relief workers/NGO's and government officials.
- Establishing contact disaster site.
- Send out a site team to assess on site for information outlets.
- Activation to commence on receipt of a warning before disaster.

ESF 2 Transportation and Public Work Engineering:

Primary Agency: PWD

Support Agencies:

i) Transport Dept ii) P&E iii) UD&PA iv) Home.
v) E&F vi) Private Transport Association

Responsibilities:

- Overall coordination of the Centre and the civil transportation capacity in support of State and Local government entities.
- Restoration of roads and bridges, construct temporary roads. Assemble casual labour.

- Coordination of and implement emergency related response and recovery functions, search and rescue and damaged assessment.
- Emergency clearing of debris to enable reconnaissance.
- Coordinate road clearing activities to assist local relief work.
- Provide a work team carrying emergency tool kits, depending on the nature of disaster, and essential equipment such as towing vehicles, Earth moving equipments, Cranes.
- Keep national and other main highways clear from disaster effects such as debris etc
- Establish priority list of roads which will be opened first.
- Identify locations for transit/relief camps.
- Adequate road signs should be installed to guide and assist in relief work.
- Reserve stocks for fuel should be checked.
- Pre-positioning assessment teams headed by the state coordinating officer.
- Emergency clearing of debris to enable reconnaissance of damaged areas and passage of emergency personnel and equipment for life saving, property protection and health and safety.

Planning Assumptions:

- Infrastructure damage limiting access.
- Routes will be cleared, detours built.
- Requirement of the transportation capacity will exceed the State capacity.
- Relief activities will create congestion to the transport routes and hamper the repair activity.
- Early damage assessment may be inaccurate and rapid assessment may be required to know response time.
- Significant number of persons having engineering skills will be required.
- Previously inspected structures will require re-evaluation if aftershocks occur following earthquake.

Activation:

- Arrange for transport for the affected area.
- All ongoing construction should be halted with appropriate measures.
- All technical officer should be notified
- Review and update precautionary measures and procedures.
- Inspect all buildings roads, bridges and structures of the State government.

ESF 3 Search and Rescue:
Primary Agency: SDRF/IRS
Support Agencies:
i) F&ES. ii) QRT. iii) NGOs. iv) MAP. v) MRP.

vi) IR. vii) Ex-Servicemen viii)Excise and Narcotic Force.

Responsibilities:

- Establish, maintain and manage search and rescue response system.
- Coordinate search and rescue logistic during field operations.
- Provide status reports of SAR updates throughout the affected areas.
- GIS is used to make an estimate of the damaged area and the development of the SAR team in the area according to priority.
- Discharge all ambulatory patients for the first aid which has the least danger to health and the others transported to safer areas.

Planning Assumptions

- Local residents, workers or volunteers may initiate some search and rescue but will lack specialized techniques.
- Spontaneous volunteers will require coordination.
- Access to damage area will be limited. Some sites may be accessible only through air or water.

Activation:

- Quick assessment of the SAR operations through Aerial surveys.
- Provide SAR management and coordination assistance.
- Medical assistance and collapsed building structure SAR.

ESF 4 Food:

Primary Agency: FCS&CA Dept.

Support Agencies:

i) Transport. ii)District Administration. iii) NGOs iv)Church

Responsibilities:

- Ensuring food requirements of affected population.
- Control the quality and quantity of food.
- Ensure timely distribution of food to the people.
- Ensure that all food that is distributed is fit for human consumption.
- Make emergency food supplies available to the population.

Planning Assumptions:

- Food storage and supplies may be disrupted.
- Total disruption of food distribution system.

Activation:

- Initiate, direct and market procurement of critical food available from different inventories.
- Rationing and allocate food for equal distribution to all families.
- Special care in food distribution is taken for women with infants, pregnant women and children.

ESF5 Drinking Water and Water Supply:
Primary Agency: PHE Dept.
Support Agencies:
i) DRDA. ii) H&FW. iii) FCS&CA. iv) UD&PA. v) LAD vi) NGOs.
Responsibilities:

- Procurement of clean drinking water.
- Transportation of water with minimum wastage.
- Special care for women with infants and pregnant women.
- Ensure that sewer pipes and drainage are kept separate from drinking water facilities.
- Support to Local Administration.
- Water purification installation with halogen tablets etc…
- Hygiene promotion with the availability of mobile toilets.

Planning Consumption:

- Most of the water available will be unfit for drinking.
- Existing storage bodies of water may be damaged and unusable.
- There will be an urgent need of water to assist victims in rescue operation.

Activation:

- Setting up water points in key locations and in relief camps.
- Maintaining water purity.
- Providing chlorine tablets to people in affected area.
- Providing clean drinking water at regular intervals in case of distruption of water pipe lines.
- Locating drinking water facilities separate from sewer and drainage facilities.

ESF6 Power and Energy
Primary Agency: P&E Dept.
Support Agencies:
i) PWD, ii) E & F. iii) Transport Dept.
Responsibilities:

- Provide and coordinate support from outside the state until Local authorities are prepared to handle power related problems.
- Identify requirements of external equipment.
- Assess damage for repairs.
- Checking and repairing of down power lines, stations and towers.
- Restoration of power supply.

- Review the total extent of damage to the power supply installations by a reconnaissance survey.
- Dispatch emergency repair teams equipped with tools, tents and food.
- Hire casual labour for the clearing of damaged poles, etc…

Planning Assumptions:

- There will be widespread prolonged electricity failure.
- There will be panic hoarding of fuel in some areas of the affected area.

Activation:

- Establish radio communications with the EOC.
- Quick damage assessment.
- Prepare a list of resources required after the first assessment.
- Check emergency tool kits.

ESF7 Shelter and Relief:

Primary Agency: District Administration.

Support Agencies:

i) Education depts. ii) UD&PA iii) P&E iv) Police Dept. v) Land &Revenue

vi) Transport Dept. vii) PHE viii) Industry.ix) FCS&CA x) FCS&CA.

xi) Excise and Narcotics. xii) LAD xiii)Churches and NGOs.

Responsibilities:

- Quick assessment and identifying the area for the establishment of relief camps.
- Provide and locate adequate relief camps and temporary shelter based on survey of damage.
- Identifying the population which can be provided with support in their own place and need not be shifted/reallocated.
- Locate relief camps close to open traffic and transport links.
- Develop alternative arrangement for population living in structures that might be affected even after the disaster.
- Coordinate activities involved with the emergency provisions.
- Emergency mass feeding, in some instances, services also may be provided to disaster workers.
- To provide logistical and resource support to local entities.
- Operate a Disaster Welfare Information (DWI). System to collect, receive, and report the status of victims, assist family reunification; and coordinate bulk distribution of emergency relief supplies.
- Allocate and specify type of requirements depending on need.

Planning Assumptions:

- Existing structures are severely damaged.
- Heavy machinery and clearance equipment may also not be accessible.
- Large population rendered homeless.
- Rapid coordination to mitigate potential donations problems is required.
- Donors both district and state will offer assistance of virtually any kind.
- Offers of assistance will be made available directly to all levels of government-Centre, State and Local-as well as voluntary organizations.

Activation:

- Quick assessment of functional and stable building.
- Clearing of the areas for establishment of relief camps.
- Set up relief camps and tents using innovative methods that can save time.
- Assist local authorities to set up important telecom and other services facilities.
- Prepare a list of requirements according to socio-cultural needs of the area.
- Coordinate transportation of material from different part of the country.

ESF8 Public Health and Sanitation:

Primary Agency: H&FW.

Support Agencies:

i) PHE. ii) AH & Vety. iii) Transport. iv) UD & PA v) LAD. vi) NGOs.

Responsibilities:

- To coordinate, direct and integrate state level response.
- Direct activation of medical personnel, supplies and equipment.
- Coordinate the evacuation of patients.
- To prepare and keep ready Mobile Hospitals and stock.
- Check stock of equipment and drugs.
- Provide systematic approach to patient care.
- Performed medical evaluation and treatment as needed.
- Maintain patient tracking system to keep record of all patients treated.

Planning assumptions:

- Outbreak of epidemic or medical emergency as secondary disaster.
- Contamination of water and food.
- Unclean disaster affected site.
- Disruption of communication and transport facilities.
- Disruption of labs and hospital.
- Urgent need for mental health crisis counsel for disaster victims.
- Disruption of sanitation facilities, loss of power and missing of people in shelters may increase disease and injury.

Activation:

- ESF to be operational on 2hrs. of notification.
- Determine type of injuries, illnesses and medicines needed.
- Provide information to all the hospitals on likely damage and expected injuries.

ESF9 Helpline:
Primary Agency: Deputy Commissioner's Office
Support Agencies:
i) BSNL. ii) Police Dept(MPRO)
Responsibilities:

- Coordinate, collect, process, report and display essential elements of information and facilitate support for planning efforts in response operations.
- Coordinate pre-planned and event-specific aerial reconnaissance operations to assess overall disaster situation.
- Pre-positioning assessment teams headed by the State Coordinating Officer and deployment of other advance elements.

Planning Assumptions:

- Access to disaster area will depend upon the re-establishment of ground and water routes.
- Early damaged assessment may be incomplete, inaccurate and general and rapid assessment may be required to determine response time.
- There will be flood of information and confusion about the injured population.

Activation:

- Setting up of toll free numbers and trying to establish the estimation of the damage and the victims in the area from the other sources.

ESF10 Donation Management:
Primary Agency: District administration
Support Agencies:
i) DLAO ii) NGOs. iii)Churches
Responsibilities:

- Coordinate Local/State governments.
- Support to Local Administration.
- Allocate and specify type of requirements depending on need.
- Organise donation(material) for easy distribution before entering disaster site.

Planning Assumptions:

- Rapid coordination to mitigate potential donations problems is required.
- Donors both national and international will offer assistance of virtually any kind.
- Offers of assistance will be made available directly to all levels of government-Centre, State and local-as well as the voluntary organosations.

Activation:

- Set up donation management desk at transport junction.
- Prepare a list of requirements according to socio-cultural needs of the area.
- Coordinate transportation of material from different parts of the country.

7.1.12 Demobilization and winding up:

Demobilization is the last phase of rescue operation, all the resources procured from various agencies has to be demobilized. Demobilization is one last critical parts in rescue operation because all the resources which was procured/obtained from other department or private persons have to be returned to the true owner and the resources which requires rental charge has to be settled before demobilizing the resources.

7.1.12.1 Documentation, Success stories and lesson learned for future:

All relevant information in respect to date, time, place, magnitude, number of casualty, damage to infrastructure and building etc will be recorded and documented. All the success stories and lesson learned will also be documented for working out the mistakes and limitations for future reference.

7.2 Responsibility matrix:

7.2.1 Emergency response functions for disaster where early warning is available

Time	Task	Department/Agency	Activity
1	2	3	4
D-72 Hr	Dissemination of warning	EOC/DIPRO	Disseminate warning to public through Whatsapp group, SMS Alert and FLS
D-48 Hr	Evacuation of likely affected area	Police, SDRF, IR, MAP, NGO	Directing the people to safe place
D-24 Hr	Alert all stakeholders	All stakeholders	Prepare and ready to be mobilized
D-0 Hr			
D+15min	Search and rescue	YMA, NGOs	Search and rescue by community
D+30min	Mobilization of force	SDRF, Police, IR Medical team and other stakeholders	Response team will be mobilized towards incident site

D+1 Hr	Activation of IRS	IRS team	Each IRS team will perform their pre-designated duty
D+2 Hr	Search and rescue	SDRF, Police, NGOs	Trained personnel will commence SnR, NGO may help them if necessary
D+3 Hr	Evacuation of injured	Search and rescue team	Evacuation of injured form collapse structure
D+6 Hr	First aid and Hospitalization	Medical team and para medic	First aid treatment to minor injuries and evacuation to hospital
D+12 Hr	Relief and rehabilitation	DC, Education depts. UD&PA , P&E Police Dept. Land &Revenue Transport PHE , Industry FCS&CA, FCS&CA, Excise and Narcotics., LAD, Churches and NGOs.	Shift the homeless to designated relief camps and rehabilitate them as soon as possible.
D+24 Hr	Demobilization	IRS Team	Demobilized the resources

7.2.2 Emergency response functions for disaster where early warning is not available:

D+15min	Search and rescue	YMA, NGOs	Search and rescue by community
D+1 Hr	Mobilization of force	SDRF, Police, IR Medical team and other stakeholders	Response team will be mobilized towards incident site
D+2 Hr	Activation of IRS	IRS team	Each IRS team will perform their pre-designated duty
D+3 Hr	Search and rescue	SDRF, Police, NGOs	Trained personnel will commence SnR, NGO may help them if necessary
D+4 Hr	Evacuation of injured	Search and rescue team	Evacuation of injured form collapse structure
D+6 Hr	First aid and Hospitalization	Medical team and para medic	First aid treatment to minor injuries and evacuation to hospital
D+12 Hr	Relief and	DC, Education depts.	Shift the homeless to

	rehabilitation	UD&PA , P&E Police Dept. Land &Revenue Transport PHE , Industry FCS&CA, FCS&CA, Excise and Narcotics., LAD, Churches and NGOs.	designated relief camps and rehabilitate them as soon as possible.
D+24 Hr	Demobilization	IRS Team	Demobilized the resources

CHAPTER VIII
RECONSTRUCTION, REHABILITATION AND RECOVERY MEASURES

8.1 General Policy Guideline:

In case of loss of lives, properties, injuries and in put subsidy for crops damage etc., items and norms of assistance from the National Disaster Response Fund and State Disaster Response Fund is notified by Ministry of Home Affairs, Disaster Management Division. The rate is revise from time to time; the current norms covers for the period of 2022 to 2026 *(Please see annexure 11)*. The NDRF/SDRF shall be dispense for providing immediate relief to the victims of notified disaster viz cyclone, drought, earthquake, fire, flood, tsunami, hailstorm, landslide, avalanche, cloud burst, pest attack and frost & cold wave and other state specific disaster. The SEC with concurrence of the meeting of SDMA on the basis of recommendation of the 14th Finance Commission declare lightning and flashflood as the state's specific disaster. The amount of assistance is at par the existing NDRF/SDRF norms.

The DDMA may prioritise relief/reconstruction measures in case of inadequacy of funds depending on the basic infrastructure needs.

8.2 Relief and recovery coordination to and when done by DDMA:

DDMA shall coordinate with other line departments to decide on a kind of support required from other agencies in terms of financial, technical and materials. DDMA shall prepare a memorandum for seeking assistance from NDMA and other agencies.

8.3 Detail Damage and Loss Assessment:

In the case of severe disaster, assessment of damage and loss would be collosal. Hence the below Table provides procedure for detail damage and loss assessment. This report needs to be accurate and factual as this would be referred for disbursement of relief and assistance as per the standing norms of assistance and also for preparation of memorandum of assistance for restoration and repair of damaged public infrastructure. Each VDMC shall assist the concern department/agency to carry out the assessment process. The report shall be submitted to DDMA who shall take further necessary action.

Sl No.	Department/Agency	Type of damage
1	Zonal Officers	House and property including loss of lives and injuries
2	SDO PWD Project Sub Division	Damaged public infrastructure
3	Agriculture/Horticulture Department	Agriculture and Horticulture crops

4	EF&CC Department	Forest fire
5	AH&Vety	Loss of livestock
5	Fisheries Department	Fishpond damage

8.4 Restoration:

It is necessary to restore damages like roads, bridges, water and electric supply and communication line and also public infrastructure and buildings. These damages could be a hindrance for recue operation. Therefore, immediate restoration is necessary to facilitate rescue operation and also for the public.

Damage to road/bridges and blockade of road is likely to occur in case of rescue operation could be affected. Therefore, immediate restoration and clearance of such debries is necessary. PWD shall respond to it immediately, if requisition or hire of public/private machinery or earthmovers is required, they will report to Chairman, DDMA who shall take necessary action. In case of damage to essential public building, they shall construct an alternate building or structure and in case of damage of hospital buiding or the hospital building is not in a position to handle the victims due to mass casualty, they shall establish make-shift hospital at an appropriate place.

Drinking water is one of the basic needs of human beings. In major disaster, drinking water supply pipe may get damaged and there could be scarcity of pure drinking water. Hence, PHE Department shall immediately restore damaged water line. In due cource, they will take measures to supply using trucks and tanky to each locality where water supply with pipe is disrupted.

Electric power supply may also get damaged in major disaster as the electrical pole and wires may get damaged. This could cause serious disruption especially where search and rescue operation is ongoing. It could also be a problem for hospital and communication services. Therefore, the P&E Department shall restore electric supply at least to essential services.

Communiction line and tower is likely to damage in major disaster causing break down of communication service. Comunication service is one of the vital services during disaster. Total disruption of communication line could be disastrous as there could be communication gap. Report of incidence should reach EOC immediately to send rescue team and provide assistance and relief materials which could be fiasco in case of failure of communication line. Hence, BSNL and other service providers shall restore their communication line at the earliest possible.

8.5 Reconstruction/repair:

Reconstruction and repair of lifeline buildings and social infrastructure including roads and bridges will be undertaken by Public Works Department. Immediately upon the occurrence of disaster, they will assess the extent of damage and prepare Detail Project Report for reconstruction or repair of the damaged infrastructure and submit it to DDMA who will take further necessary action. Likewise, damage to water supply, electricity, sanitation and irrigation etc. shall be taken up by the nodal departments. The nodal departments shall execute reconstruction/repair activities diligently and restore the minimum basic infrastructure in the area which is vital for sustaining human life in the area. These departments are PWD, P&E Department, PHED, Minor Irrigation Department. UD&PA. In case of loss to private property, owner driven approach recovery shall be adopted.

8.6 Recovery Programme:

Recovery is a long-term process and entails minute details of activities. The period may vary depending on the extend of damages. Adequate amount of funds and resources will be required for which the State government may not be in a position to provide all the required funds. Therefore, seeking of aid from external agencies and other sources might be required. For which detail assessment of loss and damages and preparation of project and memorandum shall be made.

Reserve Bank of India formulated a guideline to address short term and long term recovery by providing loans. These guidelines cover four aspects viz Institutional Framework, Restructuring of Existing Loans, Providing Fresh Loans and Other Ancillary Relief Measures. Important points are highlighted herein below for easy reference.

1. Institutional Framework

Establishing Policy/Procedures for dealing with Natural Calamities

1.1 Since the area and time of occurrence and intensity of natural calamities cannot be anticipated, it is imperative that the banks have a blueprint of action in such eventualities duly approved by the Board of Directors so that the required relief and assistance is provided with utmost speed and without any loss of time.

Discretionary Powers to Divisional / Zonal Manager of banks

1.2 Divisional/ Zonal Managers of commercial banks should be vested with certain discretionary powers so that they do not have to seek fresh approvals from their Central Offices to the line of action agreed to by the District/ State Level Bankers' Committees.

Meetings of State Level Bankers' Committee/District Consultative Committee

1.3 In the event of the calamity covering entire State/ larger part of a State, the convener of the State Level Bankers' Committee will convene a meeting immediately after the occurrence of natural calamity to evolve a coordinated action plan for implementation of the relief programme in collaboration with the State Government authorities. However, in case the calamity has affected only a small part of the State/few districts, the conveners of the District Consultative Committees of the affected districts should convene a meeting immediately. In these special SLBC/DCC meetings, the position in the affected areas should be assessed to ensure speedy formulation and implementation of suitable relief measures by banks.

1.4 Wherever the calamity is very severe, the relief measures initiated and undertaken may be reviewed periodically in the weekly/fortnightly meetings of specially constituted Task Forces or sub Committees of the SLBC till such time as conditions are normalized.

2. Restructuring/Rescheduling of Existing Loans

2.1 As the repaying capacity of the people affected by natural calamities gets severely impaired due to the damage to the economic pursuits and loss of economic assets, relief in repayment of loans becomes necessary in areas affected by natural calamity and hence, restructuring of the existing loans will be required.

Agriculture Loans

Short-term Production Credit (Crop Loans)

2.2 All short-term loans, except those which are overdue at the time of occurrence of natural calamity, should be eligible for restructuring. The principal amount of the short-term loan as well as interest due for repayment in the year of occurrence of natural calamity may be converted into term loan.

2.3 The repayment period of restructured loans may vary depending on the severity of calamity and its recurrence, the extent of loss of economic assets and distress caused. Generally, the restructured period for repayment may be 3 to 5 years. However, where the damage arising out of the calamity is very severe, banks may, at their discretion, extend the period of repayment ranging up to 7 years and in extreme cases of hardship, the repayment period may be prolonged up to a maximum period of 10 years in consultation with the Task Force/ SLBC.

2.4 In all cases of restructuring, moratorium period of at least one year should be considered. Further, the banks should not insist for additional collateral security for such restructured loans.

Agriculture Loans - Long term (Investment) Credit

2.5 The existing term loan installments will have to be rescheduled keeping in view the repaying capacity of the borrowers and the nature of natural calamity viz.,

a) Natural Calamities where only crop for that year is damaged and productive assets are not damaged.

b) Natural Calamities where the productive assets are partially or totally damaged and borrowers are in need of a new loan.

2.6 In regard to natural calamity under category (a) above, the banks may reschdeule the payment of installment during the year of natural calamity and extend the loan period by one year. Under this arrangement the installments defaulted wilfully in earlier years will not be eligible for rescheduling. The banks may also have to postpone payment of interest by borrowers.

2.7 In regard to category (b) i.e. where the borrower's assets are partially/totally damaged, the rescheduling by way of extension of loan period may be determined on the basis of overall repaying capacity of the borrower vis-a-vis his total liability (old term loan, restructured crop loan, if any and the fresh crop/term loan being given) less the subsidies received from the Government agencies, compensation available under the insurance schemes, etc. While the total repayment period for the restructured/fresh term loan will differ on case-to-case basis, generally it should not exceed a period of 10 years.

Other Loans

2.8 A view needs to be taken by SLBC/DCC depending on the severity of the calamity as to whether a general reschedulement of all other loans (i.e. besides the agriculture loans as indicated above) such as loans granted for allied activities and loans given to rural artisans, traders, micro/small industrial units or in case of extreme situations, medium enterprises is required. If such a decision is taken, while recovery of all the loans be postponed by the specified period, banks will have to assess the requirement of the individual borrowers in each such case and depending on the nature of his account, repayment capacity and the need for the fresh loans, appropriate decisions may be taken by the individual banks.

2.9 The primary consideration before the banks in extending credit to any unit for its rehabilitation should be the viability of the venture after the rehabilitation programme is implemented.

3. Sanctioning of Fresh Loans

3.1 Once the decisions on the rescheduling of loans is taken by SLBC/DCC, pending such conversion of short-term loans, banks may grant fresh crop loans to the affected farmers which will be based on the scale of finance for the particular crop and the cultivation area, as per the extant guidelines.

3.2 The bank assistance in relation to agriculture and allied activities (poultry, fishery, animal husbandry, etc.) would also be needed for long term loans for a variety of purposes such as repair of existing economic assets or acquisition of new assets. Similarly, rural artisans, self-employed persons, micro and small industrial units, etc. in the areas affected by natural calamities may require the credit to sustain their livelihood. Banks may, of their own, assess and decide on the quantum of fresh loans to be granted to the affected borrowers taking into consideration, amongst others, their credit requirements and the due procedure followed for sanctioning of loans.

3.3 Banks may also grant consumption loans up to Rs. 10,000/- to existing borrowers without any collateral. The limit may, however, be enhanced beyond Rs. 10,000/- at the discretion of the bank.

Terms and Conditions

Guarantee, Security and Margin

3.4 Credit should not be denied for want of personal guarantees. Where the bank's existing security has been eroded because of damage or destruction by floods, assistance will not be denied merely for want of additional fresh security. The fresh loan may be granted even if the value of security (existing as well as the asset to be acquired from the new loan) is less than the loan amount. For fresh loans, a sympathetic view will have to be taken.

3.5 Where the crop loan (which has been converted into term loan) was earlier given against personal security/ hypothecation of crop and the borrower is not able to offer charge/mortgage of land as security for the converted loan, he should not be denied conversion facility merely on the ground of his inability to furnish land as security. If the borrower has already taken a term loan against mortgage/charge on land, the bank should be content with a second charge for the converted term loan. Banks should not insist on third party guarantees for providing conversion facilities.

3.6 Where land is taken as security, in the absence of original title records, a certificate issued by the Revenue Department officials may be accepted for financing farmers who have lost proof of their titles i.e.

in the form of deeds, as also the registration certificates issued to registered share-croppers.

3.7 Margin requirements may be waived or the grants/ subsidy given by the concerned State Government may be considered as margin.

Rate of Interest

3.8 The rates of interest will be in accordance with the directives of the Reserve Bank. Within the areas of their discretion, however, banks are expected to take a sympathetic view of the difficulties of the borrowers and extend a concessional treatment to calamity-affected people. In respect of current dues in default, no penal interest will be charged. The banks should also suitably defer the compounding of interest charges. Banks may not levy any penal interest and consider waiving penal interest, if any, already charged in regard to the loans converted/rescheduled. Depending on the nature and severity of natural calamity, the SLBC/ DCC shall take a view on the interest rate concession that could be extended to borrowers so that there is uniformity in approach among banks in providing relief.

4. Other Ancillary Relief Measures

Besides rescheduling of existing loans and providing fresh loans to the affected persons, banks may also follow the following guidelines

Know Your Customer Norms - Relaxations

4.1 It needs to be recognized that many persons displaced or adversely affected by a major calamity may not have access to their normal identification and personal records. In such cases, where the affected persons are not able to provide standard identification documents, as permitted under the regulation and as a consequence, it is not possible for bank branches to follow the KYC guidelines as prescribed, they may resort to non-documentary verification methods. They can open a small account based on the photograph and signature or thumb impression in front of the bank official. The above instructions will be applicable to cases where the balance in the account does not exceed Rs. 50,000/- or the amount of relief granted (if higher) and the total credit in the account does not exceed Rs. 1,00,000/- or the amount of relief granted, (if higher) in a year.

Providing access to Bank Accounts

4.2 In areas where the bank branches are affected by natural calamity and are unable to function normally, banks may operate from temporary premises, under advice to RBI. For continuing the temporary premises beyond 30 days, specific approval may be obtained from the concerned regional office(RO) of RBI. Banks may

also ensure rendering of banking services to the affected areas by setting up satellite offices, extension counters or mobile banking facilities under intimation to RBI.

4.3 To satisfy customer's immediate cash requirements, restoration of the functioning of ATMs at the earliest or making alternate arrangements for providing such facilities may be given due importance. Banks may consider putting in place arrangements for allowing their customers to access other ATM networks, Mobile ATMs, etc.

4.4 Other measures that banks may take, at their discretion, to alleviate the condition of affected persons could be waiving ATM fees, increasing ATM withdrawal limits; waiving overdraft fees; waiving early withdrawal penalties on time deposits; waiving late fee for credit card/other loan installment payments and giving option to credit card holders to convert their outstanding balance to EMIs repayable in 1 or 2 years. Besides, all charges debited to the farm loan account other than the normal interest may be waived considering the hardship caused to farmers.

8.7 Insurance:

Insurance is a risk transfer. The assistance under SDRF is so nominal to cover the losses, Certain losses can be recovered through insurance policies. To avoid endless misery due to unforeseen disasters, we all need either of insurance policies. United Nations Department of Economics and Social Affairs (UN/DESA) issued Working Paper No.85 in October 2009 titled "Insurance against losses from Natural Disasters in Developing Countries" which emphasizes the role of insurance in post disaster management. There are different types in insurance such as life insurance, general insurance which include home/property insurance, vehicle Insurance, health insurance, assets insurance, business insurance, livestock insurance, crop insurance.

Life Insurance: A life insurance policy is an agreement between an insurer and a policyholder to pay a death benefit if the insured person passes away during the term of the policy. Life insurance aims to protect your family and dependents from financial hardship in the event of your death. It can also be used to help with funeral costs, estate planning, and providing inheritance.

Many life insurance policies include term life, whole life, variable life, and universal life. Each offers different advantages and disadvantages depending on your unique situation, so it is essential to understand the differences between them before purchasing a policy. It's also important to consider the various riders available with

your life insurance policy, such as accelerated death benefit or critical illness coverage. These can provide additional protection and financial security in case of a covered illness or condition.

Home/Property Insurance: We always cherished to make our dream house and other properties. Saved every penny, worked hard, and planned harder - all towards a dream of a perfect abode to gift us and our family. To secure our dream, we need to secure our home and its content with insurance against disaster. For home and property insurance, the company will evaluate the value of the house/property and carry out a risk assessment. Depending on the risk it carries and value of the house/property, the premium will be calculated and each policy covers one year each. Within the insured period, the risk of loss in respect of your home/property would be transferred to the insurance company and we can received back certain amount in lieu of damage we suffer.

Insurance company available in Kolasib district are:-

Life Insurance Company

- India Post
- Life Insurance Corporation Limited (LIC)
- SBI Life Insurance Co Ltd

General Insurance Company

- The New India Assurance Company
- National Insurance Co Ltd.
- SBI General Insurance
- Bajaj Alliance Insurance Co. Ltd.

CHAPTER IX
FINANCIAL RESOURCES FOR IMPLEMENTATION OF DDMP

9.1 State

9.1.1 State Budget:

The State Assembly annually pass a budget for Department of Disaster Management and Rehabilitation for salary and maintenance of office works and functions.

9.1.2 State Mitigation Fund:

The 15th Finance Commission recommended constitution of the State Disaster Risk Management Fund(SDRMF) for the 5 year awarded period of 2021-2026. The SDRMF consists of 2 components viz 1) The State Disaster Response Fund(SDRF) and 2)The State Disaster Mitigation Fund(SDMF) which 20% of the total allocation of SDRMF.

The State Disaster Mitigation Fund is exclusively for mitigation projects and shall be used for loal level and community-based interventions, which reduce risk and promote environmental-friendly settlements and livelihood practices. Large scale mitigation measures shall be persued through the regular development schemes.

a) **Structural Measures**: Any physical construction to reduce or avoid possible impacts of hazards f the application of engineering techniques or technology in an attempt to strengthen buildings to ensure disaster.

b) Non-Structural Measures: Use of knowledge, practice, policies, law/regulations, public awareness, training and education etc. E.g Building codes and laws, location specific planning, forest management/restoration of mangroves, awareness campaign etc.

9.1.2.1 Broad Framework for utilization of SDMF

1. **At least 10%** for Non-structural measures(Clause 10(i) of Guideines on SDMF issued by Ministry of Home Affairs.
2. **Up to 5%** for innovation, technology, research, community leadership, studies and learning etc. (Clause 10(iii) of Guideines on SDMF
3. **45%** for the State Level Shelf of the Project. The SDMA may may maintain a shelf of project from different districts of the State which my be taken up as State Level Project
4. **30%** for the Districl Level Projects to be identified by DDMA. The DDMA may may identify Mitigation projects in their respective Districts with project cost upto 10 lakh.

5. **10%** for emergency project to be identified by Administrative Department on emergency nature during the course of the year.

9.1.3 State Response Fund:

The State Disaster Response Fund (SDRF) is a fund constituted under section 48(1) (a) of the Disaster Management Act, 2005. As per the State Disaster Risk Management Fund, the SDRF consist of 80% of the total fund allocation of SDRMF which is further distributed as follows: 1)Response and Relief-40%; 2) Recovery and Reconstruction- 30% and 3) Prepardness and Capacity Building -10%.

9.1.3.1 Allocation of Funds for the State of Mizoram under SDRMF:

Allocation of funds for SDRMF for SDRF during the award period of the 15th Finance Commision covering 2021-26 for the state of Mizoram is as shown in the following table.

Total(Central and State share) Rs in Crore						
Year	2021-22	2022-23	2023-24	2024-25	2025-26	Total
SDRF (80%)	41.22	43.2	46.4	48	50.4	229.6

The SDRF is to be utilised for response and relief, recovery and reconstruction due to the notified disaster as notified by Ministry of Home Affairs such as cyclone, drought, earthquake, fire, flood, tsunami, hailstorm, landslide, avalanche, cloud burst, pest attack and frost & cold wave.

A State Government can utlise up to 10% of the funds under relief and reponse of SDRF for providing relief to the victims of natural disasters that they consider to be 'disasters' within the local context in the State and which are not included in the notified list of disasters of the Ministry of Home Affairs subject to the condition that the State Government has listed the State specific natural disasters and notified clear and transparent norms and guidelines for such disasters with the approval of the State Authority i.e the State Executive Authority (SEC).

9.1.3.2 Contribution to the Fund

Of the total size of SDRMF, Central Government will contribute 75% for general category States and 90% for special category States of the total yearly allocation in the form of a non-plan grant. The balance 25% in case of general category States and 10% in case of special category States will be contributed by the State Government concerned. Mizoram is included in special category; hence the sharing pattern on SDRMF between central and state is 90:10.

9.2 District:

9.2.1 District Disaster Mitigation Fund:

There have been no separate funds for DDMF. However, 30% of 20% the total allocation of SDRMF fund has been allotted to each District taking into consideration of population and area of the District which is for taking up of the mitigation projects in the District. The amount allocated to Kolasib District is as stated below.

Name of District	**2021-22**	**2022-23**
Kolasib	Rs. 21,84,000.00	22,68,000.00

9.2.2 District Disaster Reponse Fund:

Out of the fund allocation from the SDRMF for the State government, funds have been allotted to each district for SDRF depending on the size and requirement of the district. However, there are no specific funds as District Disaster Response Fund.

Apart from the above, funds have been received under Capacity Building Fund towards implementation of DDMP with specific purpose such as conducting awareness/training, conducting mock drill, strengthening of EOC/purchase of equipment etc.

9.3 Disaster Risk Insurance: Please see chapter 8.7

9.4 Flexi fund:

As per the guideline formulated by Ministry of Home Affairs (Disaster Management Division) issued on 6th March, 2014, 10% flexi-fund within the Centrally Sponsored Scheme(CSS) to be utilized inter alia for mitigation/restoration activities in the event of natural calamities in the sector covered by the scheme which is to be applicable from the financial year 2014-2015. These guidelines can be useful in addressing the concern of disaster mitigation as well as in post disaster restoration.

CHAPTER X
PROCEDURE AND METHODOLOGY FOR MONITORING, EVALUATION, UPDATION AND MAINTENANCE OF DDMP

10.1 Authority for maintenance and reviewing the DDMP

DDMA shall maintain and review the effectiveness of DDMP periodically. All the statistical data and important contact numbers pertaining to the stakeholders and persons involved in the execution of DDMP shall be updated. The resource inventory and sources of logistics and equipment shall also be reviewed and updated.

10.2 Proper monitoring and evaluation of the DDMP:

Effectual DDMP requires proper monitoring and evaluation which can be achieved by conducting table top exercise and mock drill. To ascertain its efficiency or gap, it can be done by practical test.

10.3 Post-disaster evaluation mechanism for DDMP:

The real test of DDMP begins when the happening of calamity. The draw back and its gap would eventually arise during and post disaster. Those gaps would be evaluated and reviewed then accordingly manifested to update DDMP.

10.4 Schedule for updation of DDMP:

The usual practice for updation of DDMP is yearly basis. As per Disaster Management Act, 2005, DDMP has to be updated annually. However, after the incidence of any calamity and if its inadequacy arises then it shall be updated to rectify the gaps.

10.5 Uploading of updated plans in website:

Following every updation, the updated plan shall be uploaded in the official website of the district which is being operated by NIC. DDMP is a public document, the hard copy cannot reach to all the persons, but its contents are immensely significant for the public to aware. Hence its accessibility is crucial that it should be made available for the public. The DIO will take measures to upload its content in the website.

10.6 Conducting of Mock drills:

Mock drill is one of the integral parts in disaster management. To identify the gaps and to keep abreast of the roles and responsibilities of person involved, mock drill is a must. The DDMA shall make plans from time to time to organise mock drill at various levels i.e District, Block, village, schools and colleges etc. Organising mock drill requires large amount of funds, hence if the DDMA thinks appropriate, may organise table top exercise only depending on fund availability.

10.7 Monitoring and gap evaluation

DDMA shall periodically monitor and evaluate the gaps in preparedness towards disaster management in line with DDMP. The efficiency of DDMP is the test of time hence, as the time changes, the DDMP also needs reevaluation to identify the gaps. All the persons involved requires to have proper training and knowledge to have a skill to accomplish their task and they have to be well acquainted with each version of the updated plans. The frequent transfer and posting of the responsible officers is one of the drawback of DDMP. They need to re-inform of their responsibilities; hence frequent monitoring is much necessary.

CHAPTER XI
COORDINATION MECHANISM FOR IMPLEMENTATION OF DDMP

11.1 Intra and inter-departmental coordination with horizontal linkage

Disaster management involves tremendous obligation which a single person or department would not be able to cope with it meaning that intra and inter departmental coordination is a must. Explicit demarcation of roles and responsibilities among various department within and without is crucial. Lack of preparation and proper planning ended to ineffectual utilization of resources both human and materials. The entire book of this plan assigned horizontal linkage between various departments ascribing their duties and function before, during and post disaster. Coordination of the whole group of teams from various department/agency shall be manned by DDMA.

11.2 Coordination mechanism with NGO's etc:

In times of disaster, communities are the first responder. Not only that, they are the strong spine in different corner when it comes to disaster management. The involvement of NGO's especially YMA, MUP, MHIP etc. in times of crisis among Mizo community cannot be done away. A good zeal of involvement and the spirit of volunteerism can be a good strike force. Lack of training and know-how in search and rescue, evacuation and medical treatment is a hindrance for proper utilization. At the same time, the over numbering of participation is a usual phemomenon, which could retard the response process at the site. Therefore, proper deployment and assignment of task is required. In Kolasib district, a good chain of coordination with NGO's is built up, their names and contact numbers are recorded which is highlighted in annexure. They are readily available to cooperate with district administration/DDMA in any exigencies of emergency.

11.3 Coordination system with state department and training institute:

Capacity building is one of the criteria for a proficient disaster management. At district level, there exist no training institute in the field of disaster management. The directorate of Disaster Management & Rehabilitation is the nodal department at the state level to have conducting training in this area in collaboration either ATI or NDRF. Any training required would be referred and send for attaining required capacity building as per their calendar.

11.4 Coordination with local self government:

The Village Council's, the local self government are the main agent of district administration in every field including disaster management. Without their participation, disaster management would be grueling. In the past, they have

exhibited a good correlation and coordination in standardizing the onerous response to disaster. Literally, they work in favour of district administration at their respective jurisdiction. Village Disaster Management Committee is being formed in each village council areas spearheaded by Village Council's, the list of which is maintained at EOC. Attempt has been made to proper functioning of these VDMC's. In times of disaster, they would be the first line of coordination to achieve proper response mechanism.

11.5 Linkage with DDMP's of neighboring district:

Kolasib District is located in inter-state border bordering 3 Districts of Assam such as Cachar, Hailakandi and Karimganj and two District of Mizoram such as Aizawl and Mamit. Disaster over pass political border, hence a vibrant linkage with DDMP's of the neighboring district is vital to enhance coordination. Proximity of help is the objective of linkage with neighboring district as they stand as the nearest agency to seek help. To conform linkage to other adjacent district, their contact details are updated which would serve as a mean for a chain of coordination. If any help in terms of manpower or material is required, assistance would be sought from them. Conversely, if they need our support, the same would be rendered in the best possible efforts we are capable of. The Contact details of each Deputy Commissioner of neighbouring districts are highlighted in Anexure 6.

11.6 Linkage with SDMP:

Kolasib District is one of the 11 districts of Mizoram. Hence, any incidence in this is the incidence in Mizoram. Therefore, likange has been made in the DDMA and SDMP. Various roles and responsibilities are given to DDMA's for building disaster resilience, Strengthening disaster risk governance, preparedness and response in the SDMP. This plan is prepared in line to these various roles and responsibilities attached to DDMA. The hazard zonation and analysis are included and also all the critical infrastructure and resources such as helipads, playgrounds etc are mapped in the State Disaster Management Plan. The hospitals and SDRF station are also mapped. In case of need arise to seek help from SDMA, the SEOC control room contact no is kept at DEOC which is also highlighted in this plan.

CHAPTER XII
STANDARD OPERATING PROCEDURES (SOPs) AND CHECK LIST

12.1 Definition of disaster situations:

The term Disaster owes its origin to the French word 'Desastre" which is a combination of two words 'des' meaning bad or evil and 'astre' meaning star. The combined expression is Bad or Evil Star'. In earlier days a disaster was considered to be the loss due to some unfavourable star. A disaster is a sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed the community's or society's ability to cope using its own resources. The United Nations defines disaster as "…the occurrence of a sudden or major misfortune which disrupts the basic fabric and normal functioning of a society (or community).

