



STATE DISASTER MANAGEMENT PLAN
2025
ARUNACHAL PRADESH



PUBLISHED BY
DEPARTMENT OF DISASTER MANAGEMENT
GOVERNMENT OF ARUNACHAL PRADESH
ITANAGAR

Contents

LIST OF TABLES	11
LIST OF FIGURES	12
GLOSSARY OF TERMS	13
PROLOGUE	18
ABBREVIATION	20
CHAPTER 1: INTRODUCTION	23
1.1 State Profile: Arunachal Pradesh	23
1.1.1 Physical features and Land Use Pattern	24
1.1.2 Biodiversity	26
1.1.3 Socio-Economic features	26
1.1.4 Climate	27
1.2 Vision	28
1.3 Scope of the Arunachal Pradesh SDMP 2025.....	28
1.4 Aim.....	29
1.5 Objectives.....	29
1.6 Trigger Mechanism	30
1.7 Overview of Arunachal Pradesh Disaster Management Arrangements and Governance 30	
1.7.1 Level of DM arrangements	31
1.7.2 Plan Activation.....	32
1.7.3 Stakeholders of the State Disaster Management Authority.....	33
1.7.4 Institutional Framework and their role and responsibilities at State level	33
1.7.4.1 Arunachal Pradesh State Disaster Management Authority	33
1.7.4.2 State Executive Committee (SEC)	34
1.8 Institutional Framework and their role and responsibilities at District level	34
1.8.1 District Disaster Management Authority (DDMA)	34
1.9 Institutional Framework and their role and responsibilities at local level	35
1.9.1 Local Authorities.....	35
1.9.2 Public & Private Sector	35
1.9.3 Community Groups/Voluntary Agencies/AAPDA Mitra Volunteers/NCC/NSS	35
1.10 Financial Arrangements	35
1.10.1 State Budget	36
1.10.2 State Disaster Response Fund	36

1.10.3 Partnerships	37
1.10.4 Loan	37
1.11 Finance and Budgeting.....	37
CHAPTER 2: HAZARD, RISK, VULNERABILITY PROFILE OF ARUNACHAL PRADESH	40
2.1.1 Vulnerability of the state to the disasters of different types.....	40
2.2.1 Earthquake	41
2.2.1.1 Seismic Zone.....	41
2.2.1.1 Risk & Vulnerability to Earthquake.....	45
2.2.2 Flood/Flash Flood	46
2.2.2.1 Flood Zonation.....	46
2.2.2.2 Risk & Vulnerability to Floods	49
2.2.3 Landslides	50
2.2.3.1 Landslide Zonation.....	50
2.2.3.2 Risk & Vulnerability Assessments.....	51
2.2.4 Forest Fire	53
2.2.4.1 Forest fire prone Zone.....	53
2.2.4.2 Forest Fire Risk & Vulnerability assessments	55
2.2.5 Vulnerability to cyclones/ wind	55
2.2.5.1 Arunachal Pradesh Wind & Cyclone Zones	55
2.2.6 Fire hazards/ accidents	56
2.2.6.1 Fire hazard response and mitigation plan.....	57
2.2.7 Climate Change.....	58
2.2.8 Deforestation	60
2.2.9 Biological Disaster	60
2.2.10 Chemical Disaster	61
2.2.10.1 Sources of Chemical Disasters.....	61
2.2.10.2 Causative factors leading to Chemical Disasters are.....	62
2.2.11 Nuclear & Radiological Disasters	62
2.2.12 Livestock Disasters	62
2.2.12.1 Risk and Vulnerability Assessment.....	62
2.2.13 Miscellaneous:	64
2.2.14 Steps for Prevention, Mitigation and Preparedness	66
CHAPTER 3: PREVENTION AND MITIGATION MEASURES	69

3. Introduction.....	69
3.1 Manmade Disaster.....	69
3.2 Natural Disasters	70
3.3 Strategy for Prevention and Mitigation.....	70
3.4 Prevention and Mitigation measures.....	71
3.4.1 Earthquake	72
3.4.2 Flood / Flash Flood	73
3.4.3 Landslide.....	74
3.4.4 Urban Flooding	75
3.5 Training Needs Analysis	78
CHAPTER 4: MAINSTREAMING DISASTER MANAGEMENT CONCERNS INTO DEVELOPMENT PLANS/PROJECTS	82
4. Introduction.....	82
4.1 Expenditure Finance Committee (EFC) Format	82
4.2 Detailed Project Report (DPR) format.....	83
4.3 Scope of integrating DRR in development schemes	84
CHAPTER-5 PREPAREDNESS MEASURES.....	87
5. Introduction.....	87
5.1 Preparedness Planning:	87
5.2 Resource Availability.....	88
5.3 India Disaster Resource Network (IDRN)	88
5.4 Resource Mobilization	89
5.5 Community based Disaster Management.....	89
5.6 State Disaster Response Force (SDRF).....	90
5.7 Training, capacity building and other proactive measures.....	90
5.8 Psychosocial Support and Mental Health Services (PSSMHS).....	93
5.8.1 Preparedness Plan for Psychosocial Support and Mental Health Services (PSSMHS) 93	
5.8.1.1 Short term Plan	93
5.8.1.2 Midterm Plan:	95
5.8.1.3 Long term Plan:.....	95
CHAPTER-6: DISASTER RESPONSE.....	99
6. Introduction.....	99
6.1 Approach.....	99
6.2 Resource Support	99

6.3 Co-ordination	100
6.4 Procedures	100
6.5 Implementation of Incident Response System for Effective Disaster Response	100
6.5.1 Incident Response System (IRS).....	100
6.5.2 IRS Organization.....	101
6.5.2.1 Command Staff	102
6.5.2.2 General Staff	102
6.5.2.2.1 Operations Section (OS)	102
6.5.2.2.2 Planning Section (PS)	102
6.5.2.2.3 Logistics Section (LS).....	102
6.5.2.2.4 Incident Response Team State	103
6.5.2.2.5 State Level Notification of Incident Response System Team.....	104
6.5.2.2.6 Incident Response Team District Level	105
6.5.2.2.7 District level Notification of Incident Response System Team	106
6.6 Response Activities.....	107
6.6.1 Warning.....	107
6.7 Evacuation.....	108
6.7.1 Definition	108
6.7.2 Legal and Operational Considerations	108
6.7.3 Evacuation Process.....	108
6.7.3.1 Operating Procedures for evacuation	109
6.7.3.2 Evacuation of marooned persons	109
6.7.3.3 Do's & Don'ts for Public.....	110
6.7.4 Emergency relief	110
6.7.5 Emergency Operations Centre (EOC).....	111
6.7.6 Activation of EOC.....	112
6.7.7 Command & Control of EOCs	113
6.8 Emergency Operation Centre [EOC]	113
6.8.1 EOC at the State Level	113
6.8.2 Organizational set up of EOC	113
6.8.3 Communication Section:	114
6.9 Tasks for all EOCs	114
6.10 Alert Mechanism – Early Warning	114

6.11 Co-ordinational roles of disaster management key officials	115
6.11.1 Action by SEC when a disaster is imminent/strikes.	115
6.11.1.1 When the Incident Response System (IRS)/ Incident Response Teams	115
6.11.2 Action by DDMA/DEPUTY COMMISSIONER when a disaster is imminent/strikes.	
6.11.2.1 Procedure to be adopted till the Incident Response System (IRS)	117
6.11.3 Action by the Sub-Divisional Magistrate/ Block Development Officer	119
6.12 Emergency Support Functions (ESFs) in managing response to disaster	120
6.13 Standard Operation Procedures	130
6.13.1 General Preparedness:	130
6.13.2 Department of Home	131
6.13.2.1 Advance Preparedness	131
6.13.2.2 During/Post- Disaster	131
6.13.3 Police Department	132
6.13.3.1 Advance Preparedness	132
6.13.3.2 During/Post- Disaster	133
6.13.4 State Disaster Response Force [SDRF]	133
6.13.4.1 Advance preparedness	134
6.13.4.2 During Disaster	134
6.13.4.3 Post-Disaster	134
6.13.5 Department of Agriculture	135
6.13.5.1 Task	135
6.13.5.2 Advance Preparedness	135
6.13.5.3 During/Post - Disaster	135
6.13.6 Department of Health Services & Family Welfare	136
6.13.6.1 Tasks	136
6.13.6.2 Advance Preparedness	137
6.13.6.3 During/ Post - Disaster	137
6.13.7 Department of Animal Husbandry & Veterinary	138
6.13.7.1 Tasks: Disposal of dead cattle and others animals to prevent outbreak of health ..	138
6.13.7.2 Advance Preparedness	138
6.13.7.3 During/Post Disaster	139
6.13.8 Public Health & Engineering Department	140
6.13.8.1 Task:	140

6.13.8.2 Advance Preparedness:	140
6.13.8.3 During/Post - Disaster	140
6.13.9 Department of Food & Civil Supplies.....	141
6.13.9.1 Tasks:	141
6.13.9.2 Advance Preparedness:	142
6.13.9.3 During/Post Disaster	142
6.13.10 Public Works Department	142
6.13.10.1 Task.....	142
6.13.10.2 Advance Preparedness	143
6.13.10.3 During/Post - Disaster	143
6.13.11 Department of Power & Hydro Power	144
6.13.11.1 Tasks:	144
6.13.11.2 Advance Preparedness:	144
6.13.11.3 During/Post - Disaster	145
6.13.12 Department of Environment & Forests	146
6.13.12.1 Advance Preparedness	146
6.13.13 Department of State Transport Service	146
6.13.13.1 Task:.....	146
6.13.13.2 Advance Preparedness: -	146
6.13.13.3 During/Post –Disaster	147
6.13.14 Department of Rural Development/ Panchayat.....	147
6.13.14.1 Advance Preparedness	147
6.13.14.2 During/ Post Disaster	147
6.13.15 Department of Urban Development & Housing	148
6.13.15.1 Task.....	148
6.13.15.2 Advance Preparedness	148
6.13.15.3 During/ Post Disaster	148
6.13.16 Water Resources Department.....	149
6.13.16.1 Task.....	149
6.13.16.2 Advance Preparedness	149
6.13.16.3 During/ Post Disaster	149
6.13.17 Fire and Emergency Services	149
6.13.17.1 Task.....	149

6.13.17.2 Advance Preparedness	149
6.13.17.3 During/ Post Disaster	150
6.13.18 Department of Information and Public Relations	150
6.13.18.1 General Tasks.....	150
6.13.19 Department of Education	150
6.13.19.1 Advance Preparedness	150
6.13.19.2 During/ Post Disaster	151
6.13.20 Department of Planning/ Finance.....	151
6.13.20.1 Advance Preparedness	151
6.13.20.2 During/ Post Disaster	151
6.13.21 Department of Social Welfare.....	151
6.13.21.1 Advance Preparedness	151
6.13.21.2 During/ Post Disaster	152
6.13.22 Department of Fisheries	152
6.13.22.1 Preparedness, Planning and Mapping:	152
6.13.22.2 During Disaster / outbreak:	152
6.13.22.3 Post -disaster:	153
6.13.23 Department Of Disaster Management.....	153
6.13.23.1 Preparedness.....	153
6.13.23.2 Prevention & Mitigation	153
6.13.23.3 Alert & Warning Stage.....	154
6.13.23.4 Response	154
6.14 Information Management.....	155
6.15 Media Liaison	155
6.16 Post-operational Debriefing	155
6.17 Green Corridor for NDRF Convoy	155
CHAPTER 7: SENDAI FRAMEWORK AND STRENGTHENING DISASTER RISK GOVERNANCE.....	157
7. Introduction.....	157
7.1 Expected outcome and goal	157
7.2 Targets to achieve the outcome and goal	158
7.3 Priorities for action.....	158
7.3.1 Priority 1: Understanding disaster risk.....	159
7.3.2 Priority 2: Strengthening disaster risk governance to manage disaster risk.....	160

7.3.3 Priority 3: Investing in disaster risk reduction for resilience.	161
7.3.4 Priority 4: Enhancing disaster preparedness for effective response.	163
7.4 Responsibility Matrix for Strengthening Disaster Risk Governance	164
CHAPTER 8: PARTNERSHIP WITH STAKEHOLDERS	167
8. Introduction.....	167
8.1 NDMA	167
8.2 National Institute of Disaster Management (NIDM)	168
8.3 National Disaster Response Force (NDRF)	168
8.4 Armed Forces	169
8.5 Indian Railways.....	169
8.6 Indian Meteorological Department (IMD).....	170
8.7 State Disaster Response Force (SDRF).....	170
8.8 State Fire & Emergency Services	170
8.9 State Disaster Management Authority:	171
8.10 District Disaster Management Authority (DDMA)	172
8.11 Media	175
8.12 Non-Governmental Organization(s) and Other Stakeholders	176
CHAPTER 9: FINANCIAL ARRANGEMENTS	178
9. Funding Mechanism at Various Levels.....	178
9.1 Centre Level	178
9.1.1 National Disaster Response Fund	178
9.1.2 Prime Minister’s National Relief Fund (PMNRF)	178
9.2 State Level.....	178
9.2.1 State Budget.....	178
9.2.2 State Disaster Response Fund.....	179
9.2.3 Chief Minister Relief Fund.....	179
9.3 Other Sources of Funds	179
9.3.1 Public Private Partnership	179
9.3.2 Grant In Aid	179
9.3.3 Loan	179
9.3.4 Disaster Bonds	179
9.3.5 Donations	180
9.3.6 Recovery Measures	180

9.4 Funds Disbursement and Audit.....	180
CHAPTER 10: REHABILITATION & RECONSTRUCTION.....	182
10. Introduction.....	182
10.1 Detailed damage assessment.....	182
10.2 Assistance to restore houses and dwelling units	182
10.3 Relocation (Need based)	182
10.4 Finalizing reconstruction & rehabilitation plan	183
10.5 Funds generation.....	183
10.6 Funds disbursement and audit.....	183
10.7 Project Management.....	184
10.8 Information, Education and Communication	184
10.9 Dispute resolution mechanisms.....	185
10.10 Implementing initiatives for recovery of reconstruction costs	185
CHAPTER 11: REVIEW AND UPDATION.....	187
11. Introduction.....	187
11.1 Plan Testing.....	187
11.2 Debrief and Evaluation-Mock Drills.....	188
11.3 Review / Updation of Plan	188
CHAPTER 12: FOLLOW-UP ACTIONS.....	190
12. Follow-Up Actions.....	190
Annexure 1: Checklist for DM/ Deputy Commissioner for disaster preparedness.....	191
Annexure 2: Emergency Operation Centre (E.O.C.)	192
Annexure 3: Mock Drill- Concept and Process	194
Annexure 4: District wise contact details of Deputy Commissioners.....	196
Annexure 5: District wise contact details of Superintendent of Police.....	197
Annexure 6: District wise contact details of District Disaster Management Officers (DDMOs)	198
Annexure 7: List of Airports/ALGs/Helipads in Arunachal Pradesh	199
Annexure 8: Coordinates and Contact details of important Resources of the Districts	205
Bibliography	222