Section 2(d) of Disaster Management Act defines disaster as a catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or man made causes, or by accident or negligence which results in substantial loss of life or human suffering or damage to, and destruction of, property, or damage to, or degradation of, environment, and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area. By complying strictly with the definition, catastrophe or calamity is not a disaster as long as the community is able to handle the consequences.

12.2 Action on receipt of warning and warning dissemination:

As soon as warning is received by EOC from SEOC or IMD or any other reliable sources, such warning shall be disseminated trough the preset mode of communication system to the public and as well as to the concern line department to take immediate action. The following matrix which shows the responsible department and line department/agency in various type of disaster.

Sl No	Type of Disaster	Responsible department/Agency	Line Department/ agency
1	Forest fire	EF&CC	F&ES, LAD, RD, VDMC
2	House fire	F&ES	LAD, VDMC
3	Biological disaster & Epidemics	H&FW/ AH&Vety	I&PR, PHE, RD, VDMC
4	Drought/ Cyclone	DDMA	Agriculture, Horticulture, PHE, Fisheries, RD, VDMC
5	Flood	DDMA	Police, I&WR, Agriculture, Horticulture, Fisheries Dept., VDMC

6	Landslide	DDMA	Police, I&WR, PWD, P&E, PHE, VDMC

12.3 Process to access financial resources:

In order to augment the financial position, it is necessary to get funds from the State government. The normal procedure for requesting allocation of funds shall be made which shall be taken up by DC as a chairperson of DDMA. Fund may be requested in a lumsump basis or need basis for which the requirement sheet shall be made.

In case, an addition financial resources is needed, an appeal shall be made to the public, Non-governmental bodies and Churches. The bank details will be publicise in which such person/bodies may transfer the fund. Donation box shall also be place in numerous places outside the effected areas for dropping of cash by the public. Foreign aid may also be requested it is required through the State government who shall take up the matter by routing through the permission of Ministry of External Affairs.

In case of contribution from NRIs, PIO and foreign non governmental bodies such as foundations etc, such donations may be accepted through Prime Minister's Relief Fund and Chief Minister's Relief Fund .All the donation from foreign non governmental entities must in in compliance with the extant regulations including the Foreign Contribution (Regulation) Act, 2010.

12.4 Roles and responsibilities of the department/stakeholders:

SDRF

Standard Operating Procedures (SOPs) for SDRF:-

1. The SDRF will be under the sole and direct control, superintendence and command of Commandant of the Bn. Concerned.
2. SDRF will be deployed or engaged for operation only under the order of Commandant concerned with the approval of DIGP under which the concerned BN(s) are administratively functioning.
3. When there is a need for SDRF, formal requisition shall be sent to the Commandant concerned by the DDMA or SDMA as the case may be as laid down under Section 65 of the Act. Verbal communication or requisition may be accepted on extreme emergency cases, which should be however be followed by a formal letter afterwards.
4. SDRF should not be called or sent for any works or tasks other than the works related directly to disaster as defined in Section 2(d) of the Disaster Management Act 2005 (which means, the disaster shall have a result in substantial loss of life or human suffering, or damage to property or

environment, and is of such magnitude as to be beyond the coping capacity of the community of the affected area).

5. The period of requisition of SDRF shall not extend beyond the period for which the SDRF is required as laid under Section 65(2) of the Act. Withdrawal of the force shall be decided by the concerned Commandant with approval of DIGP concerned in consultation with the DDMA of SDMA as the case may be.
6. SDRF should be engaged only when local volunteers are unable to undertake rescue works.
7. SDRF should not normally be engaged for dismantling building, installation etc. Unless there is immediate danger to life and property. They should not be engaged after the incident of disaster in over where the local people and volunteers can take up the dismantling works and when danger to life is over.

POLICE

***Response Activation*:**

1. The Nodal officer from the Police will activate the Quick Response teams.
2. The Quick Response Teams will be deployed at the Onsite EOCs
3. As per the information from IMTs, more officers may be sent at site.

***Actions to be taken*:**

l. If felt, cordoning of area to restrict movement of on lookers, vehicular and pedestrian traffic should be done.
2. Quick assessment of law and order situation in affected areas.
3. Prepare updates on the law and order situation every 2-3 hours and brief the Incident Commander.
4. Arrangement for controlling situations like rioting and looting.
5. QRTs will guard property and valuable in affected areas.
6. Control and monitor traffic movement.
7. QRTs will provide diversion of traffic on alternate routes as and when it is necessary.
8. The QRTs will also provide information about traffic flow along various corridors, especially heavy traffic or congested roads.
9. QRTs will communicate to police control rooms, details on the field activities including deployment and reinforcement of staff and resources and communicate nature of additional requirements.

FIRE AND EMERGENCY SERVICE

***Response Activation*:**

1. As soon as the Nodal Officer gets information about the disaster, he should reach the EOC.

2. The Quick Response Team will be deployed at the Onsite EOCs.
3. As per the information from IMT, more officers may be sent at site.

***Actions to be taken*:**

1. At the site, QRTs should contact the local volunteers and local people together information about vulnerable areas so that search and rescue operation can take place through a proper channel in heavily dense areas, large buildings, community center, hotels, hospitals, public buildings and any other area having large gathering.
2. Locate the damaged and collapsed structures and rescue the population buried and trapped in rubble.
3. The injured people should be taken out of damaged buildings etc. with utmost care.
4. Special care to women and children group should be given as they are expected to be more affected and helpless incase of any emergency situation.
5. Coordinate with the transportation ESF if a large number of medical professionals need to be sent to the affected sites and/or a large number of victims need to be transported to health facilities.

HOME GUARD AND CIVIL DEFENCE

***Response Activation*:**

1. As soon as the Nodal Officer gets information about the disaster, reach the EOC.
2. The Quick Response Teams will be deployed at the three sites.
3. As per the information received from IMT, more officers may be sent at site.

***Actions to be taken*:**

1. Support and coordinate with the Incident Command System for Law and Order, Search and Rescue and medical response and Trauma Counseling functions.
2. Locate the damaged and collapsed structures and rescue the population buried and trapped in rubble.
3. The injured people should be taken out of damaged buildings etc. with utmost care.
4. Special care to women and children groups should be given as they are expected to be more affected and helpless incase of any emergency situation.
5. In case of fire, the Civil Defence team members should do fire fighting.

6. First Aid should be provided along with the members of ESF on medical response.
7. Demonstrate Search and Rescue.

POWER AND ELECTRIC DEPTT.

Response Activation

1. Get the power ESF activated.
2. Nodal officer of primary agency will call nodal officers of supporting agencies.
3. As per the information from IMTs, the nodal officer of primary agency will activate the State Quick Response Teams at field level.
4. The Quick Response Teams will be deployed at the affected areas.

***Actions to be taken*:**

Team Leader will dispatch emergency repair teams equipped with tools, tents etc.

***Equipments to be brought*:**

All Equipments required to restore failure in network at stations should be available.

ACTION PLAN FOR BSNL

The BSNL is primarily responsible for restoration of communication facilities. The BSNL should ensure the smooth flow of information that can cater to the outreach in a time-sensitive manner at state level in response efforts.

***Response Activation*:**

- Soon after receiving information about disaster (from any source), Nodal Officer will contact State/District Emergency Operations Centre.
- The Nodal Officer from BSNL will activate the Quick Response Teams.
- The Quick Response Teams will be deployed at the Incident Sites.
- As per the information from Incident Management Team, more teams may be deployed.

***Actions to be taken*:**

- Communicate Situation to support agencies and request for detailed information on the status of equipment and infrastructure damaged in the affected areas.
- Launch assessment mission to understand better the nature of damage telecom services and network.

- Ensure possible arrangements for establishing reliable and appropriate network.
- Work out a plan of action for private telecom companies and convene a meeting to discuss and finalize the modalities.
- Compile and communicate Action Taken Reports to District and State Authorities.
- New numbers and details of contact persons to be communicated to Emergency Operations Centre(District/State).
- Mobile exchanges should be deployed as alternative mode of communication for authorities and general public.
- Establish telephone facilities for the public and information on this should be announced through media.
- Monitor the situation and arrange for emergency staff required to operate systems established.
- Inform district/state authorities on debris clearance of the work required.
- Initiate temporary rehabilitation work required.
- Launch rehabilitation work and arrange for repairs and relocation, if required.
- Other necessary equipments to restore communication network/set-up alternative emergency communication.

LOCAL ADMINISTRATION DEPTT.

***Actions to be taken*:**

- LAD will bring debris of heavy RCC structures (having beams/columns) and put dummies beneath the debris. This will facilitate demonstration of search and rescue operations. Soon after search and rescue team leave the site, LAD will mobilize, equipments for debris clearance.
- LAD will assume main role in Equipment support, debris and road clearance, on
- Receiving the intimation of the disaster from state EOC.
- LAD will coordinate with the supporting agency's officers to mobilize equipments.
- From the ware houses.
- The respective supporting agencies will contact their respective to move the equipments to central warehouse.
- The equipments like JCB, concrete cutters identified as per the need will be transport to the site.
- On receiving intimation of the intensity of the damages of structure, the nodal officer will make an assessment of the damages of roads and structures reported at the site and surrounding areas.
- The Supporting Agencies Nodal officers will call for personal immediately start debris clearance operation to enable movement to the affected site.

- All supporting agencies will inspect the road/rail network and structures within the disaster site and surrounding.
- LAD will also ensure proper corpse disposal and post mortem by coordinating with ESF on medical response.
- Assessment of damage (locations, no. of damaged, severity of damage)
- The QRTs will be deployed at the affected site.
- Enlisting the types of equipments as compiled from resource inventory required for conducting the debris clearance.
- The QRTs will report the situation and the progress in response activities to the respective EOCs.
- Undertake constructions of temporary roads to serve as access to temporary transit and relief camps, and medical facilities for disaster victims.
- Undertake repair of all paved and unpaved road surfaces including edge metalling, pathole patching and any failure of surface, foundations in the affected areas-by maintenance engineer's staff and keep monitoring their conditions.
- Ensure a critical number of medical professionals to reach the site including specialist from outside the state.
- If temporary living arrangement are being made from affected populace, the LAD must ensure high standards of sanitation in settlements in order to prevent the multiplicity of the disaster.
- It should also ensure the provision of medicine and other medical facilities required at the disaster site and the hospital health centers catering to the disaster victims.
- In case of orthopedic care required in disasters like earthquakes the immediate response would have to be complimented by a follow up treatment schedule for a majority of the patients in/near their place of residence.
- Compiled an itemized assessment of damage, from reports made by various receiving centers and sub-centers.

PUBLIC WORKS DEPTT.

***Actions to be taken*:**

- The above agencies will bring debris of heavy RCC structures (having beams/columns) and put dummies beneath the debris. This will facilitate demonstration of search and rescue operations. Soon after search and rescue team leave the site, will mobilize equipments for debris clearance.
- Assume role in equipment support, debris and road clearance, on receiving the intimation of the disaster from State EOC/Nodal Officer of LAD.
- Coordinate with the LAD officers to mobilize equipments from the warehouse.
- The equipments like JCB, Concrete Cutters identified as per the need will be transported to the site.

- On receiving intimation on the intensity of the damages of structures, the nodal officer will make an assessment on the damages of roads and structures reported at the site and surrounding areas.
- The Nodal Officer will call for personal to immediately start debris clearance operation to enable movement to the affected site.
- A review of the current situation should be taken up by the nodal agency to update the support agencies to delegate their respective personnel to take precautionary measure to plan de-routes for the transportation ESF's to operational.
- All supporting agencies will inspect the road network and structure within the disaster site and surrounding.
- Ensure proper corpse disposal and post mortem by coordinating with ESF on medical response.
- Assessment of damage (locations, no. of structures damaged, severity of damage).
- The QRTs will be deployed at the affected site.
- Enlisting the types of equipments as compiled from resource inventory required for conducting the debris clearance.
- The QRTs will report the situation and progress in response activities to the respective EOCs.
- Undertake constructions of temporary roads to serve as access to temporary transit and relief camps, and medical facilities for disaster victims.
- Undertake repair of all paved and unpaved road surfaces including edge metalling, pathole patching and any failure of surface, foundations in the affected areas by maintenance engineer's staff and keep monitoring their conditions.
- Ensure a critical number of professionals to reach the site including specialist from outside the state.
- If temporary living arrangements are being made from the affected populace, the agencies must ensures high standards of of sanitation in settlements in order to prevent the multiplicity of the disaster. Coordinate, direct, and integrate response to provide equipments Supports, relief camps establishment, and sanitation health assistances. Mobilizes different modes of transportation eg. Truck, etc to be put on stand-by.
- Assist timely re-establishment of the critical transportation links. Establish temporary electricity supplies for relief material go downs and relief camps.
- Compiled an itemized assessment of damage, from reports made by various receiving centers and sub-centers.

- Other disaster management related equipments. JCB, Concrete breakers, cranes, Grader, Jack Hammer, Tipper , Folkanes, Dumper, Aeromatic Hammer for debris/road clearance, supporting rescue operations.
- Vehicles (Truck), Earth Movers, Mobile medical vans.
- Other disaster management related equipments.

HEALTH SERVICES

***Response Activation*:**

- Nodal Officer will call nodal officers of supporting agencies.
- In coordination with the transportation ESF, it will ensure a critical number of professionals to reach the sites including specialists.
- If temporary living arrangements are being made from the affected populace, must ensure high standards of sanitation in settlements in order to prevent the multiplicity of the disaster.
- Also ensure the provision of medicine and other medical facilities required at the disaster site and the hospital health centres catering to disasters victims.
- In case of orthopedic care required, immediate response would have to be complimented by a follow up treatment schedule for a majority of the patients in/near their place of residence.
- Trained professional should be mobilized by psychosocial support.
- Ensure setting up of temporary information centers at hospital with the help of ESF on help lines and warning dissemination.
- Coordinate, direct, and integrate state level response to provide medical and sanitation health assistances.

***Actions to be taken*:**

- Readying all hospitals (including private hospitals) for managing large no. of casualties and severely injured population.
- Sufficient stock of required medicines, vaccines, drugs, plasters, syringes, etc.
- Provide systematic approach to patient care (Mass casualty management).
- Triage done to determine who needs to be taken to a medical facility on a priority basis and who can be treated on-site.

    1. First-aid provided as required
    2. Patients stabilized before transport
    3. Patients transported to nearest available medical facility having the required facilities.
    4. Trauma counseling provided to the victims and their relatives at the site and in the hospital.

5. In the hospital emergency department, triage carried out again to prioritize treatment, and appropriate care provided.
6. Maintain patient tracking system to keep to record of all patients treated.
7. Deploy mobile hospital as needed.

- Arrange for additional blood supply: organize blood donation camp for additional blood requirement.
- Provide for sending additional medical personnel equipped with food, bedding and tents.
- Send vehicles and any additional medical equipment.
- QRTs will report the situation and the progress on action taken by the team to the respective EOCs.
- QRTs quickly assess type of injuries, no. of people affected, and possible medical needs.
- QRTs will ensure timely response to the needs of the affected victims.
- Establish health facility and treatment centers at disaster sites.
- The district Civil Surgeon with district/state control room should coordinate the provision of medical services.
- Procedure should be clarified between,
  - ✓Peripheral hospitals
  - ✓Private hospitals
  - ✓Blood banks
  - ✓General hospitals and
  - ✓Health services established at transit camps, relief camps, and affected villages.

QRTs should maintain check posts and surveillance at all entry and exit points from the affected area, especially during the threat or existence of an epidemic.

PUBLIC HEALTH ENGENEERING

***Response Activation*:**

- Upon receipt of notification about disaster, PHE nodal officer will activate quick response teams.
- The quick response teams will be deployed at the sites.

***Actions to be taken*:**

- Quick assessment of water line damage and contamination.
- Supply of water tankers to disaster affected communities.
- Deploy response teams to repair and restore water supply lines that may be damaged after disaster.

- Quick assessment of water contamination levels and taking steps to restore clean drinking water.
- Provide information to IMT, district EOC and state EOC about extent of damage.

DEPARTMENT OF TRANSPORT

***Response Activation*:**

- Team Leader will activate ESF on receiving information of the disaster from State EOC
- Team Leader will inform Nodal Officers of support agencies about the event and ESF activation

***Actions to be taken*:**

- Team Leader communicates situation to support agencies and requests for detailed information on the status of transportation infrastructure in the affected area(s).

The head of each department who is the team leader of each ESF and the nodal officers of the supporting agencies are responsible to prepared for potential hazards that might impact the district severely. These departments/agencies have clearly identified roles and functions in accordance with the National Response plan (NRP). They have been grouped in as ESFs as per their nature and type of assistance they can provide. When the team leader of these ESFs are located in the EOC, they would function for the overall district response.

12.5 Information management and dissemination strategy:

Any information relating to warning/forecast shall be received from IMD through email which will be closely monitored. Such information shall be disseminated through Whatsapp, SMS alert or public address system at each local areas.

12.6 Media information strategy during emergency response: (Please refer 5.11)

12.7 Request for state government assistance: (Please refer 5.4)

12.8 Relief and rehabilitation norms:

12.8.1 Evacuation: On receipt of warning and there is an imminent possibility of occuring calamity, all the public in the vicinity will be evacuated to the safe zone**.** The safe zone will be identified time to time by the DDMA. The evacuation process will be undertaken by SDRF and police force in liaise with the concern VDMC.

Evacuation may also be required from the incident site. In such case, the injured persons and dead bodies shall be evacuated to the nearest hospital or the on-site medical facility after triaging. Priority in evacuation shall be done as per the triage.

12.8.2 Search and Rescue: Search and rescue entails some techniques and it requires skills and experience especially in collapse structure. The life of a victim rests on the efficiency of search and rescue workers. So, Search and rescue will be conducted by trained SDRF personnel, Aapda mitra volunteers and other volunteers may be called upon to assist the operation.

12.8.3 Cordoning the area: In recent pass it was realized the necessity of cordoning the incident site for the safety of the victim and person in operation and also to make available enough space for rescue workers. As soon as the incident takes place, the incident site is to be cordoned by the traffic Police. Some cordoning materials such as cone and cordoning tape are available in the DEOC. In case the cordoning material are not sufficient, ropes and other material will be used. Only the authorized person will enter inside the cordoned areas. The public including media person will not be permitted inside this area.

12.8.4 Traffic control: Traffic control is another bothering task but crucial because the movement of search and rescue team and other required resources and also evacuation of injured to hospital depends on traffic condition. In so many cases, a large crowd gather at the incident site merely to see the incidence. The tendency to be an on-looker needs to be eradicated when traffic management is concerned. Police or traffic police are responsible for traffic management, if they are not available YMA or volunteers may take the charge.

12.8.5 Disposal of dead body: Dead bodies will be taken to the nearest government hospital in which Post mortem examination shall be done. After PME, the dead bodies shall be handed over to their families/relatives. If their family/relative request exemption of post mortem examination and if the concerned Executive Magistrate/police officer is satisfied that there is a sufficient reason to prove that the dead of that person is due to disaster and no offence or crime is involved. Then post-mortem examination shall be exempted after duly execution of panchnama.

An unidentified and unclaimed bodies will be kept in the morgue house. Public notice will be issue in order to call upon the public to identify that person. If there are an unclaimed dead body after a lapse of certain period of time, A declaration shall be signed by the Executive Magistrate declaring that such unclaimed dead body cannot be identified after due efforts to identify them. Then they shall be buried in

consultation with Sub Headquarter YMA and nearest YMA branch to be buried in their graveyard in the presence of Executive Magistrate and Police officer. Marking shall be made in that grave where that person was buried.

12.9 Humanitarian relief and assistance:

12.9.1 Food: DCSO is responsible to procure and provide food to the public including rice, pulse and edible oil etc. Scarcity of food is likely to happen in case of major disaster specially among the poor people as the price of food items will increase considerably and starvation may follow. DCSO shall ensure that all the needy person receive food. He shall also manage food items received as donation from outside agency and other sources.

12.9.2 Drinking water: Supply of pure drinking water is likely to be affected during severe disaster as the water supply pipe, reservoir and pumping station and pipe line as well as power line and pole may got damage. PHE Department will arrange alternate mechanism for supply of driking water and arrange for immediate restoration of damaged water supply system.

12.9.3 Medicines: In major disaster, mass casualty is likely to happen which will increase the requirement of medicines and other medical equipment. CMO will ensure adequate supply of medicines and medical equipment at CHC and PHC. He will also be in liaise with drug supplier and dealer to ensure availability of medicines at drug store within the district. DMS will ensure availability of medicines and other medical kit at the District hospital and also for medical team at the incident site.

12.9.4 Psycho-social and trauma care: Psycho-Social and trauma care are the grey area in disaster management. The need of addressing traumatized person is as important as physical injury. Management of psycho-social shall be done by the clinical psychologist in th District Hospital. They shall establish Control Centre and a help line number shall be publicized which shall be manned by clinical psychologist at District hospital.

12.9.5 Clothing: Cloths may be lost due to severe calamity and many people will be left without cloths. Clothing is essential to cover our body and also to prevent from heat and cold weather. As a tradition of Mizo society, clothing and other utensil and blanket and matress shall be collected as donation from the public in coordination with YMA and other NGOs. In seveare cases, outside aid in the form of clothing may also be received. All of such clothing shall be distributed to the needy persons through the concerned VDMC. If additional clothing is required, procurement shall be made as per the availability of funds.

12.9.6 Shelter management: Due to disaster, many people may lose their houses. Provision of safe shelter to such person is required. Shelter or relief camp will be establishment as per the requirement. Shelter Management Team shall be constituted who shall provide all the requirements of the in-mates as per the minimun standard of relief. Numbers of schools and playground were identified for relief camp. The facilities available were also identified.(Please see Shelter Management Plan at annexure)

12.9.7 Helpline: The landline number of DEOC is 03837-221999. The emergency toll free number 1077 is activated which is accessible from all network within the district.

Matrix for Humanitarian Relief and Assistance

Sl No	Type of Relief	Nodal Agency	Line Department/Agency
1	Food	FCS&CA	DDMA, Transport, VDMC
2	Drinking water	PHE	H&FW, FC&CA, UD&PA, LAD, VDMC
3	Medicine and nutrition	H&FW	SWD
4	Psychsocial care and trauma	H&FW	SWD, NGO, VDMC
5	Clothing	DDMA	Industry, SWD, VDMC
6	Public Health & Sanitation	H&FW	PHE, AH&Vety, Transport, UD&PA, LAD, VDMC
7	Help lines	DDMA	I&PR, MPRO.
8	Shelter Management & Repair & Restoration of basic amenities	DDMA	UD&PA, LAD, P&E, PHE, H&FW, School Education, PWD, VDMC
9	Management of VIP visit	DDMA	

Annexure 1: District Information

1. LOCATION AND EXTENT

Kolasib District is located at the northern tip of Mizoram between 23°29'N and 23°54'N Latitudes and 92°31'E and 92°53' E Longitudes (Figure No. 1.1). The district is bounded on the north and northwest by Hailakandi District of Assam State, on the west by Mamit District, on the south and east by Aizawl District and on the northeast by Cachar district of Assam State. The District is drained by the river Tlawng, Tut, Tuirial, Serlui, Tuivai and Tuirini. The total geographical area of Kolasib District is 1472.12 sq.km, which accounts for 7.2% of the total geographical area of the state. The location of the district occupies an important site as it is the gateway of Mizoram from other parts of India using road and rail communication. NH-306 passes through Vairengte to Bilkhawthlir and NH-6 passes through Bairabi to Aizawl (via Bilkhawthlir). Transport network and settlement map of Kolasib District is shown in Figure No. 8 of Annexure 10. The only rail head in the state is located at Bairabi town. Serlui B Hydel Project with a capacity of 12 MW and Tuirial Hydel Project with a capacity of 60 MW is located 30 kms and 64 kms respectively from the district headquarter and the only centre for Military Counter Insurgency & Jungle Welfare School in the country is located at Vairengte. Kolasib District falls in the Survey of India Toposheet Nos. 83 D/11, 82 D/12, 83 D/15, 83 D/16, 84 A/9 and 84 A/13. Kolasib town is the administrative headquarters of the district.

2. DISTRICT AT A GLANCE

Area (Sq. Km)		1472.12
Population (as per census 2011)		83054
	Male	42456
	Female	40598
Population Density		60 per sq.km
Sex ratio		956
Literacy Rate		94.52%
No. of Household		15,709
No. of Villages		45
Bilkhawthlir RD Block		29 villages
Thingdawl RD Block		16 Villages
No of Schools/College		
Primary School (Including Private)		81
Middle School (Including Private)		77
High School (Including Deficit, Aided,		29

Private, Lumpsum)		
Higher Secondary School (Including Deficit, Aided and RMSA)	12	
College	01	
Administrative Divisions	Kawnpui Sub-Division	Kolasib Sub-Division
Average Rainfall	2,537 mm	
Road Length (PWD)	370.18 Kms	
Surface	245.14 Kms	
Un-surface	125.04 Kms	
No. of Police Station	4	
No. of Out Post	1	

3. HISTORICAL BACKGROUND

Mizoram, then known as Lushai Hills was annexed to the British India in 1891. Before that entire Mizoram including the present Kolasib was ruled by the hereditary chiefs, and then known as Lal. Each chief used to have one or more villages under his control and each chief was independent of each other. When the British annexed Lushai Hills, they placed the North Lushai Hills under the government of Assam while the southern Lushai Hills was placed under the government of Bengal. Each district was in the charge of a Superintendent. In 1898, the southern Lushai Hills was transferred to the Assam administration. After the Independence, the Deputy Commissioner replaced the Superintendent and the Lushai Hills continued to be one of the districts of Assam.

Being the seat of administration for more than three long decades Kolasib District was created by the Government of Mizoram following bifurcation of Aizawl District in 1998. The administrative headquarters of Kolasib District is situated to the north of Aizawl district. Kolasib was initially created as the centre of Tribal Development Block on day of the birth anniversary of the Father of the Nation in 1957 and was administered by Project Executive Officer. It was later upgraded to be administered by Area Administrative Officer. When Mizoram become a Union Territory in 1972, Kolasib was upgraded as the Headquarters of the Sub-Division manned by Sub-Divisional Officer (Civil) on 5th May, 1975.

4. CLIMATE

The climate of Mizoram as a whole is controlled by its location, physiographic conditions, pressure regime in the North West India and Bay of Bengal, warm

and moist maritime tropical air masses from the Bay of Bengal, local mountain and valley winds. In addition, the Chin Hills, Arakan Yoma Hill Tracts and Chittagong Hill Tracts also play an important role in shaping the climatic condition of the state. Kolasib District comes under the tropical monsoon climate zone of India**.** It experiences direct impact of monsoon.

The average annual rainfall is 2612.39 mm approximately. Except in low lying valley, the temperature fluctuation is low and the Climate remains moderate throughout the year. Winter extends from November to February with temperature ranging between 12-23^{0}C with valleys hotter and more humid, while the hill tops are cooler and more pleasant.

A study from the daily rainfall reveals that the heavy outpour generally starts from the second quarter of May and this heavy outpour usually subsides in the first quarter of October. Rainfall during May, June, July, August & September i.e. 5 months alone contributed 76% of the total annual rainfall. This is the season when the cyclone rains are often felt. The temperature remains high, but is kept down to a considerable extent by occasional rains.

5. TEMPERATURE

The salient thermo-characteristics of Kolasib District is that temperature do not fluctuate much throughout the year. The highest temperature observed during the past decade was 35°C in the day of 16^{tn} July, 1999. June and July are the warmest months with mean daily maximum at about 26°C and the mean daily minimum at about 23°C. The temperature remains high, but thereafter the onset of Monsoon (Fur) brings down the temperature and hence we do not feel the hotness as much as it has been.

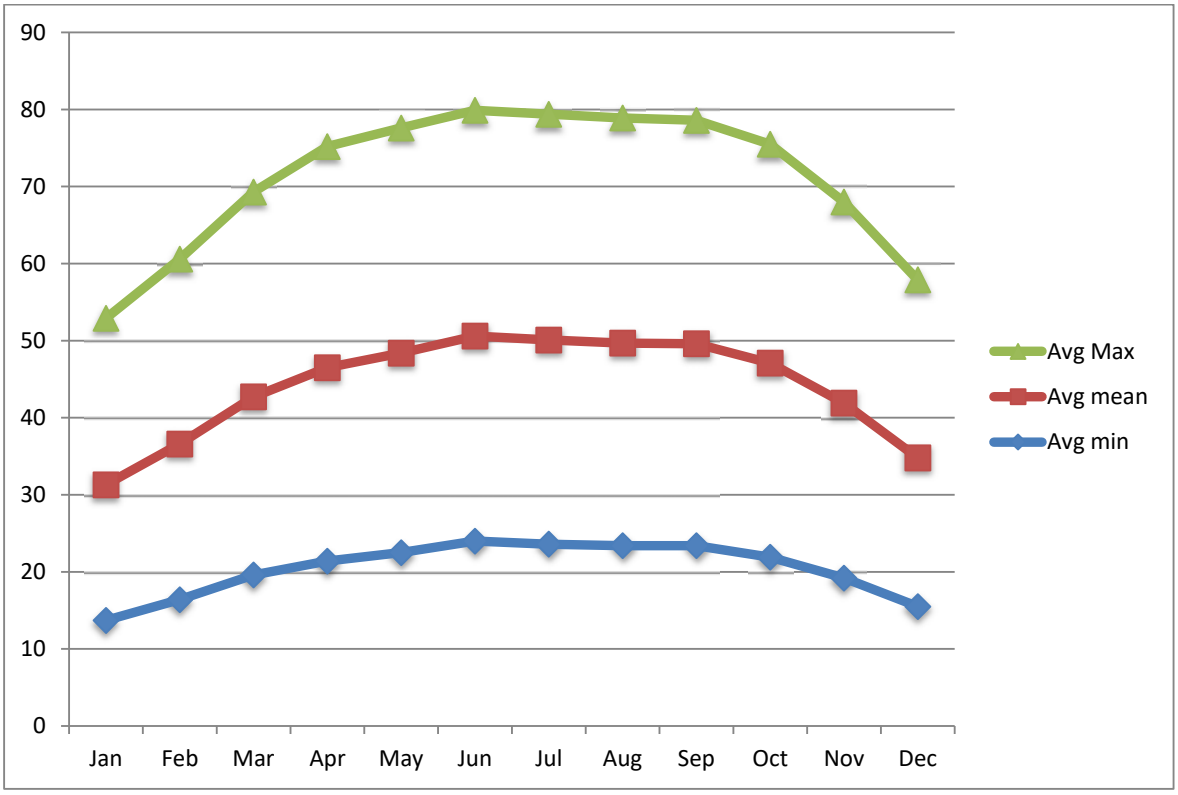
The temperature started to fall down sharply from the month of November and it is minimized in December and January. January is the coldest month with the mean daily maximum temperature at 21.6°C and the mean daily minimum of 12.9°C. However, the lowest minimum temperature was recorded in January, 2000 at 10.6°C. Monthly average, Maximum and Minimum temperature data for Kolasib District during 1986-2011 is shown in the following table.

Monthly Average, Maximum and Minimum Temperature Data for Kolasib District (1986 - 2011)

Year	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec	
	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min
198	2	1	2	1	2	1	2	1	3	2	3	2	3	2	3	2	2	2	2	2	2	1	2	1

6	1.4	3.1	4.4	4	7.9	8.2	9.1	9.8	0.9	0.9	1.9	3.5	0	0.5	1.2	2.5	8.9	1.7	8.8	0	7.3	7.1	4.9	4
1987	25.1	12.2	27.9	14.8	27.8	17.4	28.3	20.1	30.9	21.2	30.5	22.8	31.1	22.7	30.1	22.4	29.8	22.4	29.3	20.4	27.5	18.1	24.9	14
1988	25	13	26.8	14.9	28.2	17	30.5	20.4	29.2	21.2	31.2	23.3	28.9	22.5	29.7	22.2	29.2	22.8	28.7	20.5	27.6	18.6	25.3	15.9
1989	20.7	12.4	22.7	14.3	27.1	18.4	30.6	20	30.4	21.5	28.7	22.1	29.5	21.8	30.2	19.2	30.8	21.3	28.6	21.8	25.2	18.1	22.4	13.9
1990	22.3	13.8	22.9	15.6	24.3	16.6	26.1	17.4	29.9	20.2	29.2	20.9	30.6	21.8	30.1	21.1	30.3	23.3	30	20.8	31.1	20.4	23.7	14.4
1991	19.8	11.6	24.1	15.8	29.7	18.6	26.7	20.4	24.8	20.6	28.6	22.4	33.3	22.8	27.9	23.8	27.7	23	26.8	21.3	24.2	18.4	22.1	13.8
1992	20.7	12	21.3	12.1	26.5	19.7	29.3	22	27.5	21.5	26.6	23.3	31.1	23.8	31.9	23.9	30.8	24.2	25.7	23.3	23.9	21.1	19.4	16.4
1993	18.7	15	21.9	18.4	24.2	20.8	27.3	23.2	26.1	22.9	27.1	24.5	27.9	24.9	27.7	24.8	27.7	24.5	26.3	22.4	23.8	20	21.2	17.4
1994	19.7	15.5	20.6	15.8	24.1	19.9	26.9	22.2	28.8	24.8	28.4	25.4	28.5	25.3	28.5	25.5	29.3	25.2	29.7	22.5	28	20.9	27.2	16.6
1995	20.5	14.3	21.3	16.5	27.6	21.3	29.4	23.9	29.7	25.4	29.2	25.7	29.2	25.4	29.4	24.4	29.4	25.1	28	23.4	26	20.5	23	14
1996	21.1	13.9	23.7	16.8	26	20.3	29.1	23.8	29.7	22.3	30	25.2	28.5	24.8	28.1	24.8	29.2	25	27.6	22.7	25.9	20.7	23.4	16.2
1997	22.6	11.8	24.8	15.7	31.2	18.7	30	18.2	31.5	22.3	30.6	21.6	30	21.5	29.7	22.6	28.2	19.8	27.3	18.2	25.3	16.5	21.2	13.1
1998	20.2	11.3	23.7	16.2	24	17.5	27.3	21.1	29.7	21.6	29.6	23	28.2	21.6	28.1	21.4	29.3	21.7	29.6	19.7	27.3	16.8	22.9	12.1
1999	22.4	11.1	28.2	16	29.5	17.7	30.7	21.4	29.3	22.7	30.7	21.3	29.8	21.9	28.6	22.9	29	23	29.2	19.5	26.8	15.7	25.2	12.4
2000	22.5	10.6	24.2	11.1	28.9	15.2	29.3	17.7	29.1	18.3	30	23	27.8	25.6	27.5	23.9	28.3	25.2	28.5	25.6	25	20.4	20.7	24.9
2001	18.4	12.9	23.9	18.2	27.5	22.4	29.8	22.1	29.7	23.6	28	24.3	28.7	24.5	29.5	24.8	28.8	24.7	28.2	24.5	26.5	16.4	23.4	13.9
2002	22.4	15.9	25.2	17.9	32.2	17.7	31.2	17.9	32.9	20.5	31.5	23.8	30.3	23.1	30.8	16.6	31.5	19.3	31.2	20.8	33.8	19.3	24.7	12.1
2003	25.3	11.6	26.6	15.8	28.4	17.7	28.7	20.1	27.6	21.6	26.9	23.9	27.8	24.8	28	24.9	27	24.5	26.4	23.2	22.4	18.5	19.2	16.8
2004	19.9	14.8	24	18.4	23	18.8	27.8	22	30.9	24.6	28.9	24.1	27.8	24.3	28.8	23.1	26.4	22.7	27.1	22.7	24	19.3	22.1	18.2
2005	20	14.8	24	18.4	24.9	19.3	29.5	23.3	28.8	22.9	31.7	25.8	30.2	24.1	29.7	23.9	30.9	23.7	28.8	23.9	25.5	21.1	23.6	18.1
2006	21.7	15.9	25.7	21.1	23.1	22.5	29.6	24	29.6	23.8	28.6	23.6	30.4	23.3	30.2	25.1	29.5	23.6	29	23.4	25.7	20.1	23	17.2
2007	21.2	14.6	23.2	16.8	26.8	19.5	28.2	21.2	29.6	23.1	28.5	23.2	27.4	22.9	28.8	23.1	28	22.7	27.2	21.5	25.9	19.9	22.3	15.3
2008	27.4	14.5	22.3	15.2	26.9	21	31.3	24.3	31.4	25	30.2	25.5	30.1	25.7	30.3	25.5	30.9	25.1	28.8	22.3	27.3	19.1	24.8	17.4
2009	23.5	13.5	27	17.1	22.4	25	24.9	25.1	21.3	30.6	23.6	30.5	23.5	29.9	23.4	29.1	23.3	28.8	28	21.7	18.6	24.7	21.8	14.7
2010	14.	22.	16.	24.	21.	29.	24.	24.	31.	21.	31.	20.	31.	22	31.	23.	30.	23.	30.	22.	27.	19.	25.	15.

	7	7	4	1	4	9	9	7	3	3	2	6	7		4	3	7	1	6	9	8	1	8	9
2011	23.5	13.1	27.1	16.4	28	19.3	30.3	21	27.7	22	30.3	30.3	30.1	23	30.5	23.2	28.2	22.4	28.8	21.3	27.6	19	22.9	15.2
Average	21.6	13.7	24	16.4	26.6	19.6	28.7	21.4	29.2	22.5	29.3	24	29.3	23.6	29.2	23.4	29	23.4	28.4	21.9	26.1	19.2	23.1	15.5
Avg. Mean	17.6		20.2		23.1		25.1		25.9		26.6		26.5		26.3		26.2		25.2		22.7		19.3	
Avg. Max	21.6		24		26.6		28.7		29.2		29.3		29.3		29.2		29		28.4		26.1		23.1	
Avg. Min	13.7		16.4		19.6		21.4		22.5		24		23.6		23.4		23.4		21.9		19.2		15.5	



Monthly Average, Maximum and Minimum Temperature (in degree Celsius) Data for Kolasib District (1986 - 2011)

6. RAINFALL

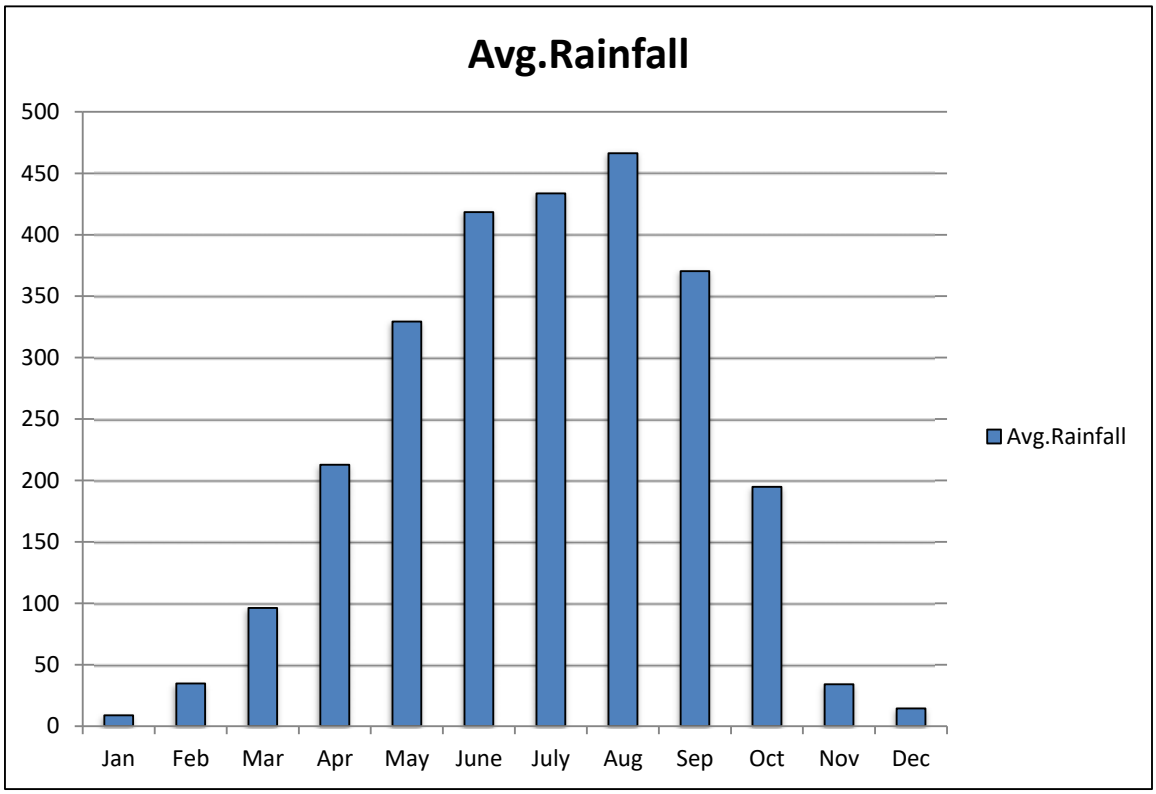
The entire state of Mizoram is under the direct influence of south west monsoon; hence Kolasib also receives an adequate amount of rainfall during the monsoon season. The study of the available rainfall data reveals that the heavy rainfall starts from the second part of May and ended in the first part of October. The average rainfall of Kolasib District is 2612.39 mm per annum and the highest rainfall received during a particular month was 852 mm record on August, 1995 and also on July, 1997. Precipitation is heavy during summer. This coincidence of the occurrence of south west monsoon and the summer makes

the climate favourable for inhabitants of the Kolasib District since the temperature is kept down to a considerable extent by usual rains. Normally, July and August are the wettest months while December and January are the driest months. Average Monthly rainfall (in mm) for Kolasib District during 1986-2020 is shown in the following table.

Average Monthly Rainfall (in mm) of Kolasib District (1986 – 2020)

Year	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1986	13	24	21	292	142	430	455	449	377	339	124	3	2669
1987	15	9	73	146	162	487	451	411	435	328	58	5	2580
1988	0	41	115	178	438	445	432	411	238	211	67	0	2576
1989	0	21	28	98	241	448	491	491	442	368	0	0	2628
1990	2	36	236	256	355	438	413	324	361	182	84	21	2708
1991	40	103	165	364	432	406	223	323	314	260	0	119	2749
1992	10	65	19	180	264	263	397	483	320	248	21	6	2276
1993	3	142	121	188	522	500	511	427	283	157	7	0	2861
1994	14	40	256	247	174	535	601	417	184	148	5	0	2621
1995	8	39	50	58	359	491	310	852	357	150	187	0	2861
1996	1	88	338	60	250	471	348	589	489	201	27	0	2862
1997	6	34	185	140	333	306	852	515	748	66	0	71	3256
1998	42	44	215	138	221	643	226	359	212	156	50	0	2306
1999	0	0	49	19	493	249	488	318	329	186	7	0	2138
2000	19	12	248	398	264	272	214	568	508	236	3	0	2742
2001	0	120	106	153	320	818	667	518	620	279	142	0	3743
2002	6	0	45	235	606	347	442	582	178	203	86	2	2732
2003	0	6	81	212	234	570	332	379	400	157	0	59	2430
2004	3	0	10	486	217	390	642	520	264	84	0	0	2616
2005	0	53.3	187.8	95.8	454.7	220.7	589	444.6	336.6	207.1	0	0	2589.6
2006	0	2.3	8.4	206.9	446.03	554.4	518.7	383.1	225.8	132.3	2.8	0	2480.73
2007	0	74	21.1	312.6	319.4	398.9	280.3	525.8	597.5	216.8	73.9	0	2820.3
2008	29.6	17.4	53.5	33.6	103.4	377.2	384	610	254	245	0	0	2107.7
2009	0	14	39.4	165.2	202.8	301.3	327.6	111.2	313.7	101.6	6.7	0	1583.5
2010	0	0.4	91.6	501.1	473.6	515	575.8	815.5	584.1	179.3	11	89	3836.4
2011	3	0	56.3	73.9	396.8	405.3	331.4	511.4	376.2	159.9	0	0	2314.2
2012	37.9	36.6	14.8	692	264.3	447.8	302.6	563.5	524.4	229	30.8	0	3143.7
2013	Nil	4.1	6.4	104.8	889.8	339.6	522.4	510.1	391.3	123.9	Nil	Nil	2892.4
2014	Nil	14.2	40.8	75.6	234.5	286.3	530.3	244.8	457.1	117.7	2.2	0	2003.5

2015	5.9	14.8	16.3	273.3	263.7	313.1	359.6	350.2	213.1	165.1	16.2	6.9	1998.2
2016	0.2	88.2	171.3	259.8	422.4	433.4	345.3	509.3	647.8	161.5	46.9	0	3086.1
2017	0	2.4	228.1	467.7	274.7	493.1	427.3	574.4	341.6	226.4	0	79.5	3115.2
2018	2.8	9.2	29.5	206.1	333.7	562.4	414.7	478.7	111.6	51.6	1.2	3.5	2205
2019	0	52.9	38.6	64.5	116.4	147.3	353.3	346.3	256.5	112.2	58.6	27	1573.6
2020	30.2	9	3	67.7	303.9	341.2	421.4	409.6	272.8	430.1	40.5	0	2329.4
Average	**8.84**	**34.77**	**96.23**	**212.82**	**329.35**	**418.46**	**433.68**	**466.41**	**370.37**	**194.81**	**34.08**	**14.47**	**2612.39**



Average Monthly Rainfall (in mm) of Kolasib District (1986 – 2020)

7. WIND

The monsoon wind is the most important that prevails in Mizoram. During summer, the sub-tropical high pressure belt and the thermal equator are displaced northward in response to the changing pattern of solar heating of the earth. From the ocean, particularly from the north Indian Ocean or Bay of Bengal, they move towards the land mass and blow over the Asian continent. This southwest monsoon reaches Mizoram during second half of May and prevails up to the first half of October. The monsoon is characterized by highly

variable weather with frequent spells of drought and heavy rains. Besides this, the winter monsoon also prevails which is a gentle drift of air in which the winds generally blow from the north east. This retreating monsoon causes sporadic rainfall especially in Mizoram and other north eastern states producing sometimes heavy cyclonic rains.

As evident from the earlier records, Mizoram state is vulnerable to the impacts of tropical cyclone which develop in North Indian Ocean (Bay of Bengal), and the cyclones of the Post Monsoon season (October to December) are more intense than those of Pre-Monsoon season (April & May). Cyclones are associated with strong winds, torrential rains and storms. Though the impact has not yet been devastating, it has often led to loss of properties and even lives. The impact of cyclone has often led to damages to houses, power line cut-off, blockage of road, damages to crops and plantations, loss of live stocks, etc. Generally, these winds come from the north western part of the state as the winds originate from the Bay of Bengal.

8. SEASONS

Depending on the variation in temperature and general weather conditions, four different types of seasons are observed for the district. They are as follows:

The cold or winter season (Thlasik): This season starts from the month of December to first half of February. This is the coldest season of the year. During this period rainfall is much less as compare to other seasons, and whatever amount rainfall received is originated from North East Monsoon, generally known as the retreating monsoon. This season is very pleasant with clear blue sky in the absence of cloud covering.

Spring season (Thal): This is the shortest season of the year. It starts from the second half of the February to the first half of March. Temperature is mild during this period and the sky is clear and the Mizo people are accustomed to build new houses during this season as there are no weather disturbances during the period.

Summer season / Rainy season: This is the longest season covering about seven months starting from the second half of March till the first half of October. The early part of this season i.e. from second half of March till First half of May is characterized by bright sunshine and clear sky with little or no cloud till it is disrupted by the coming of Monsoon showers. May and June are the hottest months in the district and maximum insolation is received during this season. A

study from the daily rainfall records reveals that the heavy outpour generally starts from the second quarter of April and this heavy outpour is usually subsides in the first quarter of October. Rainfall during May, June, July, August & September i.e. 5 months alone contributed 80% of the total annual rainfall. This is the season when the cyclonic rains are often felt. The temperature remains high, but is kept down to a considerable extent by the occasional rains.

Autumn season (Favang): This season covers for a period generally starting from the second part of October to November. The season is very pleasant and the summer rain already diminished. This is the season the Mizos are longing for, since they have no undone jobs in their jhum fields, just waiting for the ripening of their paddies.

9. GEOMORPHOLOGY

Geomorphology is essentially the study of relief features of the earth surface and its evolution. The main factor responsible for the evolution of relief is running water through defined channel of river by means of erosional activities, depositional activities and mass movement of land. The analysis of geomorphic structure help to understand risk and vulnerability of geo hazard and hazard relating to hydrological and climate induction. The geological map of Kolasib District is shown in Figure No. 2 and the geomorphology map of Kolasib District is shown in Figure No. 3 of Annexure 10.

10. TOPOGRAPHY

The area of Kolasib District is represented mainly by two main ridge lines and intervening valleys and less prominent linear ridges. The most prominent ridge runs in almost North-South direction from Mualvum near Kawnpui village, almost through the entire area except for few saddles which breaks the range. The entire length of the ridge is about 39.5 Km. which can be divided as Mualvum - Kolasib (25Km) Rengtetlang – Bilkhawthlir upto Thingdelh lui (12Km) and Phainuam ridge (12.5Km). The average height of the ridge gradually decreases from south to north. The average heights of the ridge near Kawnpui, Kolasib and Bilkhawthlir are 750m, 600m and 450m respectively, while at the northern end near Phainuam the ridge attain an average height of 150m. On the eastern side of this main ridge runs a parallel ridge from Nisapui tlang towards Lungmuat tlang upto Bukpui which is about 22 Km in length. The ridge line is terminated near Bukpui and runs about 13 Km from Hmunchung tlang towards Thingthelh and ends at Lungpher lui. On a slightly eastern side, the ridge runs from Kangmual to Hlimen with a length of 13.7 Km and continues all the way to Parsenchhip and joins Telchat tlang and continues towards

Saipum village. The north-western extremity of this range is bounded by Saichang tlang which joins with Teidung tlang on the south with a combined length of about 8.31 Km. Like the ridge on the western side, the height of this ridge decreases towards north. Nisapui tlang reaches a height of 1285 metres, whereas Kangmual attains a maximum height of 650 metres. The height of Parsenchhip tlang is about 700metres. Towards the eastern side of this ridge line flows Tuirial River and most of the spurs run from the ridge towards this river.

In between these two main ridges run two rivers, viz., Serlui and Chemlui separated by a ridge line Chem tlang which is almost 26 Km length, this ridge is terminated by Pualtawk lui and continues towards north upto Sesih lui. The length of the ridge is about 7.6 Km. The two limbs of this ridge are characterized by a subdued hillocks and fluvial valley fills.

The topography is controlled by geological structure and lithology of the area. This is evident by linear, parallel ridges and valley corresponding to the anticlines and synclines. However, in many places the immature topography is being modified by structural disturbances. Areas dominated by alternating sandstone and siltstone exhibit hogbacks and cuestas, as found in Kolasib area. Kolasib ridge is the major ridge line on the western side, which is dominated mainly by linear ridges, subdued hillock and valley fills. There are no other prominent ridge lines within its vicinity. The western side of the district is bounded by Tlawng River whose course is quite rugged and has very few flood plains. The other important river which drained the north western side of the Kolasib District is Tuichhuahen river. This river, along with its tributaries, drained majority of the north western part of Kolasib District.

11. GEOMORPHIC CLASSES

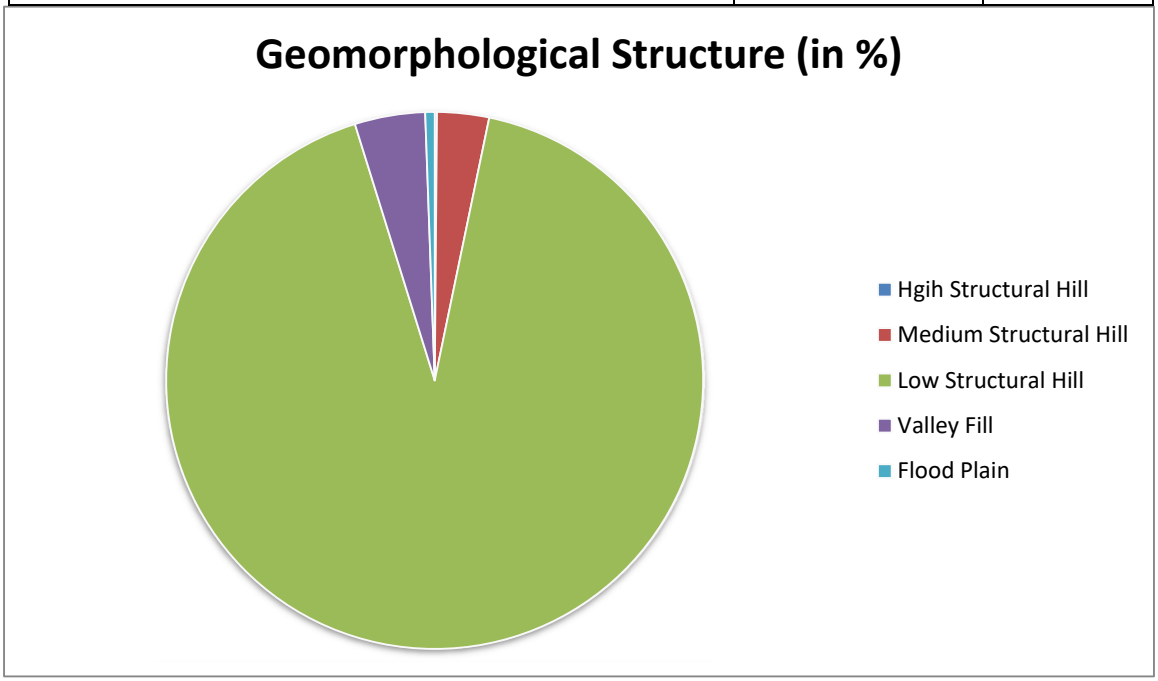
Structural hill constitutes the main geomorphic class and dominates the district. Structural hill, as the name implies, is of structural origin associated with folding, faulting and other tectonic processes. Structural hill is further divided into three classes viz., High Structural Hill, Medium Structural Hill and Low Structural Hill. High structural hill (above 1200m) cover an area of 2.07 sq.km or 0.14% of the Kolasib District and are found in the southern part of Kolasib District at Serkhan and Nisapui hill range. Medium structural Hill (500-1200m) covers an area of 45.89 sq.km or 3.12% of Kolasib District are found along the Mualvum range upto Bualpui Village. Low structural hill (below 900 m) covers an area of 1353.51 sq.km or 91.94% of Kolasib district, found in the western and northern part of the district. Valley Fill is another important features of the

relief and geomorphic class, which is originated from fluvial activities like erosion and deposition. It is characterised by unconsolidated sediments deposited by streams or river in narrow fluvial valleys. They are found mainly along the rivers of Serlui, Chemlui, Tuichhuanen lui, and areas around Hortoki, Saihapui, Saiphai, Buhchangphai and Bairabi. Saiphai and Buhchangphai plains are the well-known plains of Mizoram at state level. All these fills cover an area of 62.30 sq. km which accounts 4.23% of the total areas. Flood plain constitutes another geomorphic class found along the major rivers like Tlawng, Tuirial and Serlui. They are formed by the deposition of alluvium by the sides of major rivers. It accounts 0.57% of the total areas and cover 8.35 sq.km.

The spurs are mainly running in east-west direction. The eastern spurs are relatively longer and gentler as compare to western side. Steep slopes and scarps are found mainly the western side of the ridge lines.

Geomorphical structure of Kolasib District and its extension

Sl No	Geomorphic Unit	Area (Sq.Km)	%
1	High Structural Hill	2.07	00.14
2	Medium Structural Hill	45.89	03.12
3	Low Structural Hill	1353.51	91.94
4	Valley Fill	62.30	04.23
5	Flood Plain	8.35	00.57
Total		**1472.12**	**100.00**



Geomorphological Structure (in %) in Kolasib District

12. SLOPE

Kolasib District is characterized by many hill ridges running parallel to each other most of which roughly runs from north to south. There are numerous low lying valleys which are predominantly occupied for Wetland Rice Cultivation (WRC) including many other minor un-mapable scattering narrow valleys identified as potential area for WRC which constitutes to about 9.08% of the total area. The slope map of the district is shown in Figure No. 4 of annexure 10.

13. ASPECTS

The slope aspects of the hills are more or less evenly distributed. Areas within the study area having no aspects or relatively flatland occupy an area of 38.54 Sq. Km constituting to 2.62% of the total area. The aspects of the area have been conveniently divided into nine (9) slope facets as per given in the following table and Figure No. 5 of annexure 10:

Aspect Statistics of Kolasib District

Sl. No	Aspect side	Aspect	Area %
1	North	76.55	05.20
2	North-east	160.11	10.88
3	East	260.59	17.70
4	South-east	193.66	13.15
5	South	133.28	09.05
6	South-west	155.60	10.57
7	West	252.20	17.13
8	North-west	201.60	13.69
9	Flat land	38.54	02.62
	Total	**1472.12**	**100.00**

14. ALTITUDE

The altitude of Kolasib District can be described to have drastic un-similarity in their existence. While many places include lofty altitudes, several areas still fall under very low altitude area. The highest elevation in within the area is Sakawrhmuituai tlang (1535 metres above msl), followed by Nisapui tlang (1285 metres above msl). The lowest area in the district is recorded to be

around 40 metres above msl which are located at different places at the river banks of River Tlawng and River Tuirial including a very small low lying area where Meidum lui flows and some part of Bairabi and Hortoki, few areas adjoining Tuichhuahen lui and Thinglian lui, and few areas adjoining River Serlui, Barcheplui and Saihapui lui including a small portion of Chemphai valley.

15. DRAINAGE SYSTEM

Kolasib District is drained by few rivers and a good number of streams and rivulets of various patterns and length. Most of these streams and rivulets are ephemeral in nature. Since the drainage system for a particular area is governed mainly by natural drainage course and topography, therefore, the drainage system of Kolasib District has been studied with the help of satellite imageries and the Survey of India topographical maps. The drainage system can be divided into two parts according to the geomorphology of the area, viz. Eastern drainage systems and Western drainage system. Drainage Map is shown in Figure No. 7 of annxure 10.

Eastern Drainage

The whole district of Kolasib is divided into two Sub-Catchments according to the Watershed atlas of India. The drainage lines falling in the eastern side of this are termed as eastern drainage system. These include Tuirial drainage system and Serlui drainage system. Tuirial river originates from north Chawilung hill in Aizawl District and flows northward till it enters Cachar District of Assam. It is an important river for the district as well for the state of Mizoram since it is navigable by small boat to a considerable length and a multipurpose hydro-electricity project is being under construction in this river. It also formed the district boundary between Kolasib and Aizawl District in the eastern side. Serlui originates from Serkhan village in the southern part of the district and flow northward till it meets Tuirial in Cachar District of Assam. It is the most important single river within the Kolasib District from the agriculture point of view. It has a vast fluvial plain along its course giving a fertile agricultural land for the region and it has many incoming tributaries of which the important ones are Chemlui, Saihapui lui, Builum lui and Pualtawk lui. Saihapui lui, Chemlui and Builum lui all is important tributary of Serlui which confined to the northern part of the district. All the tributary of Serlui has important characteristics as sub-dendritic drainage pattern creating a fluvial plain along its course which is quite utilized for cultivating paddy and other cereals crops in the area. The Chemphai plain is popular in agriculture development in the district where one can find the agricultural research firm at Chemphai.

Western Drainage

The drainage systems falling in the western side of the sub-catchment of the district are termed as western drainage systems. These include Tlawng drainage system, Meidum drainage system and Tuichhuahen drainage system. Tlawng river is one of the most important rivers of Mizoram and it is the longest river in Mizoram and it passes through five districts of the state forming districts' boundary lines while running along its course. Here also it formed a district boundary line between Kolasib and Mamit Districts in the western side of the study area. It is navigable by small boat throughout the year and hence it provides water transport route with neighbouring state of Assam. Tlawng river, forming district boundary, enters the district from the south-west portion of district continue to flow upto the Bairabi village in the western part of the district. A number of streams and rivulets join along this course and the important ones are Durlui, Khuai lui, Tuitun lui and Damdiai-thlangta lui. Dendritic drainage patterns are common in this system and especially the Damdiai-thlangta lui exhibits around leaf-like shape dendritic drainage pattern showing no structural control. Meidum lui drainage system which extends in the western part of the district is characterized by dendritic to sub-dendritic drainage patterns. In its middle course Meidum lui has created fluvial plain areas suitable for agricultural and horticultural development. Tuichhuahen lui drainage system is confined to the north-western portion of the district and exhibits various drainage patterns such as angulated, dendritic to sub-dendritic and sub-parallel drainage patterns. It is an important source of water supply in the western plain areas facilitating irrigation for the flood plain it has created along its course. Chhimluang originating near Chhimluang village in the northern most part of the district is another important stream and it forms the state boundary between Mizoram and neighbouring state of Assam.

16. **RD BLOCK PROFILE**

Villages under Bilkhawthlir RD Block	**Villages underThingdawl RD Block**
1) Kolasib	1) Kawnpui
2) Vairengte	2) Thingdawl
3) Bilkhawthlir	3) Sethawn
4) Bairabi	4) Bualpui N
5) Rengtekawn	5) Hortoki
6) Builum	6) Zodin

7) Pangbalkawn	7) Zanlawn
8) S.Chhimluang	8) Serkhan
9) Meidum	9) Lungdai
10) Saihapui K	10)Nisapui
11) N.Thinglian	11)Lungmuat
12) Bukvannei	12)N Chaltlang
13) Buhchangphai	13)Bukpui
14) Phaisen	14)Khamrang
15) N.Chhimluang	15) Mualkhang
16) N.Chawnpui	
17) Saihapui 'V'	
18) Phainuam	
19) Saiphai	
20) Saipum	
21) N Hlimen	
22) Thingthelh	

17. Road distance of various villages within Kolasib district:

				Distance in KMs
		Kolasib to Vairengte		
Kolasib	-	Bilkhawthlir	-	20
Kolasib	-	N Chhimluang	-	33
Kolasib	-	Vairengte	-	46
		Kolasib to Aizawl		
Kolasib	-	Thingdawl	-	8
Kolasib	-	Sethawn	-	21
Kolasib	-	Bualpui	-	23
Kolasib	-	Kawnpui	-	29
Kolasib	-	Hortoki via Kawnpui	-	49.5
Kolasib	-	Zanlawn	-	43
Kolasib	-	Serkhan	-	59
Kolasib	-	Sentlang	-	63
Kolasib	-	Lungdai	-	64
Kolasib	-	Khamrang	-	43

Kolasib	-	Mualkhang	-	47

Kolasib to N Hlimen via Serkhan

Kolasib	-	Nisapui	-	62
Kolasib	-	Lungmuat	-	70
Kolasib	-	N Chaltlang	-	77
Kolasib	-	Bukpui	-	85
Kolasib	-	Thingthelh	-	122
Kolasib	-	N Hlimen	-	134

Kolasib to Bairabi

Kolasib	-	Pangbalkawn	-	19
Kolasib	-	Meidum	-	26
Kolasib	-	Bairabi	-	35

Kolasib to Phaisen

Kolasib	-	Saihapui K	-	15
Kolasib	-	Bukvannei	-	17
Kolasib	-	Buhchangphai	-	22
Kolasib	-	Phaisen		32

Kolasib to Saipum via Bilkhawthlir

Kolasib	-	Chemphai	-	29
Kolasib	-	N Chawnpui	-	35
Kolasib	-	Saiphai	-	40
Kolasib	-	Saipum	-	57

Kolasib to Phainuam via Vairengte

Kolasib	-	Saihapui V	-	55
Kolasib	-	Phainuam	-	54

Annexure 2: Livestock Disaster Management Plan

Livestock animal are vulnerable to biological disaster as well as natural disaster. They are impotent to prevent themselves from such disasters, it is imperative that the farmers take care of their livestock animal against disaster. The farmers and other stakeholders dealing with livestock needs to be aquainted with this vital aspect of livestock management in respect to calamity.

Consequence of loss of livestock:

The consequences of loss of livestock due to calamity in large numbers has an adverse impact. These are primarily:

i) Food scarcity due to shortage of animal origin food, e.g., milk, meat and eggs.

ii) Economic crisis due to escalation of food prices (the value of milk output in India is equal to the combined value of paddy and wheat produced).

iii) Environmental contamination leading to epidemics due to massive animal mortality.

iv) Loss of valuable germ-plasm and biodiversity.

v) Loss of employment starting from primary producers, down to the food processing and marketing chain.

vi) Loss of traction power, shortage of manure.

vii) Emotional shock to animal owners.

Risk and Vulnerability Assessment:

In Kolasib district, disaster that could lead to an emergency situation in the animal husbandry sector may arise primarily due to the following categories of risk:

i) Natural disaster: Kolasib district is vulnerable to most type of natural calamities, causing a significant disruption of the social and economic life of communities including livestock. Calamities like cyclone, landslide, fire, flood and hailstorm are the main deterrent that have the high risk to cause livestock mortality.

ii) Biological disaster: The entire district is at a high risk for outbreak of an endemic diseases like swine flu, bird flu, Foot and Mouth Diseases (FMD), goat pox and other viral diseases which can claim enormous lives of animal husbandry.

iii) Fodder poisoning: Accumulation of nitrate in plants leads to nitrate/nitrite poisoning which has a potential danger to grazing animals like cattle, goat and sheep. Most of the farmers/owners of animal unaware of the content of the food/feeds of their animal, which could contain poisonous toxic elements.

iv) Trans-boundary animal diseases: Kolasib district lies in the state boarder with Assam. Most of the livestock demand of the State is imported through

Kolasib District. The exponential import of livestock from other states can cause a widespread Trans-boundary animal diseases.

Prevention and Mitigation methodology

Animal husbandry & Veterinary, a nodal department in livestock disaster management shall take measures toward prevention and mitigation of disaster against animal husbandry. Towards this initiative, the department had made an appointment of veterinary officers, veterinarian and village officers with their jurisdiction area for Kolasib district vide chapter II Section 3(a)(b) and Section 4(1)(2)(3)(4) of the Prevention and Control of Infectious and Contagious Diseases in Animal Act, 2009. The officers and their jurisdiction are stated in the following table:

VETERINARY OFFICERS, KOLASIB DISTRICT		
Sl.No	Designation	Jurisdiction Area(Local limits)
1	DAH&VO/Chief Veterinary Officer State Vety Hospital, Kolasib	Whole Kolasib District
VETERINARIANS, KOLASIB DISTRICT		
2	Veterinary Officer, State Vety Hospital, Kolasib	1) State Vety Hospital, Kolasib 2) RAHC – Bilkhawthlir 3) RAHC – Buhchang 4) RAHC – Thingdawl
3	Veterinary Officer, State Vety Dispensary, Vairengte	1) State Vety Dispensary, Vairengte 2) RAHC – Saiphai
4	Veterinary Officer, State Vety Dispensary, Bairabi	1) State Vety Dispensary, Bairabi
5	Veterinary Officer, State Vety Dispensary, Kawnpui	1) State Vety Dispensary, Kawnpui 2) RAHC – Hortoki
6	Veterinary Officer, State Vety Dispensary, Lungdai	1) State Vety Dispensary, Lungdai 2) RAHC – Bukpui 3) RAHC – North Hlimen
VILLAGE OFFICERS, KOLASIB DISTRICT		
7	Vety Supervisor/Vety Field Assistant, State Vety Hospital, Kolasib	1) Kolasib 2) Rengtekawn 3) Gosen
8	Vety Field Assistant, RAHC Bilkhawthlir	1) Bilkhawthlir 2) Chemphai
9	Vety Field Assistant, RAHC Buhchang	1) Buhchang 2) Phaisen 3) Thinglian 4) Bukvannei 5) Saihapui

10	Vety Field Assistant, RAHC, Thingdawl	1) Thingdawl 2) Sethawn
11	Vety Field Assistant, State Vety Dispensary, Vairengte	1) Vairengte 2) North Chhimluang 3) Phainuam 4) Saihapui K
12	Vety Field Assistant, RAHC, Saiphai	1) Saiphai 2) North Chawnpui 3) Saipum
13	Vety Field Assistant, State Vety Dispensary, Bairabi	1) Bairabi 2) Pangbalkawn 3) Meidum 4) South Chhimluang 5) Hmaibiala veng
14	Vety Field Assistant, State Vety Dispensary, Kawnpui	1) Kawnpui 2) Khamrang 3) Mualkhang 4) Bualpui North 5) Mualvum
15	Vety Field Assistant, RAHC, Hortoki	1) Hortoki 2) Zodin(Rasdali)
16	Vety Field Assistant, State Vety Dispensary, Lungdai	1) Lungdai 2) Serkhan 3) Zanlawn
17	Vety Field Assistant, RAHC, Bukpui	1) Bukpui 2) North Chalrang 3) Lungmuat
18	Vety Field Assistant, RAHC, North Hlimen	1) North Hlimen 2) Thingthelh

The Veterinary Officers, Vety Field Assistant shall take measures for the prevention and mitigation of livestock disaster as per the act.

1. Every veterinarian, on the receipt of warning shall move or cause to move the animal to the safe place until the warning is withdrawn within his jurisdiction.
2. Every veterinarian, on receipt of report or has reason to belief that any animal is infected with disease shall report the matter to Veterinary Officer and direct the owner of the person or in-charge of such animal to segregate such animal and have it kept in a place away from all other animals which are healthy and take appropriate steps to prevent it from gazing in a common place or drink

water from a common place.

3. The veterinarian shall take measure to the treatment and control of the infected animals. If required, Euthanasia to be resorted for preventing the spread of the disease to other animals in the area or to protect public health if the disease is of zoonotic importance.
4. The veterinarian shall take step to compulsory vaccination at infected area to prevent spreading of the disease.
5. The veterinarian shall keep abreast of the incidence of animal diseases in the neighboring areas, and if so prevent any animals to enter in his jurisdiction.
6. The veterinarian shall take all possible measures to prevent infected animals to enter from neighboring state at the check post and issue a certificate in respect of the healthy animals only.
7. The veterinary officer may report to the District Magistrate, upon receipt of report of the prevalence of diseases in the neighboring states to prohibit the import of any animals from such state.
8. Every veterinarian shall direct the person in possession of carcass of any animal infected with any disease to dispose of it in such manner as may be prescribed.
9. Capacity building: A large number of farmers/owner of animal suffers loss of livestock due to various disease and disaster. It is essential to prevent and mitigate such loss by capacity development. It shall be the responsibility of every veterinarian to carry out capacity development programme in their jurisdiction.

Cattle Camp:

In case of a severe disaster when relief shelter in required, the veterinary officer shall make an arrangement to assign a cattle camp in appropriate place within their respective jurisdiction. Provision of fodder/feed concentrate including water supply and medicines shall be arrange by him as per the rate of norms of assistance of SDRF/NDRF. For this purpose he shall maintain a proper record of the numbers and the period to which the animals are kept in relief shelter.

Compensation/Insurance:

As per the items and norms of assistance under NDFR/SDRF for a period of 2022-2026 made by Ministry of Home Affairs(Disaster Management Division) assistance is available in case of natural calamity in the following rates:

Milch animals

Rs.37,500/- Buffalo/cow/camel/yak/mithun atc

Rs. 4,000/- Sheep/goat/pig

Draught animals

Rs. 32,000/- Camel/horse/bullock etc

Rs. 20,000/- Calf/donkey/pony/mule

The assistance may be restricted for the actual loss of economically productive animal and will subject to a celling of 3 large animals or 30 small milch animals or 3 large draught animals 6 small draught animals per household irrespective of whether a household has lost a large number of animals.

Provision of fodder/water supply/medicines

Large animals- Rs. 70/- per day

Small animals- Rs. 35/- per day

The assistance is to be provided form Deputy Commissioner's Office, Kolasib DM&R Branch on the basis of verification made by officer concern of AH&Vety. A compensation for loss due to infectious disease does not exist under item and norms of SDRF.

Annexure 3: District Shelter Management Plan

Damage to houses is imminent in case of major disaster and many people will be left homeless. Provision of safe shelter to affected person is immediate requisite, in order to do so, pre planning is much required to save time and money. Special care shall be taken for safety and security of in mates especially for woman, widow and children. Special arrangement shall also be made for differently-abled persons, old and medically serious patients.

Shelter Management Team:

District level shelter management team shall be constituted who shall make all the necessary arrangement for setting up of the relief camp and for provision of basic amenities to the inmates as per the guideline of minimun standard of relief published by NDMA. The tentative composition of the Shelter Management Team shall be as follows.

Chairman : Deputy Commissioner

Members
1. Superintendent of Police
2. Chief Medical Officer
3. Executive engineer, PHE
4. Executive engineer, PWD
5. Executive engineer, P&E
6. District Medical Superintendent
7. District Urban Development Officer
8. District Local Administration Officer
9. District Civil Supply Officer

Member Secretary: SDC i/c DM&R

Identification of Building for Relief Shelter:

Various schools across the district are identified as shelter or relief camp for setting up of relief shelter to accomudate the affected persons. These building were identified taking accounts the number of populations in the villages and town. In such places, necessary facilities like sufficient number of toilets, water supply shall be ensured. To address the gender issue, separate toilet and room shall be made. The relief camp shall be temporary in nature and shall be closed as soon as normalcy returns in the area.

The following table shows the identified building and its capacity.

Sl. No	Town/Village	Identified shelter	Capacity in person	Water storage	Toilet
1	Kolasib	Govt Kolasib P/S V, Tumpui	80	Available	Available
2		Govt Chawngfinga M/S	50	Available	Available

3		Govt M/S Hmarveng	60	Available	Available
4		Govt Kolasib P/S III, Venglai	80	Available	Available
5		Govt Kolasib P/S II, Venglai	100	Available	Available
6		Govt Kolasib M/S, Venglai	60	Available	Available
7		Govt Kolasib H/S III, Project Veng	60	Available	Available
8		Govt Selluai M/S, College Veng	50	Available	Available
9		Govt Khianga M/S	40	Available	Available
10		Govt P/S, Salemveng	80	Available	Available
11		Govt P/S II,Diakkawn	70	Available	Available
12		Govt Diakkawn M/S I	60	Available	Available
13		Govt Diakkawn, M/S II	60	Available	Available
14		Govt P/S IV, N.Diakkawn	80	Available	Available
15		Govt Kolasib P/S III, Venglai	70	Available	Available
16		Govt P/S VIII, Vengthar	80	Available	Available
17		SSA P/S Khuangpuilam	90	Available	Available
18	Vairengte	Govt P/S VII Vairengte	80	Available	Available
19		Govt P/S II Vairengte	70	Available	Available
20		Govt M/S II Vairengte	60	Available	Available
21		Govt P/S I Vairengte	60	Available	Available
22		Govt M/S I Vairengte	60	Available	Available
23		Govt P/S V Vairengte	70	Available	Available
24		Govt M/S III Vairengte	70	Available	Available
25		Govt H/S Vairengte	70	Available	Available
26	Kawnpui	Govt P/S I Kawnpui	60	Available	Available
27		Govt P/S II Kawnpui	70	Available	Available
28		Govt M/S I Kawnpui	70	Available	Available
29		Govt P/S V Kawnpui	60	Available	Available
30		Govt P/S IV Kawnpui	80	Available	Available
31	Bilkhawthlir	Govt M/S I Bilkhawthlir	60	Available	Available
32		Govt P/S I Bilkhawthlir	50	Available	Available
33		Govt T Robert H/S	70	Available	Available
34		Govt P/S IV Bilkhawthlir	80	Available	Available
35	Thingdawl	Govt M/S I Thingdawl	60	Available	Available
36		Govt P/S II Thingdawl	50	Available	Available
37		Govt M/S I Thingdawl	60	Available	Available
38	Bairabi	Govt P/s III Bairabi	60	Available	Available
39		Govt P/S V Bairabi	70	Available	Available

40	Hortoki	Govt H/S Hortoki	30	Available	Available
41		Govt M/S Hortoki	40	Available	Available
42	Pangbalkawn	Govt P/S Pangbalkawn	40	Available	Available
43	S.Chhimluang	Govt P/S S Chhimluang	30	Available	Available
44	Meidum	Govt M/S Meidum	30	Available	Available
45	Bualpui	Govt P/S Bualpui	40	Available	Available
46	Mualvum	Govt P/S Mualvum	40	Available	Available
47	Khamrang	Govt P/S Khamrang	30	Available	Available
48	Mualkhang	Govt. P/S Mualkhang	30	Available	Available
49	Zanlawn	Govt P/S Zanlawn	30	Available	Available
50	Serkhan	Govt. P/S Serkhan	30	Available	Available
51	Sentlang	Govt P/S Sentlang	40	Available	Available
52	Lungdai	Govt P/S Lungdai	40	Available	Available
53	Nisapui	Govt P/S Nisapui	30	Available	Available
54	Lungmuat	Govt P/S Lungmuat	40	Available	Available
55	N Chaltlang	Govt P/S N Chaltlang	30	Available	Available
56	Bukpui	Govt P/S Bukpui	30	Available	Available
57	Rengtekawn	Govt P/S Rengtekawn	40	Available	Available
58	N Chhimluang	Govt P/S N.Chhimluang	30	Available	Available
59	Saihapui V	Govt P/S Saihapui V	30	Available	Available
60	Phainuam	Govt P/S Phainuam	30	Available	Available
61	Saipum	Govt P/S Saipum	30	Available	Available
62	N Hlimen	Govt P/S N. Hlimen	30	Available	Available
63	Thingthelh	Govt P/S Thingthelh	30	Available	Available
64	Phaisen	Govt P/S Phaisen	40	Available	Available
65	Buhchangphai	Govt P/S Buhchangphai	30	Available	Available
66	Bukvannei	Govt P/S Bukvannei	30	Available	Available
67	Saihapui K	Govt P/S Saihapui K	30	Available	Available

In case of deficiency of the above identified shelter; additional arrangement will be made in the following places.

Sl No	**Town/Village**	**Site identified**	**Capacity**	**water storage**	**Toilet**
1	Kolasib	Tumpui playground	200	To be arrange	To be arrange
2		Saidan playground	250	To be arrange	To be arrange
3		Diakkawn playground	300	To be arrange	To be arrange
4	Vairengte	Field No 1	150	To be arrange	To be arrange
5		Joint YMA playground	200	To be arrange	To be arrange

6	Thingdawl	Thingdawl playground	150	To be arrange	To be arrange
7	Bilkhawthlir	Bilkhawthlir playground	200	To be arrange	To be arrange
8	Hortoki	Hortoki playground	150	To be arrange	To be arrange
9	Kawnpui	Kawnpui playground	200	To be arrange	To be arrange
10	Serkhan	Serkhan playground	100	To be arrange	To be arrange
11	Lungmuat	Lungmuat playground	150	To be arrange	To be arrange
12	Sentlang	Sentlang playground	100	To be arrange	To be arrange
13	Mualvum	Mualvum playground	150	To be arrange	To be arrange
14	Nisapui	Nisapui playground	100	To be arrange	To be arrange
15	Lungdai	Lungdai playground	150	To be arrange	To be arrange

Minimum Standard of Relief:

The National Disaster Management Authority publishes a guideline on minimun standard of relief. This guideline basically spells out the minimum emenities/facilities to be provided to the in mate. Some of the significant points are highlighted below.

Minimum standard in respect of Food:

1. Milk and other dairy products shall be provided for the childred and lactating mother.
2. Sufficient step shall be taken to ensure hygine at the community and camp kitchen.
3. It shall be ensured that men and women are supplied food with minimum calorie of 2400 calorie Kcal per day. In respect of children and infants, the food to be supplied would be 1700 Kcal per day.

Minimum standard in respect of water:

1. Sufficient quantity of water shall be provided in the relief camp for personal cleanliness and hand wash.
2. Minimun supplies of 3 liter per person, per day of drinking water is made available.

Minimum standard in respect of sanitation:

1. Number of toilets: 1 toilet for 30 persons may be arranged. Separate toilet and bath area be cater for women and children. At least 15 liter of water per person needs to be arranged for toilet/bathing purpose. Handwash facility in

toilets should be ensured. Steps may be taken for control of spread of diseases Dignity kit for for women shall be provided with sanitary napkins and disposable paper bag with proper labelling.

2. Toilet shall not be more than 50 meter away from the relief camp. Pit latrin and soak ways shall be at least 30 meter from the ground water source and the bottom of the latrine has to be at least 1.5 meter above the water level.
3. Drainage or spillage from defecation system shall not run towards any surface water source or shallow ground water source.

Minimum standard in respect of medical cover:

1. Mobile medical team shall visit the relief camp to attend the affected people. Step shall be taken to avoid spread of communicable diseases.
2. It the relief camp are extended over a long time, then necessary arrangement may be made for psychological treatment.
3. Helpline shall be set up and contact number and details of which shall be displayed at the relief camp and adequately publicized to inform the people.
4. For pregnant women, necessary basic arrangements shall be made for safe delivery.
5. In respect of people who are affected and being refered to hospital for treatment/operation etc. transportation shall be arranged to reach the referred hospital.

Matrix of roles and responsibilities for relief camp

Sl No	Department	Action
1	DC and PWD	Setting up of relief camp including community kitchen/camp kitchen
2	P&E	Provision of Lights and power back up
3	PHE	Supply of adequate quantity of water
4	PHE and UD&PA, DLAO	Sanitation and hygine including setting up of temporary toilet and bath area.
5	H&FW	Medical treatment including psychosocial care
6	FCS&CA	Provision of adequate quantity of food items as per minimun standard of relief.