LIST OF TABLES

Table 1: Demographic Profile.....	24
Table 2: Land use pattern in ‘000 ha	24
Table 3: District wise net area irrigated by sources in ‘000 ha.....	25
Table 4: Biodiversity of the Arunachal Pradesh	26
Table 5: Social profiles of the districts in the State	26
Table 6: Different Component of Disaster Management.....	37
Table 7: Vulnerability of districts to various Hazards	40
Table 8: Seasonality of Hazards in Arunachal Pradesh	40
Table 9: History of occurrence of earthquake in and around the State of Arunachal Pradesh	42
Table 10: Earthquake Hazard Classification.....	43
Table 11: Loss of lives due to landslide/ Flashflood/Flood	47
Table 12: Classification of floods	48
Table 13: Flood Hazard Zonation	48
Table 14: Landslide Hazard Classification	51
Table 15: Incidences of Forest Fire in Arunachal Pradesh	54
Table 16: Area under Forest Fire prone classes in Arunachal Pradesh.....	54
Table 17: Structural & Non-Structural Measures for mitigation of earthquake	72
Table 18: Structural & Non-Structural Measures for mitigation of flood.....	73
Table 19: Structural & Non-Structural Measures for mitigation to landslides	74
Table 20: Urban Flooding	76
Table 21: Role and responsibilities for Structural & nonstructural measures for all Hazards .	77
Table 22: Training needs analysis.....	80
Table 23: Expenditure Finance Committee (EFC) & Responsible Departments.....	83
Table 24: Detail Project Report (DPR) & Responsible Department.....	83
Table 25: Suggested for Departments and schemes to incorporate in the planes	84
Table 26: Resource availability	88
Table 27: Community Based Disaster Management.....	89
Table 28: Training for disaster preparedness	90
Table 29: Awareness programme for preparedness	91
Table 30: Computer based programming for disaster preparedness	91
Table 31: Techno-legal Regime	91
Table 32: Medical Preparedness	95
Table 33: Knowledge Management	96
Table 34: Communication for disaster preparedness	97
Table 35: Departments/agencies responsible for issue of warnings during disasters	107
Table 36: The responsibilities, initial activities on receipt of warning and minimum standards for each ESF	121
Table 37: The details of the primary and support agencies for each type of ESF	123
Table 38: Role and Responsibility of Government Departments/ Stakeholders.....	124
Table 39: Targets of the Sendai Framework and its implementation in the context of Arunachal Pradesh.....	158
Table 40: Targets for achieving priority 1 in the context of Arunachal Pradesh.....	159

Table 41: Targets to strengthen disaster risk governance and its implementation in the context of Arunachal Pradesh	160
Table 42: Targets for investing in Disaster Risk reduction for resilience and action plan for implementation in the context of Arunachal Pradesh	162
Table 43: Targets and action plan for Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction.....	163
Table 44: Responsibility Matrix for Strengthening Disaster Risk Governance.....	164

LIST OF FIGURES

Figure 1: Map of Arunachal Pradesh	23
Figure 2: Overall Structure	32
Figure 3: Seismic epicentres of Arunachal Pradesh and surrounding region (1906-2003).....	42
Figure 4: Seismic Zone Map of India	42
Figure 5: Vulnerability Profile of Districts to Earthquake in Arunachal Pradesh	45
Figure 6: Drainage Map of Arunachal Pradesh	47
Figure 7: National Flood Vulnerability Map of India	47
Figure 8: Vulnerability of Villages towards Flood	49
Figure 9: Damages due to flood/flash flood at East Siang and West Siang District during 2020	50
Figure 10: Vulnerability of villages to landslides	52
Figure 11: Landslide hazard zone map of Arunachal Pradesh.....	52
Figure 12: Damages due to Landslide at National Highway 713A, Itanagar Capital Complex (A), and East Kameng District (B), Arunachal Pradesh during 2020.....	52
Figure 13: Forest fire hotspot map using fire points over the period of 2008–2016.....	53
Figure 14: Forest fire prone zones map of Arunachal Pradesh.....	54
Figure 15: Wind and Cyclone Map of Arunachal Pradesh	56
Figure 16: Structure of Incident Response System	101
Figure 17: Steps and Action for Response.....	115

GLOSSARY OF TERMS

Disaster	<i>A catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or manmade causes, or by accident or negligence which results in substantial loss of human suffering or damage to, and destruction of, property, or damage to, and 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.</i>
Disaster Management	<i>A continuous and integrated process of planning, organizing, coordinating and implementing measures which are necessary or expedient for prevention of danger or threat of any disaster; mitigation or reduction of risk of any disaster or its severity or consequences; capacity building; preparedness to deal with any disaster; prompt response to any threatening disaster situation or disaster; assessing the severity or magnitude of effects of any disaster; evacuation, rescue and relief; and rehabilitation and reconstruction.</i>
Earthquake	<i>An earthquake is a series of vibrations on the earth's surface caused by the generation of elastic (seismic) waves due to sudden rupture within the earth during release of accumulated strain energy.</i>
Elements at Risk	<i>The population, properties, economic activities, including public services etc. at risk in a given area.</i>
Flood	<i>A flood is an overflow of water that submerges land which is usually dry. Flooding may occur as an overflow of water from water bodies, such as a river, lake, or ocean, in which the water overtops or breaks levees, resulting in some of that water escaping its usual boundaries</i>
Flash flood	<i>Sudden cloud burst resulting in the overflow beyond the normal capacity of streams thrust the side wall of channel or intense rainfall occurring over a short period of time- as is seen during cloud bursts can cause flash floods resulting in down ward flow of copious amount of water within a short duration.</i>
Hazard	<i>A threatening event or the probability of occurrence of a potentially damaging phenomenon (e.g., an earthquake, cyclonic storm or a large flood) within a given time period and area.</i>
High Risk Areas	<i>Geographical areas which fall under seismic zones III, IV and V, which are vulnerable to potential impact of earthquakes, landslides, rock falls or mudflows.</i>
Local Authority	<i>It includes Panchayati Raj Institutions, municipalities, a district board, cantonment board, town planning authority or Zilla Parishad or any other body or authority, by whatever name called, for the time being invested by</i>

laws, for rendering essential services or, with the control & management of civic services, within a specified local area.

Mitigation	<i>Measures aimed at reducing the risk, impact or effects of a disaster or threatening disaster situation.</i>
Non-Structural Measures	<i>Non-engineered measures to reduce or avoid possible impacts of hazards such as education, training, capacity development, public awareness, communication etc.</i>
Preparedness	<i>The state of readiness to deal with a threatening disaster situation or disaster and the effects thereof.</i>
Prevention	<i>Measure taken to avert a disaster from occurring, if possible (to impede a hazard so that it does not have any harmful effects).</i>
Resilience	<i>The capacity of a system to tolerate perturbation or disturbances without collapsing into a qualitatively different state, to withstand shock and rebuild when necessary.</i>
Risk	<i>The expected number of lives lost, persons injured, damage to property and disruption of economic activity due to a particular natural phenomenon.</i>
Risk Assessment	<i>The determination of the nature and extent of risk by analyzing potential hazards and evaluating existing conditions of vulnerability that could pose a potential threat or harm to people, property, livelihoods, and the environment.</i>
Risk Management	<i>The systematic process of using administrative decisions, organization, operational skills, and capacities to implement policies, strategies, and coping capacity of the society and communities to lessen the impact of hazards.</i>
Relief	<i>Immediate measures that are required in search and rescue of survivors, as well to meet the basic needs for shelter, water, food and health care. (short term) (definition by ADPC)</i>
	<i>or</i>
	<i>Refers to the process of responding to a catastrophic situation, providing humanitarian aid to persons and communities who have suffered from some form of disaster. (from New world encyclopedia)</i>
Rescue	<i>An attempt or to save someone from a dangerous or unpleasant situation/ disaster</i>
Rehabilitation	<i>Actions taken in the aftermath of a disaster to; assist victims to repair their dwellings; re-establish essential services; revive key economic and social activities</i>
Restoration	<i>Long term measure to repair or replace damaged dwellings and infrastructure and to set the economy back on course.</i>

Rapid Visual Screening (RVS)	<i>Rapid Visual Screening is a procedure requiring visual evaluation to assess the vulnerability of buildings, by permitting vulnerability assessment based on walk around of the building by a trained evaluator. The evaluation procedure and system is compatible with GIS-based city database and also permits use of the collected building information for a variety of other planning and mitigation purposes.</i>
Seismic Hazard	<i>Seismic hazard in context of engineering design is defined as the predicted level of ground acceleration which would be exceeded with 10% probability at the site under construction due to occurrence of earthquake anywhere in the region, in the next 50 years.</i>
Specific Risk	<i>The expected degree of loss due to particular natural phenomenon.</i>
Seismic Retrofitting	<i>The structural modifications to upgrade the strength, ductility and energy dissipating ability of seismically deficient or earthquake damaged structures.</i>
Seismic Strengthening	<i>The process of enhancing the strength of existing structures to make them resistant to seismic activity, ground motion or soil failure due to earthquakes.</i>
Siltation	<i>Increase in concentration and or of deposition of water-borne silt in a body of water like river/ lake etc., which is generally not desirable.</i>
State Authority (SDMA)	<i>The State Disaster Management Authority established under sub-section (I) of the section 14 of DM Act, 2005 and includes the Disaster Management Authority for the Union Territory constituted under that section.</i>
State Government	<i>The Department of the Government of the state having administrative control of the Disaster Management and includes Administrator of the Union Territory appointed by the President under article 239 of the Constitution.</i>
Structural Measures	<i>Any physical construction to reduce or avoid possible impacts of hazards, which include engineering measures and construction of hazard-resistant and protective structures and infrastructure.</i>
Vulnerability	<i>The degree of loss to a given element at risk or set of such elements resulting from the occurrence of a natural phenomenon (or manmade) of a given magnitude and expressed on a scale from 0(no damage) to 1(total loss).</i>



PEMA KHANDU



ARUNACHAL PRADESH

Phone: (O) 0360-2212341

2212173

Fax: 0360-2291365

**CHIEF MINISTER
ARUNACHAL PRADESH**

I am pleased to present to the people of Arunachal Pradesh the State Disaster Management Plan 2025 (SDMP-2025). This plan marks a significant step towards building a disaster-resilient Arunachal Pradesh. It is envisioned to strengthen, organize, and enhance the capacity of all stakeholders across the State, enabling swift and effective disaster response using available local resources—while minimizing reliance on external assistance.

Situated in the Eastern Himalayan Region, our State is particularly vulnerable to a range of natural hazards including floods, flash floods, landslides, earthquakes, forest fires, and other fire-related incidents. The growing impact of climate change—manifesting as intense rainfall, prolonged monsoons, heat waves, and other extreme weather events—has further compounded these risks, posing serious threats to lives, livelihoods, and infrastructure.

Given these vulnerabilities, SDMP-2025 has been developed with the objective of strengthening disaster prevention, preparedness, and resilience. It emphasizes cooperation, coordination, and collective action among all stakeholders—government departments, agencies, and local communities. The plan is based on a careful study of existing systems and extensive consultations with various stakeholders, ensuring that it is grounded in the realities of our State.

For this plan to be truly effective, it requires the wholehearted participation and commitment of all stakeholders. Disaster management must become not just a policy, but a shared culture—a daily habit and a way of life. Only then can we build a safer, stronger Arunachal Pradesh for our future generations.

I extend my sincere appreciation to the Department of Disaster Management, Arunachal Pradesh, for preparing this comprehensive plan that integrates all aspects of disaster risk management—prevention, mitigation, preparedness, and response. I am confident that the successful implementation of SDMP 2025 will go a long way in realizing our collective vision of a disaster-resilient State.

Place: Itanagar

(Pema Khandu)



MANISH KUMAR GUPTA
(IAS)



CHIEF SECRETARY
GOVERNMENT OF ARUNACHAL PRADESH
ITANAGAR

PREFACE

Arunachal Pradesh attained statehood on 20th February 1987. With a geographical area of 83,743 sq. km, it is the largest State in the North-Eastern region of India. It shares international borders with Bhutan to the west, China to the north and northeast, and Myanmar to the east, while it is bounded by Nagaland to the southeast and the plains of Assam to the south.

According to the 2011 Census, the State has a population of 13,83,727 and a population density of only 17 persons per square kilometre, making it one of the most sparsely populated States in India. Despite this, the State's complex topography and fragile ecosystem render it highly vulnerable to various natural hazards. Over the past few decades, there has been increasing evidence that the frequency and intensity of natural calamities have grown, largely due to the impacts of climate change—resulting in recurring loss of lives, livelihoods, and property.

While the occurrence of natural disasters cannot be entirely prevented, their adverse impacts can be substantially reduced through effective planning, preparedness, and monitoring.

Recognizing this, the Government of India enacted the Disaster Management Act in 2005 and adopted the National Policy on Disaster Management in 2009. Prior to this, disaster management in India—and in Arunachal Pradesh—was primarily reactive and relief-oriented. However, the implementation of the DM Act marked a significant paradigm shift from a response-centric approach to a more proactive, holistic, and integrated framework that emphasizes prevention, mitigation, preparedness, and resilience-building.

The **State Disaster Management Plan 2025** has been prepared in alignment with this modern approach. The plan not only prioritizes rapid and coordinated response but also focuses on conserving developmental gains and minimizing losses to life, property, and livelihoods. It adopts a structured, concise, and action-oriented framework that guides all stakeholders—government departments, agencies, and communities—to develop detailed plans and fulfil their roles in disaster risk reduction and emergency response.

Since the enactment of the Disaster Management Act, the State's institutional capacity to reduce risks, enhance preparedness, and respond effectively to disasters has steadily improved. I am confident that this Plan will further strengthen Arunachal Pradesh's ability to build a disaster-resilient future.

(Manish Kumar Gupta)

Place: Itanagar



DANI SALU
SECRETARY (DM)



SECRETARY (DM)
DEPARTMENT OF DISASTER MANAGEMENT
GOVERNMENT OF ARUNACHAL PRADESH

PROLOGUE

The Sendai framework for Disaster Risk Reduction 2015-2030 was adopted at the Third United Nations World Conference on Disaster Risk Reduction by the UN which provided an opportunity for countries to adapt a concise, focused, forward looking and action-oriented framework for disaster risk reduction. Keeping in mind targets of the SENDAI Framework, the State Disaster Management Plan 2025 emphasizes on substantial reduction of disaster risk and losses in lives, livelihoods and health and in economic, physical, social, cultural and environmental assets of persons, business, communities and countries. Further, it aims to prevent new and reduce existing disaster risk through the implementation of integrated and inclusive socio-economic measures.