Assistance of concerned VDMC and community shall be sought for setting up of relief camp and procurement of required materials.

Annexure 4: District Medical Plan and Mass Casualty Management Plan

District Level Technical Core Group:

District Level Technical Core Group was formed vide their letter no.F.11011/48/13-CMO(K)/Disas/2017-102 dated 20th January, 2017. The following are the members of the Core Group

Dr. Lalawmpuia Chhangte, CMO - Chairman
Dr C Vanlalhlimpuia, District Nodal Officer - Member Secretary
Members:-

1) Dr. Samuel Lalfakawma Fanai, DMS
2) Dr. RK Lalthlamuana, SMO
3) Dr. Zochampuia, MO
4) Lalsangkimi Zote, DPM(NHM)
5) Lalrinzuala, EE(MEM)
6) Rinpari, Nursing Superentendent
7) Lalsangliani, UDC (I/c Vehicle)
8) Lalfamkima, VCP Venglai, Kolasib
9) B.Nagminthang, President YMA, Venglai Branch, Kolasib

Quick Response Team:

Medical QRT was formed at District level and Field level to enable them to response to any calamities in case of mass casualty.

Quick Response Team (QRT) at the District Level
District Office DMS Office, Kolasib

Name/Designation/Office address	Phones with STD code e-mail
Team Leader:	(Office) 03837 221930
Dr. H. D. Lallawmkima	(Fax) 03837 221930
Medical Officer	9486272571
DMS Office, Kolasib	(e-mail) hdlka1919@gmail.com
Alternate	(Office) 03837 221930
Dr. Vanlalbuatsaiha	(Fax) 03837 221930
Medical Officer	(Mobile) 8730979739
DMS Office, Kolaslb	(e-mail) hd.frances@gmail.com
Member 1:	(Office) 03837 221930
Lalhmingliani	(Fax) 03837 221930
Staff Nurse	(Mobile) 9612177461
DMS Office, Kolasib	
Member 2:	(Office) 03837 221930
Vanlalthlani	(Fax) 03837221930
Staff Nurse	(Mobile) 9862383287
DMS Office, Kolasib	(e-mail)
Member 3:	(Office) 03837 221930

PC. Lalchhuanvawra	(Fax) 03837 221930
IV Grade	(Mobile) 9862771254
DMS Office, Kolasib	(e-mail)

The Task assigned are :-

1. They will reach the incident site as early as possible
2. The Team must be fully equipt with Emergency Medicine and medical kits like stretcher, oxygen, etc.
3. They will arrange transportation for the victim from the District Hospital/Health Centre.

Quick Response Team {QRT} at the Field Level

Field Office .....

Name/Designation/Office address	Phones with STD code e-mail
Team	{Office} 03837 221930
Dr. Lalrawngbawla Colney	{Fax} 03837 221930
Medical Officer	9862439238
DMS Office, Kolasib	(e-mail)
Alternate Team Leader:	{Office} 03837 221930
Dr. Zorinkima Sailung	{Fax} 03837 221930
Medical Officer	{Mobile} 8414949546
DMS Office, Kolasib	{e-mail}
Member 1:	{Office} 03837 221930
Lucy lalrinpuii,	{Fax} 03837 221930
Staff Nurse	{Mobile} 9863277058
DMS Office, Kolasib	(e-mail)
Member 2:	{Office} 03837 221930
Lalparmawii	{Fax} 03837 221930
Staff Nurse	{Mobile} 9612977800
DMS Office, Kolasib	{e-mail}
Member 3:	{Office} 03'837 221930
Lalfakzuala	{Fax} 03837 221930
IV Grade	{Mobile} 9366770645
DMS Office, Kolasib	(e-mail)

The Task assigned are:-

1. They will reach the incident site as early as possible.
2. The Team must be fully equipt with Emergency Medicine and medical kits like stretcher, oxygen, etc.
3. They will arrange transportation for the victim from the District Hospital/Health Centre.

MASS CASUALTY MANAGEMENT

Staffing: In case of major disaster, the number of casualties may increase considerably and the incident site may be at multiple places to which the medical team has to attend. Also, the hospital may be packed with the injured victims. Therefore, the exiting number of medical personnel at the hospital may not be adequate to cope with such exigencies and attend to all such injured persons. In such cases, the number of medical personnel needs to be strengthened. In order to achieve this, the following option may be adopted for enabling smooth medical response:

1. The trainded medical profession working in another sector or department may be requisitioned.
2. The retired medical personnel shall be called upon to assist the medical team.
3. Outside aid from the government or agency like Red Cross Society and Indian Medical Association etc. may also be requested which shall be done through the existing protocol for seeking external aid.

Make Shift Hospital: The size of the existing hospital may not be adequate to accommodate the injured victim. Therefore, setting up of make shift hospital shall be required with all medical facilities as normal hospital. RSTC Boys hostel and training hall at Hmarveng is identified for setting up of make shift hospital. PWD shall assist the medical team in all the required civil works for setting up of make shift hospital. P&ED and PHED shall assist in supply of power and water respectively.

Psychosocial Care: The following are the mental health staff who will provide care and treatment to a person having post traumatic stress disorder. They will set up a help line immediately after the incidence of disaster which shall be publisized through electronic and print media. A person having such disorder may also be advised to contact Tele Manas 14416 a toll free number which is functional 24x7.

Sl No.	Name	Designation	Contact No
1	Helen Lanunmawii Sailo	Clinical Psychologist	8131068695
2	Ngaihawmi Khenglawt	Psychiatric Social Worker	8974156609
3	Judithi Khawlhring	Community Nurse	8414008764
4	Lalrinawmi	Psychiatric Nurse	8415846003

RESOURCE INVENTORY

Item	Item Description	Item quantity Unit	Specify location if not present in the ment	Availabilit Month	Mode of transpor-tation	Operator provided (No/ NA)
Ambulance	Transportation	2	Department	12	By Road	Yes
Stretcher	Transportation	4	Department	12	By Road	Yes
First Aid Kit	Treatment	Adequate amount	Department	12	By Road	Yes
Oxygen	Treatment	16	Department	12	By Road	Yes
Wheel Chair	Transportation	5	Department	12	By Road	Yes

HUMAN RESOURCES AT DISTRICT HOSPITAL

Item (Skill) Name	Item (Skill) Name	No of persons availa-ble	Availa bility month	Prior experience in emergency response	Prior training on emergency response	Description (If team entered composition)
Doctor	Dr.Ramdinthari	19	12	Yes	Yes	Treatment
	Dr.Zochampuia					
	Dr. Salome Zonunsangi					
	Dr. C. Vanlalhlimpuia					
	Dr. HD Lallawmkima					
	Dr.Vanlalbuatsaiha					
	Dr. C. Lalduhsaka					
	Dr.Robert Lalfakzuala					
	Dr. HC Lalnunhlua					
	Dr.Lalmuankimi					
	Dr.Janet Zoremnghaki					
	Dr.Zoremmawii					
	Dr.ZorinkimaSailung					
	Dr.Lalthanzami					
	Dr.Lalruatdiki					
	Dr.B. Zomuansanga					
	Dr. Jenny Lalruatpuii Dr. Lalrawngbawla Colney					
NURSI NG	Rinpari Nursing Supe.	21	12	Yes	Yes	Treatment
	T. C. Lalhlimpuii W/S					

STAFF	Lalbiakliani S/N					
	C. Laldinpuiii S/N					
	R. Vanlalpari S/N Lalbiakliani S/N					
	Laithanpuii S/N					
	Lucy Zoramsiami S/N Lalparmawii S/N					
	Vanlalhnaii S/N R. Lalmuanpuii S/N					
	H. Lalzari S/N					
	Lalparmawii S/N					
	Vanlalthlani S/N H. Lalzari					
	Lalsangliani S/N					
	Lalthakimi S/N C. Lalmuanpuii S/N					
	Malsawmtluangi S/N					
	Lucy Lalrinpuii S/N Catherine lalhlimpuii					
Tech	R. Lallianmawia	6	12	No	No	Assistant
	Lalrinzuala					
	Lalchungnunga					
	C. Lalremruata					
	C. Lalmuankima					
	Samuel Lalpekhlua					
	Roluahpuii					
Driver	Vanlalliana	4	12	Yes	Yes	Transportation
	C. Lalrinmawia					
	Sangthanzara					
	Zoramliana					
IV Grade	K. Lalrinmawia	8	12	No	No	Assistant
	Lalnunmawia					
	JH Hmingthangzauva K. Lalrinmawia					
	Lalfakzuala Llabiakzuali					
	Robert Vanlaldika					
	Kapchhungi					

List of medical facilities including CHC, PHC and Sub Centre and Sub Centre Clinics within Kolasib District are shown in the following table. Map of medical facilities is shown in Figure 29 of Annexure 10

Hospital	**CHC**	**PHC & UHC**	**Sub – Centre**		**Sub - Centre Clinics**
District	Vairengte	Lungdai	Pangbalkawn	Bualpui	Khuangpuilam

Hospital, Kolasib					
		Kawnpui	Tumpui	Hortoki	Salem Veng
		Bukpui	Diakkawn	Bukpui	Parkkawn
		Bairabi	Thingdawl	N, Hlimen	Hmar Veng
		Bilkhawthlir	Builum	Lungdai	Tuitha Veng
			Vairengte	Serkhan	N. Chaltlang
			Phaisen	Nisapui	
			Phainuam	Lungmuat	
			Bilkhawthlir	Zanlawn	
			Saiphai	Rengtekawn	
			Saipum	Buhchang	
			N. Chawnpui		
			Bairabi		
			Kawnpui		

Status of Hospitals in Kolasib District:

Sl. No	Name of CHC/PHC	No. of Bed	No of extra bed	Nos. of Oxygen cylinder	Nos. of Concentrator
1	Kolasib DH	60	5	239	5
2	Bukpui PHC	6	2	3	2
3	Lungdai PHC	10	2	4	2
4	Kawnpui PHC	10	2	5	3
5	Bairabi PHC	10	1	4	3
6	Bilkhawthlir PHC	10	2	6	3
7	Vairengte CHC	30	2	10	5

AMBULANCE SERVICE

Sl. No	Name of DH/CHC/PHC	No. of Ambulance	Name of Driver	Contact No.
1	Kolasib DH	2 (NAS)	Sangthanzara	9862114024
			Lalremsiama	
2	Bukpui PHC	1	B Lalfela	8974588711/ 8787441383
3	Kawnpui PHC	1	Lalthafamkima	9485303723
4	Bilkhawthlir PHC	1	PB Lalthantluanga	6009131036
5	Vairengte CHC	1	Chanchinmawia	9612459389

OTHER AMBULANCE SERVICE

Sl. No	Name of Hospital/Dept./Agency	No. of Ambulance	Contact person	Contact No.
1	Nazareth Nursing Home, Kolasib	1	Lalengkima	8794928773 03837-221996
2	Prison	1	Thuthlungropuia	9862368223
3	Sub Hqtr YMA	1	Roney C Lalrinmawia	6909881012
4	ZDU	1	Ramfangmawia	9366352692
			Zothansanga	8837461169

NURSING HOME(NAZARETH NURSING HOME)
RESOURCES AVAILABE

No of Doctor	No. of S/N	No. of Bed	Extra bed.(In case of emergency	Nos. of Oxygen cylinder	Nos. of Concentrator
1	6	20	4	14	1

Annexure 5: Contact Details of NGO's within Kolasib District:

SUB-HEADQUARTERS. YMA, KOLASIB		
President	Thomas D. Lalengliana	8014244036
Vice President	C. Liankunga	9463143995
Secretary	Lalnunmawia	9436143306
Asst. Secretary	Jerry Zoremsanga	7005410944
Treasurer	Timothy Lalchhuanawma	9774947840
Fin. Secretary	Samuel Lalfela	9863458397

DISASTER SUB COMMITTEE: SUB HQTR YMA KOLASIB		
Chairman	H Vanlalnghaka	9089292000
Vice Chairman	Lalhmachhuana	9862383213
Secretary	Rony C Lalrinmawia	6909881012
Asst. Secretary cum finance secretary	TBC Roluahpuia	9862050905
OB Incharge	Lalnunmawia, Treasurer SYMA	9436143306

DISTRICT HEADQUARTER MUP KOLASIB		
President	Ralliantawna	
Vice President	R Zasanga	
Secretary	Lianchhunga	8787721358
Asst. Secretary	Lalthantluanga Sailo	8774088925
Treasurer	C Lallura	9436143150
Fin. Secretary	C Zohmingthanga	9436158957

SUB HEADQUARTER MHIP KOLASIB		
President	C Laldinpuii	9862502110
Vice President	Laltluangi	9862305462
Secretary	HB Lalparmawii	9862792536
Asst. Secretary	Lalhmingchhuangi	
Treasurer	Lalthawmmawii	7005612863
Fin. Secretary	Vanlaldinthari	

Annexure 6: IMPORTANT TELEPHONE NUMBERS.

I. Head of Offices with present incumbent.

Sl. No	DESIGNATION	NAME OF INCUMBENT	MOBILE	OFFICE/FAX	RESIDENCE
1	Deputy Commissioner	John LT Sanga	9436146090	220001/221063(F)	220002
2	Supdt. Of Police	Lalrinawma Traite	9615332933	220948/221349(F)	220026
3	Commandant, 1st IR Bn.	R MS Dawngkima	9436143182	266545/266626(F)	266544
4	PD, DRDO	Malsawmtluanga	9862689748	221203/222142(F)	-
5	DUDO, UD&PA	Rebecca Laldinmawii Hrahsel	8974736278	222259/222258(F)	-
6	SO, LR&S	Lalmuan Puia	8118997952	221062/220541(F)	-
7	SDO(C) Kawnpui	Cheemala Siva Gopal Reddy	8008143608		
8	SDO(C) Vairengte	Beitlotha Nohro	7629972318		
9	Judge, Fast Track Court	Julie Lalrinzami	8974006683		
10	CJM, District Court	Cacy Malsawmtluangi Ralte	7085930730	222019/222155(F)	222019
11	Principal, GKC	T. Zahmingliana	9436143132 7629812077	220027/222184(F)	
12	EE, PWD, HW	Lalrinngheta	8415848630	220038/222224	220039
13	EE, PWD Kolasib Div.	Lalhmingmawia	9436141818		
14	EE, PHE	Er.H.Lalsiamliana	9436151128	220622/222055(F)	220821
15	EE, P&E	Er. C. Lalzarliana	8415063969	220083/220054(C)	220003
16	Jt. Director, ICAR	Dr. Sunil Doley	9436166531	220041/220560(F)	220041
17	EE, I&WR	Lalchhandama	9366015033 9436154350	220301/(F)	221751
18	Sr.Scientist& Head KVK	Dr. Michelle Vanlallawmawmi	9436155858 7005368475	220360	
19	DVO	Dr. Sanglien Ralsun	9436158369 8794751074	220014/(F)	-
20	DFO	Margaret Lalramchhani	8974436843	222099/221700(F)	220373
21	CMO	Dr. Lalawmpuia Chhangte	9436150122	222163 (F)	220046
22	DMS	Dr.Samuel Lalfakawma Fanai	8787761067	221930/(F)	-
23	Deputy Comm. of	H Vanlalsanga	8575326949	222127/220021	222298

	State Taxes				
24	DEO& DPC SAMAGYA SHIKSHA	PC Lalngaizuala	7005786365	221506/221847 (F)	-221847
25	Addl. SP	David J Byhnadolai	8974762412	221181	
26	District Sainik Officer	Maj. Carolyne Z. Pachuau	8974064771	222265/(F)	
27	DAO	Lalringliana	9612166059	220024/222075(F)	220508
28	DHO	C. Zosangliana	9862251123	220272/220985(F)	220272
29	DSO	Lalmuansangi	9612125542	220321/(F)	-
30	DTO	B. Laltluangkima	7085484344	221568(F)	-
31	DLAO	S.T. Lalhmingmawia	7005367150 /9436140011	220315/221158(F)	220178
32	BDO, Thingdawl	Lalmuan Puia	8118997952	268753/268504(F)	
33	BDO, Bilkhawthlir	Timothy R.Lalhmangaiha	8974205531 8787897859	265184/(F)	
34	DIPRO	Dr.Hmingthanzuala	9774634454	220075/(F)	220075
35	DCSO	Zairemkima	7629808882	220058/220023(F)	
36	Asst. Com. Of Excise	NgurthanzamaSailo	9862584091	221005/(F)	220861
37	Supdt. Of Dist. Jail	Lalmuanpuia	9863362217	220734/222272(F)	9436194381
38	District Treasury Officer	Kevin Lalmalsawma	8974161852	220053/222183(F)	-
39	Jt. Director, FM, DIC	P.C Lalvuana	9436158911	220161	
40	SDE(Gr.) BSNL	Suresh Nayak	9436745144	220000/222066	
41	District Cooperative Officer(DCO)	Lalthlamuana	8974966385	220497/222235(F)	-
42	Asst. Controller, Legal Metrology	Vanlalngheta	9436151718	221438	
43	SDPO	R.H. Lalrinhlua	7085537221	220055	
44	DFDO	C. Lallianpuii	9612022725	222125/(F)	
45	D.O, S&WC	Z.Lalthanzuala	9612504050	222128/(F)	-
46	SDEO	Vanlalmuka	8837495336	220312/220968(F)	-
47	DRO Eco & Stat.	K. Lalbiakthanga	7085627130	220122	
48	Asst. Tourist Officer	Lalbiakfeli	9612660112	220067	
49	DCPO	David Zaitinvawra	9862540311	8974940015	
50	Marketing Officer Trade & Commerce	Ramtiama	7005458029	7005458029	
51	DPO (Social Welfare)	Lalnunthari	9436141145 7085952596		

52	EO, DVIO	Lalhlupuii	9862380160	222012	
53	Lead Bank Manager,	Ashim Jyoti Das	7085085990		
54	Principal ETC, SIRD	ZR Thafala	8730888859	221523/221521(F)	221965
55	Principal, DRC(DIET)	Engzama	9862968378	221822/221823(F)	
56	Principal, CZS	Lalnghilhlova Chinzah	9436143603	221339	221335
57	Principal, JNV	Sudharkar Shukla	7000472661	268574/(F)	
58	Principal, SoNT	Laltanpuii	8837259791		
59	DDm, NABARD	J.P Traite	9615585651		
60	DS&YO	K.Lalthlengliana	9612287471	220049	
61	Librarian	Felix Laltanpuia	9862536608	220639	-
62	Post Master	Madana	7085462240	220030	
63	Sub-Stn. Officer F&ES	Vanlalruala	9774222586	220101	
64	Manager MIZOFED, LPG	Reuben K Lalngaihzuala	9862383266	220020	
65	Manager MIZOFED, POL	K Lalzarmawia	8974144726	220142	
66	Manager, Coffee Board	Chandrashekar	9402112854	220270	
67	Manager Rubber Board	-	-	220357	

II. NAME AND CONTACT NO. OF DC's IN ADJACENT DISTRICTS

Sl No	Name	Designation	Mobile no.	Office no.
1	Dr Lalhriatzuali Ralte, IAS	DC, Aizawl	9436141306	0389-2329203/201(O) 2329902(F) 2321119(DEOC)
2	V Remliana, MCS	DC, Mamit	9612081196	0389-2565220(O) 2565221(R) 565414(F)
3	Rohan Kumar Jha, IAS	DC, Cachar	-	03842-245056
4	Nisarg Hivare, IAS	DC, Hailakandi	-	03844-222251

III. CIJWS VAIRENGTE

Sl No	Contact Person	Contact No
1	Col. Hitesh Dhankar Colonel General Staff	7354224093
2	Col Neeraj Colonel Administration	7771012548

IV. POLICE STATION/OUT POST AND FIRE STATION

Sl No	Name of Police station/Out Post/Fire Station	Contact No
1	Kolasib Police Station	03837-222281/8974637760
2	Vairengte Police Station	03837-261066/9366267840
3	Kawnpui Police Station	9636144052
4	Bairabi Police Station	8794723770
5	Saiphai Out Post	7630078852
6	Bilkhwthlir Out post	7005536409
7	Kolasib Fire Sub Station	7627966100/03837-222322 03837-220101
8	Vairengte Fire Sub Station	9366651918
9	Vairengte Police Check Gate	9366291342

V. Supplier of Machineries & Equipments

Sl No.	Trade Name	Address	Type	Contact No
1	M&B	Kolasib Venglai	Hardware & Machineries	8415846764 9612593889
2	Chhuanawma Hardware	Kolasib Venglai	Hardware	8974248174 8131933869
3	Thuauma & Sons	Kolasib Venglai	Hardware	8732008959
4	PCLS Electricals	Kolasib Diakkawn	Electricals	9612226307
5	Rainbow Electricals	Kolasib Venglai	Electricals	8974893287
6	MAG C Agencies	Aizawl Bawngkawn	Fire Extinguisher	7947427211
7	Neihlai Enterprise	Aizawl Bawngkawn	Fire Extinguisher	9436140444
8	Tlaukunga Marketing & Co(TMC)	Aizawl Zarkawt, Lalbuaia Shopping Centre	Fire Extinguisher	8974009529
9	VL Machinery & Tools	Aizawl Dawrpui	Machineries	8415849126
10	Capital Hardware & Machineries	Aizawl Chandmari	Hardware & Machineries	03892345359

11	Jts Machinery	Aizawl Upper Khatla	Machineries	9862914695
12	Mahima Industries	Kolkota	Machineries	8583819588 9748722978
13	Karigri Hanloom and Crafts	Guwahati	Machineries	7002902121

Annexure 7: SoP for District Legal Services Authority

Introduction:

It is well understood that disaster management is dynamic in all aspects. It requires coordination of all the stakeholders at all levels. District Legal Services Authority has recently been included as a stakeholder in disaster management. Various crimes such as rape, assault, kidnapping, robbery, theft etc. were found looping during disasters which proliferate the misery of the victims. In the past experiences, it was realized that the rights of victims were vehemently violated during disasters and that they were erroneously neglected as to their entitlement is concerned. In such cases, the DLSA would manifest to provide speedy legal aid to ensure their relief and assistance, rehabilitation and provision of Minimum Standard of Relief to the victims.

Composition of DLSA:

The composition of District Legal Services Authority is as under:-

Chairman : Addl District Session Judge, Aizawl
Member Secretary : Cacy Malsawmtluangi Ralte, MJS
Ex Officio Members:-
Deputy Commissioner, Kolasib
Superintendent of Police
Asst. Govt. Advocate, Kolasib
Nominated Members:-
President, Sub Hqtrs. YMA Kolasib
President, Sub Hqtrs. MHIP Kolasib
Dr C Lalmuankima

Lok Adalat:

Lok Adalat (People's Court) is one of the key functionary under DLSA and it is one of the alternate dispute mechanism. They have been given statutory status under the Legal Services Authority Act, 1987. The Lok Adalat is presided over by Members of the Lok Adalat who have the role of statutory conciliator. Composition of the Lok Adalat in Kolasib District is as under:-

Presiding Officer : Cacy Malsawmtluangi Ralte, MJS
Conciliators : Lallawmkimi, MJS
K Zomuanpuia, Legal Practitioner
R Zomuanpuia, Legal Practitioner
Ralliantawna, Social Worker
Vanlalchhuangi, Social Worker
H Vanlalnghaka, Social Worker
Lalrinmawia Ngente, Social Worker

In usual practice, Lok Adalat sits every second saturday of the month and National Lok Adalat is held every last month of the quarter. The aggrieved person/party which arise in connection to calamity *inter alia* can approach Lok Adalat. In case of major disasters, the periodicity of sitting would be increased as required.

Place of Sitting:

During disaster period the place of sitting shall be determined by the Presiding Officer of Lok Adalat as and when neccessary depending upon the extent of damage and place of occurrence. There could be some chances that the conveyance may abruptly be affected by the catastrophe, in such case, the easy accessibility of the victims would be taken into consideration.

Para Legal Volunteers(PLV's) & Legal Aid Clinic

In the entire district of Kolasib, there are as many as 27 Para Legal Volunteers appointed for the year 2018-2019. They have been trained to facilitate basic legal requirement to the people. The PLVs were appointed in a locality basis and they are well accustomed with the problems faced by the people. Further, Legal Aid Clinic were established in some places that are manned by the PLVs of the concerned location. Hence the PLVs and Legal Aid Clinic would play a vital role in providing legal assistance to the victims or direct them to mediate their grievances to the appropriate authority.

The list of PLV's and Place of Legal Aid Clinic established.

Sl No	Name of PLV	Location	If Legal Aid Clinic established
1.	K. Lalruatdika	Lungdai	-
2.	F. Sikulrema	Bukpui	-
3.	Zosangliani	Kawnpui	Yes
4.	K. Lalbeiseii	-do-	Yes
5.	Ramchullova	-do-	Yes
6.	Vanlaltiama Colney	Hortoki	Yes
7.	R. Lalnunsanga	Bualpui	-
8.	Lalchhinchhiaha	-do-	-
9.	PC. Lalremruati	Thingdawl	Yes
10.	Ralliantawna	Diakkawn, Kolasib	Yes
11.	Thanglianson	Vengthar, Kolasib	-
12.	Lalfakzualaa	New Diakkawn, Kolasib	-
13.	B. Daniel Lalawmpuia	Tuithaveng, Kolasib	-
14.	Happy Laldingliani	Project Veng, Kolasib	Yes
15.	Lalzarmawii	District Jail	Yes

16.	R. Lallawmsanga	Front Office, District Court	Yes
17.	Zothankima Zote	Bilkhawthlir	Yes
18.	VL. Remruatfela	-do-	Yes
19.	Lalnuntluangi	Bairabi	Yes
20.	C. Lalchhandama	-do-	Yes
21.	Lalnunkima Ngente	Vairengte	Yes
22.	Lalruatkima	-do-	Yes
23.	Elizabeth-i	-do-	Yes
24.	Lalrinpuii	-do-	Yes
25.	Malsawmtluangi Ngurte	Saipum	-
26.	R. Lalhriatpuia	Pangbalkawn	Yes
27.	C. Lalmuanawma	Buhchangphai	-

Legal Awareness:

Legal awareness has been conducted by DLSA periodically to impart legal acquaintance to the people. Awareness programme is so crucial especially among uneducated and illiterate person that they are unaware of their legal rights. So training programme has continually been conducted and in such programme, disaster related matters such as relief, assistance, rehabilitation and the entitlement under minimum standard of relief would invariably be included as one of the topics.

Annexure 8: List of Community Responder

I. Quick Response Team(QRT)

Sl No	Name	Date of Birth	Address	Contact No
1	Samuel Lalremruata S/o Lalthanzauva(L)	7/02/1996	Kolasib, Diakkawn	9774633234
2	Amos Vanlalhriatpuia S/o B Zonuntluanga	13/06/1995	Salem veng, Diakkawn, Kolasib	9612200380 8837287405
3	Lalthansanga S/o Vanlallura	19/09/2002	Kolasib, Diakkawn	8257005975
4	K. Dengthanzauva S/o K.Rohmingliana	21/11/1996	Galilee veng, Diakkawn, Kolasib	6009066023
5	Vanlalmalsawmdawngkima S/o Vanlalringa	25/01/1998	Salem veng, Diakkawn, Kolasib	8794423169
6	Isak Ringremkhawma S/o Riangkam	08/10/1997	Bilkhawthlir, Kualmawi	9366578538
7	Joseph Lalhmingsanga S/o R. Lalnunmawia	08/01/1997	Bilkhawthlir, Kawnveng	7640985540
8	Vanlalduhzuala S/o Vanlalruata	23/05/1998	Bilkhawthlir, Tuithaveng	8257072723
9	Laldawngliana S/o Lalchangliana	7/12/1987	Kolasib, Tumpui	8416078976 7005429650

II. Aapda Mitra Volunters

Sl. No	Name	Gender	Mobile No.	D.O.B	Address
1	Vanlalhruaia Pachuau	Male	8974809360	15.09.1977	Thingdawl, Venglai
2	Gilbert Lalrinhlua	Male	8837039234	25.12.1991	Thingdawl, Hmarveng
3	Michael Lalrinmawia	Male	9366237040	26.05.1991	Thingdawl, Hmarveng
4	Joseph Rorelliana	Male	7005692343	19.10.1997	Thingdawl, Tlangnuam
5	J. Lalhriatmawia	Male	6009033401	09.09.2000	Thingdawl, Tlangnuam
6	Lalthangdela	Male	8837320578	09.01.1996	Hortoki, Vengchhak
7	Lallawmzuala	Male	9378046076	22.10.2002	Hortoki, Vengchhak
8	Malsawmsanga	Male	7005889646	02.07.1996	Hortoki, Vengthar
9	Lalruatfela	Male	9366249512	18.06.1998	Hortoki, Vengthar
10	Lalrinzuala	Male	9366075350	26.09.1992	Khamrang, Dawr Veng,

11	Robert Lalramhuala	Male	9774655399	09.11.1989	Saipum
12	Lalrinfela	Male	6009031158	13.09.2000	Saipum, Hmarveng
13	Lalhmachhuana	Male	9366891678	08.03.1993	Saipum
14	Lalhruaitluanga	Male	9366727105	30.12.2001	Saipum
15	Lalramchuana	Male	9863678805	29.09.1997	Saihapui 'V'
16	Lalhruaizela	Male	6009808292	18.01.1996	Saihapui 'V'
17	Lalruatfela	Male	7005948900	01.01.2000	Saihapui 'V'
18	Laltlansanga	Male	6009738861	11.06.2003	Saihapui 'V'
19	Lalchawimawia	Male	9101761968	10.02.1990	Saihapui 'V'
20	Rorelsaka	Male	9863513525	11.12.1993	Saihapui 'V'
19	Lalchawimawia	Male	9101761968	10.02.1990	Saihapui 'V'
20	Rorelsaka	Male	9863513525	11.12.1993	Saihapui 'V'
21	Lalbiakhlua	Male	6003399139	21.02.2004	Saihapui 'V'
22	Rory Rosangliana	Male	6009919475	11.08.2001	Saihapui 'V'
23	Vanrammawia	Male	9863694976	25.09.1996	Saihapui 'V'
24	Ramngaihawma	Male	9862313655	25.07.1986	Saihapui 'V'
25	H. Lalduatpuia	Male	8787518441	24.04.1994	Saihapui 'V'
26	Vanlalduhzuala	Male	8257072723	23.05.1998	Bilkhawthlir, Tuitha Veng
27	Isak C. Vanlalrindika	Male	9383008148	7.12.1997	Bilkhawthlir, Kualmawi
28	Vohbik Lalduhsaka	Male	9366511692	27.4.2000	Bilkhawthlir, Kualmawi
29	Asha Lalnunsiami	Female	8837368803	18.10.1998	Bualpui North
30	Lallawmkimi	Female	8787482668	18.03.2001	Sethawn
31	Lalchuansangi	Female	8837411017	18.07.1998	Kawnpui, Venglai
32	Francis Malsawmkima	Male	8413993144	03.11.2003	Kawnpui, Banglaveng
33	Malsawmdawngkimi	Female	8974981071	19.01.1994	Kawnpui, Banglaveng
34	Lalengzami	Female	7640868378	18.07.1992	Kawnpui, Banglaveng
35	Lallawmkimi	Female	8730990635	23.07.1999	Kawnpui, Vengthar
36	Laltluangliana	Male	9366202262	19.04.1997	Serkhan, Hmarveng
37	Lalhmudika	Male	8798409194	04.03.1998	N. Chawnpui

38	Albert Lalfakawma	Male	9366058898	06.12.1999	N. Chawnpui
39	Lalhmunmawia	Male	8837033877	06.09.2001	N. Chawnpui
40	Lalruatsangi	Female	8730884009	02.10.2000	Meidum
41	Ramengmawia	Male	6909587945	08.08.2003	Meidum
42	P. Lalrintluanga	Male	9863645108	07.08.1983	Nisapui, Thlanmual Veng
43	H. Lalengmawia	Male	8837020178	15.02.1989	Nisapui, Thlanmual Veng
44	Malsawmkima	Male	6009006192	25.07.2003	Nisapui, Thlanmual Veng
45	Lalrempuii	Female	7005474094	12.02.1999	Nisapui, Hmarveng
46	Lalfakmawii	Female	9366949138	12.05.2001	Nisapui, Hmarveng
47	Vanlalpeka	Male	6009252585	28.08.2002	Pangbalkawn
48	Lalhriatrengi	Female	6009178785	22.12.2002	Pangbalkawn
49	Elina Ramtharmawii	Female	7005250402	24.12.1996	New Builum
50	Zarzokimi	Female	6909496475	22.10.1999	New Builum
51	Lalthankima	Male	9366083667	23.03.1996	Rengtekawn
52	Imanuel Lalpiangruala	Male	8794786792	19.12.1998	Rengtekawn
53	Mangminluna	Male	8787749844	15.10.1997	Kolasib, Khuangpuilam
54	Grace Malsawmtluangi	Female	9863448890	12.3.1997	Kolasib, Khuangpuilam
55	R. Lallawmzuala	Male	8837474267	08.12.1989	Kolasib, Vengthar
56	R. Lalmuanzuala	Male	8287233853	04.04.1998	Kolasib, Vengthar
57	Laltlansanga	Male	7627989290	19.06.2001	Kolasib, Vengthar
58	Nekzomawia	Male	7630956532	29.04.2001	Kolasib, Vengthar
59	Laldingngheti	Female	9612689269	19.03.1983	Kolasib, Vengthar
60	Lalruatfela	Male	8787844297	14.08.1996	Kolasib, Vengthar
61	Joseph Lalrinpuia Khiangte	Male	9862305411	24.06.1997	Kolasib, Vengthar
62	Esther Lalhmingsangi	Female	7627913528	21.12.2000	Kolasib, New Diakkawn
63	V.Lalhlimpuia	Male	9612475938	16.03.2005	Kolasib, New Diakkawn
64	Zodinthara	Male	8732066749	04.06.1979	Kolasib, Diakkawn
65	David Lalrinkima	Male	9774606176	02.12.1999	Kolasib, Diakkawn

66	Andrew Malsawma	Male	6009809367	15.05.1999	Kolasib, Diakkawn
67	Paul Lalramliana	Male	8794509516	27.11.1994	Kolasib, Salem Veng
68	R. Lalhmasaa	Male	9862697603	27.07.1983	Kolasib, Diakkawn
69	Lalhmangaihzuala	Male	8729954085	12.03.1988	Kolasib, Diakkawn
70	Lalhmangaihzuala	Male	9774341797	13.09.1994	Kolasib, Diakkawn
71	Lalmalsawma	Male	7628025734	14.07.1991	Kolasib, Diakkawn
72	H. Zorinmawia	Male	6009049239	21.07.1999	Kolasib, Diakkawn
73	R. Lalremruati	Female	9863426440	02.10.1993	Kolasib, Diakkawn
74	Malsawmthari	Female	7630939270	18.01.1997	Kolasib, Diakkawn
75	H. David Laldinthara	Male	8787624452	04.11.1995	Kolasib, Diakkawn
76	Samuel Lalremruata	Male	9774633234	07.02.1996	Kolasib, Diakkawn
77	Lalthansanga	Male	8257005975	19.9.2002	Kolasib, Diakkawn
78	Amosa Lalmalsawma	Male	9366665177	13.10.1996	Kolasib, Diakkawn
79	Esther Lalrindiki	Female	9366190114	30.6.2000	Kolasib, Salem Veng
80	Lalchhanchhuaha	Male	7085417446	11.02.1984	Kolasib, Venglai East
81	Lalrinfela	Male	8794646436	05.03.1993	Kolasib, Venglai
82	Lalrinchhana	Male	9612755830	23.11.1995	Kolasib, Venglai
83	Lalchhuanliana	Male	7005428023	24.12.2000	Kolasib, Venglai
84	Lalthlamuana	Male	9862305411	11.11.1995	Kolasib, Venglai
85	Lalrinfela	Male	7627988274	22.08.1997	Kolasib, Venglai
86	Mercy Lallawmzuali Hlondo	Female	9863201881	20.3.1993	Kolasib, Venglai
87	Andrew Malsawmtluanga	Male	9383397225	24.09.2005	Kolasib, Project Veng
88	Elizabeth Hasda	Female	7640835878	20.02.2000	Kolasib, Project veng
89	Lalngilneii	Female	8974748428	16.12.2001	Kolasib, Project veng
90	Vanlalnghaki	Female	8794850643	14.12.1997	Kolasib, Project veng
91	Christina Lalchhanchhuahi	Female	9366024160	24.7.1996	Kolasib, Project veng
92	Vanlaltanpuii	Female	6009040198	31.7.2003	Kolasib, Project veng
93	Lalnunhlui	Female	9863199615	09.06.2003	Kolasib, Project veng

94	C. Lalduhsaka	Male	9863622164	16.10.2001	Kolasib, Tumpui
95	Lallawmkimi	Female	8974450982	27.06.2000	Kolasib, Tumpui
96	R. Vanlalhruaii	Female	8414926436	25.12.1988	Kolasib, Tumpui
97	Lalthlamuana	Male	8974657059	26.09.2002	Kolasib, Hmarveng
98	Rebecca Lallawmzuali	Female	9362198553	22.08.2003	Kolasib, Hmarveng
99	Emmy Vanlalchhani	Female	9366308401	25.09.1998	Kolasib, Tuitha Veng
100	Lalrohlua	Male	9863164408	22.01.2003	Kolasib, Saidan

III. List of Identified Ex-Servicemen

Sl No	Name of Army and rank	Phone number	Age as on 2019	DOB	Address
1	Sep PB Rochungnunga		36	08/02/1983	Diakkawn Kolasib
2	Hav. John Lalnuntluanga	9366078729	37	23/01/1982	Hmarveng Kolasib
3	NK C lalhminghluna	9459354106	38	01/02/1981	Salemveng Kolasib
4	Nk Lalnunmawia	7355178724	37	08/09/1982	College veng Kolasib
5	Nk Lalduhkima	8119849465	35	27/06/1984	Kolasib
6	Lnk Saingurpuia Sailo		37	24/04/1982	Diakkawn Kolasib
7	Nk Lalrinzuala	7005962930	35	15/10/1984	Hmarveng Kolasib
8	Lnk R Laldinsanga		37	15/07/1982	Tumpui Kolasib
9	CPO Dinesh Joshi	8108006775	35	18/01/1984	Hmarveng Kolasib
10	PO Lalmuankima Renthlei	8257030667	38	27/11/1981	Venglai Kolasib
11	Nk Vanlalhluna		40	30/05/1979	Kolasib
12	CFN Zohmingthanga	8974670102	29	04/12/1990	Vairengte
13	Sep Lalsangzuala		35	21/05/1984	Vairengte
14	Nk Lalhmingliana	8014283143	37	24/12/1982	Vairengte
15	Nk Lalpianghuna		39	15/03/1979	Vairengte
16	Nk Lalhmudika		37	14/02/1982	Vairengte
17	Nk C Vanlalringa	9862186472	39	20/11/1980	Vairengte
18	Nk Vanlalduhsaka		39	03/03/1980	Vairengte
19	Sep Rocky Lalchhandama		38	03/06/1981	Vairengte

20	Sep Lalhunthara		37	24/12/1982	Vairengte
21	Sep Jerome Ramdinsanga	7308412636	33	10/08/1986	Vairengte
22	Sep Vanramenga	9459201514	35	17/10/1984	Vairengte
23	Nk H lalnunmawia	9402514239	36	01/01/1983	Vairengte
24	Nk Lalchhanhima		39	03/12/1980	Kawnpui
25	Lnk Lalruatkima	8787841669	39	18/04/1979	Bilkhawthlir
26	Nk Lalrammuana	9436317816	39	19/04/1980	Bilkhawthlir
27	Nk Lalthlamuana	9402322324	39	24/08/1980	Bilkhawthlir
28	Nk PC Lalrammuana	9436317816	39	19/04/1980	Bilkhawthlir
29	Sep Lalruatkima	8974235475	40	28/04/1979	Bilkhawthlir
30	Nk Zosangzuala	9577100340	36	06/10/1983	Bilkhawthlir
31	Nk R Zorinsanga	8731835018	40	05/05/1979	Thingdawl
32	Lnk Arjun Chhetry	7005962930	36	05/10/1985	Bualpui N
33	Nk AM Bdr Gharti	7896741088	37	01/01/1982	Bualpui N
34	Lnk Lalthakima	8974670102	37	20/12/1982	Zanlawn
35	Lnk Lalengzuauva		38	23/11/1981	Saihapui V
36	Hav Lalmalsawma	7085367537	39	27/04/1980	N Hlimen