Overall objectives of this SDMP 2025 are to prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery and thus achieving the overall targets of the SENDAI framework. The State Disaster Management Plan 2025 has been revised keeping in mind the new approach and dimensions to disaster management. The Department of Disaster Management, Government of Arunachal Pradesh, hopes that the revised version will be useful and effective in addressing the difficult challenges of disaster risk reduction faced by all the stakeholders.

(Dani Salu)

Dated 14/08/2025
Place Itanagar



**KANKI
DARANG**



DIRECTOR (DM)
DEPARTMENT OF DISASTER
MANAGEMENT
GOVERNMENT OF ARUNACHAL
PRADESH

ACKNOWLEDGEMENT

On behalf of the Department of Disaster Management, Government of Arunachal Pradesh, I extend my sincere gratitude to all stakeholders who contributed to the updating of the State Disaster Management Plan (SDMP) 2025. The revision of the SDMP has been a collective effort that goes well beyond the Department itself, reflecting the spirit of collaboration and shared responsibility in disaster risk reduction.

We are especially grateful to the Hon'ble Chief Minister and the Minister-in-Charge, Department of Disaster Management, for their unwavering encouragement and support throughout the process.

Our heartfelt thanks also go to the Hon'ble Chief Secretary-cum-Chairman, State Executive Committee (SEC) and the Secretary, Disaster Management, for their consistent guidance and support during the preparation of this Plan.

Valuable inputs and suggestions were received from Deputy Commissioners, Additional Deputy Commissioners, Heads of Departments, District Disaster Management Officers (DDMOs), Universities, and representatives from the Central Government. We deeply appreciate their contributions.

We would also like to acknowledge the dedicated efforts of the officers and staff of the Department of Disaster Management, whose commitment and hard work were instrumental in completing this important document.

Our sincere appreciation to each and every one involved in the successful update of the State Disaster Management Plan 2025.

(Kanki Darang)

Place: Itanagar

ABBREVIATION

ASHA	Accredited Social Health Activist
APSDMA	Arunachal Pradesh State Disaster Management Authority
ATIs	Administrative Training Institutes
BDO	Block Development Officer
BDMC	Block Disaster Management Committee
BMTPC	Building Materials & Technology Promotion Council
CBDM	Community Based Disaster Management
CBOs	Community Based Organisations
CHC	Community Health Centre
CMO	Chief Medical Officer
CO	Circle Officer
CSCs	Community Service Centres
CWC	Central Water Commission
DCG	District Crisis Group
DEA	Department of Economic Affairs
DEOC	District Emergency Operation Centre
DM	Disaster Management
DM ACT, 2005	Disaster Management Act, 2005
DMO	District Medical Officer
EOC	Emergency Operations Centre
FMD	Foot and Mouth Disease
GIS	Geographic Information System
GoAP	Government of Arunachal Pradesh
GoI	Government of India
HPC	High Powered Committee
HRD	Human Resource Development
HR	Human Resources
IEC	Information Education Communication
IMD	India Meteorological Department
IT	Information Technology
MFRs	Medical First Responders
MHA	Ministry of Home Affairs
MIS	Management Information System
MoA	Ministry of Agriculture
MoC & F	Ministry of Chemicals and Fertilizers
MoC & I	Ministry of Commerce and Industries
MoEF	Ministry of Environment & Forest

MoF	Ministry of Finance
MoH & FW	Ministry of Health & Family Welfare
Mo LE	Ministry of Labour and Employment
Mo P & NG	Ministry of Petroleum and Natural Gas
Mo SRT & H	Ministry of Shipping, Road Transport and Highways
NCC	National Cadet Corps
NCCF	National Calamity Contingency Fund
NCDM	National Committee on Disaster Management
NDMA	National Disaster Management Authority
NDMRCs	National Disaster Mitigation Resource Centres
NDRF	National Disaster Response Force
NDRF	National Disaster Response Fund
NEFA	North-East Frontier Agency
NERIST	North-Eastern Regional Institute of Science & Technology
NSS	National Service Scheme
NYK	Nehru Yuva Kendra
NGOs	Non-Governmental Organisations
NBC	Nuclear, Biological and Chemical
PCR	Police Control Room
PHC	Primary Health Centre
PHE & WS	Public Health Engineering & Water Supply
PRI	Panchayati Raj Institutions
PPP	Private Party in Partnership
RO	Responsible Officer
RVS	Rapid Visual Screening
SCG	State Crisis Group
SDMA	State Disaster Management Authority
SDRF	State Disaster Response Force
SEC	State Executive Committee
SEOC	State Emergency Operation Centre
SIRD	State Institute of Rural Development
SOPs	Standard Operating Procedures
SWOT	Strengths, Weaknesses, Opportunities, and Threats
SRSAC	State Remote Sensing Application Centre
ULBs	Urban Local Bodies

CHAPTER 1: INTRODUCTION



CHAPTER 1: INTRODUCTION

1.1 State Profile: Arunachal Pradesh

Arunachal Pradesh attained its statehood on 20th February 1987. Arunachal Pradesh with a geographical area of 83,743 sq. Km is the largest State in North-East India and is bounded by countries such as Bhutan to the west, China to the north-east, Myanmar to the east, the Indian State Nagaland to the south-east and the plains of Assam to the south. The State is situated in the Indian Eastern Himalayan region between latitudes 26^o 38'N and 29^o 30'N, longitudes 91^o 20'E and 97^o 30'E with varying elevations ranging from 50 meters in the foot hills gradually ascending to above 7000 meters (SAPCC, 2011). Spatial representations of districts in Arunachal Pradesh are depicted in Figure 1.

At present there are 25 Districts and 1 Capital Complex, 38 ADC HQ (Ind), 12 SDO HQ, 26 EAC HQ 123 circles and 909 Blocks. Each district is under the administrative control of a Deputy Commissioner. Each Civil sub-division is under the control of an Additional Deputy Commissioner / Sub-Divisional Officer. There are 3863 nos. of villages (Census, 2011). Demographic profile is given in Table 1.

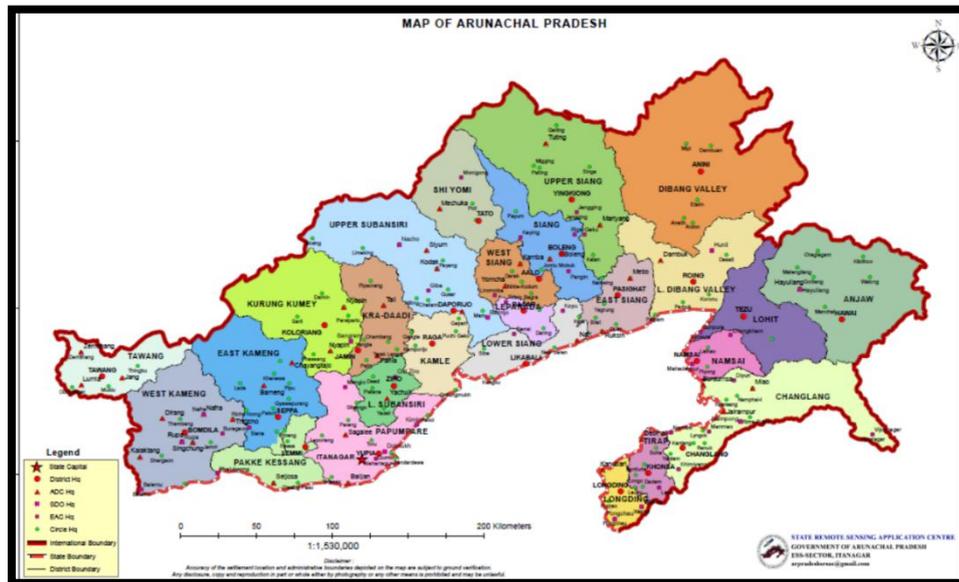


Figure 1: Map of Arunachal Pradesh
(Source: SRSAC)

Table 1: Demographic Profile

Source: (Census, 2011)

Population	13,83,727
Male	7,13,912
Female	6,69,815
Sex Ratio	920 females to 1000 males
Population density	17 persons per sq. km.
Decadal growth rate	25.92% (2001-2011)
Infant Mortality Rate (IMR)	37
Effective literacy rate	66.95%

1.1.1 Physical features and Land Use Pattern

About 66,687.78 sq km (79.63%) of the total geographical area in Arunachal Pradesh are under forest cover (FSI, 2019). Agriculture and animal husbandry are the two pre dominant occupation among the rural communities. According to Verma (2013), 58.44 % of population belongs to the category of cultivators, 3.85 % agricultural labourers, 0.86 % workers in household industries, and 36.85 % other types of workers. However, the arable land is estimated at only 0.25 million hectares (3.08%) of the total geographical area of the State (SAPCC, 2011). Changlang district has the highest cultivable land (27.37%) across districts in Arunachal Pradesh while Dibang valley has the least (2.91%). Similarly, the cropping intensity of the districts varies with least cropping intensity in Tawang (60.27%) and highest in Kurung Kumey (89.98%). The average cropping intensity of the State is 76.76%.

District wise percentage of forest cover, area not available for cultivation, cultivable land, net area sown and cropping intensity are given in Table 2.

Table 2: Land use pattern in '000 ha
Source of data: (FSI, 2019); (Census, 2011)

Districts	Geographical Area	Forests, 2017		Area not available for cultivation, 2010-11	Cultivable land, 2010-11	Net area sown, 2010-11		Cropping Intensity (%)
		Area	%			Area	%	
Tawang	217.2	117.7	54.19	214.02	3.19	3.19	1.47	60.27
West Kameng	742.2	1,027.8	88.94	736.14	6.06	6.06	0.82	72.99
East Kameng	413.4			407.51	5.89	5.89	1.43	81.63
Papum Pare	346.2	319.1	92.17	332.52	13.68	13.68	3.95	73.27
Lower Subansiri	350.8	838.2	87.97	340.35	10.45	10.45	2.98	61.69

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

Kurung Kumey	604.0			592.03	11.97	11.97	1.98	89.98
Upper Subansiri	703.2	557.1	79.22	687.63	15.57	15.57	2.21	61.53
West Siang	832.5	735.6	88.36	810.21	22.30	22.30	2.68	77.66
East Siang	360.3	288.0	79.93	338.76	21.54	21.54	5.98	78.56
Upper Siang	659.0	536.9	81.47	649.57	9.44	9.44	1.43	77.83
Dibang Valley	912.9	923.2	70.86	909.99	2.91	2.91	0.32	86.83
Lower Dibang Valley	390.0			386.57	3.43	3.43	0.88	76.83
Lohit	521.2	760.1	66.66	508.91	12.29	12.29	2.36	81.63
Anjaw	619.0	399.2	85.63	615.08	3.92	3.92	0.63	82.98
Changlang	466.2			438.83	27.37	27.37	5.87	86.72
Tirap	236.2	193.5	81.92	220.97	15.23	15.23	6.45	80.63

Further, Agriculture in the State are highly rain-fed with only 17% of the total cultivated area in Arunachal Pradesh under irrigation (SAPCC, 2011). Available records indicate that a wide utilization gap exist till today. It is estimated that about 55% of created potential is utilized and 45% remains unutilized due to poor resource support (SAPCC, 2011).

Table 3: District wise net area irrigated by sources in '000 ha
Source of data: (Government of India, 2011)

Districts	Geographical Area (Ha)	Net area irrigated	
		Area	%*
Tawang	2,17,200	348.93	0.16
West Kameng	7,42,200	354.92	0.05
East Kameng	4,13,400	897.86	0.22
Papum Pare	3,46,200	5,168.20	1.49
Lower Subansiri	3,50,800	6,430.62	1.83
Kurung Kumey	6,04,000	5,058.86	0.84
Upper Subansiri	7,03,200	2,385.30	0.34
West Siang	8,32,500	10,011.13	1.20
East Siang	3,60,300	8,357.59	2.32
Upper Siang	6,59,000	2,010.62	0.31
Dibang Valley	9,12,900	93.65	0.01
Lower Dibang Valley	3,90,000	1632.53	0.42
Lohit	5,21,200	3,106.16	0.60
Anjaw	6,19,000	146.04	0.02
Changlang	4,66,200	3,977.37	0.85
Tirap	2,36,200	622.34	0.26

1.1.2 Biodiversity

Arunachal Pradesh possesses India's second highest level of genetic resources, being one of the world's 18 biodiversity hotspots. It is rich in biological resources with 760 species of birds, 85 species of mammal, 4,500 species of angiosperms, and 550 species of orchids (Table 4) (SAPCC, 2011). These biodiversity plays an important role in the occupation of the tribal communities in Arunachal Pradesh. The important forests types found in the state are tropical evergreen, semi evergreen, deciduous, pine, temperate, and alpine. Papum Pare district has the highest percentage under forest cover (92.17%) while Tawang has the least percentage of area under forest cover (54.19%).

Table 4: Biodiversity of the Arunachal Pradesh
Source of data: (SAPCC, 2011)

Biological Richness	No. of Species
Fauna	20% of Country's fauna
Flowering plants	4500
Pteridophytes	400
Conifers	23
Bamboos	35
Canes	20
Rhododendron	52
Orchids	>500

1.1.3 Socio-Economic features

The population of Arunachal Pradesh is 13.84 lakhs with a population density of 17 person per sq. Km (Census, 2011). The sex ratio is 938 females per 1000 male. Percentage of population living below poverty is 34.67% (Census, 2011). However, the percentage living below poverty line varies across districts in Arunachal Pradesh with Kurung Kumey having the highest percentage of BPL (71%), while above 60% of the population live below poverty line across all the districts in Arunachal Pradesh. Number of doctors per 1000 population is below 1 across 16 districts. District wise social economic profiles of the State is given in Table 5.