IV. Quick Resonse Team

Sl No	Name	Date of Birth	Address	Contact No
1	Samuel Lalremruata S/o Lalthanzauva(L)	7/02/1996	Kolasib, Diakkawn	9774633234
2	Amos Vanlalhriatpuia S/o B Zonuntluanga	13/06/1995	Salem veng, Diakkawn, Kolasib	9612200380 8837287405
3	Lalthansanga S/o Vanlallura	19/09/2002	Kolasib, Diakkawn	8257005975
4	K. Dengthanzauva S/o K.Rohmingliana	21/11/1996	Galilee veng, Diakkawn, Kolasib	6009066023
5	Vanlalmalsawmdawngkima S/o Vanlalringa	25/01/1998	Salem veng, Diakkawn, Kolasib	8794423169
6	Isak Ringremkhawma S/o Riangkam	08/10/1997	Bilkhawthlir, Kualmawi	9366578538
7	Joseph Lalhmingsanga S/o R. Lalnunmawia	08/01/1997	Bilkhawthlir, Kawnveng	7640985540
8	Vanlalduhzuala S/o Vanlalruata	23/05/1998	Bilkhawthlir, Tuithaveng	8257072723
9	Laldawngliana S/o Lalchangliana	7/12/1987	Kolasib, Tumpui	8416078976 7005429650

V. List of Diving Squad team:-

Sl. No	Hming	Khua/Veng	Contact No.
1	Zonunsanga	Hortoki	7085511025
2	Malsawmdawngkima	Hortoki	9856642383
3	Malsawmsanga	Hortoki	8974978898
4	Robert Lalramhuala	Saipum	9402535240 9774655399
5	C Lalchangliana	Saipum	9485491738
6	Lalneihkunga	Saipum	9485470571
7	Joseph Laltlankima	Diakkawn, Kolasib	8731877961
8	Zorammawia	New Builum	8974148915
9	Lalfakmawia	New Builum	8837346424
10	PC Zosangliana	New Builum	8794469714
11	Vanlalhriatrenga	New Builum	8974456539
12	F Lalmuanawma	New Builum	8794786440
13	Lalthlamuana	New Builum	9862644299
14	Vanlalthanga	Venglai, Kolasib	9774557093
15	Lalthabuanga	Saidan	8794594161
16	PC Lalrindika	Khuangpuilam, Kolasib	9612209213
17	Darhlunchhunga	Bairabi S	8974145897
18	Vanlalhmangaiha	Bairabi S	8794759386
19	PC Lalnunsanga	Kolasib Hmarveng	8258832742
20	Lalnunhlua	Venglai Kolasib	-
21	PC VL Tluanga	Tuithaveng, Kolasib	9378094187

Annexure 9: Resource Inventory

I. Equipments at District Emergency Operation Centre, Kolasib

Sl. no	Particulars	Qnty	Description	Remarks
1	Angle cutter	1	Petrol operated machine mainly for cutting iron/steel	Serviceable
2	Blade for Angle cutter	2		Serviceable
3	Circular saw with Diamond Blade	1	Electric operated machine. The edge of the blade is coated with diamond. Can be used for cuttuing concreate wall and iron	Serviceable
4	Chain saw	2	Petrol operated machine for lumbering	Serviceable
5	Chain saw blade	4		Serviceable
6	Glove	4	Climbing apparatus	Serviceable
7	Folding Stretcher	4		Serviceable
8	Shovel	3		Serviceable
9	Dao	9		Serviceable
10	Pliers	2		Serviceable
11	Hammer	2	weight 2 kg	Serviceable
12	Crow bar	6	weight 4 kg & 5 feet long	Serviceable
13	Climbing Helmet	90		Serviceable
14	Mega phone	3	Battery operated.	2 not serviceable
15	Rope	3	8mm 2 and 10mm 1 about 100 ft each.	Serviceable
16	Inflatable Light Tower	1	Petrol operated. It can glow 60 feet radius approx.	Serviceable
17	Emergency Light	2		Serviceable
18	Search light	3	Battery operated and the focus is about 500 mtrs.	Serviceable
19	Electric Generator	1	Use petrol for stating engine and K.oil for generator. Capacity 2.5 Kva	Serviceable
20	Torch light	14	D Size battery operated both 2 cell and 3 cell	Serviceable
21	Lantern	3		Serviceable

22	Life Jacket	20		Serviceable
23	Inflatable boat	1	Rubber air filled capacity 12 Persons	Serviceable
24	Rope Ladder	4	8 feet	Serviceable
25	Aluminium ladder	2	20 feet	Serviceable
26	Fire extinguisher	2	2kg (ABC Type)	Serviceable
27	Fire extinguisher	3	5 Kg (ABC Type)	Expired
28	Traffic Cone	5		Serviceable
29	Cordoning tape	2 coils		Serviceable
30	Sit harness	4		Serviceable
31	Body harness	4		Serviceable
32	Pulley	2		Serviceable
33	Figure of 8	3		Serviceable
34	Carabineer Plain	19		Serviceable
35	Ascender Jummer	4		Serviceable
36	Rubber Glove	1		Serviceable
37	Rain Coat	3		Serviceable
38	Scuba Gear	1		Serviceable
39	Breathing Air Compressor	1		Serviceable
40	Extension wire drum	1	25 mtrs	Serviceable
41	Tent	2		Serviceable

II. Equipment available at SDRF Mualvum

Sl. No	Equipments	No. of Equipments		
		Serviceable	Unserviceable	Total
1	Florescent jacket	16	1	17
2	Search Light (Medium)	Nil	1	1
3	Search Light MK-III	Nil	2	2
4	Safety goggle	8	2	10
5	Head light	10	Nil	10
6	Body harness (full)	10	Nil	10
7	Disposable glove	Nil	163 issued & 37 unserviceable	200
8	Megaphone	4	Nil	4
9	Nylon rope 20mm	1	Nil	1
10	Stretcher (local)	Nil	1	1
11	Bolt cutter	2	Nil	2

12	Safety helmet	41	4	45
13	Rotary rescue saw (bosch)	1	Nil	1
14	Chain Saw with blade	2	Nil	2
15	Drilling machine	1	Nil	1
16	Generator 2.5KVA	1	Nil	1
17	Hydraulic Jack (10 tonnes)	1	Nil	1
18	Heavy duty work gloves	5	Nil	5
19	Life jacket	4	Nil	4
20	Ascender jumar	4	Nil	4
21	Figure of 8	5	Nil	5
22	Carabineer	4	Nil	4
23	Pulley	4	Nil	4
24	Ladder	1	Nil	1
25	Rope ladder	4	Nil	4
26	Demolition hammer	1	Nil	1
27	Circular saw	1	Nil	1
28	4 fold stretcher	1	Nil	1
29	Silpauline	Nil	58	58
30	Silpauline (sun block)	5	3	8
31	Hammer 2 kgs	3	Nil	3
32	Hammer 5 kgs	3	Nil	3
33	Scoop stretcher	2	Nil	2
34	Pelican pocket light	10	Nil	10
35	Extension cord (heavy duty)	1	Nil	1
36	Mitten	4	Nil	4
37	Rope 10mm	2	Nil	2
38	First aid box	2 sets	Nil	2
39	Seat hardness	4	Nil	4
40	Led pelican light 9410L	2	Nil	2

III. SDRF personnel of 1st IR Bn updated on 10.01.2023

Sl. No	Rank	Names	Age	Present place of posting	Remarks if any
1	Inspr.	C. Lalchhuanawma	58	Attached to security	
2	Inspr.	F. Tlanghmingthanga	58	Zophai BOP	
3	SI	Chawngthansanga	60	Bn. Hqrs.	
4	SI	Lalthianga	60	Bn. Hqrs.	
5	SI	R. Lalchawiliana	51	Kolasib Post	
6	SI	Lalchhandama	57	Bn. Hqrs.	
7	Hav.	C. Ramliana	48	Bn. Hqrs.	

8	Hav.	H. Lalengzauva	49	Saihapui 'V' BOP	
9	Hav.	H. Vanalalbela	57	Bn. Hqrs.	
10	Hav.	HS. Lalruatkima	47	Saipum BOP	
11	Hav.	Lalchand Guala	52	Tuirial Post	
12	Hav.	Lalchhuanawma-I	48	Bn. Hqrs.	
13	Hav.	Lalhmingzauva	48	Tuirial Post	
14	Hav.	Lalngaihsaka	50	Tuirial Post	
15	Hav.	Lalngurthanga	47	Attached to TRF Aizawl	
16	Hav.	Lalparmawia	46	Serlui 'B' Post	
17	Hav.	Lalpianruala	49	Bn. Hqrs.	
18	Hav.	Lalrintluanga	56	Bn. Hqrs.	
19	Hav.	Lalremruata Renthlei	43	Bn. Hqrs.	
20	Hav.	Lalropuia	57	Phaisen BOP	
21	Hav.	Lalrosanga	54	Bn. Hqrs.	
22	Hav.	R. Lalduhawma-II	49	Vairengte IOC	
23	Hav.	R. Lalramzauva	55	Bn. Hqrs.	
24	Hav.	RL. Chhanhima	55	Vairengte BOP	
25	Hav.	Thuamlianmanga (u/s)	50	Zophai BOP	
26	Hav.	Tom Lorraince Ngaihawma (u/s)	53	Bn. Hqrs.	Unfit (Mental Illness)
27	Hav.	TT. Hnuna	50	Saiphai BOP	
28	Hav.	Vanlalruata	49	Phaisen BOP	
29	Hav.	Vanlalsiamthara	48	Phaisen BOP	
30	Hav.	Zirsangzuala Kawlni	51	Bn. Hqrs.	
31	Nk.	C. Lalnunmawia	42	Bairabi Post	
32	Nk.	C. Tinthanga	51	Bn. Hqrs.	
33	Nk.	JH. Lallawmzuala	44	Saipum BOP	
34	Nk.	Jimmy Lalmuanchhana	43	Bn. Hqrs.	
35	Nk.	Laldingngheta	52	Bn. Hqrs.	Unfit (Ke veilam zeng)
36	Nk.	Lalengmawia Ralte	48	Bn. Hqrs.	
37	Nk.	Lalhmingliana	48	Attached to TRF Aizawl	
38	Nk.	Ramdinliana	43	Phaisen BOP	
39	Nk.	Sakhawhluna	45	Kolasib Rengtekawn	
40	Nk.	T. Lalrinpuia	52	Tuirial Post	
41	Nk.	R. Lalpartlana	39	Vairengte IOC	
42	Nk.	Lalmuankima	39	Attached to TRF Aizawl	
43	C/120	Lalthakima	37	Tuirial Post	
44	C/141	Zomuanpuia	35	Kolasib Post	
45	C/146	Lalvulmawia	37	Bairabi Post	
46	C/157	Lalrinmawia	35	Kolasib Post	
47	C/161	Parbin Chhetry	40	Vairengte IOC	

48	C/162	Joseph Lalzahawma	35	Kolasib Rengtekawn	
49	C/164	PC. Lalmuanpuia	36	Attached to TRF Aizawl	
50	C/167	Isaak Lalramnghaka	39	Bairabi Post	
51	C/173	K. Lalrinhlua	45	Phaisen BOP	
52	C/180	Lalmuankima	38	Attached to TFC	
53	C/199	Lalrokunga Hauzel	39	Attached to F&ES Lengpui	
54	C/208	Lalropuia	42	Kolasib Post	
55	C/213	Lalronghaka	38	Saiphai BOP	
56	C/214	K,. Ramfangzauva	36	PSO to Fast Track Court, Kolasib	
57	C/221	Lalnunsanga	42	Kolasib Post	
58	C/230	Israel Lalnithanga	46	PSO to CJM Kolasib	
59	C/241	Lalhmingthanga	35	CO 3MAP/Bn. Hqrs.	
60	C/244	T. Lalmalsawma	36	Attached to PTS	
61	C/247	C. Laltlankima	36	Vairengte Post	
62	C/249	RM. Lalnunnema	42	Saihapui 'V' BOP	
63	C/252	C. Lalrammuana	36	Vairengte Post	
64	C/272	Ricky Laltlanliana	37	Bn. Hqrs.	
65	C/278	C. Lalnunhlima	36	Vairengte IOC	
66	C/281	MC Lalramenga	39	Bn. Hqrs.	
67	C/287	Lallunghnema	34	Bn. Hqrs.	
68	C/301	Lalrindika	35	Bn. Hqrs.	
69	C/303	Vijay Thapa	38	Attached to KLB TRF	
70	C/304	Jerry Malsawmkima	44	Attached to TRF Aizawl	
71	C/309	C. Lalrinsanga	39	Phaisen BOP	
72	C/310	Bidu Kumar Barman	38	Vairengte IOC	
73	C/313	K. Vanlalruata	37	Phaisen BOP	
74	C/316	Ranu Kumar Singh	36	Bn. Hqrs.	
75	C/331	Lalparmawia	35	Bairabi Post	

Posting Wise Summary updated on 10.01.2023		
1	Battalion Hqrs.	21
2	BOP/Static Guard	40
3	Attch. at Traffic Unit	7
4	Attch. as Orderly at Aizawl	2
5	Attch. at Security	2
6	Attch. at F&ES	1
7	Unfit	2
TOTAL		**75**

Annexure 10: Maps of Kolasib District

Figure No. 1: Location map of Kolasib district:

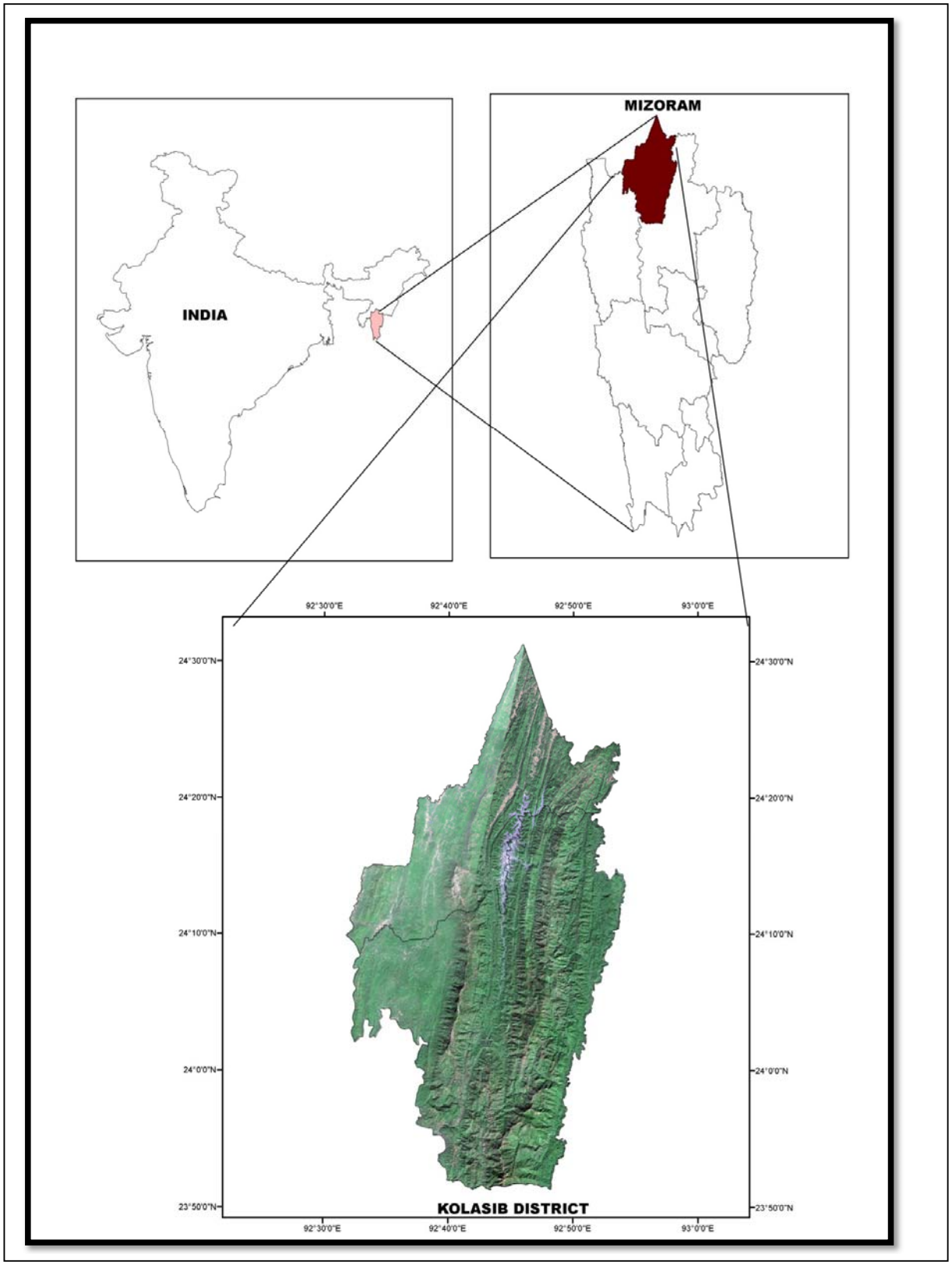


Figure No. 2: Geological Map of Kolasib District

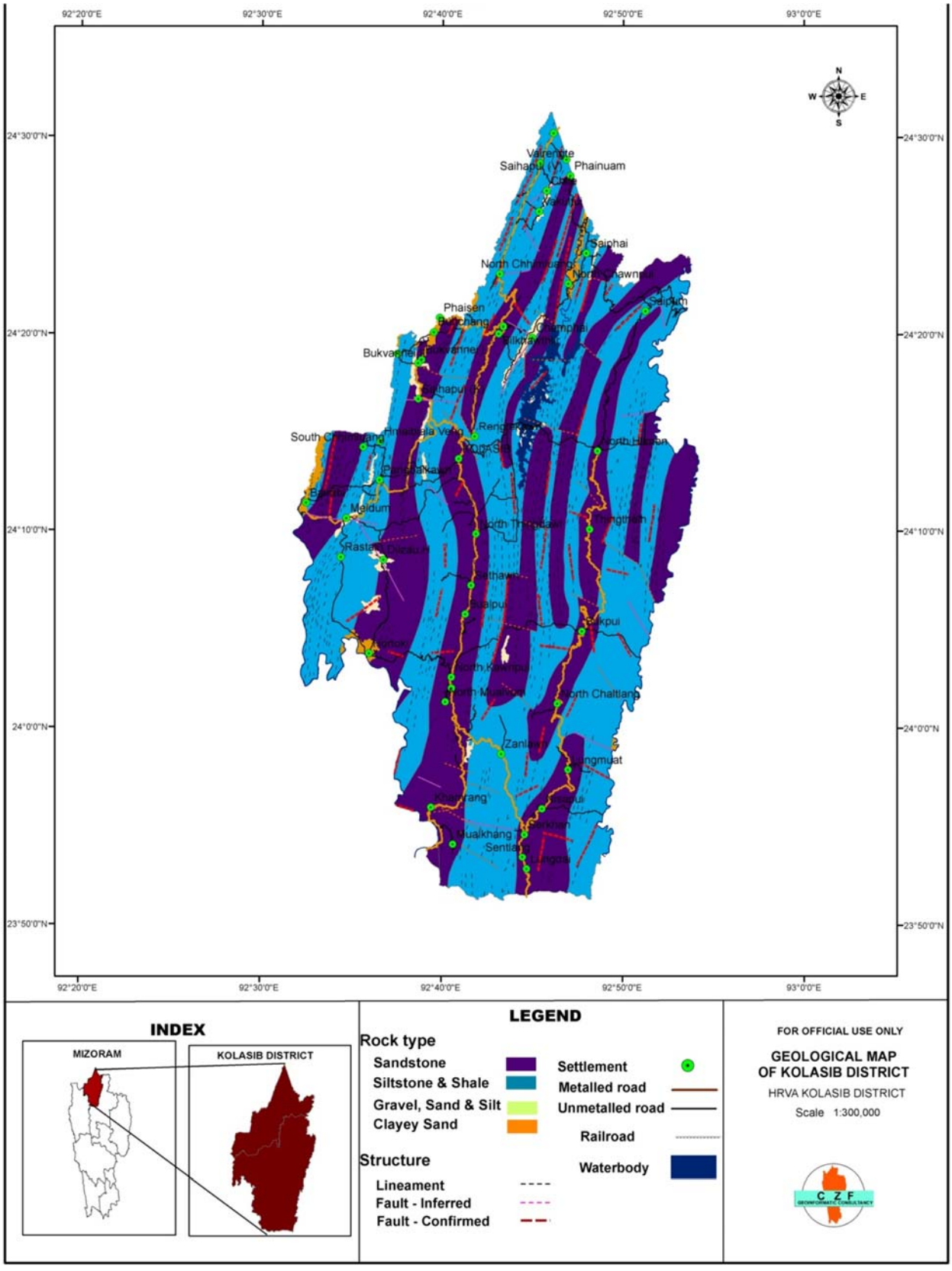


Figure No. 3: Geomorphological Map of Kolasib District

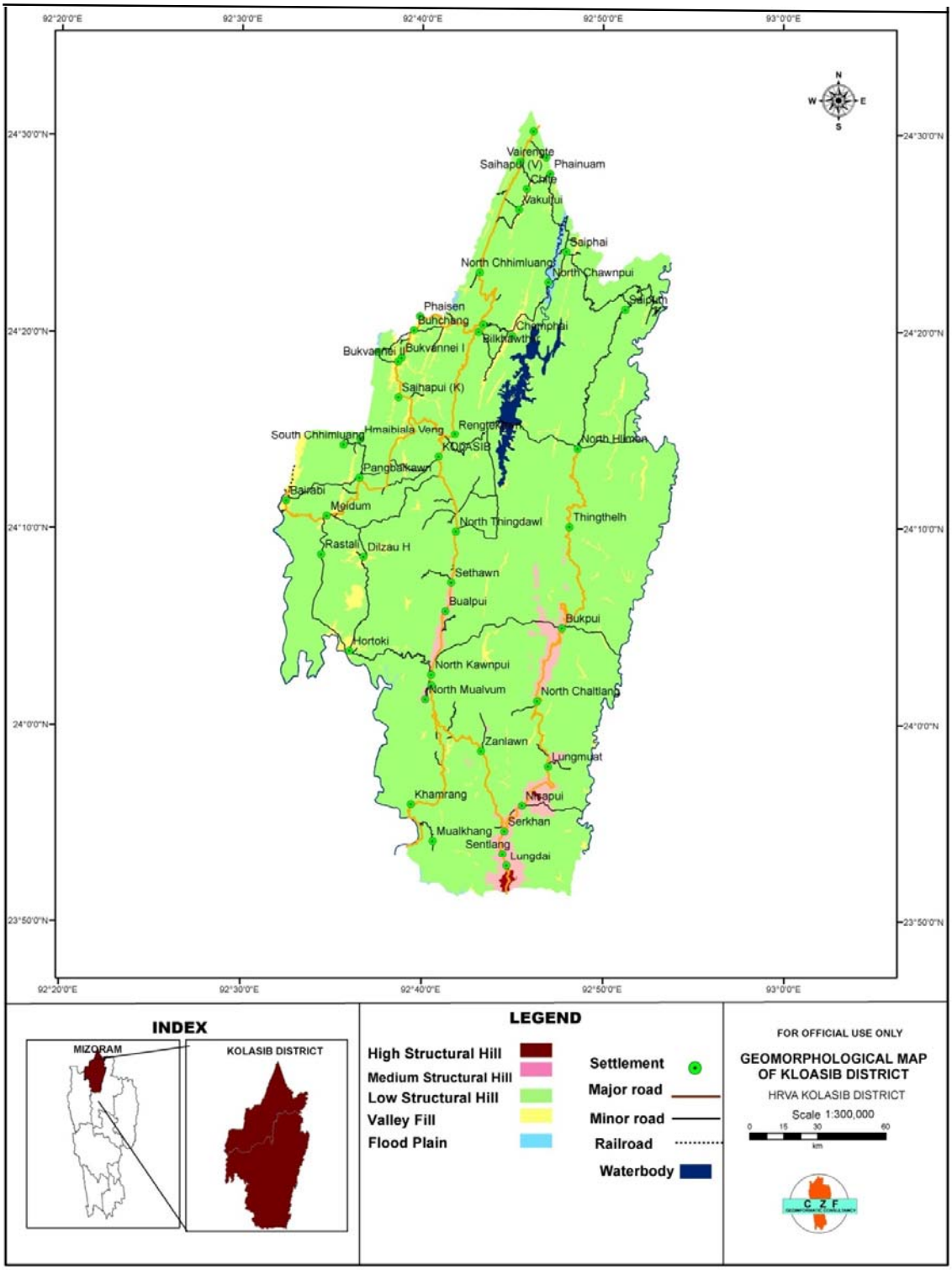


Figure No. 4:Slope Map of Kolasib District

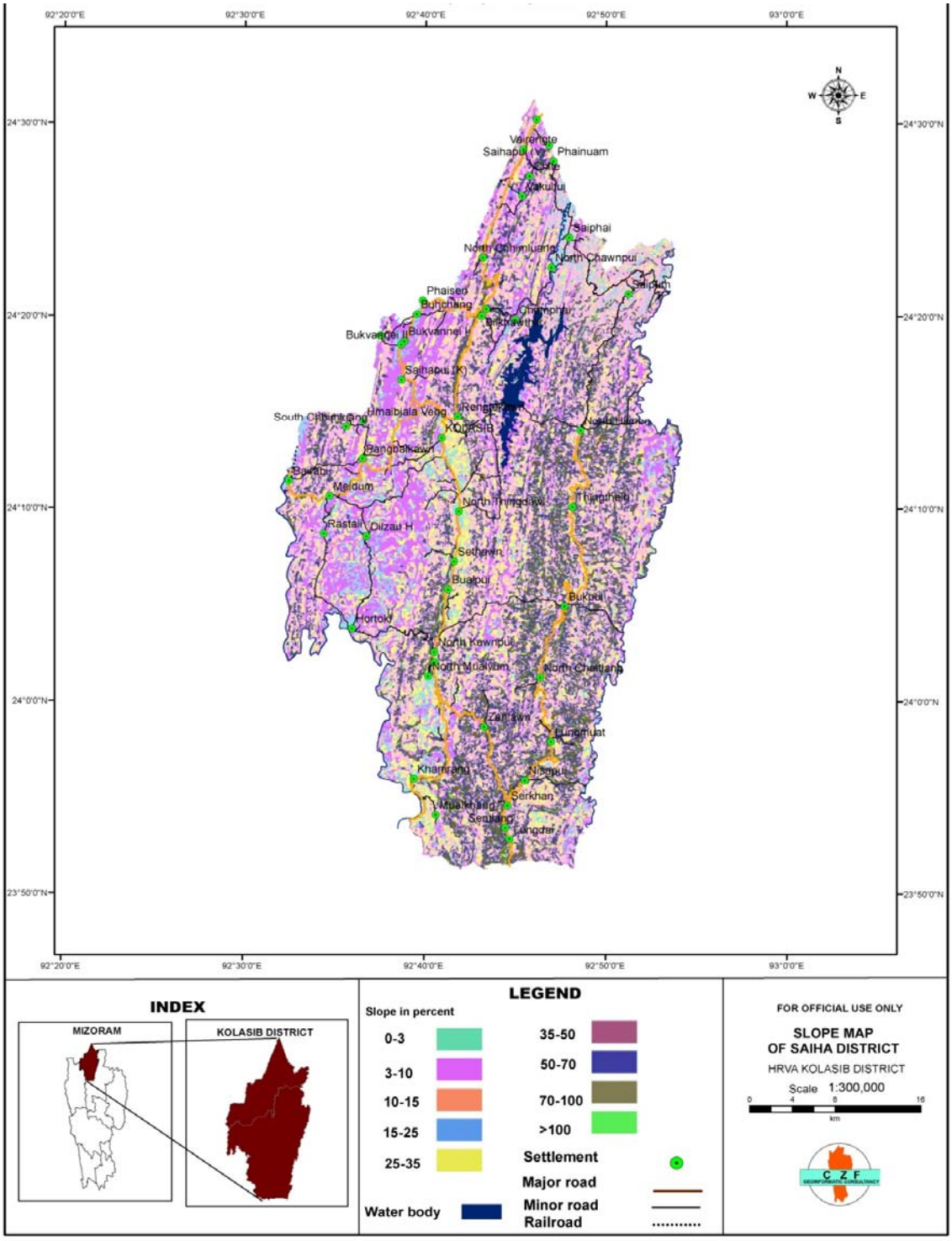


Figure No.5: Aspect Map of Kolasib District

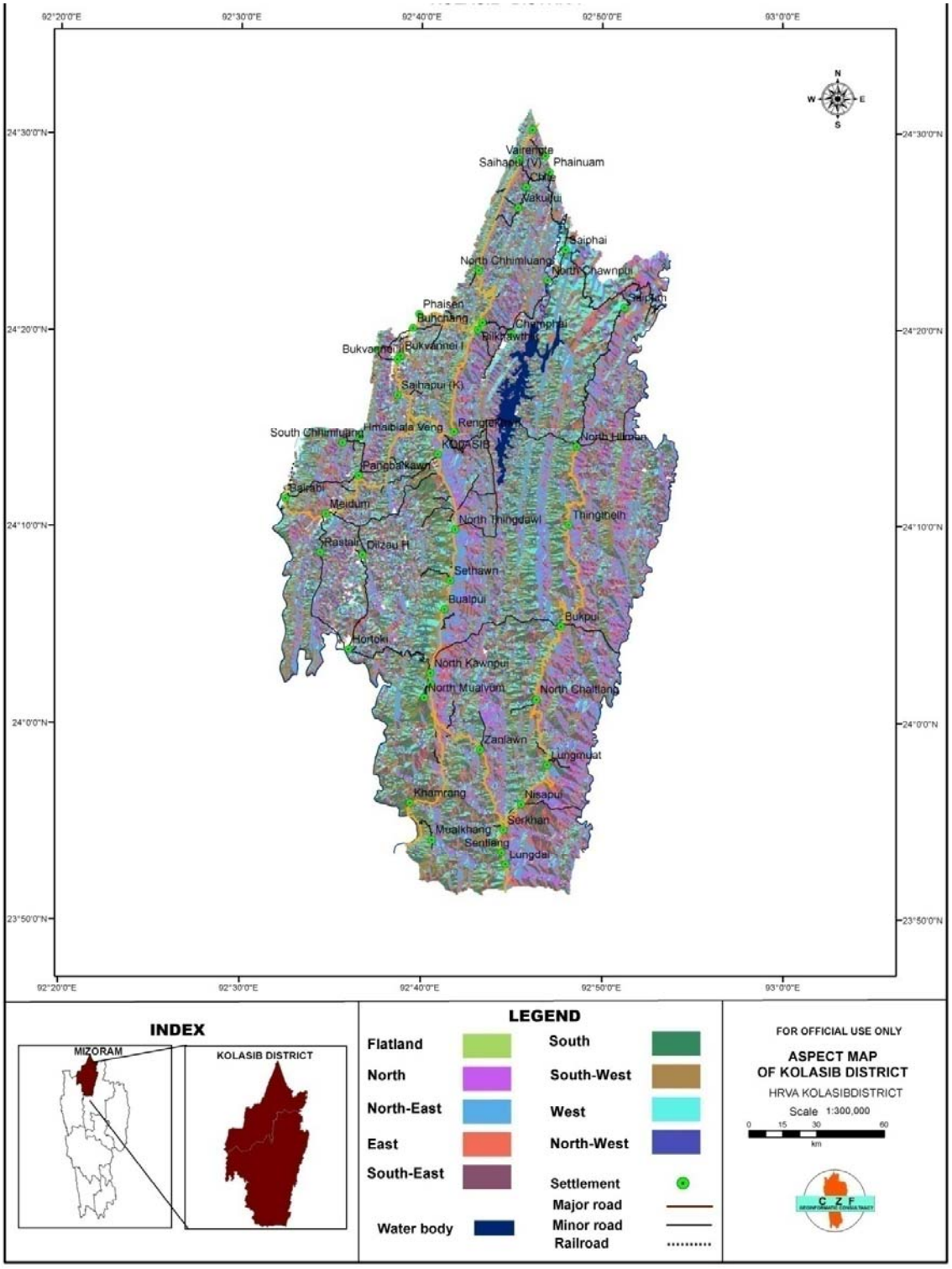


Figure No.6: Land Use/Land Cover Map of Kolasib District

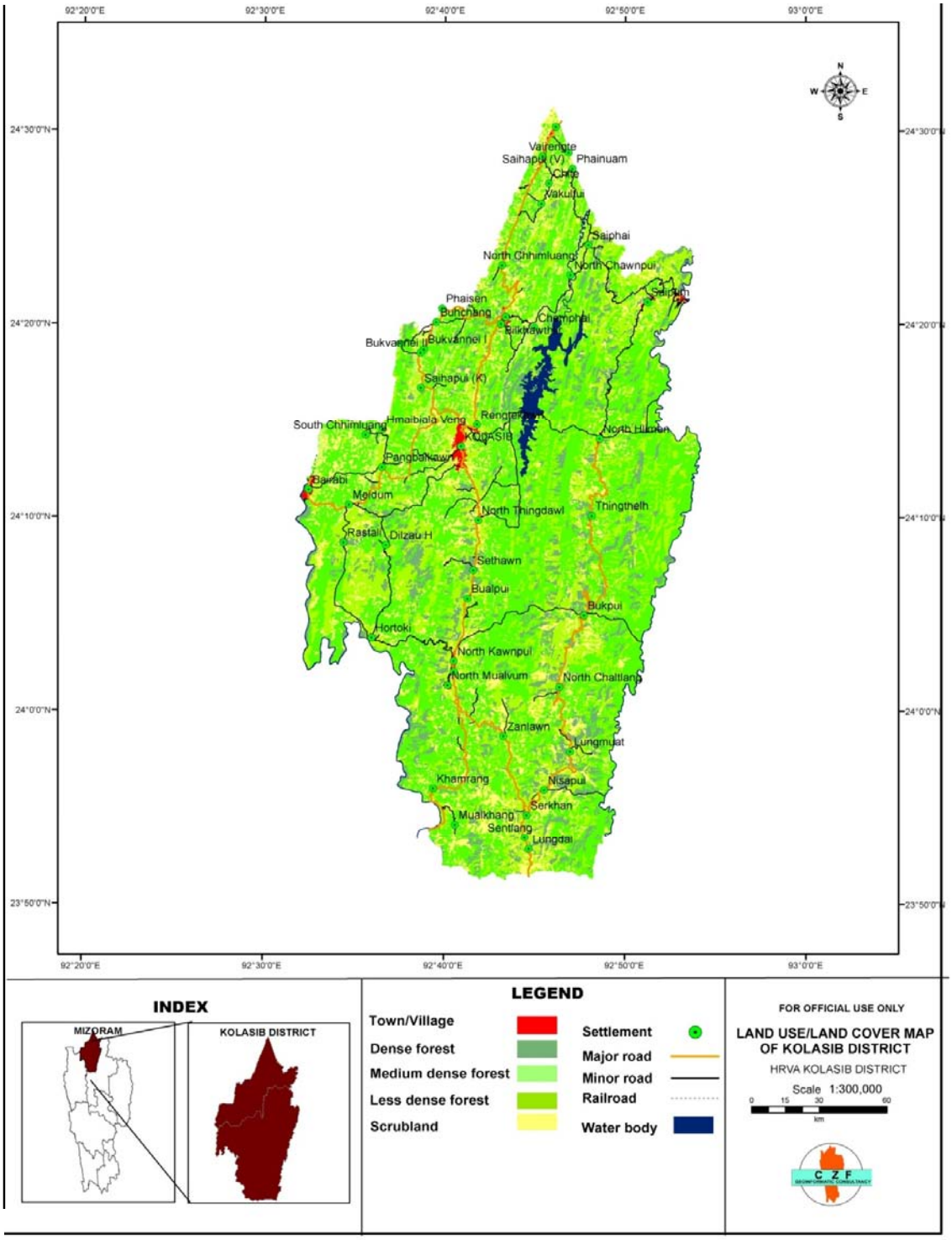


Figure No.7: Drainage Map of Kolasib District

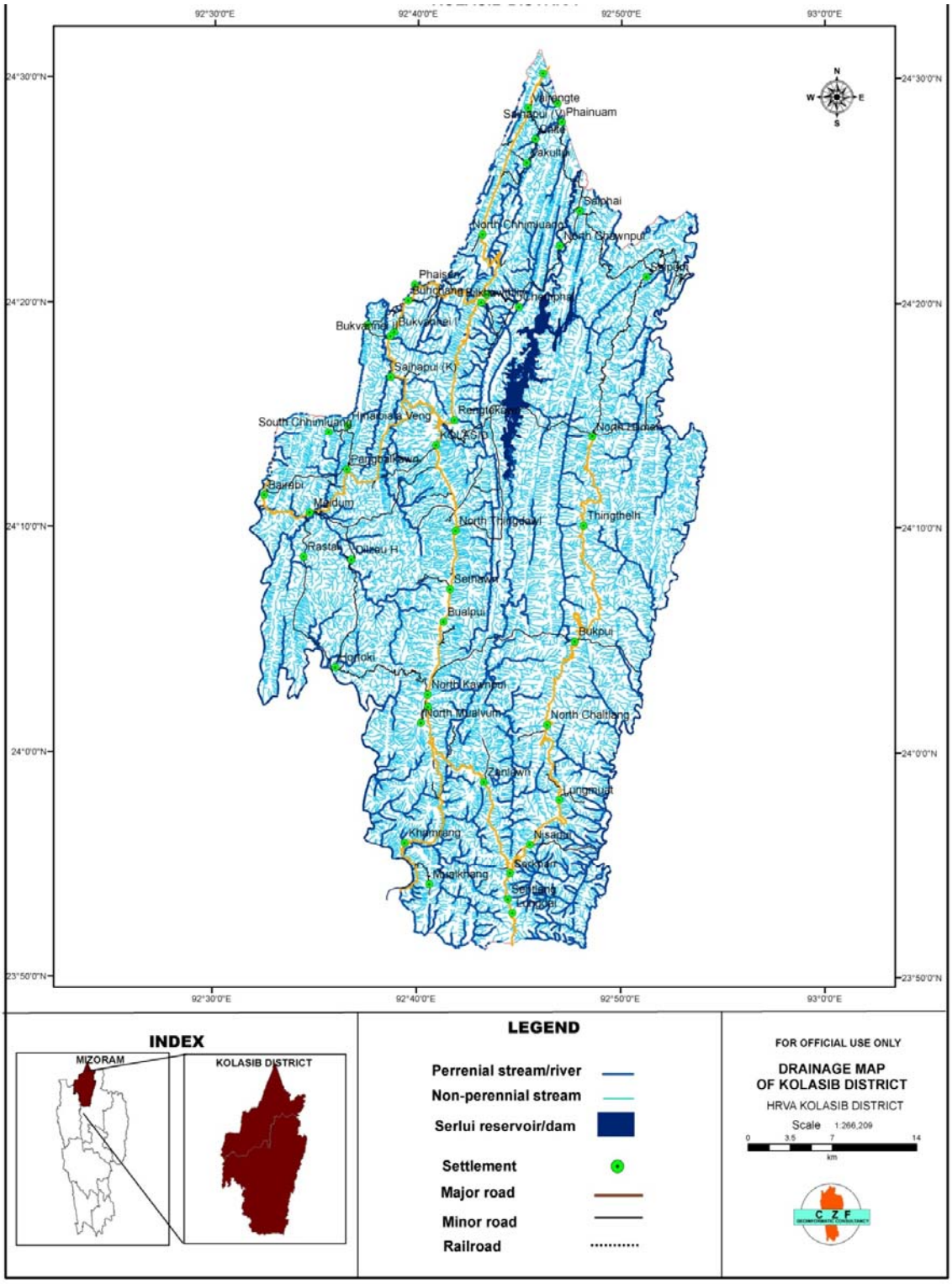


Figure No.8: Transport Network & Settlement Map of Kolasib District

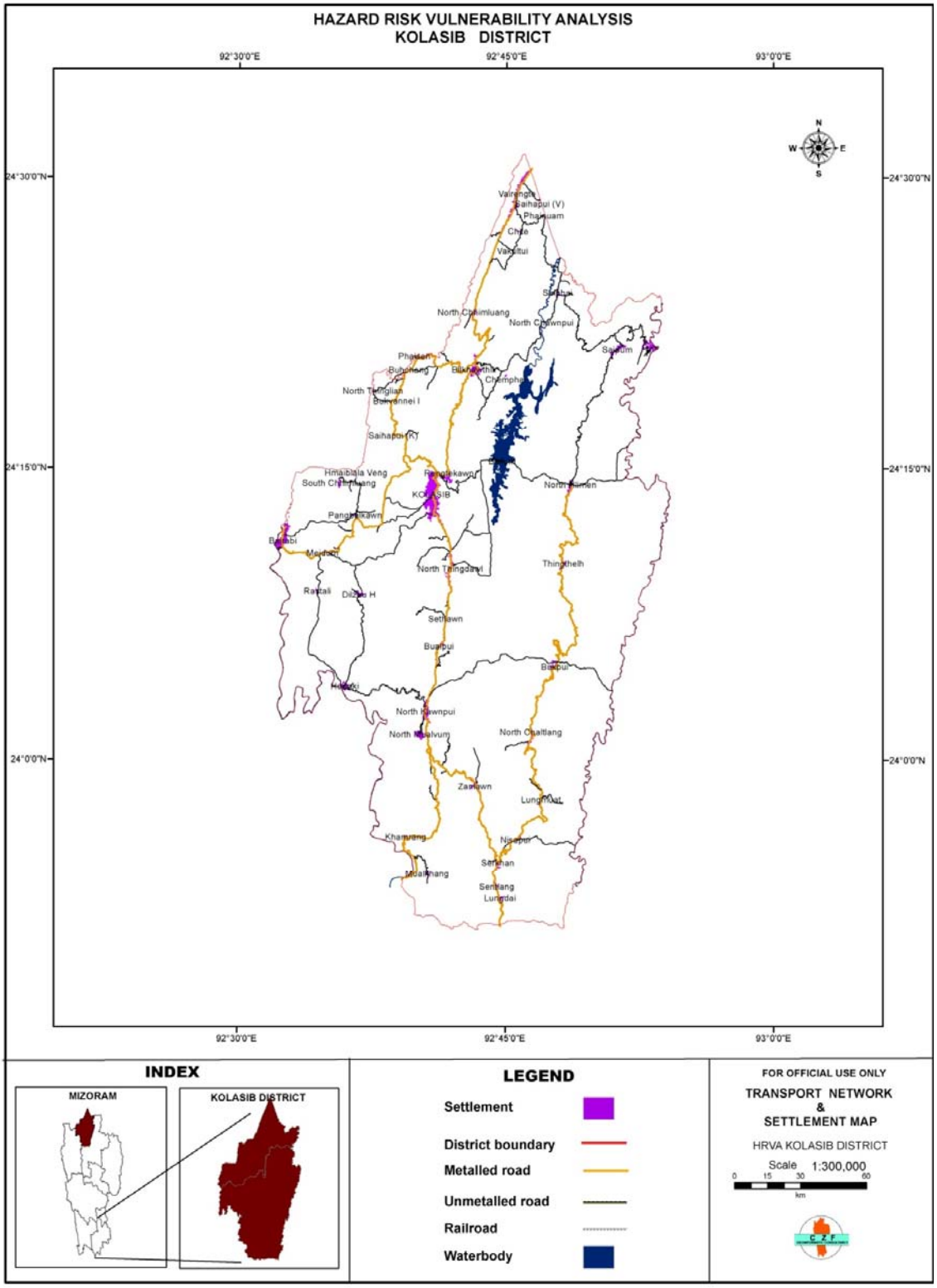


Figure No. 9: RCC Type Houses Map of Kolasib District

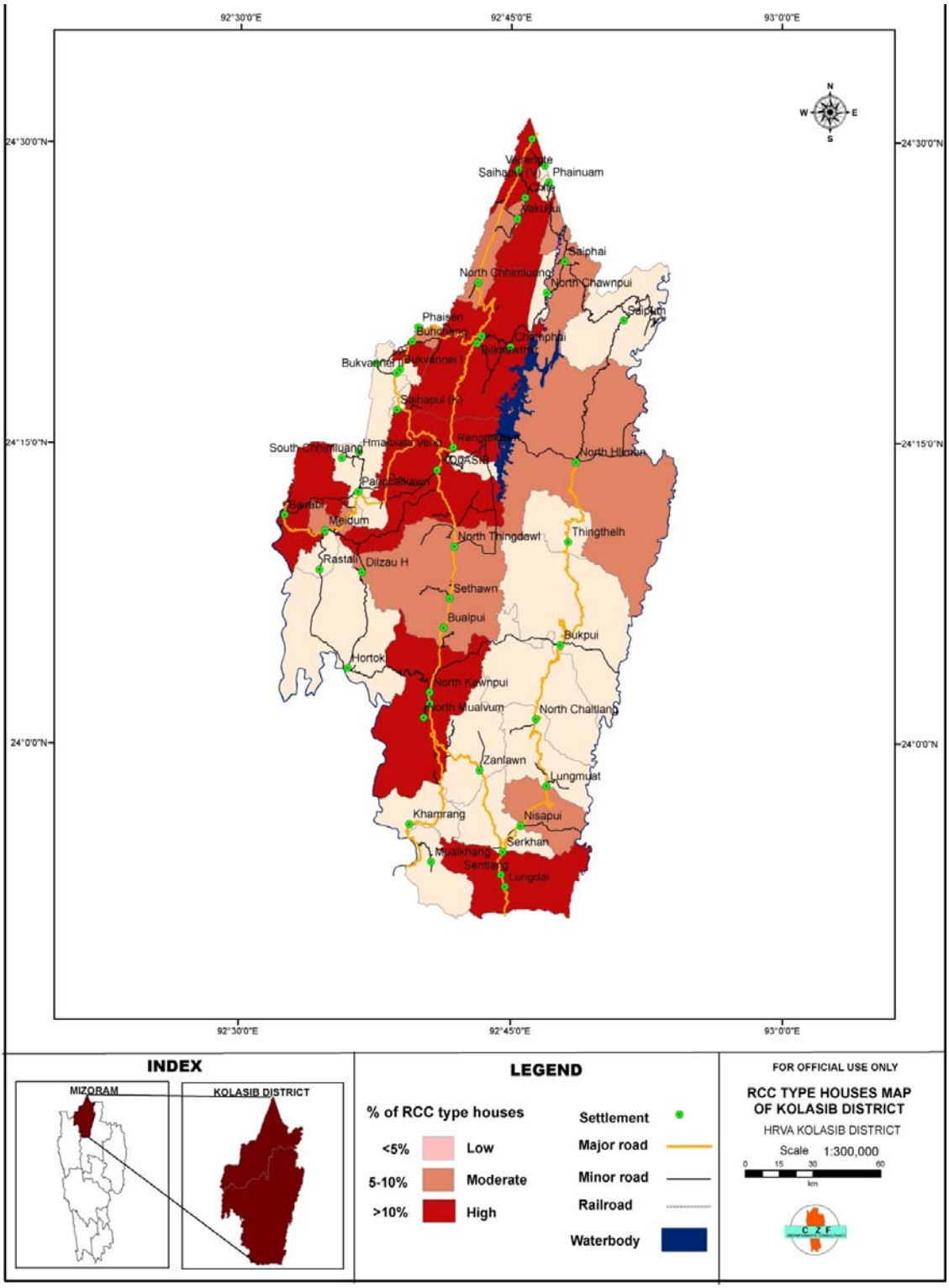


Figure No. 10: Assam Type Houses Map of Kolasib District

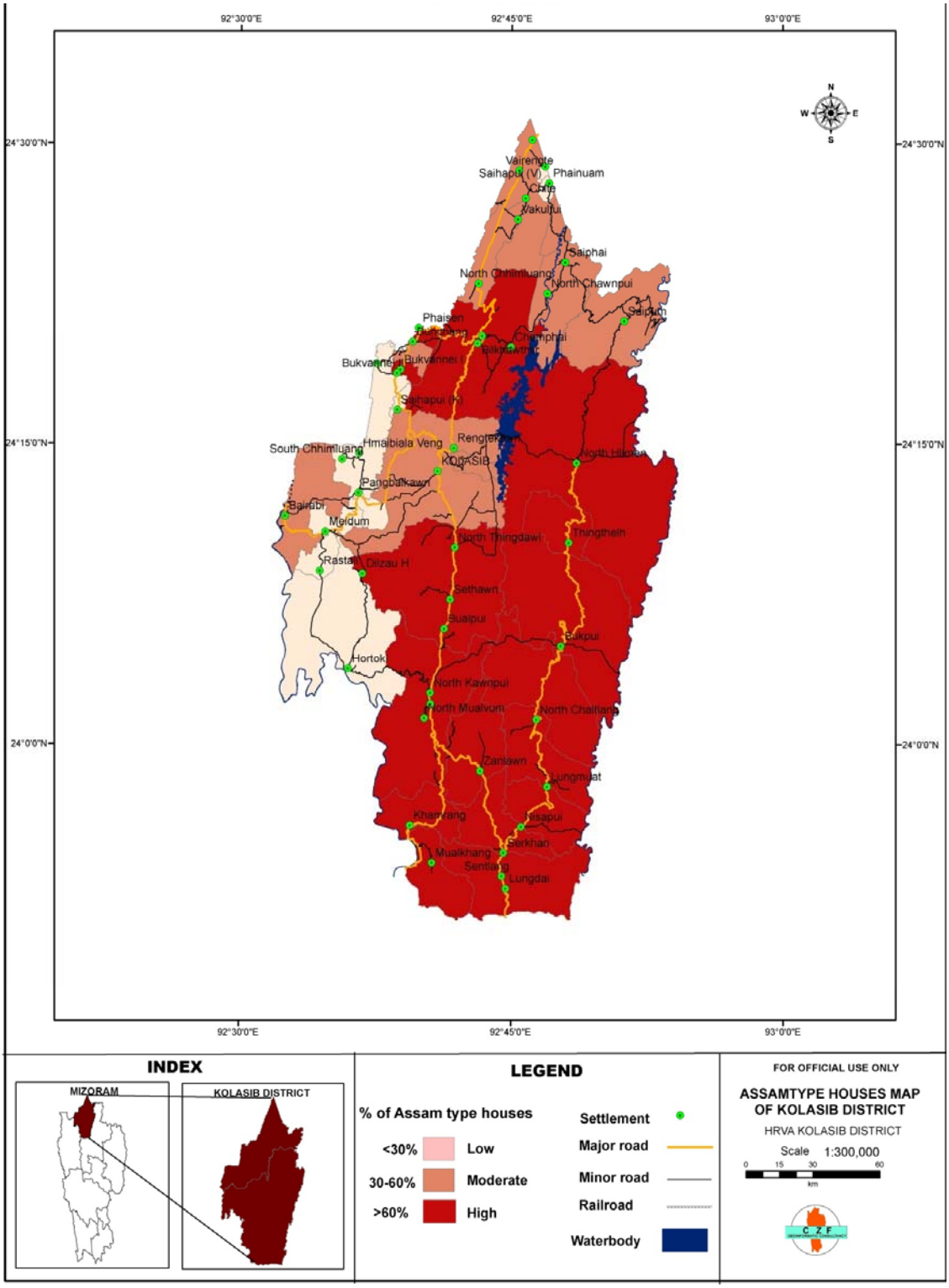


Figure No.11: Kutcha Type Houses Map of Kolasib District

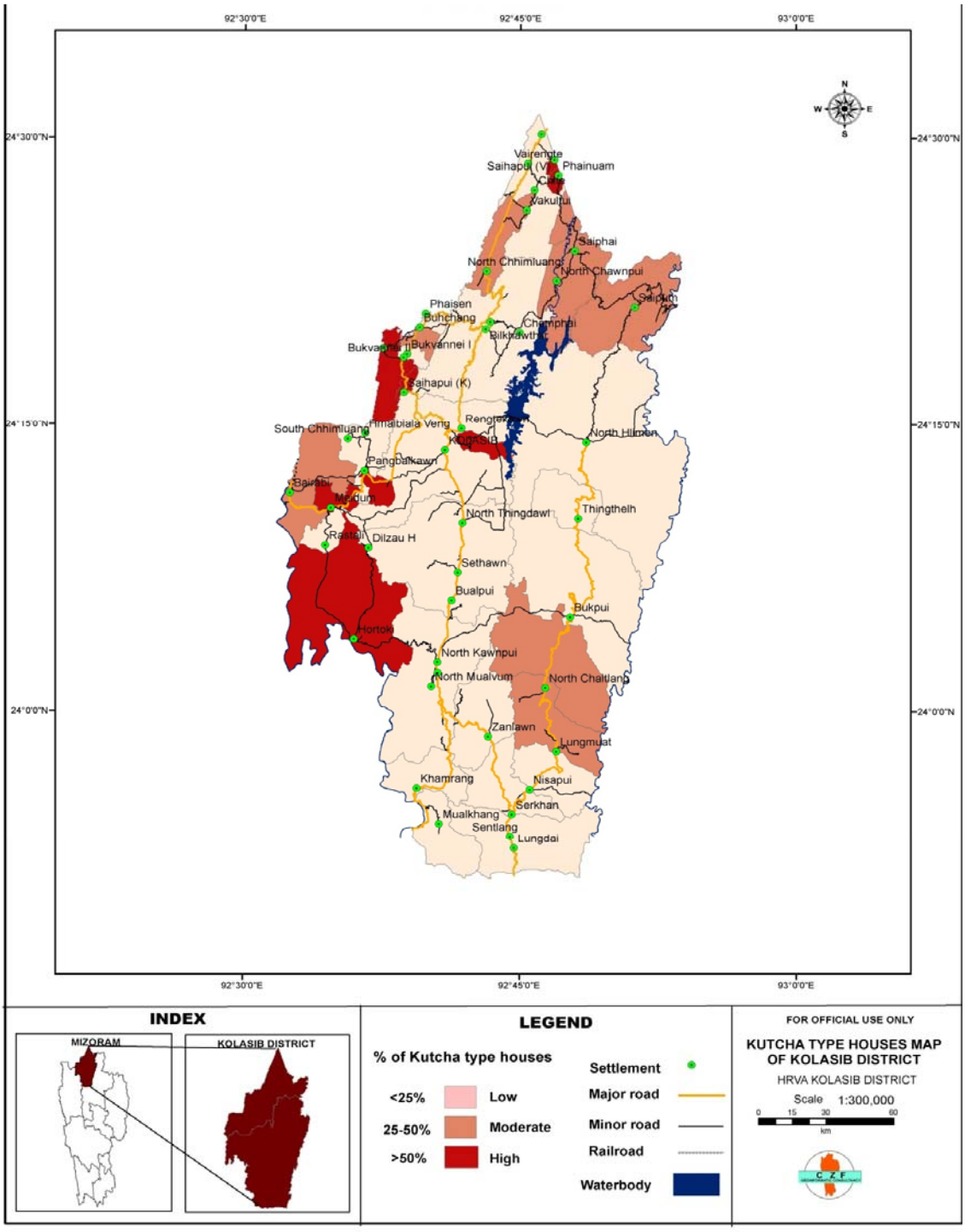


Figure No.12: Population Map of Kolasib District

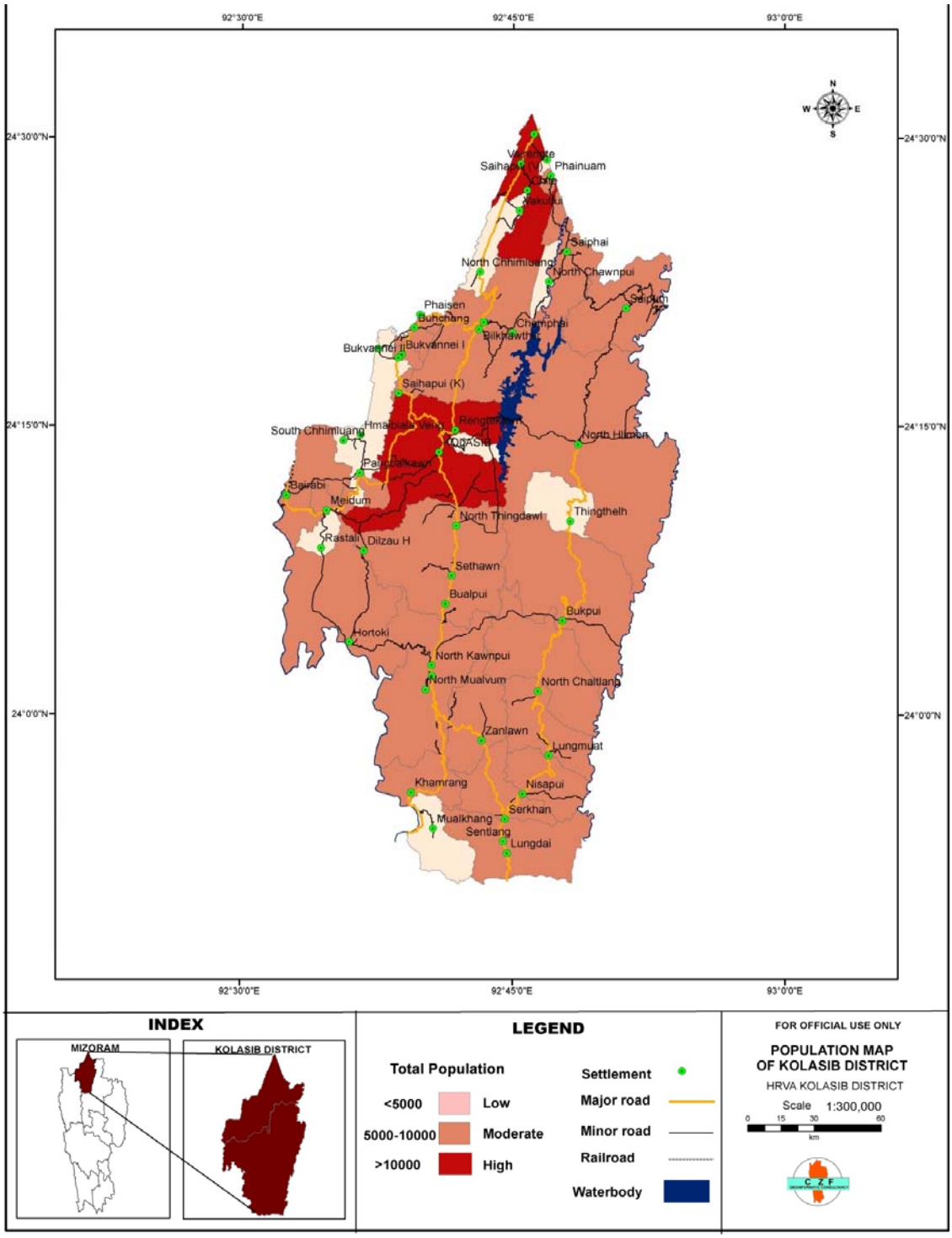


Figure No. 13: Sex Ratio Map of Kolasib District

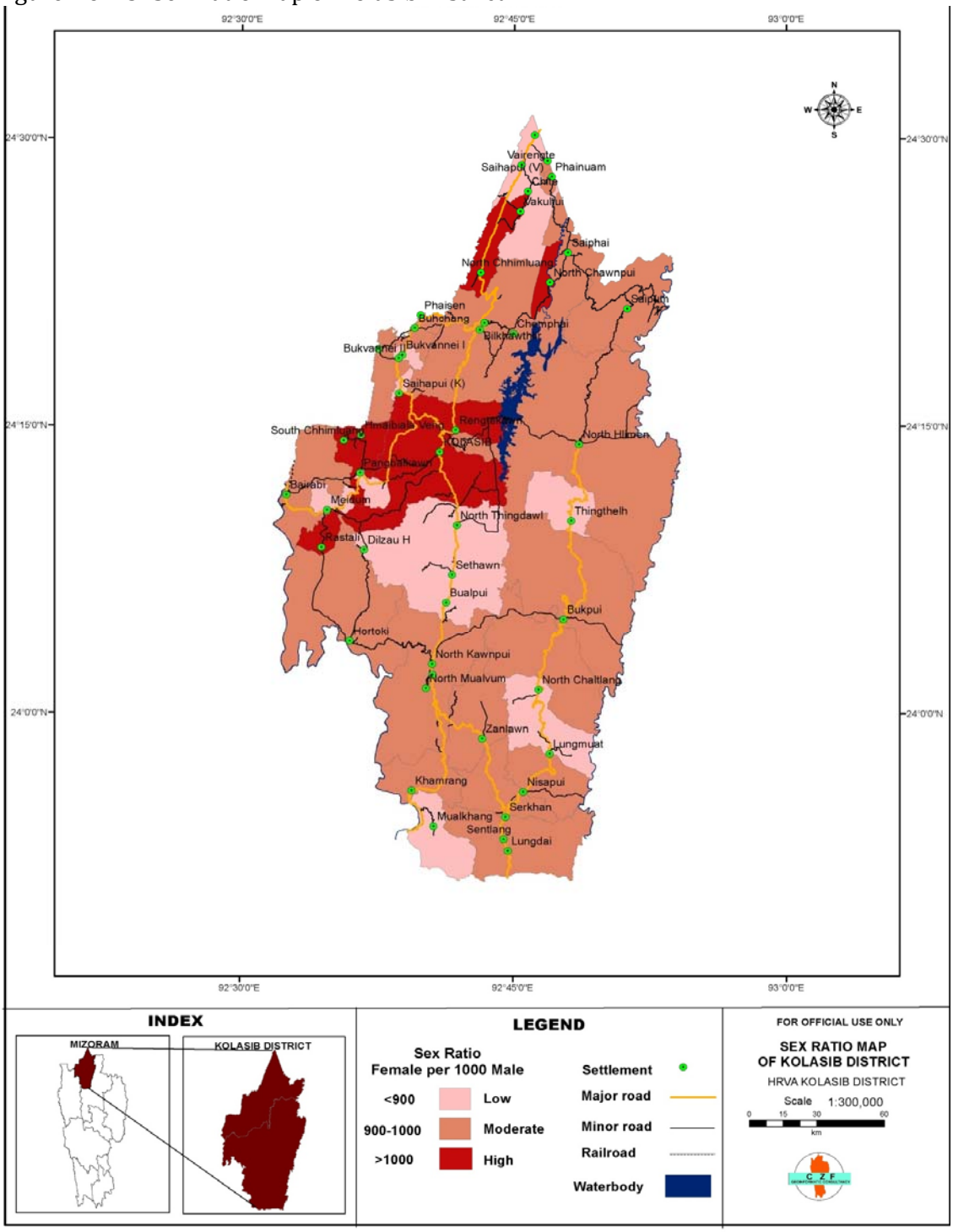


Figure No.14: Elders' Population Map of Kolasib District

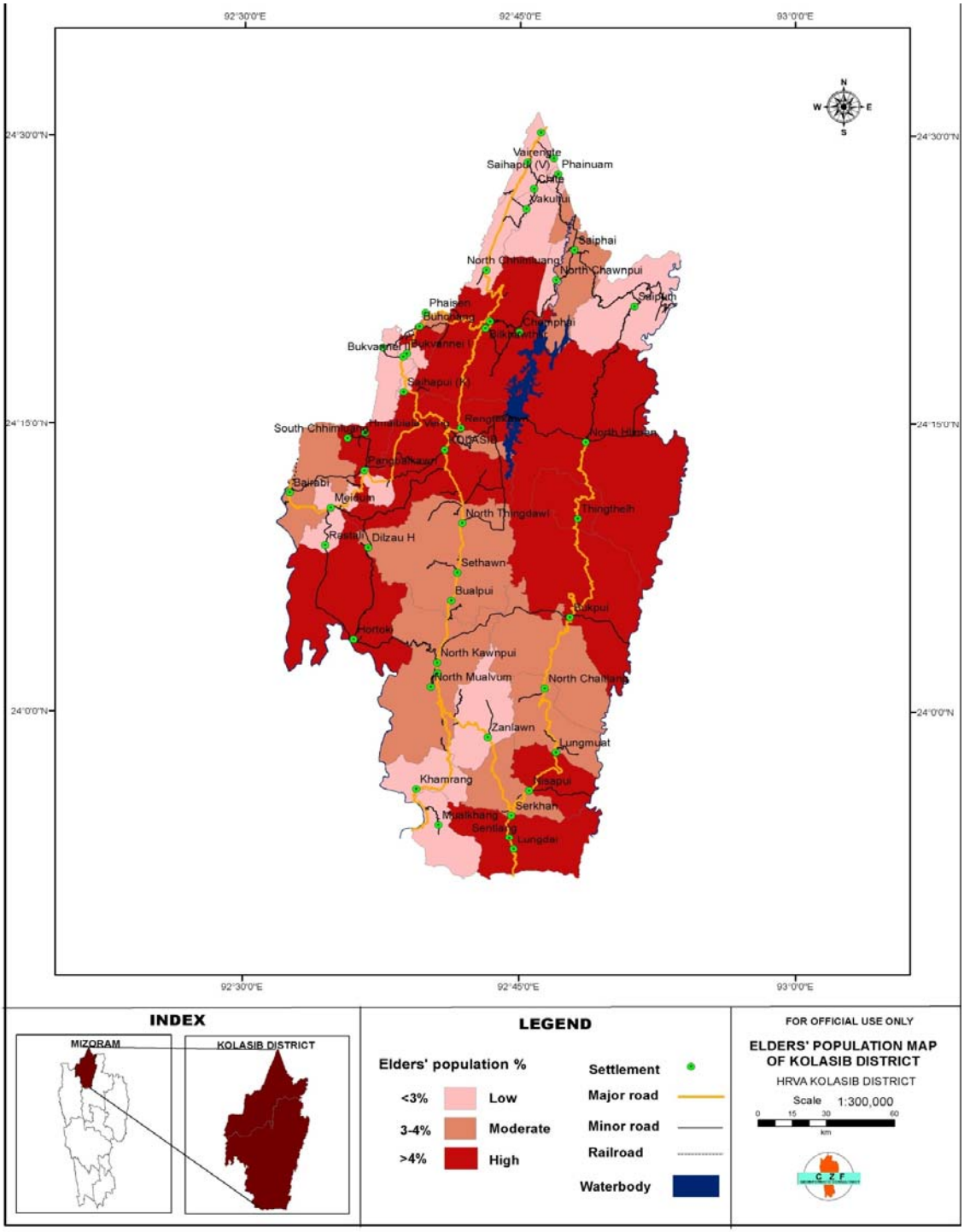


Figure No. 15: Children Population Map of Kolasib District

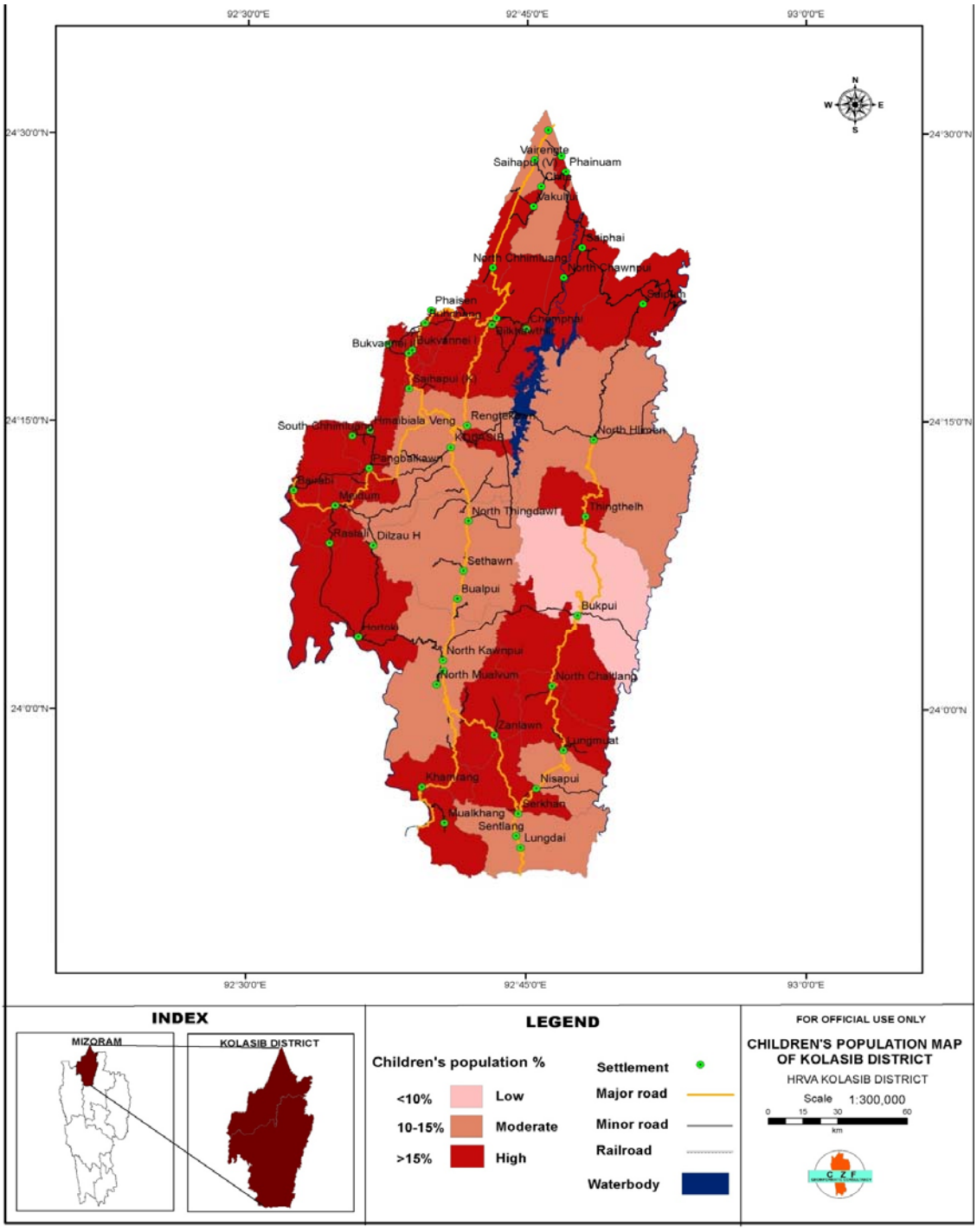


Figure No.16: Literacy Map of Kolasib District

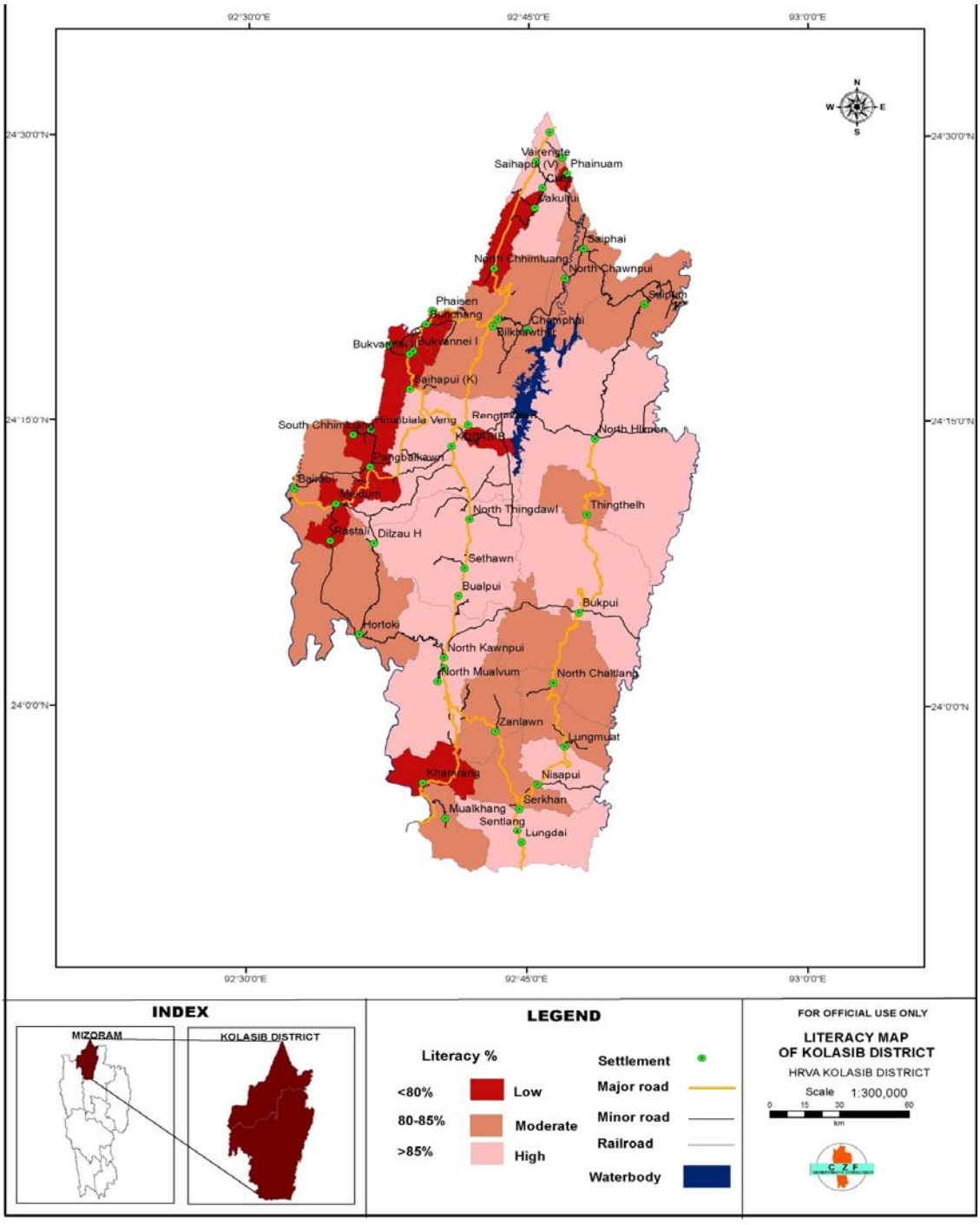


Figure No.17: Average Pregnancy Map of Kolasib District

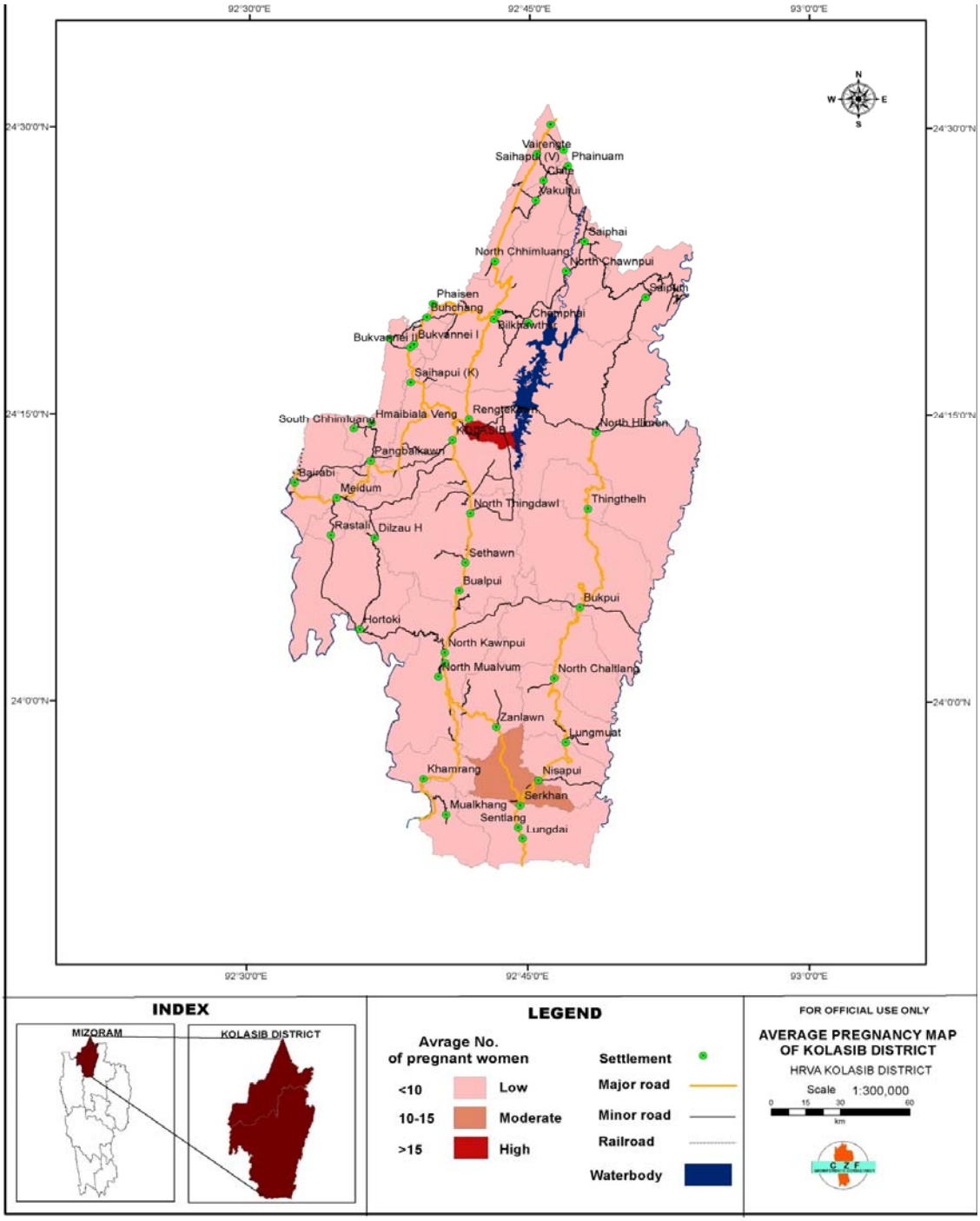


Figure No.18: Low Income Group Map of Kolasib District

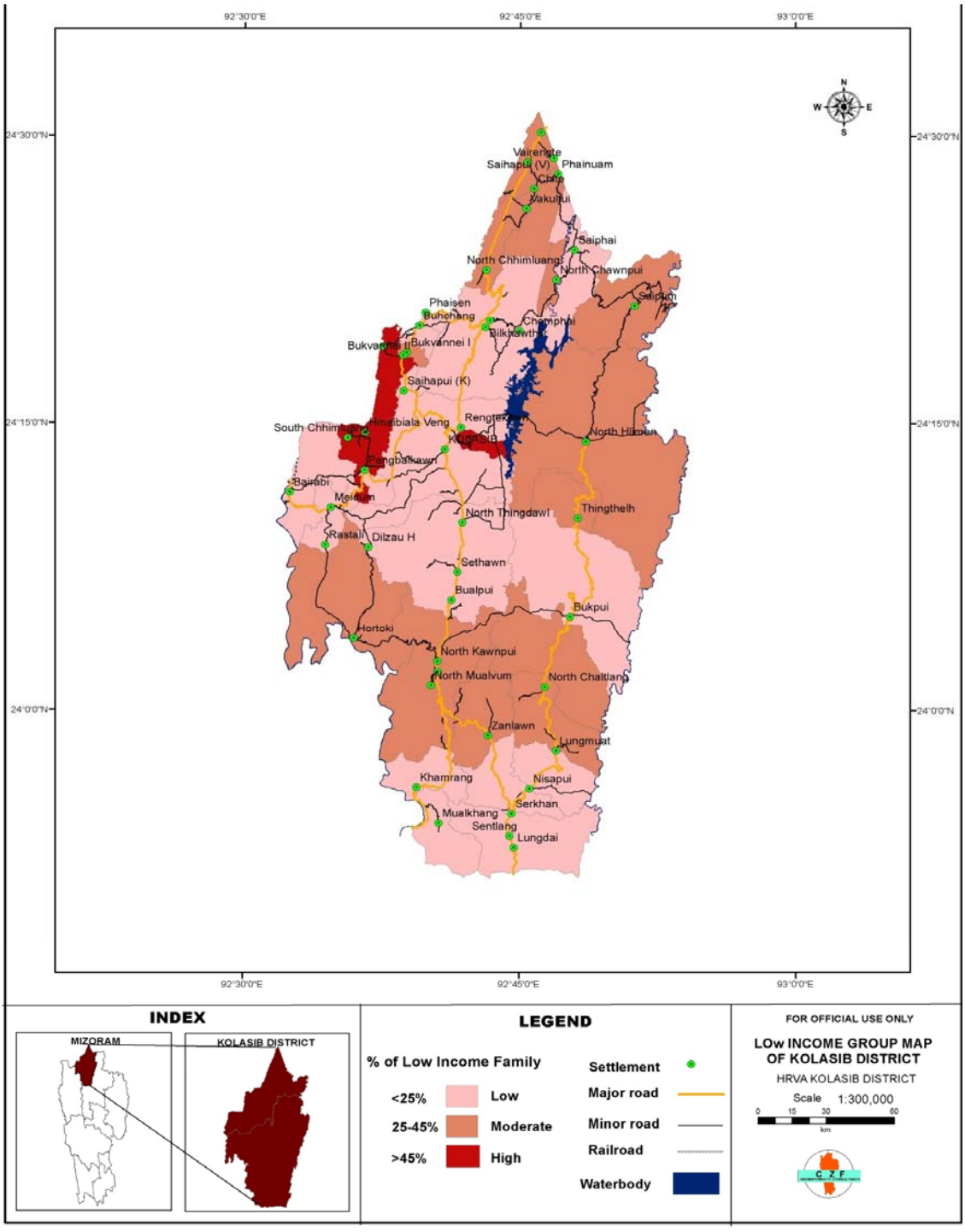


Figure No.19: Risk Map Base on Vulnerability & Landslide Hazard

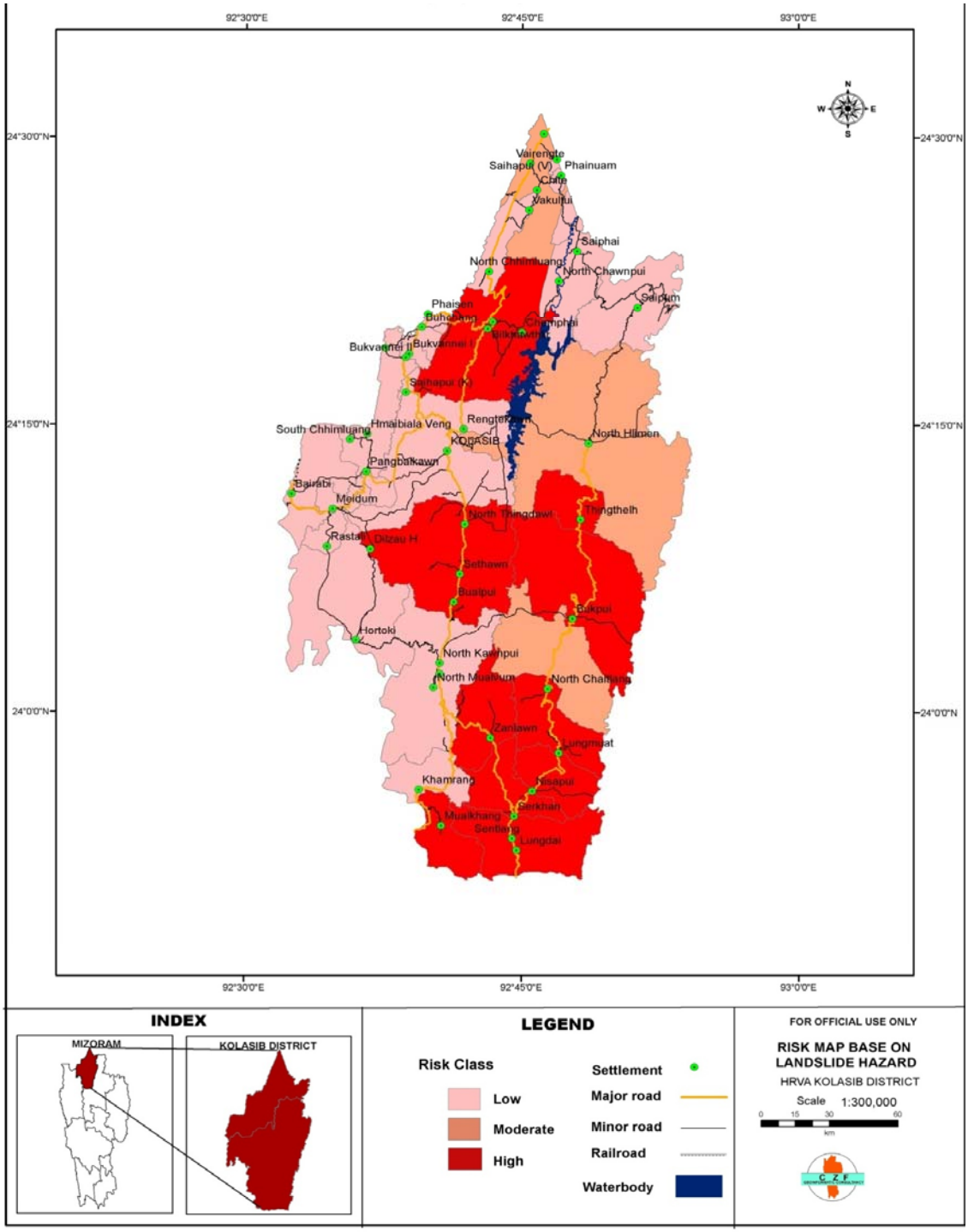


Figure No. 20: Risk Map Base on Vulnerability & Earthquake Hazard

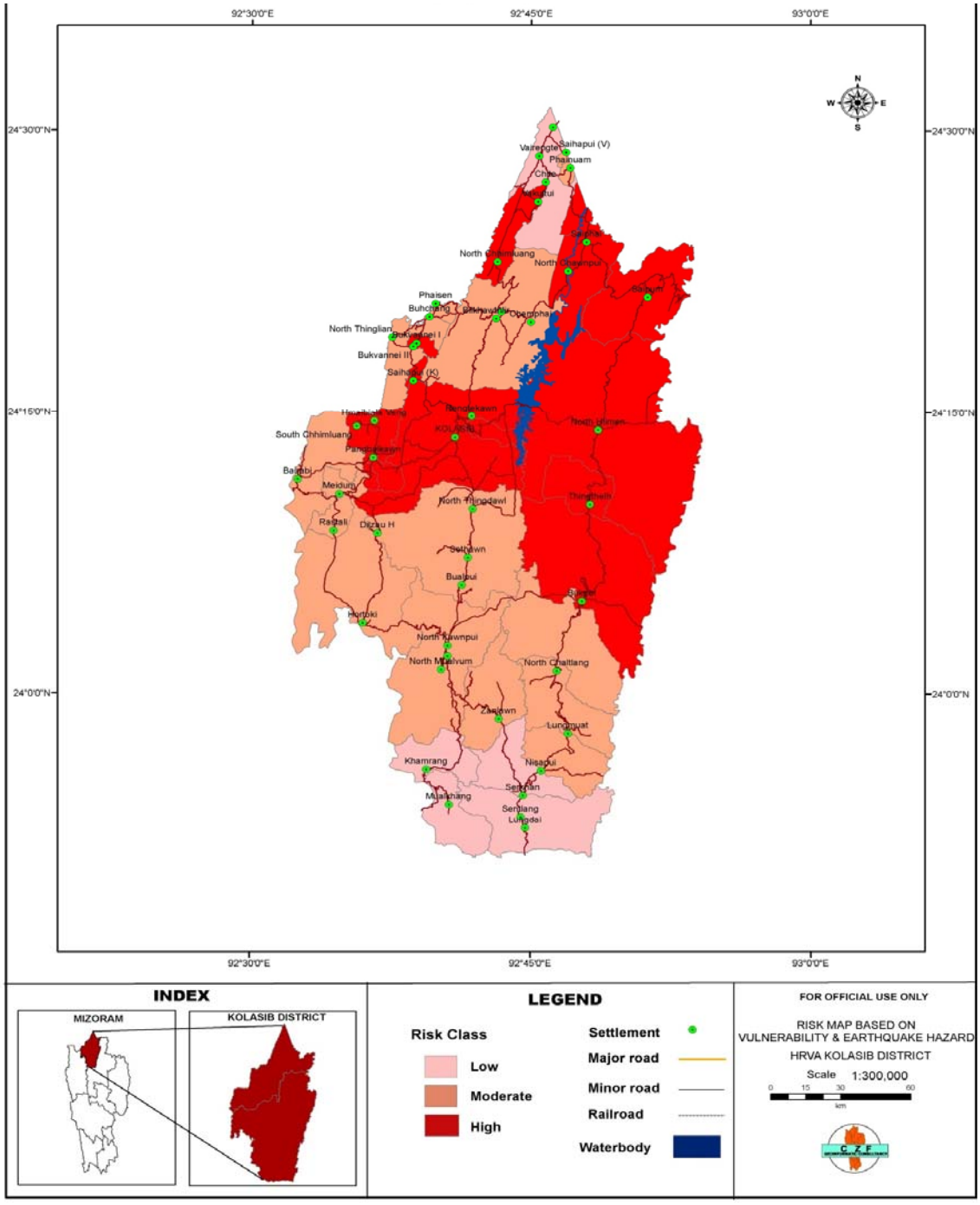


Figure No. 21: Risk Map Base on Vulnerability & Cyclone Hazard

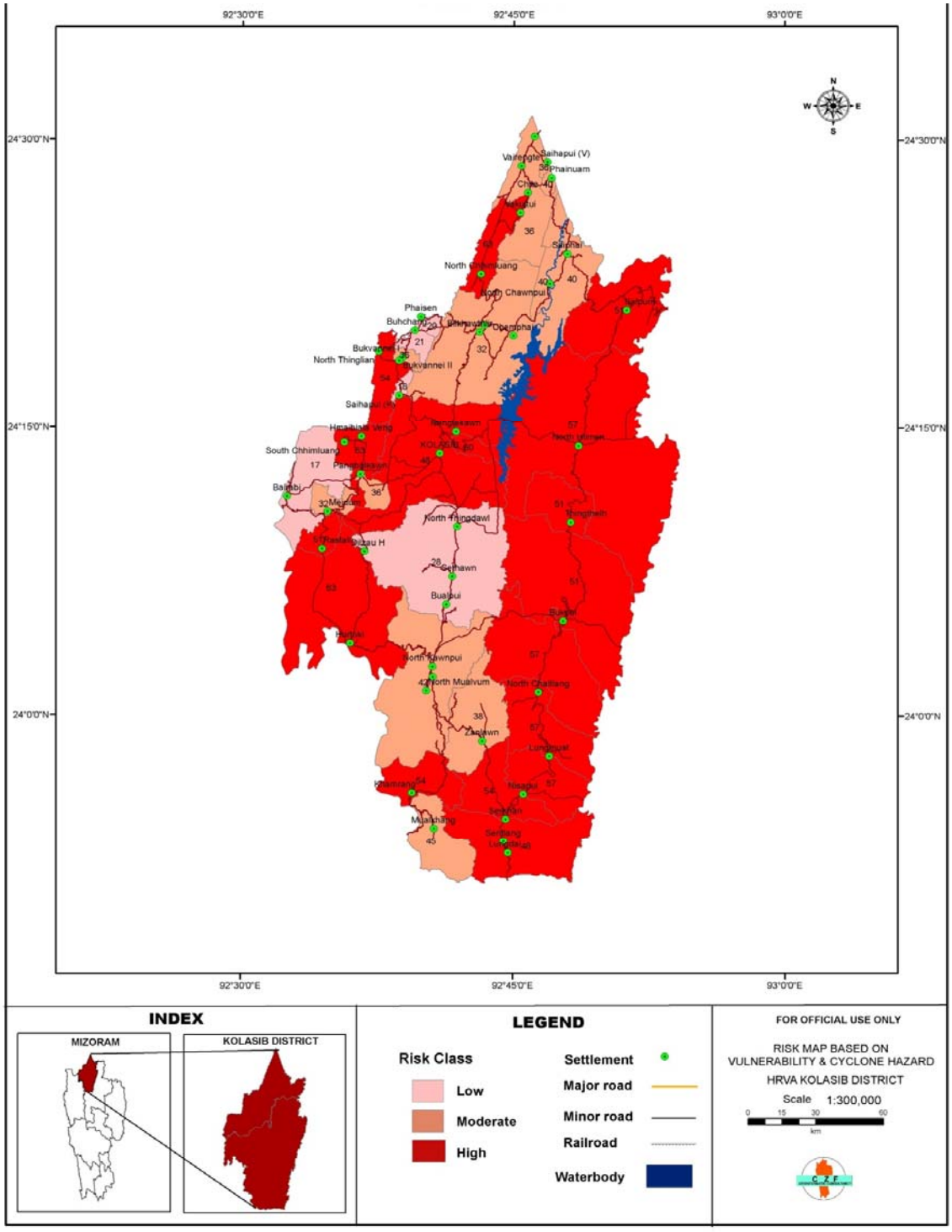


Figure No.22: Risk Map Based on Vulnerability & Flood Hazard

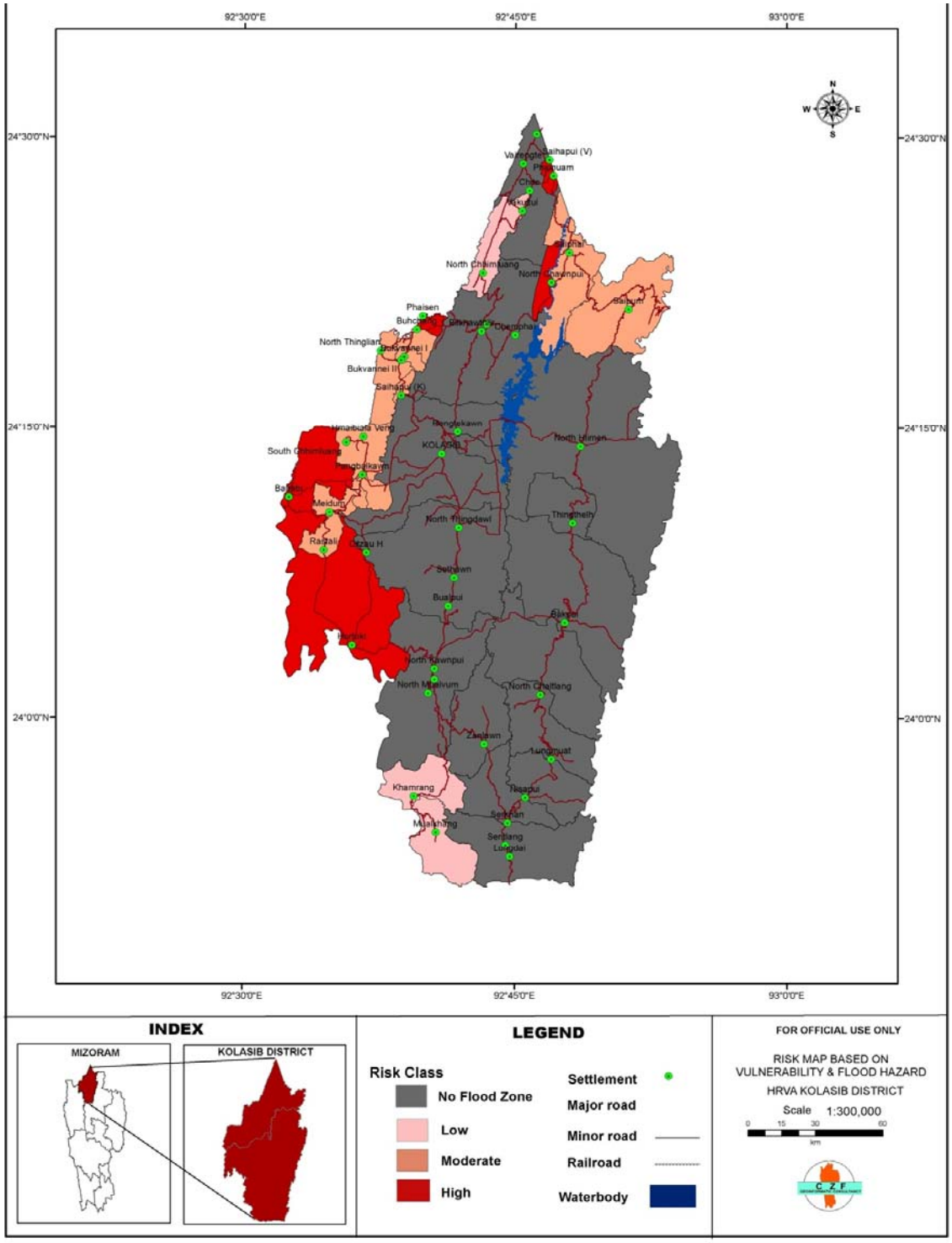


Figure No.23: Landslide Hazard Zonation Map of Kolasib District

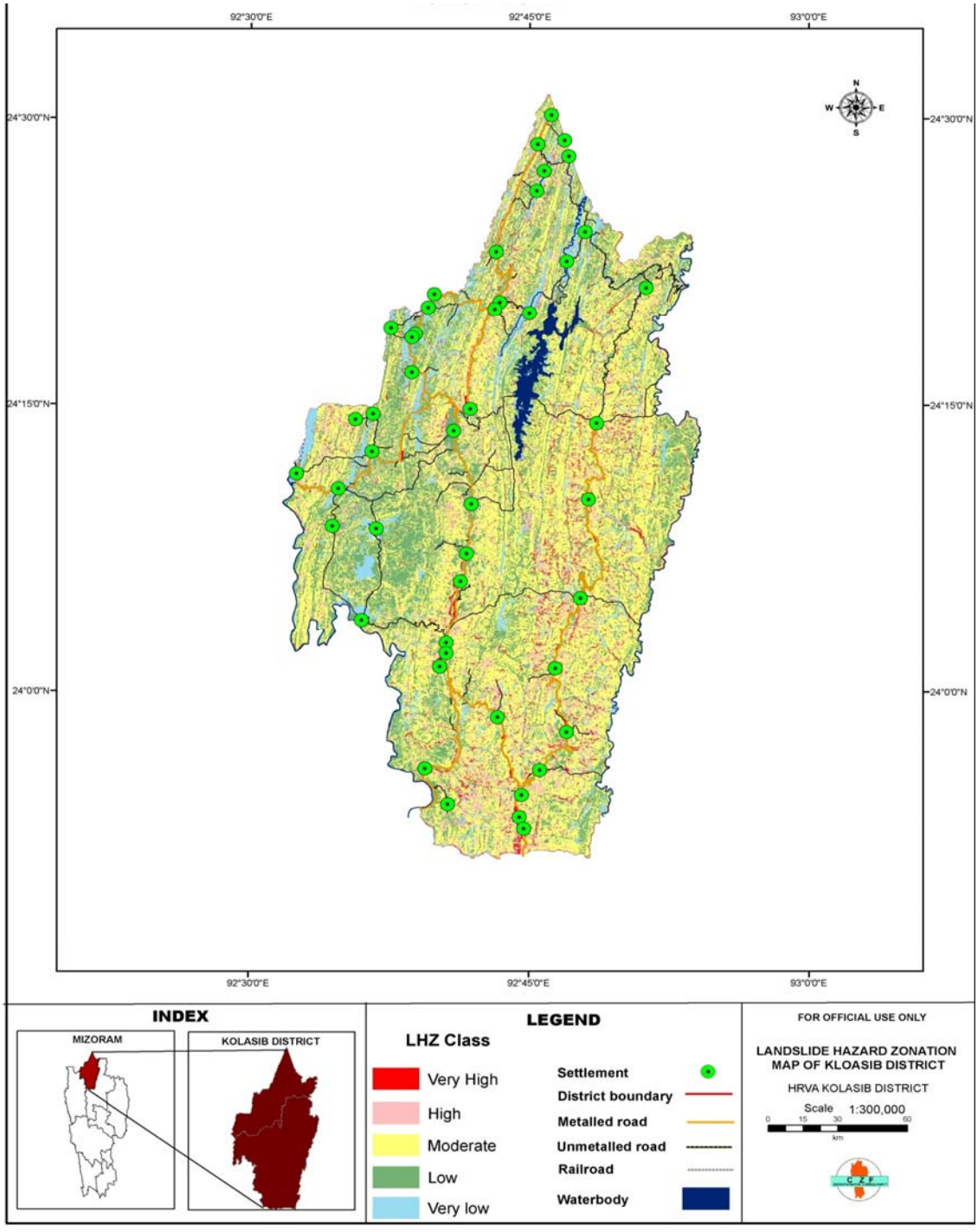


Figure No.24: Earthquake Hazard Zonation Map of Kolasib District

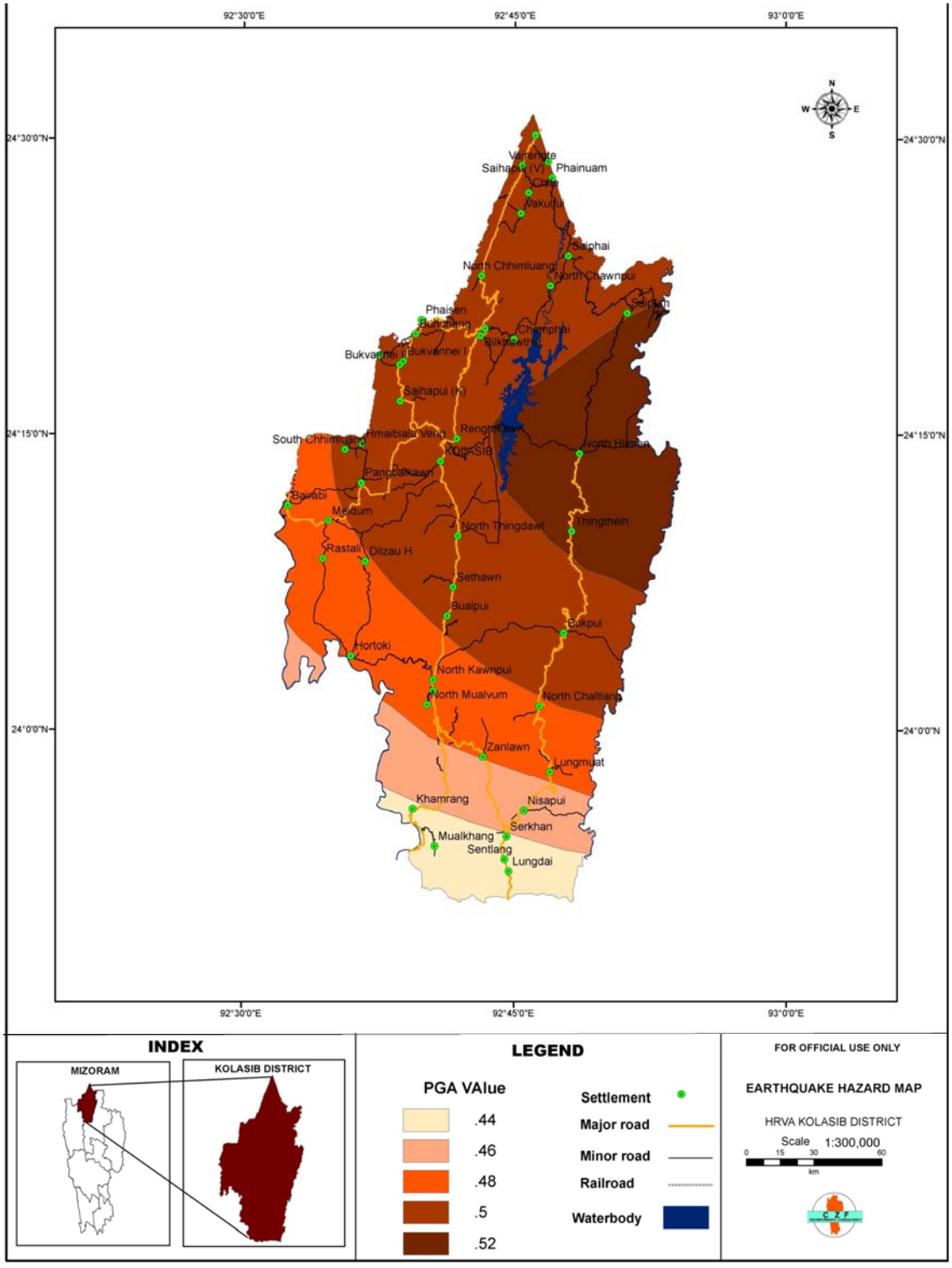


Figure No.25: Wind & Cyclone Hazard Zonation Map of Kolasib District

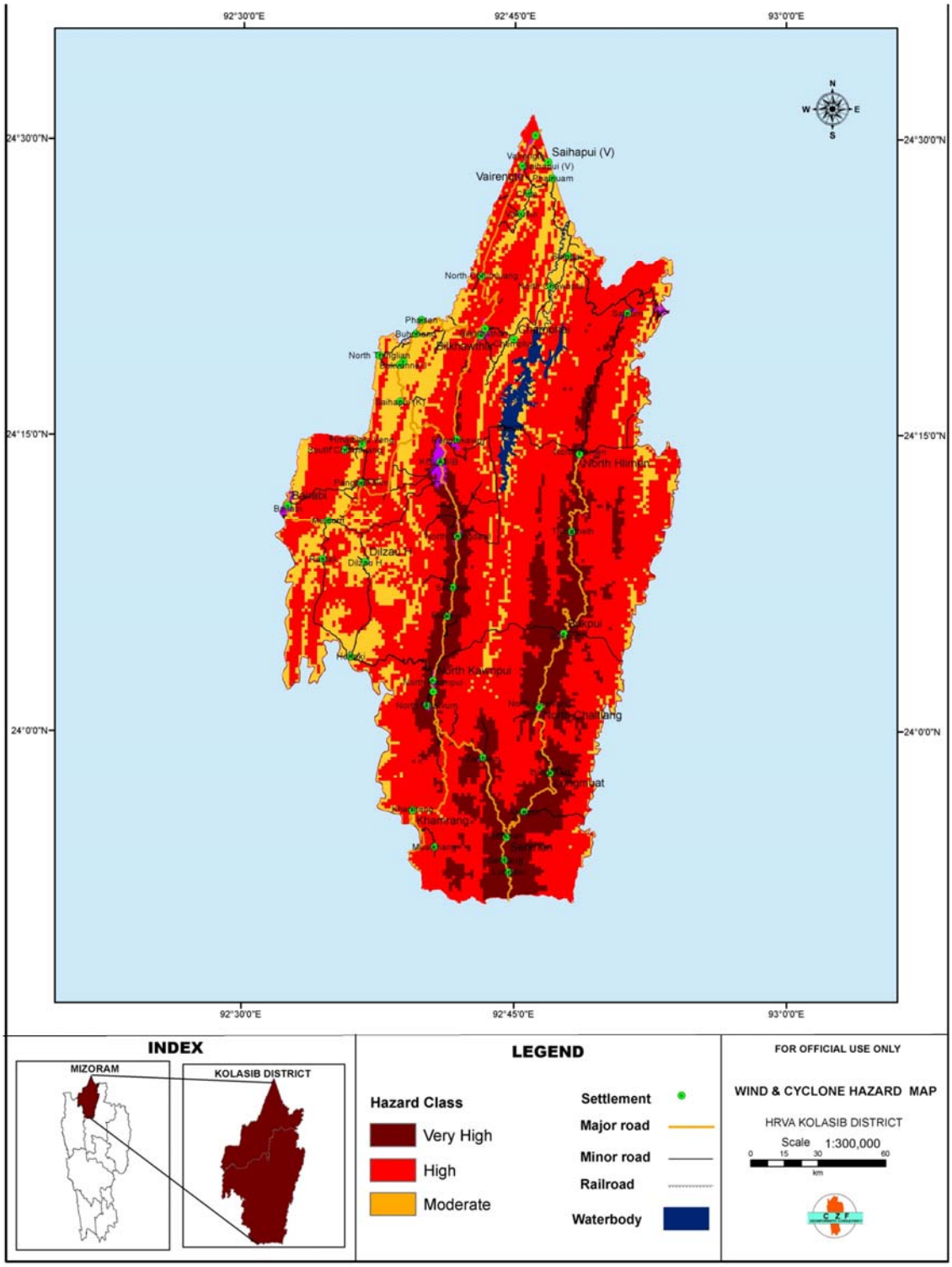


Figure No.26: Flood Hazard Zonation Map of Kolasib District

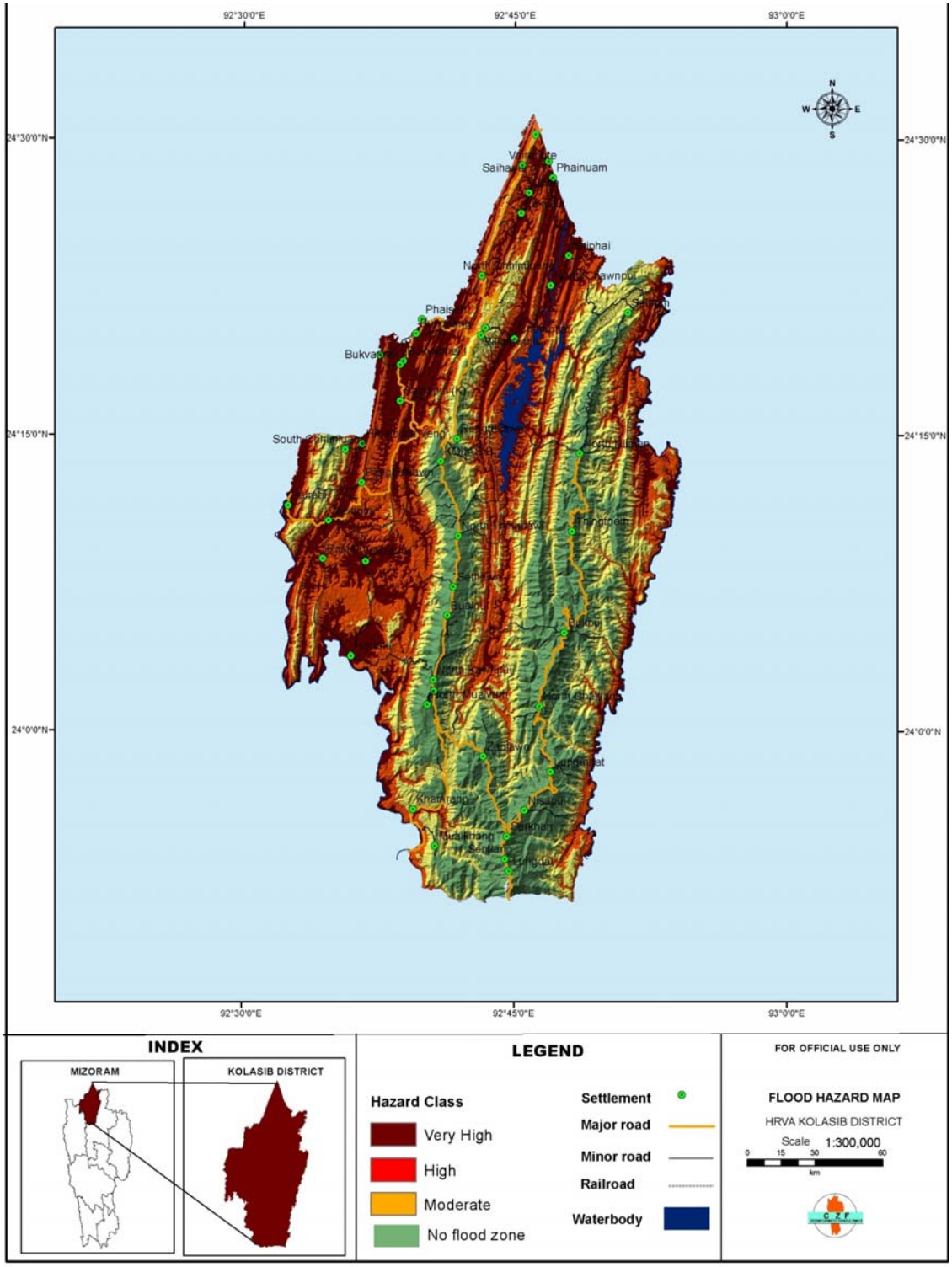


Figure No.27: Multi Hazard Zonation Map of Kolasib District

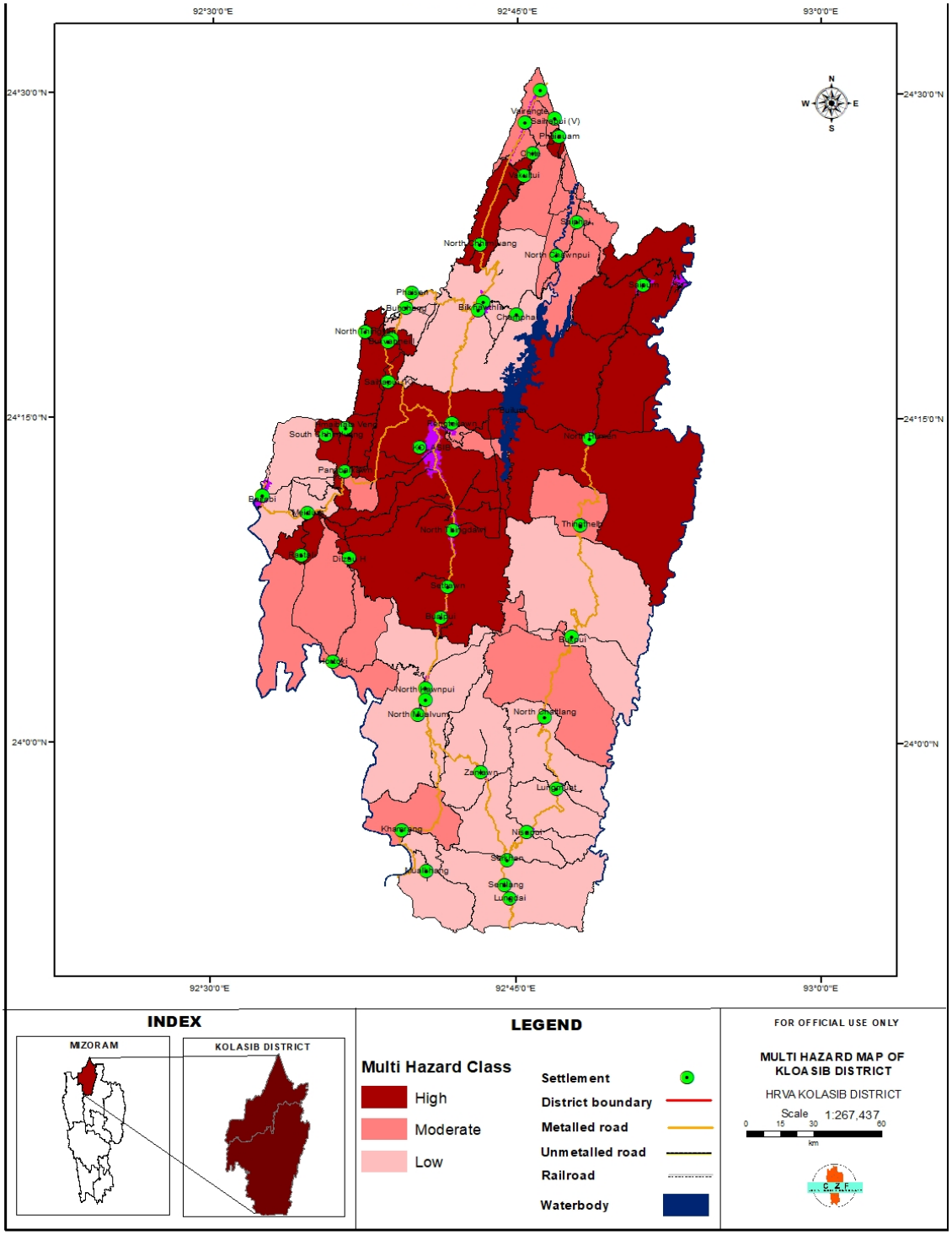


Figure No.28: Critical Facilities Map of Kolasib District

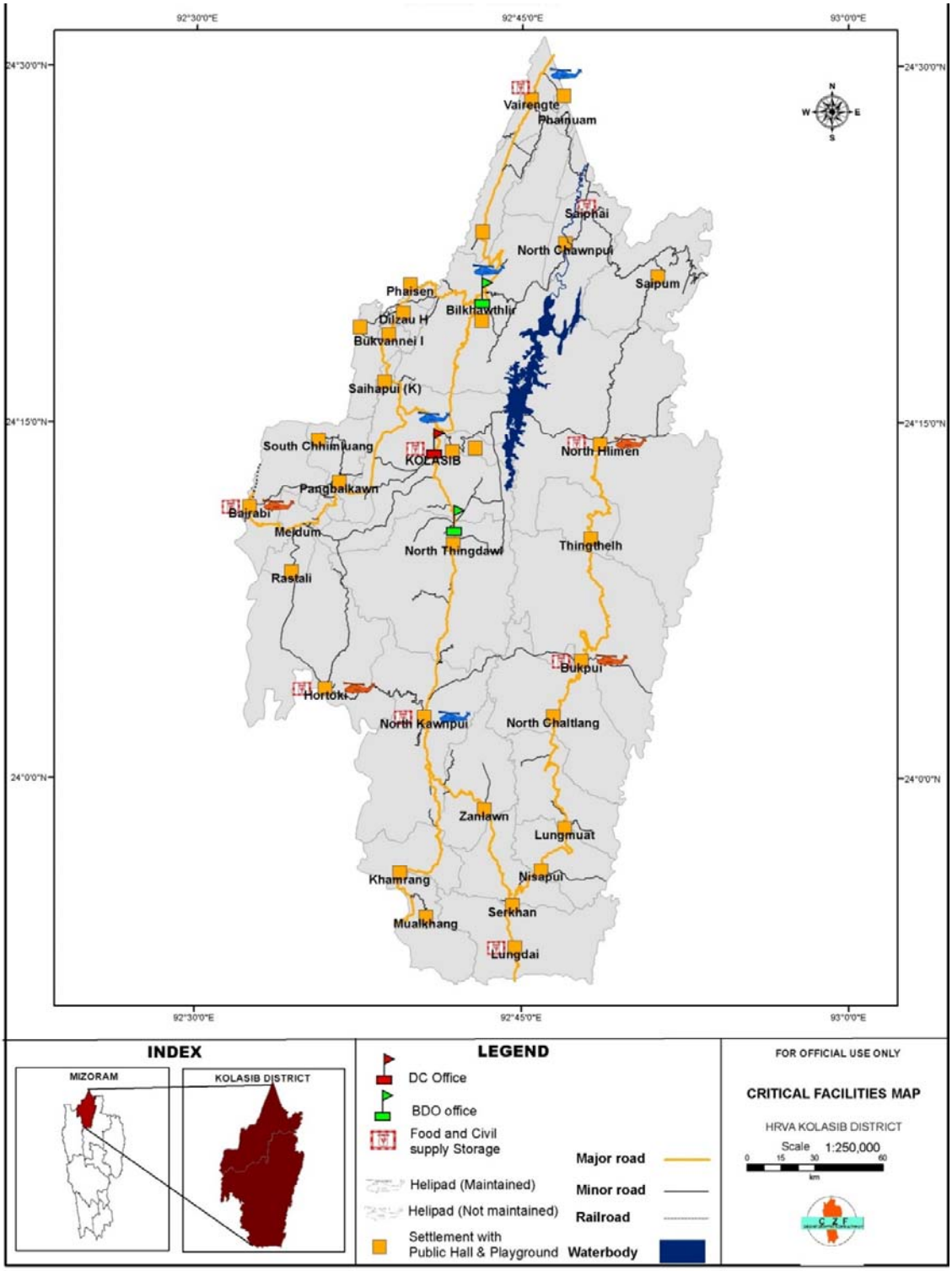
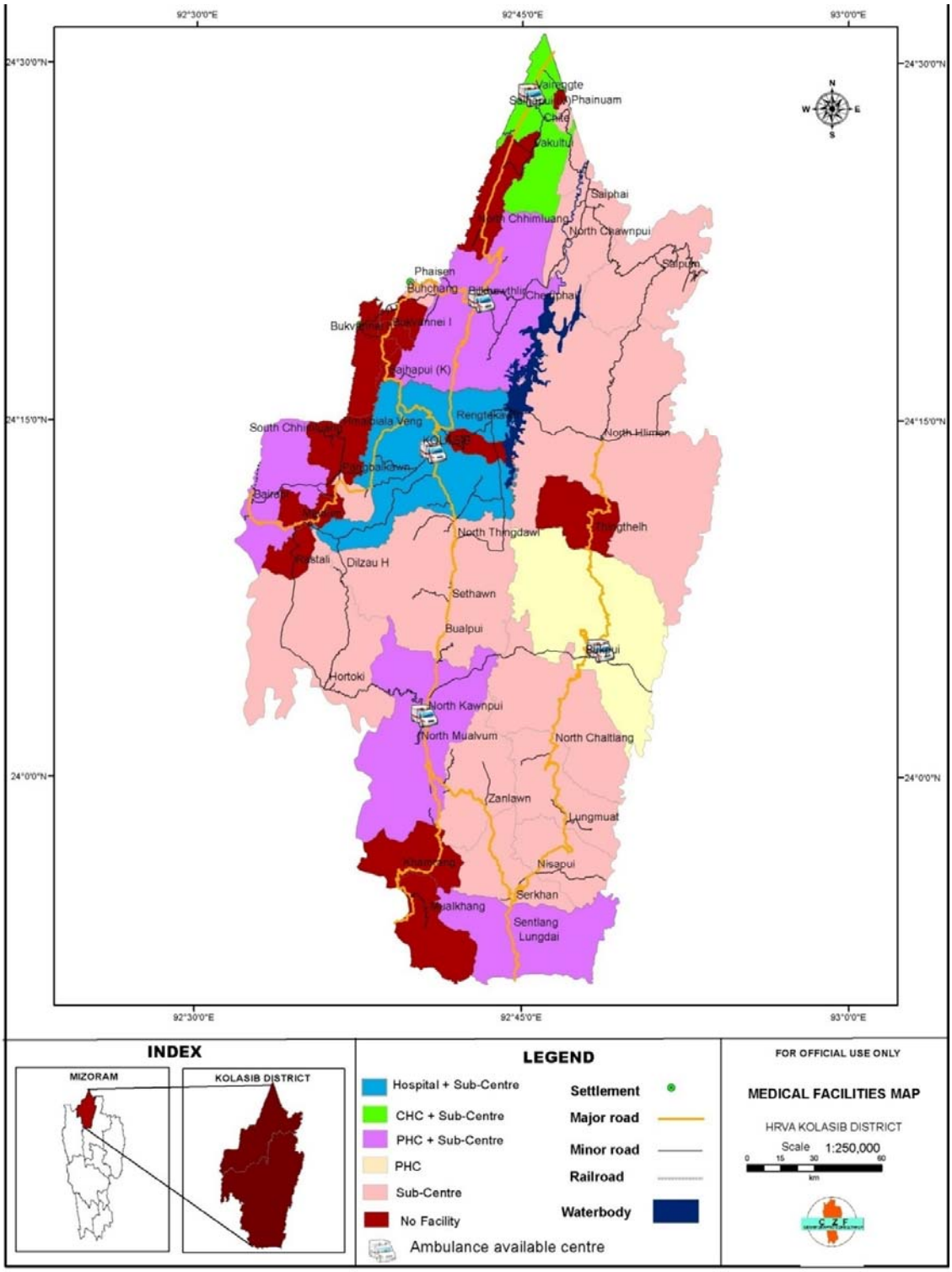


Figure No. 29: Medical Facilities Map of Kolasib District



Annexure 11: Important Guidelines

I. Items and norms of Assistance from NDRF/SDRF 2022-2023 (MHA Letter No.F 33-03/2020-NDM-I Dated 10th October, 2022)

Sl No	ITEM	NORMS OF ASSISTANCE
1	2	3
	RESPONSE & RELIEF (40% of State Disaster Risk Management Fund(SDRMF) i.e equal to 50% of SDRF allocation for the year)	