Table 5: Social profiles of the districts in the State
Source of data: (Census, 2011); (NRHM, 2017)

Districts	Population (2011)	Sex Ratio ¹ (2011)	% Population BPL (2011)	Number of doctors per 1000 population (2015)
Tawang	49,997	714	64	0.06
West Kameng	83,947	836	65	0.08
East Kameng	78,690	1029	66	0.06

¹Sex ratio: Females per '000 males

Papum Pare	176,573	980	68	0.05
Lower Subansiri	83,030	984	66	0.07
Kurung Kumey	92,076	1031	71	0.09
Upper Subansiri	83,448	998	65	0.07
West Siang	112,274	930	67	0.09
East Siang	99,214	978	66	0.05
Upper Siang	35,320	889	68	0.06
Dibang Valley	8,004	813	64	0.12
Lower Dibang Valley	54,080	928	65	0.07
Lohit	54,080	912	63	0.04
Anjaw	21,167	839	63	0.19
Changlang	148,226	926	66	0.05
Tirap	111,975	944	65	0.05

1.1.4 Climate

There are five agro-climatic zones in Arunachal Pradesh reflecting the climate variability due to large area of the State. These agro-climatic zones are alpine zone, mid tropical hill zone, mid tropical plain zone, sub-tropical hill zone, and temperate sub-alpine zone. The Climate in Arunachal Pradesh ranges from sub-tropical to temperate depending on the altitude of the land. For instance, the climate in the upper regions of the State experiences alpine or tundra climate, the middle ranges have temperate climate, and the lower ranges experience humid conditions. The average temperature in Arunachal Pradesh ranges from 15° to 21° C during winters, while the monsoon temperature ranges from 20° to 30° C (SAPCC, 2011). The rainfall of Arunachal Pradesh is amongst the heaviest in the country receiving more than 3500 mm in a year. The state receives rainfall over a period of 8 to 9 months except in winter, however, most of rainfall is between May to September. Higher regions experience snowfall during winter. The average annual rainfall is 1000 mm in the higher elevations and 5750 mm in the foot hill areas.

Arunachal Pradesh, located in the Eastern Himalayan region is highly vulnerable to floods/flash floods, landslides, earthquake, forest fire, fire etc., due to high intensity rainfall, prolonged monsoon rainfall, climate change V, increased development, and being in high seismic zone etc., posing a serious risk to the lives and livelihood of the communities, infrastructure, natural resources etc. The Intergovernmental Panel on Climate Change (IPCC) predicts that ‘heavy precipitation events’, which will augment risks from natural disasters such as floods, landslides etc., (IPCC, 2007). Over the past decades, there are growing bodies of evidence that with continued climate change and high intensity rainfall, incidences of natural hazards in Arunachal Pradesh are becoming

more frequent, intense and unpredictable. These hazards have the potential to cause large-scale disasters resulting in loss of life, damage to property, infrastructure etc.

In this backdrop, it is important to bring out a State specific Disaster Management Plan for the State of Arunachal Pradesh. Section 23 of the Disaster management Act 2005 mandate that there shall be a Disaster Management Plan for every State in India. The Plan shall be prepared by the State Executive Committee (SEC) and shall be approved by the State Authority. This plan is prepared as per the provisions outlined in the Disaster management Act 2005 and shall be known as “*Arunachal Pradesh State Disaster Management Plan- 2025*” which will be applicable to the whole of the State of Arunachal Pradesh, India.

1.2 Vision

To organize, strengthen and enhance the capabilities of all the stakeholders in the State enabling them to immediately respond to the disasters using their own available resources, thereby minimizing the effects/ impacts of disasters with optimum use of external aid or resources.

1.3 Scope of the Arunachal Pradesh SDMP 2025

The Arunachal Pradesh SDMP 2025 encompasses the following scopes;

- To study the State’s vulnerability to different kinds of disasters.
- The measures to be adopted for prevention and mitigation before, during & after disasters.
- The way mitigation measures shall be integrated with development plans.
- The capacity building and preparedness measures to be taken.
- The roles and responsibilities of each Department of the Government of the State in relation to the measures specified above.
- The roles and responsibilities of different Departments of the Government of the State in responding to any threat or disastrous situation or disaster.
- Methodologies for the annual review and updating of the State Disaster Management Plan.
- Appropriate provisions of finances for the measures to be taken to tackle disaster and for capacity building programmes to be carried out by the State Government.

- Availability of the various Government Departments of the State and the provisions & methodologies of these Departments to draw up their own plans in accordance with the state plan.

1.4 Aim

The aim of Arunachal Pradesh SDMP-2025 is to make the State disaster resilient across all sectors, achieve substantial and inclusive disaster risk reduction by building local capacities starting with the poor and decreasing significantly the loss of lives, livelihoods, and assets in different forms including economic, physical, cultural, and environmental while enhancing the ability to cope with disasters at all levels.

It further aims to ensure that all components of Disaster Management are addressed well in order to facilitate planning, preparedness, operational, coordination and community participation.

1.5 Objectives

The Objective of the Arunachal Pradesh SDMP-2025 is to set out the State Government's approach to Disaster Management in accordance with the operational and legislative responsibilities of the DM Act 2005. This document will stand as a high-level document outlining the approach to disaster management by the Government of Arunachal Pradesh. The specific objectives of the Arunachal Pradesh SDMP-2025 are to ensure

- The involvement of all the stakeholders in the community in making the State disaster resilient.
- To prepare a comprehensive plan for Mitigation, *Prevention, Response and Recovery* mechanism.
- To promote a culture of *Planning, Preparedness and Prevention* rather than Rescue, Relief and Restoration.
- Mainstreaming Disaster Risk Reduction in the developmental planning process.
- To create awareness among general masses on Disasters and analyze SWOT and strengthening their capacity.
- To capacitate the community members in mitigation activities by using their own available resources.

- To ensure efficient response and relief mechanism with special emphasis to vulnerable sections of the society.
- To promote a culture of safe construction of building structures and habitats which are disaster resistant.
- To ensure transparent and full proof recovery/ rescue/ relief mechanism.

1.6 Trigger Mechanism

The plan would be put into action considering the situation prevailing at a given point of time as per the provision made vide section 2 (d) of the National Disaster Management Act, 2005.

1.7 Overview of Arunachal Pradesh Disaster Management Arrangements and Governance

The DM Act 2005 is the legal basis for DM activities within all levels of the National and State Government and it includes the following points;

- Establish Disaster Management Authority at the State, District and Local level.
- Assessing the Vulnerability of different forms of disasters and specifying the various measures to be taken for their prevention and mitigation.
- Undertake preparedness activities to respond to any threatening disaster situations and give directions wherever necessary for enhancing such preparedness.
- Coordinate emergency response in the event of any threatening disaster situation or disaster.
- Promote general education, awareness, community training including drills in regards to any form of disasters and the measures that may be taken to prevent the disaster, mitigate and respond to such disaster.
- Give direction and ensure the roles and responsibilities that are clearly outlined for Departments of the Government functioning at all levels in order to respond to any threatening disaster situation or disaster.
- Assist and protect the communities affected by disaster or provide relief to such community or to prevent or combat disruptions or to deal with the effects of any threatening disaster situation.
- Develop mechanisms in which the mitigation measures shall be integrated with development plans and projects.

- Monitor the implementation of the plan, and annually review and update the plan at all levels.

1.7.1 Level of DM arrangements

As per the DM Act 2005, DM arrangements in the State are based upon partnerships between National, State, District and Local Authorities. This partnership recognizes each Level of DM arrangements. Level of Disasters have already been categorized and disseminated as L0, L1, L2 and L3 based on the ability of various authorities to deal with them (Figure 2).

<i>L</i>	Concept has been developed to define different levels of disasters in order to facilitate the responses and assistance to State and districts.
<i>L₀ level</i>	denotes normal time which will be utilized for close monitoring, documentation, prevention and preparatory activities. Training on search and rescue, rehearsals, evaluation and inventory up-dation of response activities to be carried out during this time.
<i>L₁ level</i>	Specifies disaster that can be managed at the district level; however, the State and Center will remain in readiness to provide assistance if needed.
<i>L₂ level</i>	Those disaster situations, which require assistance and active participation of the State, mobilization of its resources for management of disasters.
<i>L₃ level</i>	In case of large-scale disaster where the State and District Authorities are overwhelmed and require assistance from the Central for reinstating the State and district machinery and for rescue, relief, other response and recovery measures. In most cases the scale and intensity of the disaster are determined by the concerned technical agencies i.e., Indian Meteorological Department (IMD), Central Water Commission (CWC) etc., are authorized for declaring L ₃ disaster.

The partnership across various authorities is to work collaboratively and ensure coordination and planning at all times by sharing information and resource mobilization that are necessary for DM. In any response situation, initial efforts would always be taken by the District Administration. However, when District is overwhelmed in any situation, the support necessarily has to come from the State and National Level. Responsible Officer (RO) within the jurisdiction will trigger the activation for various level of disaster.

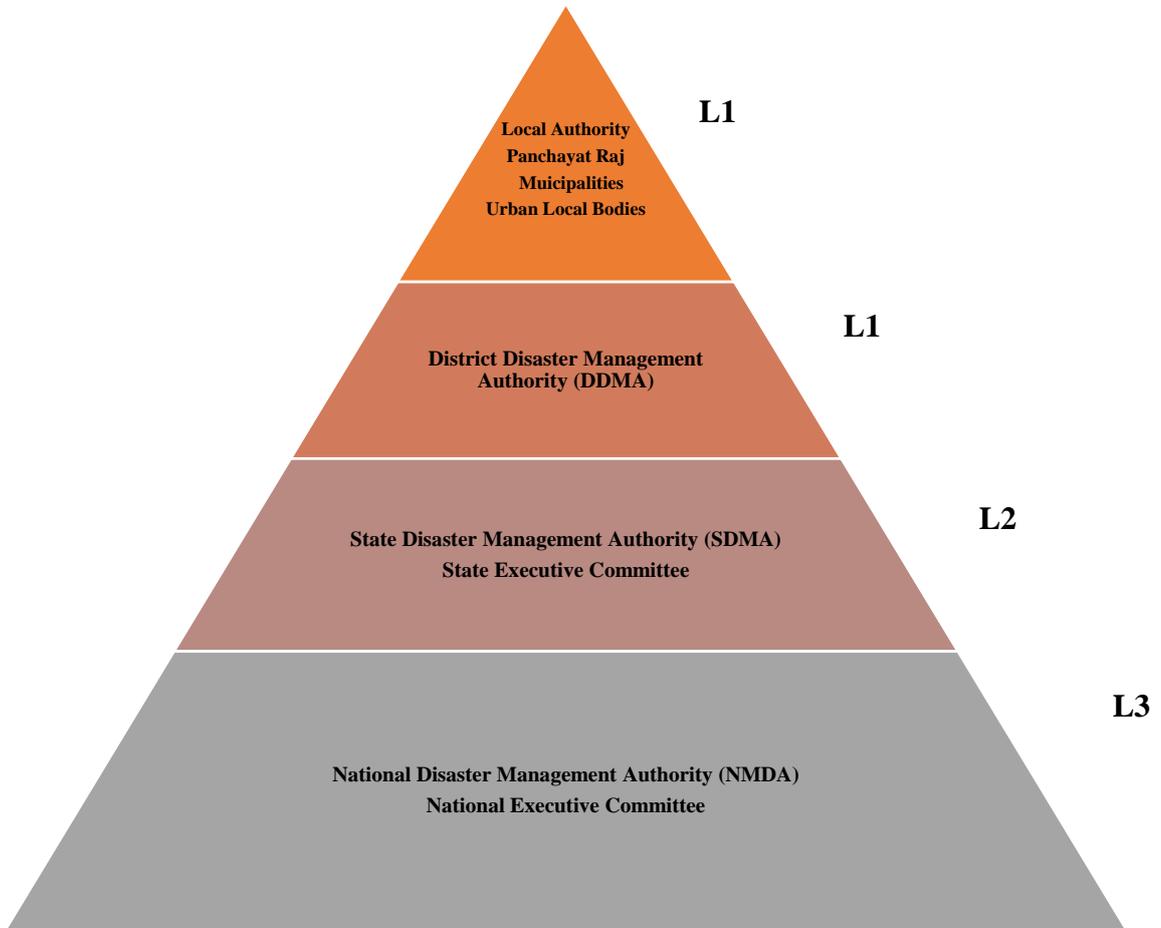


Figure 2: Overall Structure

Disaster Management (DM) structure must be established across the state of Arunachal Pradesh (Local/District/State) along with creation of support structures such as Disaster Response Information Centre, Emergency Operation Centres (EOCs), State Disaster Response Force (SDRF) among others, so as to conduct smooth operations at each Level of DM arrangements.

1.7.2 Plan Activation

The Disaster response teams will be activated on the receipt of disaster warning/on the occurrence of disaster. The occurrence of disaster may be reported by the concerned DDMA/ DEOC/ monitoring agencies/ stakeholders to the SDMA/SEC/ SEOC/ Dept. of Disaster Management/ Nodal/ Alternate Nodal officers by the fastest means. SDMA/ SEC/ SEOC will activate all departments for emergency response.

1.7.3 Stakeholders of the State Disaster Management Authority

The State Disaster Management Authority and the Department of Disaster Management are the Nodal institutions in the State which deal with disaster management. All the major Line Departments of the State Government, District Administration, technical institutions, community at large, local self-governments (ULBs/PRI's etc.), NGOs/CBOs etc. are the stakeholders of the State Disaster Management Plan.

The role of the stakeholders has been prepared with the above objective to let the concerned organizations understand their duties and responsibilities in respect to disaster management at all levels ensuring accomplishment of their respective tasks (pre-during- after disaster) as defined in the Plan.

1.7.4 Institutional Framework and their role and responsibilities at State level

1.7.4.1 Arunachal Pradesh State Disaster Management Authority

At the State level, the Arunachal Pradesh SDMA, headed by the Chief Minister, is responsible for laying down policies and plans for DM in the state. It, inter alia approves the State Disaster Management Plan in accordance with the guidelines, instructions, advice issued by Govt. of India. SDMA supervise the implementation of the State Disaster Management Plan, recommend disaster risk reduction measures by the Line Departments and review the developmental plans of the Departments to build disaster resilient society, viz. laying of techno-legal regime and its compliance, integration of disaster resistant techniques in the construction works, reviewing measures taken for disaster risk reduction and capacity building by the Departments, taking up special projects/ plans at the community level to reduce its vulnerability. The specific role and responsibilities of Arunachal Pradesh SDMA are;

- Development of Capacity Building of the Institutions involved; Training of department officers/officials, members from the community and other stakeholders through a participatory approach in disaster management.
- Planning, monitoring, evaluation, capacity building, awareness generation etc.
- Knowledge networking and transfer, spread and adoption of improved and appropriate technology for disaster prevention, response and recovery.

- Review, modification and adoption of appropriate laws, rules, codes and other measures to improve disaster management at all levels.
- Arranging resources from Central Government and sharing resources with neighboring and other states.
- Mainstreaming disaster risk reduction in all developmental activities/ planning process.
- Financial matters relating to disaster risk management.
- Building of Inventories.
- Initiating Community Awareness Programme; generating awareness through media and other IEC strategies and workshops for all stakeholders.
- Effective early warning systems and its disseminations involving GIS, Remote sensing, Control Room, CWC, IMD etc.
- Documentation.
- Suspend operation of any executive order if such executive order prevents, hinders or delays any necessary action in dealing with disaster.

1.7.4.2 State Executive Committee (SEC)

The State Executive Committee (SEC) is constituted under the Chairmanship of the Chief Secretary to the Government of Arunachal Pradesh to assist the **Arunachal Pradesh State Disaster Management Authority (APSDMA)** in the performance of its function and coordinate action in accordance with the guidelines and ensure the compliance of directions issued by the State Government under the Act.

1.8 Institutional Framework and their role and responsibilities at District level

1.8.1 District Disaster Management Authority (DDMA)

The District Disaster Management Authority constituted for every district in the State is under the Chairmanship of the Deputy Commissioner of the respective district. The District Authority shall act as per the Disaster Management Act 2005 in planning, coordinating and as the implementing body for Disaster Management (DM) and take all measures for the purposes of DM in the district as per the guidelines laid down by the National and State Authority.

The District Authority will prepare the District Disaster Management Plans, review capabilities and preparedness measures, give directions to the concerned Departments in the district, organize and coordinate specialized training programmes for different level of officers, employees, voluntary rescue workers including all stakeholders and take all such measures as may be appropriate for a holistic and proactive approach to DM.

1.9 Institutional Framework and their role and responsibilities at local level

1.9.1 Local Authorities

Local authorities should include Urban Local Bodies (ULBs) and Panchayati Raj Institutions (PRIs). These bodies will ensure capacity building of their personnel for managing disasters, carrying out relief, and rehabilitation and reconstruction activities in the affected areas immediately in planned way and preparing DM Plans in consonance with guidelines of the NDMA, SDMA and DDMA.

1.9.2 Public & Private Sector

The State Government would partner with public and private sectors to ensure their active participation in the pre-disaster activities in alignment with the overall plan developed by the State Government. They would need to be taken as joint partners in ensuring that all activities to build a disaster resistance/ resilient society in the state incorporating disaster resilient features and other statutory requirements under the DM Act 2005.

1.9.3 Community Groups/Voluntary Agencies/AAPDA Mitra Volunteers/NCC/NSS

Local community groups and voluntary agencies such as AAPDA Mitra, NCC, NSS including NGOs/CBOs are to be taken as joint partners in prevention and mitigation activities under the overall direction and supervision of the SDMA/DDMA. The trainings be professionalized and the schedule should be prepared with concerned Agencies.

1.10 Financial Arrangements

An immediate response and recovery operation is carried out from State Disaster Response Fund and from the State's own resources. As the State has very a meager resource, so the State has to seek additional assistance from National Disaster Response

Fund to address to the disaster. The assistance, however, is very less when compared to the loss suffered. To make the effort sustainable, the following measures are proposed;

- Allocate 5-10% of the normal developmental budget of the Departments for disaster management and mitigation activities for mainstreaming Disaster Risk Reduction (DRR) in all developmental activities of respective Department. The funds will be utilized by the concerned Department.
- Incorporate risk reduction measures in normal developmental plans.
- Undertake a budgetary exercise at the State Level to raise additional resources necessary for improvement and modernizations of existing arrangements, training and important disaster management related activities which cannot be covered under normal budget.
- Draw up project proposals and mobilize additional resources from national and international agencies including the Central Government.
- To ensure the long-term sustenance and permanency of the organization, fund has to be generated and deployed on an ongoing basis. There are different ways to raise the fund in the State as described below;

1.10.1 State Budget

The Authority must propose/submit to the State Government for approval of a budget in the prescribed form for the next financial year, showing the estimated receipts and expenditure, and the sums which would be required from the State Government for Disaster Management during that financial year.

As per the provisions of DM Act 2005, the Authority may accept grants, subventions, donations, and gifts from the Central or State Government or a local authority or any individual or body, whether incorporated or not.

1.10.2 State Disaster Response Fund

The SDRF fund to carry out emergency response & relief activities after any disaster as per the recommendation of 13th FC is made available to the Department of Disaster Management, Government of Arunachal Pradesh based on 90% Central Share and 10% State Share. Grant in aid

Further, State may receive a grant in aid from Central Govt., World Bank and/or other departments/agencies to carry out specific projects/schemes related to disaster management/ mitigation/ capacity building.

1.10.3 Partnerships

There are projects/schemes in which funding can be done by a public sector authority and a private party in partnership (also called on PPP mode funding).

1.10.4 Loan

Authority if needed may borrow money from the open market with prior approval of the State Government to carry out disaster management activities as described in DM Act, 2005.

1.11 Finance and Budgeting

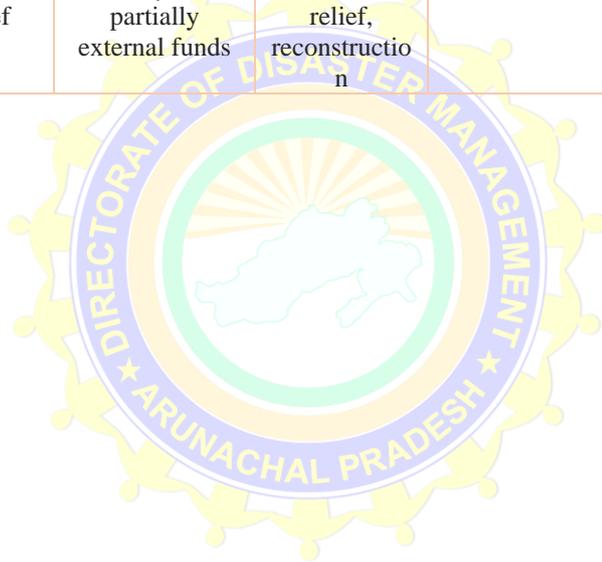
Budget planning is a comprehensive exercise for annual financial planning. For DM, there can be two categories of budget heads: (a) Line Department's own fund through various schemes and programmes (b) additional budget required particularly for DM activities. Table 6 below are the sources available (or to be tapped) for different components of disaster management;

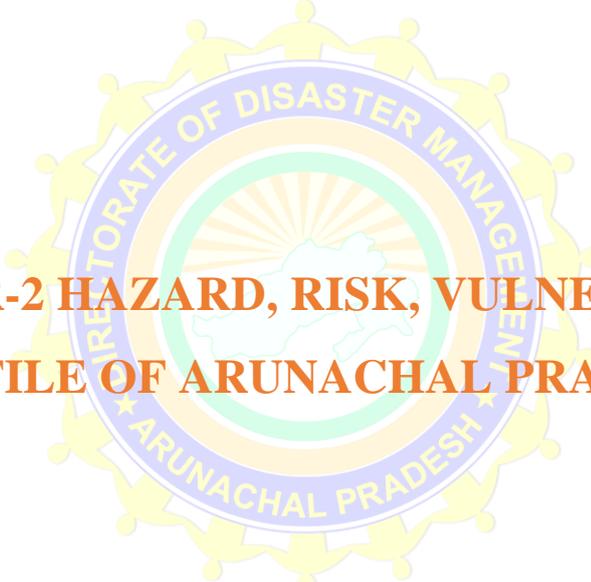
Table 6: Different Component of Disaster Management

Name	Purpose	Finance Arrangements	Activities that can be taken under scheme	Nodal Agency
NDRF	Relief Assistance	100% Central Govt	Cash and kind relief	SDMA/SEC/Department of DM/DDMA/ / Dist.Admin /Executing Agencies
SDRF	Relief Assistance	90% Centre, 10% State	Cash and kind relief	SDMA/SEC/Department of DM/DDMA/ / Dist.Admin /Executing Agencies
Planning Commission (13 Finance commission) Year 2010-15	Capacity Building	100% Centre	Training Awareness Generation IEC material Mock drills	SDMA/SEC/Department of DM/DDMA/ Dist.Admin /Executing Agencies
Line department funds	Preparedness and mitigation	Line department budgetary allocation	Activities falling in purview of departments for DRR, preparedness and mitigation	Line Departments/Dist.Admin

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

District Planning Fund	Any public works	MP and MLA aid and grants	Preparedness , Mitigation capacity building, recovery	District Authority, Local Bodies, Line departments
External Institutional Funding	Projects on DRR, Recovery, Mitigation and Preparedness	Total external or bilateral or multilateral arrangements	Infrastructure upgradation Technological interventions and technical studies DRR projects	SDMA/SEC/Department of DM/DDMA/ Dist.Admin/Executing Agencies
Donor	Any DM activities	Total donation in cash and kind	Any DM activities	SDMA/SEC/DDMA/ Dist.Admin
CSR	Corporate	3% of profit	Any DM activities	SDMA/SEC/DDMA/Dist.Admin/GA DA
Appeal	Immediate relief	Fully or partially external funds	Immediate relief, reconstruction	SDMA/SEC/DDMA/Dist.Admin





**CHAPTER-2 HAZARD, RISK, VULNERABILITY
PROFILE OF ARUNACHAL PRADESH**

CHAPTER 2: HAZARD, RISK, VULNERABILITY PROFILE OF ARUNACHAL PRADESH

2.1.1 Vulnerability of the state to the disasters of different types

Arunachal Pradesh is prone to disasters such as floods, flash floods, landslides, earthquake, erosions, hailstones, high wind speed/thunderstorm, etc. Table 7 below depicts the vulnerability of districts to various hazards. Seasonality of hazards and their seasonality is given in Table 8.

Table 7: Vulnerability of districts to various Hazards

Sl. No.	Districts	Vulnerability to Earthquake	Vulnerability to Flood / Flash Flood	Vulnerability to landslide	Vulnerability to Fire/ Forest Fire
1.	Tawang	Very High	Very High	Very High	High
2.	West Kameng	Very High	Very High	Very High	High
3.	East Kameng	Very High	Very High	Very High	High
4.	Papumpare				
	Urban	Very High	Very High	Very High	High
	Rural	Very High	Very High	Very High	High
5.	Lower Subansiri	Very High	Very High	Very High	High
6.	Kurung Kumey	Very High	Very High	Very High	High
7.	Upper Subansiri	Very High	Very High	Very High	High
8.	West Siang	Very High	Very High	Very High	High
9.	Upper Siang	Very High	Very High	Very High	High
10.	East Siang	Very High	Very High	Very High	High
11.	Siang	Very High	Very High	Very High	High
12.	Lower Dibang valley	Very High	Very High	Very High	High
13.	Dibang Valley	Very High	Very High	Very High	High
14.	Lohit	Very High	Very High	Very High	High
15.	Namsai	Very High	Very High	Very High	High
16.	Anjaw	Very High	Very High	Very High	High
17.	Tirap	Very High	Very High	Very High	High
18.	Changlang	Very High	Very High	Very High	High
19.	Longding	Very High	Very High	Very High	High

Table 8: Seasonality of Hazards in Arunachal Pradesh

Sl. No.	Nature of Hazard	Season/ Period
1	Flood/ Flash flood	March to October
2	Landslides	March to October
3	Cyclone/ High Speed wind	December to May
4	Earthquake	Any time of the year
5	Drought	subsequent to monsoon failure (to be notified as and when required by the Department of Agriculture)
6	Epidemics	Any time of the year and especial during monsoon period.
7	Fire	Any time of the year but maximum during winter and dry spell.

Brief description of natural disaster, its history, risk and vulnerability of the State of Arunachal Pradesh is given below.

2.2.1 Earthquake

2.2.1.1 Seismic Zone

The Himalayan Mountain ranges are considered to be the world's youngest folded mountain ranges. Arunachal Pradesh, located in the Eastern Himalayan ranges, are abutting against Mishmi hills and which are in turn terminating against Indo – Myanmar mobile belt resulting in upliftment of most gigantic mountain ranges of the world. These formations are folded, faulted and also crisscrossed by several lineaments making the entire north eastern region as one of the seismically most active intercontinental regions in the world. Arunachal Pradesh is the *cordon sanitaire* between the Indian and the Eurasian plates in North-Eastern India. The earthquake activity in this region is due to the Indian plate diving (thrusting) beneath the Eurasian plate. Entire State of Arunachal Pradesh is categorized under highly active seismic zone V (ASC, 2021) (Figure 3 & Figure 4). As such, the state has innate propensity of the occurrence of earthquakes as it falls in the seismic zone – V. This was evidenced by the earthquakes of 1897, 1905, 1934 and 1950 with the magnitudes of more than 8.0 on Richter scale rocking the entire north eastern region of India. Apart from these major quakes, several other quakes of low magnitude also occurred during the past century resulting in loss of life and livelihoods. History of earthquake is given in Table 9. Active seismicity of the North Eastern region has caused extensive landslides, rock falls on the hill slopes, subsidence and fissuring of ground in the valley, and changes in the course and configuration of rivers and its tributaries (ASDMP).

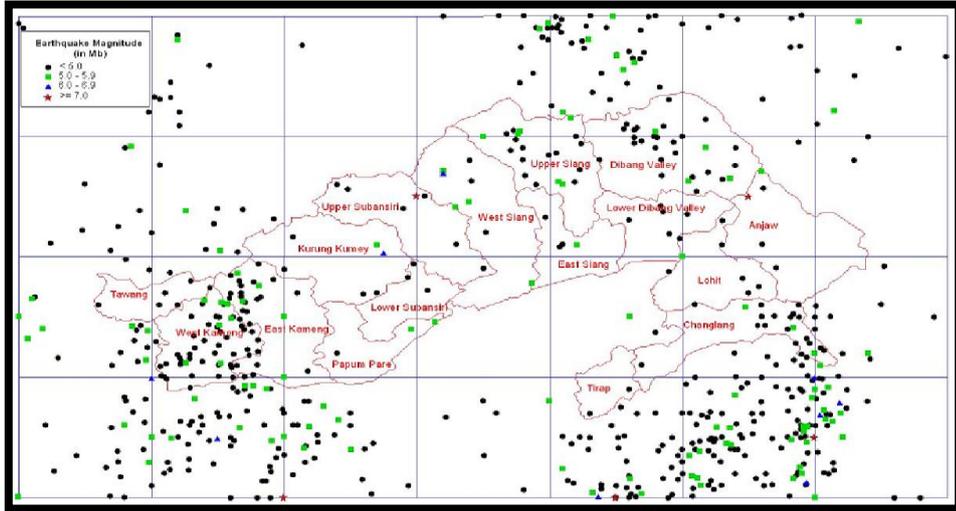


Figure 3: Seismic epicentres of Arunachal Pradesh and surrounding region (1906-2003)
Source: SRSAC, Itanagar.