1	**GRATUITOUS RELIEF**	
	a) Ex-Gratia payment to families of deceased persons	**Rs. 4.00 lakh** per deceased person including those involved in relief operations or associated in preparedness activities, subject to certification regarding cause of death from appropriate authority.
	b) Ex-Gratia payment for loss of a limb or eyes(s).	**Rs. 74,000/-** per person, when the disability is between 40% and 60%. **Rs. 2.50 lakh/-** per person, when the disability is more than 60%. Subject to certification by a doctor from a hospital or dispensary of Government, regarding extent and cause of disability.
	c) Grievous injury requiring hospitalization	**Rs 16,000/-** per person requiring hospitalization for more than a week. **Rs. 5,400/-** per person requiring hospitalization for less than a week. Note: Injured person getting treatment under the 'Ayushman Bharat Yojna' will not be eligible for relief under this item.
	d) Clothing and utensils/house-hold goods for families whose houses have been washed away/fully damaged/severely inundated for more than a week due to a natural calamity.	Rs. 2,500/- per family, for loss of clothing. Rs. 2,500/- per family, for loss of utensils/household goods.
	e) Gratuitous relief for families whose livelihood is seriously affected	Gratuitous Relief(GR) for families, livelihood is seriously affected will be provided to two adults members of the affected family as per actual rate of

		MNREGA per day or average rate of all States/UTs per day, whichever is lower. For this purpose, notification issued by Ministry of Rural Development from time to time, is to be referred for calculating average rate. The relief amount should be disbursed through DBT/cash(ln case of exigency of the situation only) or the State Government may provide this relief in kind. State Govt, will certify that identified beneficiaries are not housed in relief camps, during the period GR is provided. Further, the State Government will provide the basis and process for arriving at such beneficiaries, district-wise. Period for providing gratuitous relief will be as per the assessment of the State Executive Committee (SEC) and the Central Team (in case of NDRF). The default period of assistance will be upto 30 days, which may be extended upto 60 days in the first instance, if required, and subsequently upto 90 days in case of drought/ pest attack. Depending on the ground situation, the SEC can extend the time period beyond the prescribed limit. Provided that expenditure on this account, in no case, should exceed 25% of SDRF allocation under this window (Response & Relief) for the year. Further, to ensure transparency, the list of persons to whom Gratuitous Relief is provided, should be uploaded on the website of the State Government. The State Government shall notify the basis and proof for the identification of beneficiaries in a transparent manner.
2.	**SEARCH & RESCUE OPERATIONS**	
	(a) Cost of search and rescue measures/ evacuation of people affected/ likely to be affected.	As per actual cost incurred, assessed by SEC and recommended by central Team (in case of NDRF).