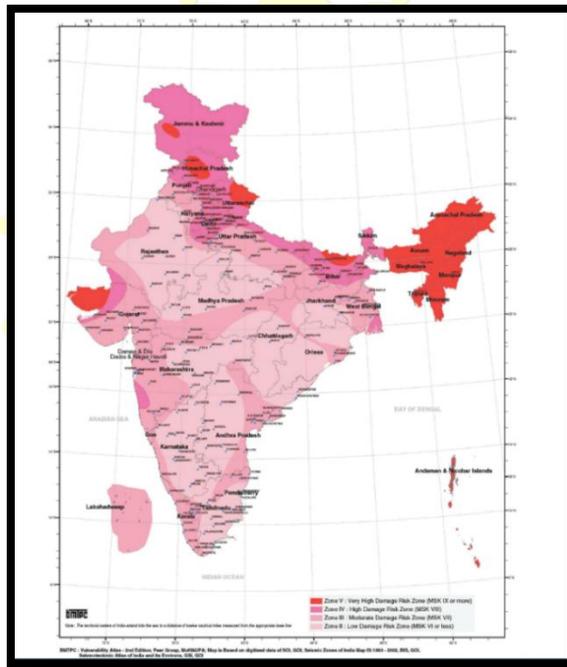


Figure 4: Seismic Zone Map of India
(NMDA 2007)

Table 9: History of occurrence of earthquake in and around the State of Arunachal Pradesh
(Source: BMPTC, Vulnerability Atlas; www.asc-india.org)

Natural Disasters	Year of Occurrence	Magnitude in Richter scale
	1906	7
	1908	7.5
	1941	6.8
	1947	7.7
	1950	8.7
	1984	6.0

Earthquake	1988	7.3
	2003	5.4
	2004	5.5
	2005	5.7
	2006	5.3
	2007	4.6
	2008	5.2
	2009	6.1, 5.0, 5.1, 5.2
	2011	3.6, 4.6
	2015	5.6
	2016	6.7
	2019	5.5, 5.6, 3.8, 4.9
	2020	5.3
	2021	6.4

The earthquake zonation maps have been prepared based on the methodology and the parameters like available seismic information, structures including thrusts, faults and lineaments along with geomorphology, the region has been classified into six (6) zones viz., Severe, Very High, High, Moderate, Low and Very Low zones (Table 10).

Table 10: Earthquake Hazard Classification
(Source: SRSAC)

Sl. No.	Earthquake Hazard zone	Remarks
1	Severe	The area is totally unstable, energy dissipation is rapid, slope failures are very common and massive disasters result instantaneously. An unsafe zone. The high intensity earthquakes can result in land slumps, which block the main drain courses. This blockage during monsoon can result in accumulation of huge quantity of water on the upstream side that can be broached any time leading to flash floods as was experienced during 1950 and 2001, in Siang & Subansiri rivers.
2	Very High	High risk zone since the area is relatively unstable. Energy dissipation is slightly less due to the increasing distance from the epicenter, slope failures are common, sudden and the results are large scale disasters.
3	High	Slightly lesser than Very High due to increasing distance from the Epicenter
4	Moderate	A moderate risk zone since the seismic waves have to travel greater distance, due to the dissipation of the energy along the passage and the reduction of the effect considerably resulting in the area becoming moderately stable
5	Low	Area is reasonably stable. With the increased distance of travel, seismic waves lose energy and capacity to cause destruction. In this zone, tremors are felt but the vulnerability is far less. Gravity action is dominant, disaster is not common and the risk factor is far less.
6	Very Low	The risk is almost nil as the effects of earthquake tremors are barely perceptible due to the total energy dissipation. Very less hazardous effect can be expected or perceived in this zone.

The very high or severe zone is confined to the western portion of Upper Dibang Valley, southern part of East Siang district, northeastern part of Lohit, bordering area between Tirap and Changlang districts in the west and isolated patch in the central part of Changlang district. All these regions are in the close proximity of the major thrusts and fault zones indicating high quantum of energy dissipation along the active tectonic regions especially the trans-Himalayan and Arakan Yoma belts. The areas are also more vulnerable because of the highly fragile sedimentary lithostratigraphy, which further enhances the disastrous effect of the tectonic event.

The High hazard zone is strongest covering the entire district of Lower Dibang Valley. The vulnerability of the district becomes more pronounced because of its close proximity to or the successor of the severe hazard zone. Since the energy dissipation takes place more pronouncedly in this zone, the after effects are felt or experienced to the highest here. The waves propagated discharge their load mostly in this zone, it is more susceptible for post event destruction. Isolated patches of smaller dimension of this zone are also noticed in the southwestern part of Anjaw district, northeastern part of Lohit district, northern portion of Tirap district, Southwestern part of Changlang and northern part of East Siang districts.

The moderate hazard zone is the region which generally does not experience the catastrophic effect of the natural hazard as it occupies further outward areas of the energy dissipation and wave propagation (lesser energy levels). The moderate effects of the tremors felt in the region may disturb the weaker constructions or structures, generally will not be a witness to the huge destructions. In the eastern half of state, western half of the Lohit, a long and linear strip of moderate width running north west-southeast in Upper Dibang Valley and Anjaw districts, a east-west running strip covering parts of Changlang and Tirap districts, eastern portion of Changlang and isolated smaller patches in Upper Siang district are located I in this zone.

The low hazard zone is the area where in the propagated waves have lost much of their destructive energy due to longer traverse from the source of emergence. The energy dissipation is very low and as a result, the destruction due to the earthquake is very minimal. Since it is a no risk zone, no strong effect of the tectonic event can be seen or felt. This area is more pronounced away from the dominant tectono-geodynamic region. Areas classified under this category are observed as a long narrow strip running northwest-southeast in the eastern half of Upper Dibang Valley and adjoining Anjaw

districts, isolated patches in southern Lohit, southeastern part of Changlang and an arcuate belt with predominant east-west trend in Tirap district.

The Very Low hazard zone covers the area where no effect of the tectonic event is felt excepting some minor tremors some times. Otherwise, it is the safest region. The secure regions are located all along the eastern border along China in eastern part covering Upper Dibang Valley and Anjaw districts. Isolated patches of smaller dimensions are also seen in southeastern Changlang district along Myanmar border. This essentially also indicates the buffering effect the Arakan Yoma belt has as far as the energy dissipation is concerned and the restriction of prolonged outward propagation.

2.2.1.1 Risk & Vulnerability to Earthquake

The methodology followed for risk analysis is by overlaying each of the hazard zonation maps on the village maps on 1:50,000 scale in a GIS environment and assessing the hazard zone, in which each village falls for each of the disasters. Village locations have been overlaid on the maps prepared for each disaster and the vulnerability / risk analysis are classified as highly vulnerable, moderately vulnerable, and low vulnerable. Based on the analysis, it was found the all the villages across districts in Arunachal Pradesh falls in the category of highly vulnerable and medium vulnerable to earthquake (Figure 5). The underlying cause of vulnerability to earthquake apart for its bio physical factors are determined by weak housing/building constructions; poor socio-economic condition; low literacy and education; poor communication such as road networks; difficult topography etc.

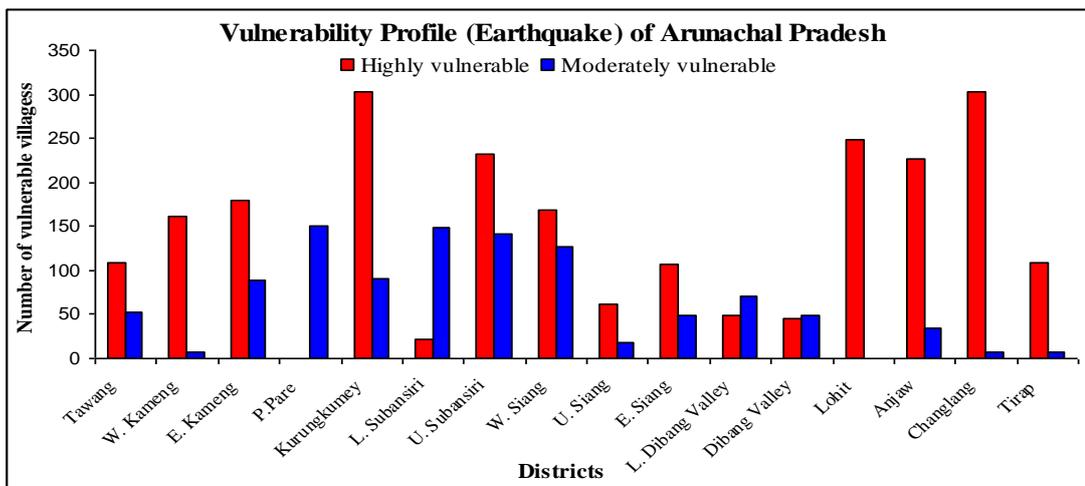


Figure 5: Vulnerability Profile of Districts to Earthquake in Arunachal Pradesh
Source: SRSAC

2.2.2 Flood/Flash Flood

2.2.2.1 Flood Zonation

Arunachal Pradesh has five major rivers, namely Kameng, Subansiri, Siang, Tirap and Lohit. It has the highest average run-off of 350 BCM. About 80% of mean annual flow of river Brahmaputra is contributed by more than 3,000 small and big river tributaries(SAPCC 2011). An estimated area of 8155 sq. km of the State is prone to flood (SAPCC 2011). Arunachal Pradesh is highly vulnerable to floods due to high intensity rainfall, prolonged monsoon rainfall, hydro-meteorological, geomorphologic and topographical features, climate change, etc., posing a serious risk to the lives and livelihood of the communities, infrastructure, natural resources etc. Further, flood in Arunachal Pradesh is more frequent and prevalent due to intense rainfalls during monsoon. During monsoon, choking of drain lines results in with holding enormous quantity of water, which when out grows with holding capacity result in breaching of such barriers and cause intense Flood/flash floods downstream. The State of Arunachal Pradesh is in the high rainfall zones of the world where it receives annual rainfall of 2000–5000 mm, while 70–80% rainfall occurs during the month of May and October (Ahmad, Goparaju, & Qayum, 2018). The Intergovernmental Panel on Climate Change (IPCC) predicts that ‘heavy precipitation events’, which are likely to increase in frequency of floods (IPCC, 2007). The State has witnessed major floods in year 1961, 1994, 2001, 2004, 2008, 2014 and floods are now becoming a regular annual phenomenon. Loss of life due to floods/flash floods/landslides is given in Table 11. Flood Hazard Zonation of Arunachal Pradesh is given in

Table 13. Among the districts of the state, Lower Subansiri, West Siang, East Siang, Lower Dibang Valley, Lohit and Northwest part of Changlang District are known to suffer from recurring floods.

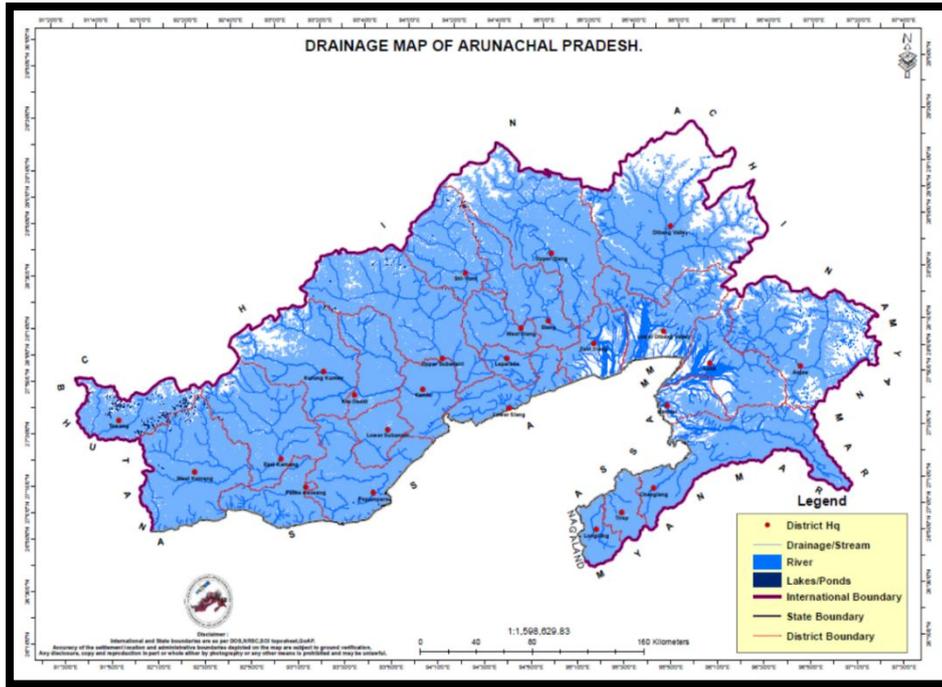


Figure 6: Drainage Map of Arunachal Pradesh
(Source: SRSAC)

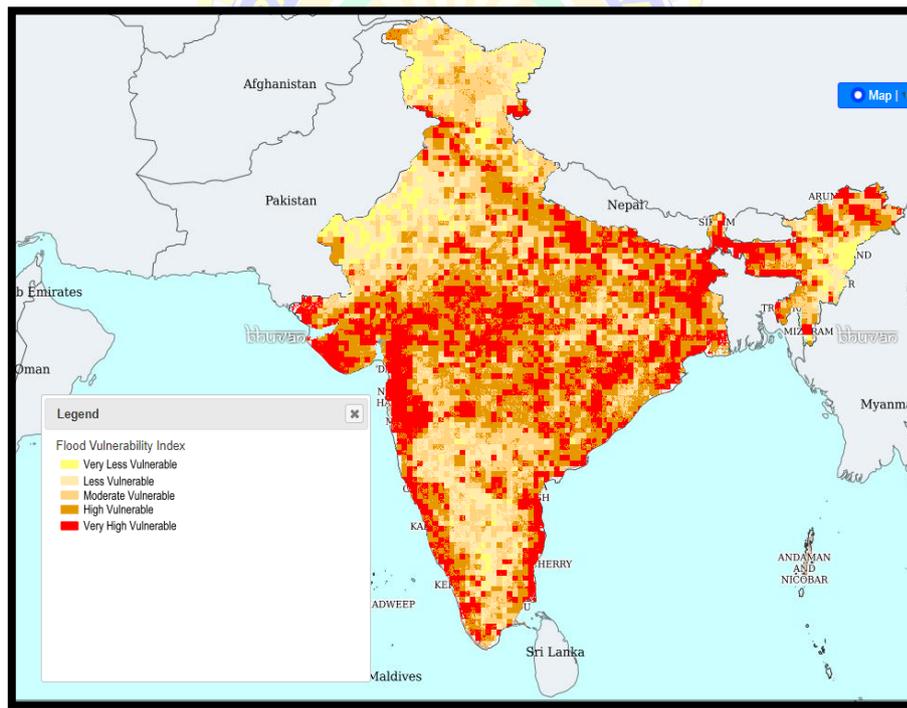


Figure 7: National Flood Vulnerability Map of India
(Source: ISRO, <https://bhuvan-app1.nrsc.gov.in/nfvas/#>)

Table 11: Loss of lives due to landslide/ Flashflood/Flood
Source: SEOC, Itanagar

Sl. No	Place	Year of Occurrence	Nos. of Death
1	Naharlagun	2009	4
2	State	2010	44

3	State	2011	47
4	State	2012	70
5	State	2013	52
6	State	2014	61
7	State	2015	29
8	State	2016	42
9	State	2017	60
10	State	2018	7
11	State	2019	7
12	State	2020	19
13	State	2021	6
14	State	2022	22

The historical information (past) on floods drawn from the topo maps and the ones of recent past delineated from the satellite data along with the all the causative parameters have been taken into account while preparing the flood hazard zone maps. However, due to non-availability of 1m contour maps, the flood prone zones delineated are classified as under, by interpolating the contours as given in Table 12.

Table 12: Classification of floods
Source: SRSAC

Severe	0 - 5m
Very High	5 - 10m
High	10 - 20m
Moderate	20 - 40m
Low	40 - 80m

Table 13: Flood Hazard Zonation
Source: SRSAC

Sl. No	Flood Hazard Zone	Remarks
1	Severe (0-5m)	This zone normally found in the plain areas in the lower reaches. The areas under these zones will be affected quite frequently. Since this land is more suitable for agricultural activity, crop loss will be there when flood happens.
2	Very High (5-10m)	This zone is also unsafe as far as flood is concerned when sudden intense rainfall or cloud burst occurs; the rainfall reaches the lower reaches in the plain regions, inter-montane valleys and valleys in the hilly regions within no time.
3	High (10-20m)	This zone is normally found in the hilly areas, however this zone was also delineated in plain areas to show the area of lateral spread along the rivers when a flood of higher magnitude occurs.

4	Moderate (20-40m)	These are the areas which are likely to be affected when there is rise of 20-40m in the river. The areas which are above 40m in the plain regions are considered to be safe.
5	Low (40-80m)	These are confined to hilly regions only. 80m in river bed level is considered to include possible flash floods due to sudden cloud burst or other reasons. The areas which are above 80m in the plain regions are considered to be safe.

2.2.2.2 Risk & Vulnerability to Floods

Arunachal Pradesh, due to its complex geo-physical, fragile ecosystem and poor socio-economic conditions are highly vulnerable to floods. The tributaries of Brahmaputra and other rivers in Assam flow through Arunachal Pradesh making this state more vulnerable to floods (Hodam, et al., 2008). Along with bio-physical factors, socio economic factors which contribute to the high degree of vulnerability and damages in the State during floods are:

- ✓ Poor socio-economic condition of the majority of population living in the plain belts and the local economy being primarily dependent on the monsoon paddy.
- ✓ Poor infra-structure and weak mud houses.
- ✓ Very little or no forest covers in the flood prone areas.
- ✓ Sudden cloud burst results in the overflow beyond the normal capacity of streams thrust the side wall of channel.

Figure 8 represent number of villages falling under high and moderately vulnerable across districts in Arunachal Pradesh. Figure 9 depicts damages due to flood in the State of Arunachal Pradesh.

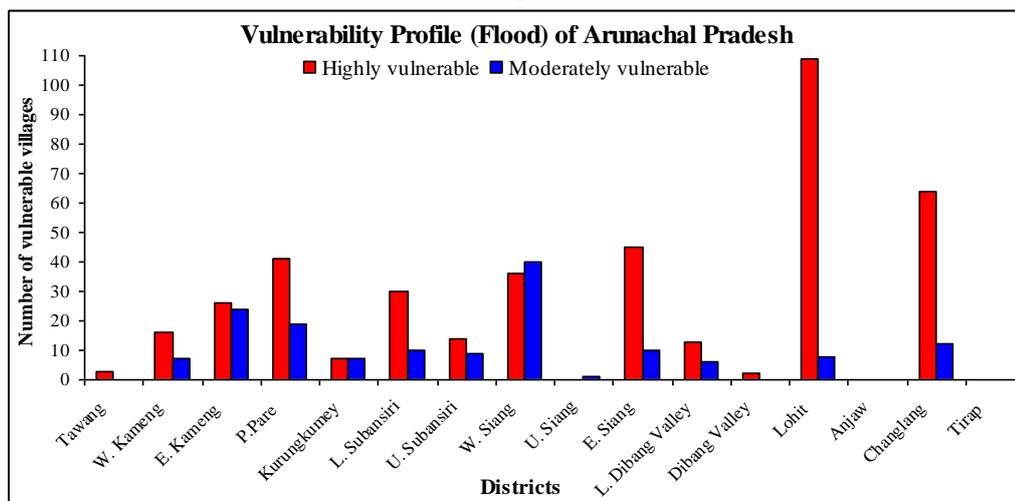


Figure 8: Vulnerability of Villages towards Flood (Source: SRSAC)



Figure 9: Damages due to flood/flash flood at East Siang and West Siang District during 2020
(Source: SEOC, Itanagar)

2.2.3 Landslides

2.2.3.1 Landslide Zonation

Landslides are natural phenomenon causing the downward and outward movement of slope materials like rocks, soil and so on under the influence of gravity. Some of the underlying causes of landslides are erosion by rivers, weakening of rocks and soils by torrential rains, earthquake, etc. Landslides are caused by a number of underlying factors such as geology, climate, manmade activities like road construction, building, agricultural activities, dam construction etc. Landslide is one of the repeated geological hazards during rainy season, which causes fatalities, damage to property and economic losses. Landslides are a major threat to human life, properties, infrastructures, and natural environments in most mountainous regions of the world. Further, global climate change had increased the frequency of landslide and subsequently, the losses and damages associated with landslides have been increased (Gon Chae, Park, Catani, Simoni, & Berti, 2017).

The Himalayan States are highly vulnerable to slope instability due to immature and rugged topography, fragile rock conditions, high seismicity resulting from proximity to the plate margins, and high rainfall (ASDMA, 2015). Arunachal Pradesh located in the Himalayan region is highly prone to landslides (Figure 11). Considering all the parameters like Slope percentage, Slope facets, Rainfall, Lithology, Vegetative cover, hydro geomorphology, Land use/ land cover, Structures, available Seismic information and anthropogenic activity like settlement and development of roads etc., the region has been classified into five (5) zones viz., Very High, High, Moderate, Low and very Low zones.

Table 14: Landslide Hazard Classification
Source: SRSAC

Sl. No	Landslide Hazard Zone	Remarks
1	Very High	The cumulative weightages are more than 9.0 and are a very high risk zone as the slope is more than 500 and is totally unstable. Since the gravitational pull is along the slope direction or the hypotenuse, slope failure is very common, instantaneous and results in huge disasters. The hazardous effects due to slumping are a devastating and hence, it is a very high risky or totally unsafe zone.
2	High	The cumulative weightages ranging between 7.1 to 9.0 and are a high risk zone as the slope range is 25-50% and is unstable. Since the gravitational pull is away from the center of the base, slope failure becomes very common and results in disasters. It is risky or non-safer zone.
3	Moderate	The cumulative weightages ranging between 5.1 and 7.0 and are a moderate risk zone as the slope range is 15-25 % and is moderately stable. The hazardous effects due to slumping are a possibility and hence it is a relatively safer zone to certain extent.
4	Low	The cumulative weightages range from 3.1 to 5.0 and is again a low-risk zone as the slope range is 5- 15% and is reasonably stable. Since the gravity action is more dominant, slope failure is not common and cannot result in disasters. Hence, the hazardous effects due to slumping are remote and hence are a safe zone.
5	Very Low	Cumulative weightages range up to 3.0 and it is the no risk zone as the effect of sliding is barely perceptible due to the slope stability or this zone has very gentle to gentle slope and does not yield to slope failure. No hazardous effect can be expected in this zone.

2.2.3.2 Risk & Vulnerability Assessments

Data from the State Remote Sensing Department shows majority of the districts are falling under high to medium vulnerable zone to incidences of landslides. Along with bio physical factors, anthropogenic interference such as road contractions, Jhum cultivation, fragile landscape, and other developmental activities are making the communities highly vulnerable to landslides (Figure 11). History of occurrence of landslides and damages arising due to landslide is given in Table 11 and Figure 12 respectively.

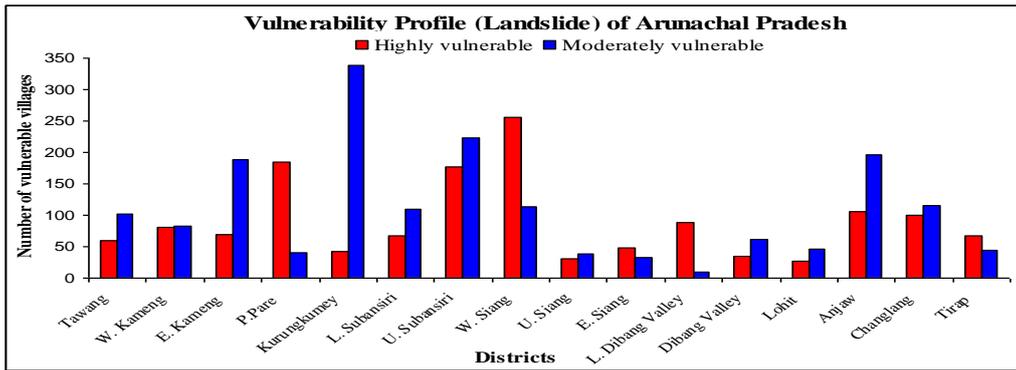


Figure 10: Vulnerability of villages to landslides (Source: SRSAC)

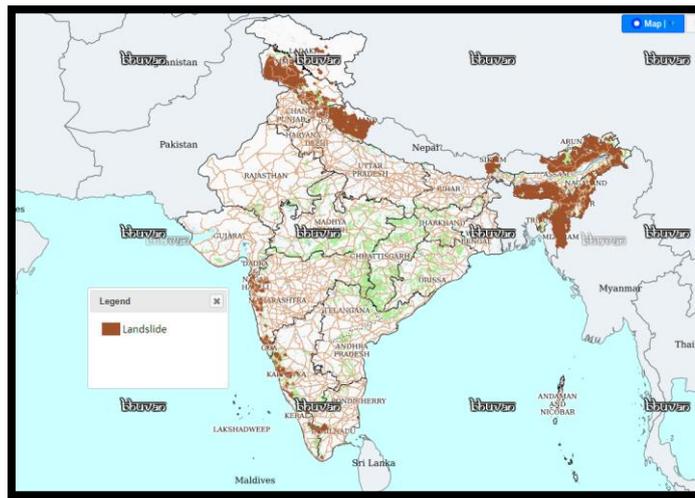


Figure 11: Landslide hazard zone map of Arunachal Pradesh (Source: ISRO, <https://bhuvan-app1.nrsc.gov.in/nfvas/#>)



Figure 12: Damages due to Landslide at National Highway 713A, Itanagar Capital Complex (A), and East Kameng District (B), Arunachal Pradesh during 2020

2.2.4 Forest Fire

2.2.4.1 Forest fire prone Zone

A forest fire is a fire in an area of combustible vegetation that occurs in the countryside or rural area. Forest is major natural resources and they play an important role in maintaining ecological balance. At present, with increasing population and urbanisation, forest is threatened by both anthropogenic activities and wild fire (MSDMP, 2020).

The total forest cover in the State of Arunachal Pradesh is 66,687.78 sq km which is 79.63 % of the State's geographical area (FSI, 2019). In Arunachal Pradesh apart from topographical and meteorological factors, forest fire largely arises due to traditional shifting (jhum) cultivation, one of the dominant natures of farming practiced by the people (Ahmad, Goparaju, & Qayum, 2018). Most of the southern Arunachal Pradesh was affected by the forest fire and it is maximum for Kameng districts (Ahmad, Goparaju, & Qayum, 2018). This has led to a major injury and loss to the forest biodiversity and changes in ecosystem. Incidences of forest fire in the State of Arunachal Pradesh is given in Table 15. Further, forest fire is one of the major degenerating factors, which extensively damages the growing stock and its generations and making area vulnerable to erosion. Similarly, it has wide-ranging adverse ecological, economic and social (Satendra & Kaushik, 2014). Figure 13 and Figure 14 below depicts forest fire hotspot and forest fire prone zone maps of Arunachal Pradesh.

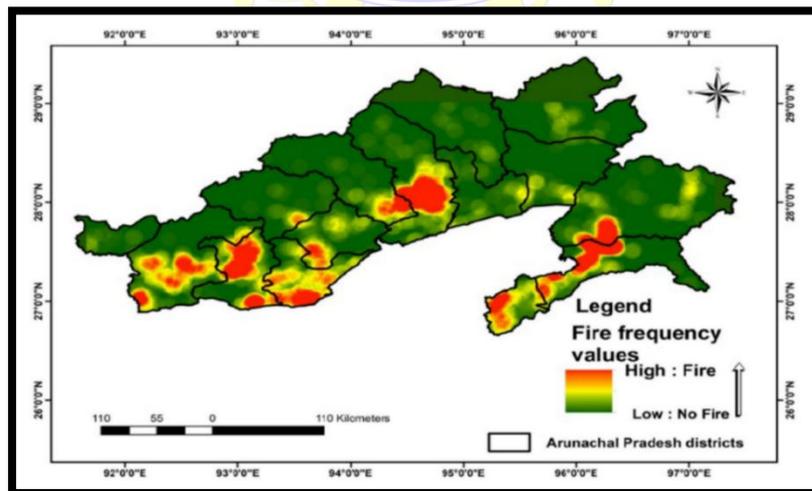


Figure 13: Forest fire hotspot map using fire points over the period of 2008–2016

Source: (Ahmad, Goparaju, & Qayum, 2018)

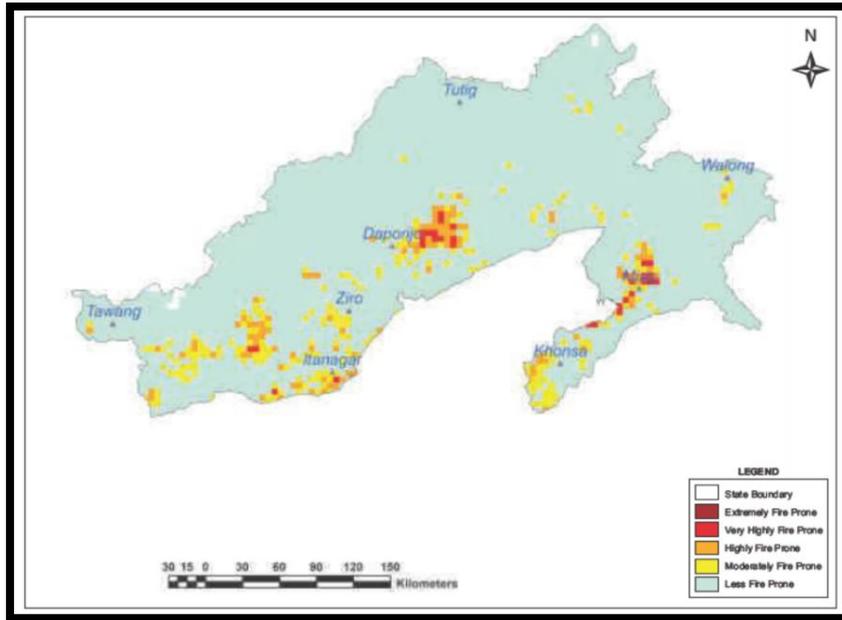


Figure 14: Forest fire prone zones map of Arunachal Pradesh
(Source FSI, 2019)

Table 15: Incidences of Forest Fire in Arunachal Pradesh
(Forest Survey of India, 2017)

Sl. No	Year	Number of Forest Fire
1	2004	97
2	2005	514
3	2006	627
4	2007	349
5	2008	786
6	2009	576
7	2010	485
8	2011	No data
9	2012	No data
10	2013	501
11	2014	535
12	2015	358
13	2016	293
14	2017	733
15	2018	No data
16	2019	No data
17	2020	No data

Table 16 below depicts the % of forest cover that falls under extreme fire prone zone, very high, high, moderately and less fire prone zones in the State of Arunachal Pradesh.