		- By the time the central Team visits the affected area, these activities are already over. Therefore, the State Level Committee and the Central Team can recommended actual/ near-actual costs.
	(b) Hiring of boats for carrying immediate relief and saving lives.	As per actual costs incurred, assessed by SEC and recommended by the Central Team (in case of NDRF). The quantum of assistance will be limited to the actual expenditure incurred on hiring boats and essential equipment requiring for rescuing stranded people and thereby saving human lives during a notified natural calamity.
3	**RELIEF MEASURES**	
	a) Provision for temporary accommodation, food, clothing, medical care etc. for people affected/ evacuated and sheltered in relief camps.	As per assessment of need by SEC and recommended of the Central Team (in case of NDRF), for a period of up to 30 days. The SEC would need to specify the number of camps, their duration and the number of persons in camps. In case of continuation of a calamity like drought or widespread devastation caused by earthquake or flood etc., this period may be extended to 60 days, and up to 90 days in case of severe drought. Depending on the ground situation, the State Executive Committee can extend the time period beyond the prescribed limit subject to that expenditure on this account should not exceed 25% of SDRF allocation for the year. Medical care may be provided from National Rural Health Mission (NRHM).
	b) Air dropping of essential supplies	As per actual, based on assessment of need by SEC and recommendation of the Central Team (in case of NDRF). - The quantum of assistance will be limited to actual amount raised in the bills by the Ministry of Defence for airdropping of essential supplies and rescue operations only.

	c) Provision of emergency supply of drinking water in rural areas and urban areas.	As per actual cost, based on the assessment of need by NEC and recommended by the Central Team (in case of NDRF), up to 30 days and may be extended up to 90 days in case of drought. Depending on the ground situation, the State Executive Committee can extend the time period beyond the prescribed limit subject to that expenditure on this account should not exceed 25% of SDRF allocation for the year.
4	**CLEARANCE OF AFFECTED AREAS**	
	a) Clearance of debris in public areas.	As per actual cost within 30 days from the date of start of the work based on assessment of need by SEC for the assistance to be provided under SDRF and as per assessment of the Central Team for assistance to be provided under NDRF.
	b) Drainage of flood water in affected areas	As per actual cost within 30 days from the date of start of the work based on assessment of need by SEC for the assistance to be provided under SDRF and as per assessment of the Central Team(in case of NDRF).
	c) Disposal of death bodies/ Carcasses	As per actuals, based on assessment of need by SEC and recommendation of the Central Team (in case of NDRF).
5	**AGRICULTURE**	
(i)	**Assistance to farmers having landholding upto 2 ha**	
A.	**Assistance for land and other loss**	
	a) De-silting of agriculture land (where thickness of sand/ silt deposit is more than 3", to be certified by the competent authority of the State Government)	**Rs. 18,000**/- per hectare for each item. Above is subject to minimum assistance of not less than Rs. 2,200 per farmer. (Subject to the condition that no other assistance/subsidy has been availed of by/is eligible to the beneficiary under any other Government Scheme.)
	b) Removal of debris on agriculture land in hilly areas.	
	c) De-silting/ Restoration/ Repair of fish farms	
	d) Loss of substantial portion of land caused by landslide, avalanche, change of course of rivers.	**Rs. 47,000/-** per hectare to only those small and marginal farmers whose ownership o the land is legitimate as per the revenue records.

		Above is subkect to minimum assistance of not less than Rs. 5,000 per farmer.
B.	**Input subsidy (where crop loss is 33% and above)**	
	a) For agriculture crops, horticulture crops and annual plantation crops	**Rs 6,800**/- per hectare in rainfed areas. Above is subject to minimum assistance of not less than Rs. 1,000 per farmer and restricted to sown areas. **Rs. 17,000**/- per hectare in assured irrigated areas Above is subject to minimum assistance not less Rs.2,000 and restricted to sown areas.
	b) Perennial Crops	**Rs. 22,500**/- hectare for all types of perennial crops/Agro forestry(Plantation on own farmland) subject to minimum assistance not less than **Rs. 2,500/-** per farmer and restricted to sown areas.
	c) Sericulture	**Rs. 6,000**/- per hectare for Eri, Mulberry, Tussar **Rs. 7,500**/- per hectare for Muga. Above is subject to minimum assistance not less Rs.1,000/- and restricted to sown areas.
(ii)	**Input Subsidy to farmers having more than 2Ha of landholding**	**Rs. 8,500**/- per hectare in rainfed areas and restricted to sown areas. **Rs. 17,000/-** per hectare for areas under assured irrigation and restricted to sown areas. **Rs. 22,500**/- per hectare for all types of perennial crops/trees including gro forestry (Plantation in own farmland) and restricted to sown areas. Assistance may be provided where crop loss is 33% and above, subject to a ceiling of 2 hectare per farmer.
	Note: Assistance for input subsidy under item No. 5(i)(B) and 5(ii) will be adjusted to the extend of insurance claim received under Prime Minister Fasal Bima Yojna (PMFBY) for the instant calamity.	

6.	**ANIMAL HUSBANDRY - ASSISTANCE TO SMALL AND MARGINAL FARMERS**	
	i) Replacement of milch animals, draught animals or animals used for haulage.	***Milch animals -*** **Rs. 37,500**/- Buffalo/cow/camel/yak/Mithun etc. **Rs.4,000/-** Sheep/goat/pig. ***Draught animal -*** **Rs. 32,000**/- Camel/horse/bullock etc. **Rs. 20,000**/- Calf/Donkey/Pony/Mule The assistance may be restricted for the actual loss of economically productive animals and will be subject to a ceiling of 3 large milch animal or 30 small milch animals or 3 large draught animal or 6 small drought animals per household irrespective of whether a household has lost a large number of animals. (Claim for loss of animals will be considered only if number and type of animals owned by small and marginal farmers/landless livestock owners are registered with local/designated authorities.) ***Poultry:-*** Poultry @ **Rs. 100/-** per bird subject to a ceiling of assistance of **Rs. 10,000**/- per beneficiary household. The death of the poultry birds should be on account of natural calamity. Note:- Relief under these norms is not eligible if the assistance is available from any other Government Scheme. e.g. loss of birds due to Avian Influenza or any other diseases for which the Department of Animal Husbandry has a separate scheme for compensating the poultry owners.
	(ii) Provision of fodder/ feed	Large animals - **Rs. 80**/- per day.

	concentrate including water supply and medicines in cattle camps. **Explanation:** It will also include existing Gaushalas, if authorized by the State Government by Notification or Government Order, to act as a cattle camp subject to the following conditions:- (i) During the period of calamity, District Administration will assess the requirement of cattle shelter and number of gaushala required to be notified as cattle shelter in the District/Tehsil. After obtaining the base-line information on the cattle already sheltered and the number of more cattle it can accommodate, Gaushala may be notified as cattle shelter. ii)The notified gaushala shall maintain a separate account of the additional cattle belonging to SMF and landless labourers for the notified drought period. The consolidated list of SMF and landless beneficiaries with number and types of animals will be displayed on the notice board of Gram Panchayat, Block, Tehsil and in the office of Sub-Divisional Magistrate and District Magistrate as well as State/ District web-site for the purpose of verification and social audit. iii) SDRF funds will only be released to such notified gaushala on reimbursement basis and will be limited to list of individual beneficiaries notified as in SI.No. (ii) above.	Small animals - **Rs. 45/-** per day. Period for providing relief will be as per assessment of the State Executive Committee (SEC) and the Central Team (in case of NDRF). The default period for assistance will be upto 30 days, which may be extended upto 60 days in the first instance and in case of severe drought up to 90 days. Depending on the ground situation, the State Executive Committee can extend the time period beyond the prescribed limit, Provided that expenditure on this account, in no case should exceed 25% of SDRF allocation under this window(Response & Relief) for the year. Based on assessment of need by SEC and recommendation of the Central Team (in case of NDRF) consistent with estimates of cattle as per Livestock Census and subject to the certificate by the competent authority about the requirement of medicine and vaccine being calamity related.
	iii) Transport of fodder to cattle outside cattle camps	As per the actual cost of transport, based on assessment of need by SEC and recommendation of the Central team (in case

		of NDRF) consistent with estimated of cattle as per Livestock Census.
7.	**FISHERY**	
	i) Assistance to Fisherman for repair/ replacement of non-mechanised boats, and nets damaged/lost (This assistance will not be provided if the beneficiary is eligible or has availed of any subsidy/assistance, for the instant calamity, under any other Government Scheme.)	**Rs. 6,000**/- for repair of partially damaged boats only **Rs. 3,000**/- for repair of partially damaged net. **Rs. 15,000**/- for repair of fully damaged boats. **Rs. 4,000**/- for repair of fully damaged net. (Assistance under this item will be adjusted to the extend of insurance claim, if any, received by the fisherman under any insurance scheme, for the instant calamity)
	ii) Input subsidy for fish seed farm	**Rs. 10,000**/- per hectare. (This assistance will not be provided if the beneficiary is eligible or has availed of any subsidy/assistance, for the instant calamity, under any other Government Scheme, except the one time subsidy provided under the Scheme Ministry of Fisheries, Animal Husbandry & Dairying.)
8.	**HANDICRAFTS/HANDLOOM - ASSISTANCE TO ARTISANS**	
	i) For replacement of damaged main functional tools/ equipment	**Rs. 5,100**/- per artisan for equipments. - Subject to certification by the competent authority designated by the Government about damage and its replacement.
	ii) For loss of raw-materials/ goods in process/ finished goods.	**Rs. 5,100**/- per artisan for raw material. - Subject to certification by the competent authority designated by the State Government about loss and its replacement.
9.	**LOCUST CONTROL**	
	Hiring of vehicles, tractors with spray equipments for spraying of plant protection chemicals for pest control, hiring of water tankers and purchase of pant protection	As per the actual cost, based on teh assessment of need by the SEC and recommended by the Central Team (in case of NDRF)

	chemicals for locust control	The quantum of assistance will be limited to the actual expenditure incurred in hiing vehicles, tracctors with spray equipments for spraying of plant protection chemicals for locust control during locust attack, in no case should exceed 25% of SDRF allocation under this window (Response & Relief) for the year.
B	**RECOVERY & RECONSTRUCTION: (30% of SDRMF i.e equal to 37.50% of SDRF allocation for the year)**	
10.	**HOUSING**	
	a) **Fully damaged/ destroyed houses severely damanged houses**	
	i) Pucca house	**Rs. 1,20,000**/- per house**,** in plain areas
	ii) Kutcha house	**Rs. 1,30,000**/- per house, in hilly areas.
	b) **Partially Damaged Houses (other than huts) where the damage is at least 15%**	
	i) Pucca	**Rs.6,500/-** per house
	ii) Kutcha	**Rs.4,000/-** per house.
	c) **Damaged/destroyed huts:**	**Rs. 8,000**/- per hut (Hut means temporary, make shift unit, inferior to Kutcha house, made of thatch, mud, plastic sheets etc. traditionally recognized as huts by the State/District authorities.) Note:- The damaged house should be an authorized construction duly certified by the Competent Authority of the State Government.
	d) **Cattle shed attached with house**	**Rs. 3,000**/- per shed.
11	**INFRASTRUCTURE** ***Repair/restoration (of immediate nature) of damaged infrastructure.***	
	1) **Roads & Bridges,** which may include the following activities:	***Assessment of requirements:*** Based on assessment of need, as per States'

	i) Filling of breaches and potholes, use of pipe for creating waterways, repair and stone pitching of embarkments ii)Repair of breached culverts iii)providing diversions to damaged/washed out portion of bridges to restore immediate connectivity. iv)Temporary repair of approaches to bridges/embarkments of bridges, repair of damaged railing bridges, repair of cause ways to restore *immediate connectivity, granular sub base, over damaged stretch of roads to restore traffic.*	costs/rates/ schedules for repair by SEC and recommendation of the Central Team (in case of NDRF). In case of repair of roads, assistance will be given basedon the notified Ordinary Repair (OR)and periodical Renewal (PR) of the State. In case OR and PR is not available, then assistance will be provided aas per rate prescribed in this item. However, in any case the assistance will be provided at the rate which ever is lower. Prescribe rate are as under:- Repairs of State Highway/Major District Roads(MDR) In normal areas -- @ Rs.1.0 lakh/km; In hilly areas -- @ Rs.1.25 lakh/km Repairs of Rural/village Roads with culverts In normal areas -- @ Rs. 60000 /km; In hilly areas -- @ Rs 75000 /km Repairs of RCC culvert/Bridge In normal areas -- @ Rs. 60000 /culvert; In hilly areas -- @ Rs 75000 /culvert
	2) **Drinking water Supply Schemes**, which may include the following activities:- i)Repair of damaged platforms of hand pumps/ring wells/spring-tapped chambers/public stand posts, cisterns ii)Restoration of damaged stand posts including replacement of damage pipe lengths with new pipe lengths, cleaning of clear water reservoir (to make it leak proof) iii) Repair of damaged pumping machines, leaking overhead	Damaged drinking water supply scheme will be eligible for assistance as per actual, subject to a celing of Rs. 2.00 lakh per damaged scheme Cleaning of Community drinking water wells as per actual, subject to a celling of Rs. 10,000/- per well

	reservoir and water pumps including damaged intake-outtake structure, approache gantries/jetties	
	3) **Minor Irrigation Scheme**, which may include the following activities: i) Immediate repair of damaged canal structures and earthen/mansory works of tanks and small reservoirs with the use of cement, sand bags and stones. ii) Repair of weak areas such as piping or rat holes in dam walls/embarkments iii) Removal of vegetative material/building material/debris from canal and dreainge system. iv) Repair of embarkments of minor irrigation projects	In case of minor irrigation works, assistance will be given as oer the schedule of rates (SOR) for repair notified by the concerned State. In case SOR is not available, assistance for irrigation scheme/canal will be provided as per actuals, subject to a celling of Rs. 2.00 lakh per damaged minor irrigation scheme. Note:- However, in any case, the assistance will be provided at the rate which ever is lower Assistance for restoration of damaged embarkment of minor irrigation projects will be at pat with the case of similar rural roads subject to stipulation that no duplication would be done with any ongoing schemes.
	4) **Power** (only limited to immediate restoration of electricity supply in the affected areas), Damaged poles/conductors and transformer upto 11Kv.	Regarding repair of damaged power sector, assistance will be given fof the damaged conductors, poles and transformer upto the level of 11kv abd LT lines with bare minimum conductor as per details hereunder. The rate of assistance will be - Rs. 5000/pole - Rs. 0.50 lakh per km for repair of damaged LT line - Rs. 1.00 lakh for replacement of one damaged distribution transformer Note: The above assistance will not be applicable for those items which can be reused
	5) **Schools** Repair of damaged schools building	As per actual, subject to ceiling of Rs. 2.00 lakh per school
	6) **Primary/Community Health Centre**	As per actual, subject to ceiling of Rs. 2.00 lakh per school

	Repairs of Primary/Community Health Centre	
	7) **Community Assets owned by Panchayat** Temporary repairs of Mahila Mandal, Yuva Kendra, Panchayat Ghar, Community Hall, Anganwadi	As per actual, subject to ceiling of Rs. 2.50 lakh per unit.
C.	**PREPARNESS & CAPACITY BUILDING (10% of SDRMF i.e equal to 12.50% of SDRF allocation for the year)**	
	Procurement of essential search, rescue and evacuation equipments including communication equipments, etc. for response to disaster.	Expenditure from the preparedness and capacity building window will be govern by the Guidelines issued separately by the Ministry of Home Affairs for the Preparation & Capacity Building window of SDRF &NDRF
13.	**CAPACITY BUILDING**	
D	**STATE SPECIFIC DISASTER**	
.	State specific disasters within the local context in the State, which are not included in the notified list of disasters eligible for assistance from SDRF/NDRF, can be met from SDRF within the limit of 10% of the annual funds allocation of the SDRF.	- Expenditure is to be incurred from SDRF only (and not from NDRF), as assessed by the State Executive Committee (SEC). - The norm for various items will be the same as applicable to other notified natural disasters, as listed above. or - In these cases, the scale of relief assistance against each item for 'local disaster' should not exceed the norms of SDRF. - The flexibility is to be applicable only after the State has formally listed the disasters for inclusion and notified transparent norms and guidelines with a clear procedure for identification of the beneficiaries for disaster relief for such local disasters', with the approval of SEC.
E	**Item Not Covered under SDRF/NDRF**	

	a) Colleges and other education institutions building b) Mojor/Medium irrigation Schemes c) Flood control and anti erosion protection works d) Hydro Power Project?HT Distribution systems/Transformers and sub stations e) High Tention Lines (above 11kv) f) State Govt Buildings viz. departmental/office building, departmental/residential quarters, religions structures, patwarkhana, Court premises, play ground, forest bungalow property and animal/bird sanctuary etc. g) Long term/permanent restoration work h) Procurement of equipments/ machineries under NDRF i) National Highways j) Sectors such as Telecommunication and Power (except immediate restoration of power supply), which generate their own revenues, and also undertake immediate repair/restoration works form their own funds/resources, are excluded.

Note:-

(i) For assistance under NDRF for items at S. Nos. 2 (a), (b). 3 (a), (b), (c), 4 (a), (b), (c), 6 (ii), (iii), and 9, while actual expenditure is allowed, the State Government will provide the item-wise details of expenditure to the Inter-Ministerial Central Team (IMCT)/ Central Government.

(ii) Ex-Gratia payment of Rs 50,000/- per deceased person, to next of kin of the deceased person, including those involved in the relief operations or associated in the preparedness activities, subject to the cause of death being certified as COVID-19, as per the guidelines jointly issued by the Ministry of Health and Family Welfare and the Indian Council of Medical Research on 3rd September, 2021, will be given as per guidelines on minimum relief issued by the National Disaster Management Authority (NDMA) dated 11.09.2021.

This ex-gratia assistance will be applicable from the date of first COVID-19 case reported in the country and will continue till de-notification of COVID-19 as a disaster or till further orders, whichever is earlier, to next of kin of the deceased due to COVID-19.

(iii) There will be a Mid-Term review of the norms after 2 years, based on price level index.

(iv) The State Governments are to take utmost care and ensure that all individual beneficiary-oriented assistance is necessarily/ mandatorily disbursed through Direct Benefit Transfer in the bank account of the beneficiary.

(v) The scale of relief assistance against each item for all notified disasters including 'local disaster' should not exceed the norms of SDRF/ NDRF. Any amount spent by the State for such disasters over and above the ceiling, would be borne out of the resources of the State Government and not from SDRF.

II. Guidelines on Minimum Standards of Relief

Introduction

Disaster Management Act (Section 12) mandates National Disaster Management Authority (NOMA) to recommend Guidelines for minimum standards of relief to be provided to persons affected by disaster which shall include:

(a) The minimum requirements to be provided in the relief camps in relation to shelter, food, drinking water, medical cover, sanitation

(b) Special provisions to be made for widows and orphans.

(c) *Ex gratia* assistance on account of loss of life as also assistance on account of damage to houses and for restoration of means of livelihood

(d) Such other relief as may be necessary

According to Section 19 of the act, the State Authorities shall lay down detailed guidelines for providing standards of relief to persons affected by disaster in the state and such standards shall in no case be less than the minimum standards in the guidelines laid down by National Authority. Hence, NOMA, as mandated by the Act, has worked out the basic minimum standards of relief to be provided to the persons affected by disaster.

Before finalizing the above Guidelines, various meetings were held in NOMA with the representatives of Nodal Ministries *I* Departments of Govt of India in which senior officials from State Govt. also participated to offer their valuable views. It was observed during the above meetings that the Guidelines on Minimum Standards need to be simple and implementable by the States.

Definition of Relief and Rehabilitation Camp:-

Relief shelters and Rehabilitation camps shall be set up in order to accommodate people affected by a disaster. The camp shall be temporary in nature, with basic necessities. People in the camp shall be encouraged to return to their respective accommodation once the normalcy is returned.

The State Govt/District administration sometimes may not be able to implement all the basic guidelines recommended by NOMA from the day one of the disaster and therefore, the following method shall be followed:-

(a) First three days ------ Basic norms to the possible extent may be followed.

(b) 4 to 10 days ------ Efforts should be made to follow most of the norms recommended by NOMA in this Guideline.

(c) 11 days and above ------ NOMA's prescribed norms shall be followed.

The factors like terrain, climatic conditions at the site of disaster etc. will also impact the requirement and ability of the administration and other stakeholders to deliver relief. These constraints should also be kept in view while prescribing minimum standards of relief.

2. **Minimum Standards in respect of Shelter in relief camps** :-

(a) State/UT/District Administration shall take necessary steps to pre-identify locations/buildings like local schools, anganwadi centers /cyclone shelters/ community centers/ marriage halls etc which can be used as Relief shelters where people can be accommodated in case of disaster in the area. In such centers, necessary facilities like sufficient number of toilets, water supply, generators with fuel for power back up during disasters shall be ensured.

After a disaster, large covered space shall be required to accommodate the affected people. In order to avoid last minute arrangement and high cost, States/UTs can explore the option of advance MoUs with manufacturers/suppliers for supply of factory made fast track pre-fabricated shelters/tents/ toilets/ mobile toilets and urinals etc. which can be dismantled and taken back by the supplier after the closure of the camp. This arrangement shall avoid delay in setting up of camp and exorbitant billing of essential supplies.

(b) In the relief centers, 3.5 Sq.m. of covered area per person with basic lighting facilities shall be catered to accommodate the victims. In mountainous areas, minimum covered area shall be relaxed due to lack of available flat land/ built up area. Special care shall be taken for safety and privacy of inmates, especially for women, widows and children. Special arrangements should be made for differently-abled persons, old and medically serious patients.

(c) Relief centers shall be temporary in nature and be closed as soon as normalcy returns in the area.

(d) Sufficient number of sites based on population density shall be identified as relief centers and earmarked well in advance at the time of planning and development of a metro/city/town.

3. **Minimum Standards in respect of Food in relief camps:-**

(a) Milk and other dairy products shall be provided for the children and lactating mothers. Every effort shall be taken in the given circumstances to ensure sufficient quantity of food is made available to the affected people (especially for aged people and children) staying in the relief shelters/ camps.

(b) Sufficient steps shall be taken to ensure hygiene at community and camp kitchens. Date of manufacturing and date of expiry on the packaged food items shall be kept in view before distribution.

(c) It shall be ensured that men and women are supplied food with minimum calorie of 2,400 Kcal per day. In respect of children/ infants, the food to be supplied would be 1,700 Kcal per day.

4. **Minimum Standards in respect of Water in relief camps:-**

(a) Sufficient quantity of water shall be provided in the relief camps for personal cleanliness and hand wash.

(b) It may be ensured that the minimum supply of 3 liters per person, per day of drinking water is made available in the relief camps. Further, the State/ UT /District authorities shall adjust the minimum quantity of water etc as per the geographic, demographic and social practices of the region. If other means for providing saf drinking water is not possible at-least double chlorination of water needs to be ensured.

(c) In order to ensure adequate water supply, the location of the source of water supply shall preferably be within the premises of relief shelter/camp. However, the maximum distance from the relief camp to the nearest water point shall not be more than 500 mtrs. if tapped water supply is available.

5. **Minimum Standards in respect of Sanitation in relief camps:-**

(a) **Number of toilets:** 1 toilet for 30 persons may be arranged/ built. Separate toilet and bath area be catered for women and children. At least 15 liters of water per person needs to be arranged for toilets/bathing purposes. Hand wash facility in toilets should be ensured. Steps may be taken for control of spread of diseases. Dignity kits for women shall be provided with sanitary napkins and disposable paper bags with proper labeling.

(b) Toilets shall not be more than 50 m away from the relief camps. Pit

Latrines and Soak ways shall be at least 30 m from any ground water source and the bottom of any latrine has to be at least 1.5 m above the water level.

(c) Drainage or spillage from defecation system shall not run towards any surface water source or shallow ground water source.

6. **Minimum Standards in respect of medical cover in relief camps:-**

(a) Mobile medical teams shall visit relief camps to attend the affected people. Steps shall be taken to avoid spread of communicable diseases.

(b) If the relief camps are extended over a long time , then necessary arrangement may be made for psychosocial treatment.

(c) Helpline should be set up and contact number and details of which shall be displayed at the relief/shelters and adequately publicized to inform the people.

(d) For pregnant women, necessary basic arrangements shall be made by the local administration for safe delivery.

(e) Advance tie up/arrangement shall be made with the Govt/private hospitals so that necessary doctors/ para-medical staff are available at short notice for relief camps to attend to the affected people. In respect of people who are affected and being referred to hospitals for treatment/ operation etc, suitable transportation shall be arranged to reach to referred hospital.

(f) In order to manage mass casualty in a disaster, advance contingency plans for management of multiple casualties shall be developed.

7. **Minimum Standards of Relief for Widows and Orphans:-**

(a) In each camp, a separate register shall be maintained for entering the details of women who are widowed and for children who are orphaned due to the disaster. Their complete details shall be entered in the register, duly counter signed by the concerned officials and this register shall be kept as a permanent record with the District administration .

(b) Special care shall be given to widows and orphans who are separated from their families. For widows, certificate by the District Admn shall be issued stating that she lost her husband in the disaster and the same shall be issued **within 15 days of disaster.**

(c) As the widow/family shall be economically weak, the State administration

shall provide a reasonable amount for the funeral rites of her husband and this payment shall be deducted from the subsequent financial compensation/relief that shall be paid by the Govt.

(d) Necessary financial compensation and other government assistance need to be arranged within 45 days of the disaster to the widow and to the orphaned children. In respect of orphaned children, similar certificate shall be issued and the children need to be taken care of properly and the funds that may be given to the children by the Govt. shall be duly deposited in a PSU Bank in a Joint *AIC* where the Collector/DC shall be the first account holder of the Bank account. Interest from the fund can be given to the child/ guardian every month for his/her proper upkeep. Education for the child shall be ensured by the District/ local administration.

(e) As far as ex gratia assistance on account of loss of life as also assistance on account of damage to houses and for restoration of means of livelihood, the norms provided by Govt of India (Ministry of Home Affairs) for assistance from SDRF should be the minimum standards of relief.

Annexure 13: Do's and Don't in Various Hazards

Earthquake

Before & During

- Make new constructions earthquake resistant in consultation of professional structural engineer, if possible.
- Prepare a family disaster plan including o preparation of emergency kit which will make you self-sufficient for a minimum of three days with adequate supply of drinking water, dry food items, stock of basic medicines, sanitary pads, baby food items etc. o Identification of few safe family meeting places; pick easy to identify, open and accessible places that you can easily reach.
- Conduct regular Mock Drills for school children
- Falling objects must be given additional fixing so that they don't fall while shaking and cause harm.
- During an earthquake stay calm; if inside, Stay inside. "DROP, COVER and HOLD! Drop under firm furniture. Cover as much of your head and upper body as you can. Hold onto any secure furniture. Move to an inside wall and sit with your back to the wall, bring your knees to your chest and cover your head. Stay away from mirror and windows. Do not exit the building during the shaking. Do not use lift.
- If outdoors, move to an open area away from all structure, especially building, bridges, trees and overhead power lines.

After

- Move cautiously, and check for unstable objects and other hazards above and around you.
- Check yourself for injuries. Help those in need.
- Check all power connections at home/ office before switching them ON.
- BEWARE: chances of Short circuits might happen.
- Stay out of damaged buildings.
- Anticipate aftershocks, especially if the shaking lasted longer than two minutes.
- Listen to the radio or watch local TV for emergency information and additional safety instructions.

FLOODS

- Before & During
- All your family members should know the safe route to nearest shelter/raised shelters.
- Tune to your local radio/TV for warnings and advice.
- Have an emergency kit ready with basic medicines and sanitary pads, baby food items, important documents etc.

- Keep dry food, drinking water and clothes ready.
- Drink preferably boiled water. Keep your food covered, don't take heavy meals.
- Use sandbags to seal entry points around doors and vents. Also seal windows if the water is likely to rise that high.
- Do not let children and pregnant woman remain empty stomach.
- Be careful of snake bites which are common in post floods

After

- Pack warm clothing, essential medication, valuables, personal papers, etc. in waterproof bags, to be taken with your emergency kit.
- Move to high rise floor, raise furniture, clothing and valuables onto beds, tables etc from getting wet.
- Turn off the main power supply. Do not use electrical appliances, which have been in floodwater.
- Do not get into water of unknown depth and current.
- Do not allow children to play in, or near flood waters.

FOR RAOD SAFETY:

- While driving, exit the roads if flood water is above half tyre height. If this happens, start reversing or change the route, whichever possible.
- Drive in 1st gear and keep reviving the engine to avoid water from entering exhaust pipe.
- Turn on headlights so that you can easily be spotted.
- Car electrical systems may shut down, if the car stalls and engine doesn't restart, leave the vehicle or you may get trapped.
- For cars which have single button to disengage all locks, open a window or sunroof to escape.
- Keep a hammer close to drivers' seat or use the headrests which have metallic tongs at bottom to break open any window during emergency.

FIRE

Do's

- Get your premises fire audited; check for loose electric connections; don't store combustible material near loose electric wires.
- In case of fire, dial 101 (or the special number for FIRE SERVICE in your area/town).
- If trapped lay down/sit near the floor; curtail entry of smoke into the room; look for exit; breathe through wet cloth;learn at least two escape routes and ensure they are free from obstacles.

- Remain calm, unplug all electrical appliances. Meet at safe place after exit. Keep buckets of water and blankets ready.
- Keep fire extinguishers and regularly re-fill them.
- If clothes catch fire, STOP DROP and ROLL. Conduct regular drills.
- In case of uncontrolled fire, wrap the victim in a blanket, till the fire ceases.
- **Don'ts**
- Don't burn crackers in crowded, congested places, narrow lanes or inside the house.
- Don't cover crackers with tin containers or glass bottles for extra sound effect.
- Avoid long loose clothes, as they are fast in catching fire.
- Don't dispose lighted cigarette ends carelessly.
- Don't remove burnt clothing (unless it comes off easily).
- Don't apply adhesive dressing on the burnt area.

FOREST FIRE

- Do not smoke near thick vegetation, do not leave a lighted cigarette/ bidi in dry vegetation areas;
- Do not leave any open fire in forest area after use.
- Lightning in places of dry vegetation causes fires, create a buffer zone to manage such fires, if possible, else alert forest officials and seek help.
- Try to put the fire out by digging or circle around it by water, if not possible, call a Fire brigade.
- Move farm animals & movable goods to safer places.
- During fire, listen regularly to Radio for advance information & obey the instructions cum advice regarding moving to safe locations.
- Teach the causes and harm of fire to your family, friends and others. Make people aware about forest fire safety.
- Do not be scared when a sudden fire occurs in the forest, be calm & encourage others & community to deal patiently.
- After adventure activities, ensure no lighted bon-fire is left.
- One should not leave the burning wood sticks in or near the forest vegetation.
- Don't enter the forest during the fire.
- Discourage Community from using slash &burn method for cultivation. This also has severe health impacts as Co2 levels rise.

LANDSLIDE

Before & During

- Avoid building houses near steep slopes, closes to mountain edges, near drainage ways or along natural erosion valleys.

- Become familiar with land around you. Avoid areas with debris flow.
- In mudflow areas, build channels to direct the flow around buildings.
- Stay alert and awake. Stay Calm and do not panic. Stay together.
- Listen for unusual sounds that might indicate moving debris, such as trees cracking or boulders knocking together.
- Move away from the path of a landslide or debris flow as quickly as possible.
- Avoid river valleys and low-lying areas.
- If you are near a stream or channel, be alert for any sudden increase or decrease in water flow and notice whether the water changes from clear to muddy. It is a sign of mudslide/landslide nearby. Inform nearest tehsil/ district headquarters. Plant trees and mesh the hillocks to protect soil from eroding

After

- Go to designated public shelter if you have been asked to evacuate.
- Stay away from the slide area as there may be danger of additional slides.
- Check for injured and trapped persons near the slide, without entering the direct slide area. Direct rescuers to their locations.
- Do not move injured person without rendering first aid unless in acute danger state.
- Do not drink contaminated water from rivers, springs, wells etc.

CYCLONE

Before & During

- Listen to radio or TV weather reports and alert everyone through a loud speaker or by going home to home.
- Identify safe shelter in your area. These should be cyclone resistant and also find the closest route to reach them. Move domestic animals to safety as well.
- Keep your emergency kit and basic food supply, medicines, torch and batteries etc.
- Doors, windows, roof and walls should be strengthened before the cyclone season through retrofitting and repairing. Store adequate food grains and water in safe places. Check that doors to garden sheds and garages are also secure.
- Keep flashlights, candles, and matches in case of power outages.
- Do not venture into the sea. Stay Indoors and stand below the strongest part of the house if you have not moved to the cyclone shelter.
- Remain indoors until advised that the cyclone has passed away.
- Do not take shelter close to trees because branches may break off or trees may even be uprooted, and fall on top of you or heavy constructions such as bridges etc.

- During the eye of the storm, move to the other side of your shelter, since the wind will now come from the opposite direction.
- Write each child's name, address, and contact number on a piece of paper and place it in the child's pocket.
- If you are outside, be aware of the dangers of flying objects, falling trees, buildings that may collapse, and damaged power lines.
- If you are in a car, do not try to outdrive a cyclone or heavy winds: if it changes course you will be in danger of being picked up in your vehicle. Remain in the car preferable halting at a safe place.
- Conduct Mock Drills for yourself and the community for evacuation.

After

- After the winds die down, wait for at least 1.5 hours before leaving your shelter.
- Do not go out till officially advised that it is safe. If evacuated, wait till advised to go back.
- Do not use power points until they have been checked.
- Use the recommended route to return to your home. Do not rush.
- Be careful of fallen powers lines, damaged roads and houses, fallen trees.

PURIFYING WATER

- If water supplies run low and main water is contaminated, you will have to purify water.
- If you can see particles floating in water, strain it through some paper towels then boil it, add purifying tablets, or disinfect it.
- Boil some water for 10 minutes to purify it, and then allow it to cool before drinking.
- Use chlorine-based tablets to purify water.
- To disinfect water, use regular household bleach containing 5.25 percent sodium hypochlorite only. A stronger percentage is dangerous.
- Add two drops of bleach to 1 pt (500 ml) of water stir and leave it to stand for 30 minutes. The water should smell slightly of bleach. If it does not, repeat the process and leave the water to stand for 15 minutes more.

Annexure 14:Abbreviations

CBO	- Community Based Organization
DDMA	- District Disaster Management Authoity
DDMC	- District Disaster Management Committee
DDMP	- District Disaster Management Plan
DEOC	- District Emergency Operation Centre
DM&R	- Disaster Management & Rehabilitation
DRR	- Disaster Risk Reduction
DSCDM	- District Standing Committee on Disaster Management
EOC	- Emergency Operation Centre
ESFs	- Emergency Support Functions
HVRA	- Hazard, Vulnerability Risk Assesment
IDRN	- Indian Disaster Resource Network
IRS	- Incident Response System
LAD	- Land Area Development
MHIP	- Mizo Hmeichhe Insuihkhawm Pawl
MUP	- Mizo Upa Pawl
NDMA	- National Disaster Management Authority
NDRF Management	- National Disaster Response Force/National Disaster Fund
NGO	- Non-Governmental Organization
NSS	- National Service Scheme
QRTs	- Quick Response Teams
RCC	- Reinforced Cement Concrete

SDRF	- State Disaster Management Force/State Disaster Management Fund
SDRMF	- State Disaster Risk Management Fund
SDMA	- State Disaster Management Authority
SDMF	- State Disaster Mitigation Fund
SDRN	- State Disaster Resource Network
SOPs	- Standard Operation Procedures
SOC	- State Operation Centre
TL	- Team Leader
VC	- Village Council
VDMC	- Village Disaster Management Committee
VDMP	- Village Disaster Management Plan
WRC	- Wetland Rice Cultivation
YMA	- Young Mizo Association