Table 16: Area under Forest Fire prone classes in Arunachal Pradesh
Source: (FSI 2019)

Forest Fire prone areas in Arunachal Pradesh (in Sq Km)			
Sl. No	Forest Fire Prone Classes	Geographical Area	% of total forest cover

1	Extremely fire prone	25.5	0.01
2	Very highly fire prone	750.74	0.97
3	Highly fire prone	2,639.79	3.49
4	Moderately fire prone	5,591.97	6.87
5	Less fire prone	74,295.14	88.66
	Total	83,303.14	100

2.2.4.2 Forest Fire Risk & Vulnerability assessments

The FSI report of 2012 shows that 9 districts of Arunachal Pradesh are highly² vulnerable to forest fire, 1 district is moderately³ vulnerable while 3 districts fall in low⁴ vulnerable category (Forest Survey of India, 2012). Studies also shows that most of the southern Arunachal Pradesh was affected by the forest fire and it is maximum for Kameng districts (Ahmad, Goparaju, & Qayum, 2018). Majority of the cause can be attributed to uncontrolled burning of jhum fields and unattended fires adjoining forest areas.

2.2.5 Vulnerability to cyclones/ wind

2.2.5.1 Arunachal Pradesh Wind & Cyclone Zones

Cyclones affect various parts of the State particularly during April-May every year. Figure 15 depicts wind hazard map. The factors contributing to high degree of vulnerability include poor socio-economic conditions, weak housing, etc.

² Highly Vulnerable: Fire Incidence in all 7 years at the same area

³ Moderately Vulnerable: Fire Incidence continuously in 4 to 6 years at the same area

⁴ Low vulnerable: Fire Incidence continuously in 2 to 3 years at the same area

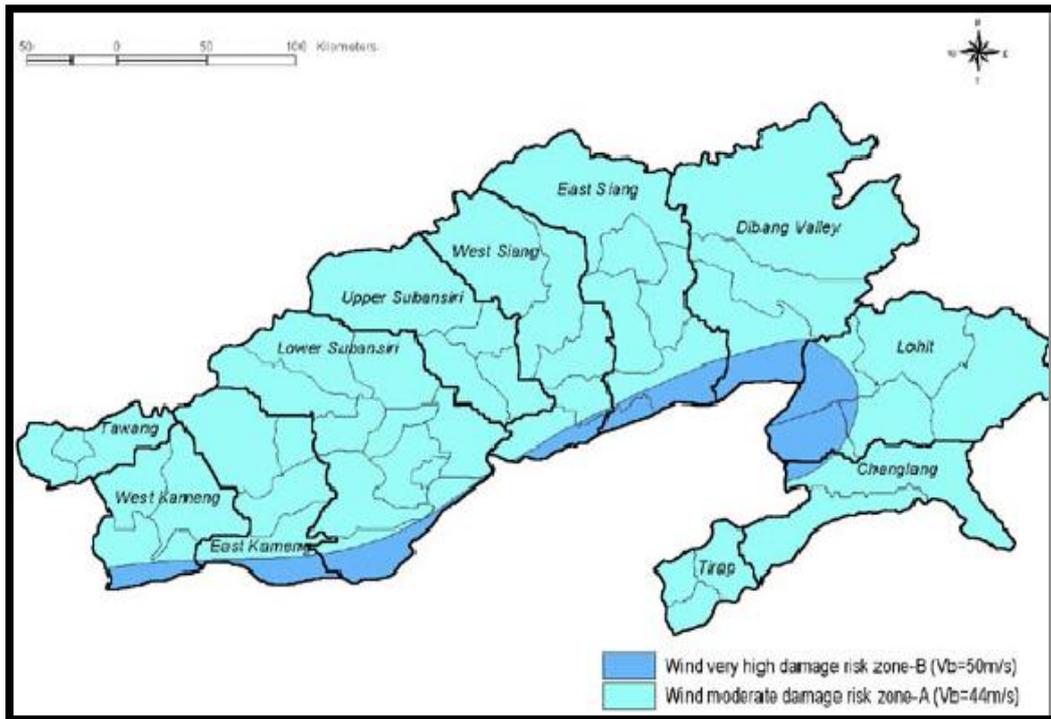


Figure 15: Wind and Cyclone Map of Arunachal Pradesh
(Source: BMPTC)

2.2.6 Fire hazards/ accidents

Fire service setup in any area is mainly based on population, response time and risk hazard analysis. In the absence of risk hazard analysis, it would be improper to decide on the specific and special equipment required at a particular fire station. It should be based on a correct assessment of the possible and potential extent of damage if the fire services do not have the concerned special equipment. There are however, a certain set of equipment, which each fire station should mandatorily have. The plan also needs to be constantly reviewed on the basis of growing hazards and thus needs to be dynamic.

Fire accidents are quite common because of the following factors;

- ✓ Electric short circuit – Unsafe wiring, overloading, sub-standard electrical equipment/ fittings and electric wiring/connection done by unskilled persons.
- ✓ Unattended and uncovered lamps/candle that falls down due to the movement of pets/rat/car or children.
- ✓ Practice of NOT putting off the fire before sleep or unattended/unguarded fire.
- ✓ Not observing safety precautions regarding LPG gas cylinders.
- ✓ Not paying attention to fire wood size and oversize wood beyond the fire place.

- ✓ Habit of throwing cigarette/bidi butts before putting it off.
- ✓ Lighting Diyas and agarbatti near photos of gods but not paying due attention on it.
- ✓ Individual housing with roof of thatch/grass/leaves and storage of straw/hay in close proximity of the house.
- ✓ Lack of availability of adequate water and nil or poor equipment for firefighting especially in rural areas and small towns
- ✓ Lack of awareness of basic do's and don'ts when people live in houses that uses inflammable materials
- ✓ Human error or carelessness

2.2.6.1 Fire hazard response and mitigation plan

Background of the city/ region

- ✓ City overview – population, density, land use, type of buildings, roads and accessibility.
- ✓ Infrastructure, health care system, business and industrial locations, schools, educational institutions, and other land use, etc. Classify the vulnerable assets, people, housing and critical infrastructure.
- ✓ Resource and institutions – public and private that can help and support the fire hazard response system.

Planning process, response and mitigation strategy

- ✓ Goals, objectives and potential actions should be clearly spelt out in the plan.
- ✓ Identify hazards by collecting historical hazard information (both natural and manmade).
- ✓ Risk and vulnerability assessment – identification of city specific hazards and assessment of risks involved (vulnerability analysis).
- ✓ Assess own assets and capabilities– (administrative, financial, technical, regulatory, legal) and determine how the ULBs / fire services need to address the requirements.

Identification of resource

- ✓ Identify role of the government departments, existing institutions, expert agencies, NGOs, etc. along with their capacity assessment.
- ✓ Identify key stakeholders in the community and surrounding areas.

- ✓ Organize resources– identify hazard mitigation teams, agencies, community members.
- ✓ Decide stages/steps for implementation of plan – key stages, actors, public participation - training and capacity building, Public outreach & sensitization plan, involvement and participation of the community and role of ward committee and area Sabhas/ Panchayats etc.
- ✓ Review and incorporation of future developmental plans of the city and other information.
- ✓ Preventive actions – property and natural resource protection techniques and strategies, appropriate equipment and facilities of their own at large colonies and high-rise buildings, like water, fire extinguishers, escape routes, etc., public information and awareness plans and actions required.
- ✓ Potential impact and damages – social, economic and environmental.
- ✓ Use of GIS in planning.

Evaluation and monitoring

- ✓ For making the plan dynamic, integration of the community, continuous evaluation and monitoring is necessary. In towns interaction with the municipal council and in villages with the PRIs will prove very helpful. The plans should be discussed with them and suggestions obtained should be incorporated from time to time. Surprise mock exercises for fire emergencies will greatly help in evaluating and monitoring of the plan.

2.2.7 Climate Change

Main characteristics of climate change include rising temperatures, changes in rainfall pattern, melting of glaciers and sea ice, sea level rise and an increased intensity and/or frequency of extreme events. These changes in physical processes have impacts on biological and socio-economic factors such as: shifts in crop growing seasons; changes in disease vectors; increased rates of extinction of many species; severe water shortages; and heavy deluges and flooding. The north-eastern region of India is expected to be highly prone to the consequences to climate change.

Climate change possesses a serious threat to the ecosystem in State of Arunachal Pradesh. Arunachal Pradesh is witnessing climate change with variation in average temperature and rainfall. Climate data from Indian Meteorological Department (2013) shows increasing trends in annual mean maximum temperature and annual mean

minimum temperature in Arunachal Pradesh by 0.020 C for the year 1951-2010. Similarly, State level annual rainfall trends for Arunachal Pradesh has shown decrease of rainfall by -3.63 mm for the year 1951-2010. These impacts of climate change arising due to anthropogenic factors is threatening natural ecosystem, and food production system of the communities in the State.

Extreme precipitation events (heavy rain storm, cloud burst) may have their own impacts on the fragile geomorphology of the Himalayan part of the Brahmaputra basin causing more widespread landslides and soil erosion. The response of hydrologic systems, erosion processes, and sedimentation in the Himalayan River basins could alter significantly due to climate change. Glacial recession is also linked to increased sediment load in rivers. A number of major flash floods have occurred in this decade due to heavy rainstorms or cloud bursts in the state or in the upper catchments of the rivers.

One of the recent studies evaluates the possible impacts of climate change on water resources of the river basins in India (Climate change impact assessment of water resources of India, A. K. Gosain, Sandhya Rao and Anamika Arora, Current Science, Vol. 101, No. 3, 10 August 2011). The report mentions majority of the river systems show increase in precipitation at the basin level. Only Brahmaputra, Cauvery and Pennar show marginal decrease in precipitation under Mid Century (MC) scenario.

More rigorous studies are required at regional scale to ascertain intraregional trends in temperature and rainfall in this part of India.

As a result of global warming, glaciers in the Himalayas are retreating at an average rate of 15m/year, consistent with the rapid warming recorded at Himalayan climate stations since the 1970s. The mainstream of the Brahmaputra River (known as the Yarlung Jhangbo in Tibet, China) and some of its tributaries like the Subansiri is partly fed by snow-melt run-off in the trans- Himalayan and Himalayan parts of their basins.

Recession of glaciers caused by climate change have created more glacial lakes in the Nepal, Bhutan and Tibet Himalayas and increasing glacial lake outburst floods (GLOF) have caused more flash flooding in the Greater Himalayan Region in recent times.

2.2.8 Deforestation

Over half of the world's forest has been destroyed in the last 10000 or so year, the majority of this loss has occurred in the last 50 years, occurring simultaneously with a massive increase in the human population. The incredible scale of this loss has led to significant changes throughout many parts of the world, and in recent years these changes have been accelerating. These changes include: large scale extinction events, desertification, climatic changes, top soil loss, flooding, famine, disease outbreaks and insect 'plagues', among others.

Forest is the most important resource in Arunachal Pradesh with the predominantly large tribal population living in close association with forests and highly dependent on it. 79.63% of the total geographical area in Arunachal Pradesh are under forest cover(FSI 2019). However, high rate of deforestation is a concern in the State. The Forest Survey of India reported a decrease of 190 sq. km in forest cover which can be attributed to shifting cultivation and developmental activities (FSI, 2019). Similarly, a study conducted by Indian Institute of Remote Sensing in 2018 predicted decrease of 9007.14 sq. km of forest cover in Assam and Arunachal Pradesh by 2028 (Kushwaha et al. 2018). Similarly, there are high incidences of natural calamities such as landslides due to rapid urbanization (road construction), habitations in sloping lands, increasing population, Jhum cultivation etc. Traditional shifting (jhum) cultivation is practiced by the people which impacts upon forest conservation.

2.2.9 Biological Disaster

The concept of 'contagion' developed and the earliest societies devised methods and systems that could contain the spread of such diseases to ensure a reasonable level of health for the populace. The spread of agriculture and domestication of animals led to economic development and the realization that diseases affecting crops and livestock could also affect the well-being of human societies as they became more complex, and populations increased. The increase of population also resulted in the congregation of a large number of susceptible people in limited spaces. The larger communities became vulnerable to food supply and trans-species migration of infectious agents. As a result, the large scale epidemics leading to economic disasters. Similarly, large scale loss of livestock or crops also resulted in destruction of the social fabric.

Apart from the biological disaster of natural origin, the extension of human activity and its contact with a hitherto localized microbial environment introduces novel pathogens (COVID 19; Nipah, Hendra, Ebola, Marburg and Lassa fever viruses). In the case of HIV, a sporadically occurring phenomenon- that of transmission of virus from chimpanzee to man-became a pandemic and has been the largest epidemic in history. Human conflict resulting in large scale population movement, breakdown of social structures and contact with alien groups has always generated a large number of infections. Further, the introduction of a communicable disease in the enemy camp has been exercised by military commanders from earliest times.

Whether naturally acquired or artificially introduced, highly virulent agents have the potential of infecting large numbers of susceptible individuals and in some cases establishing infectious chains. The potential of some infectious agents is nearly as great as that of nuclear weapons and, are therefore, included in the triad of Weapons of Mass Destruction (WMD): Nuclear, Biological and Chemical (NBC)

2.2.10 Chemical Disaster

There has been a paradigm shift in the Government's focus from its rescue, relief and restoration-centric approach to a planning, prevention/ mitigation and preparedness approach. It has been realized that effective Chemical Disaster Management (CDM) is possible by the adoption of preventive and mitigation strategies as most chemical disasters are preventable in comparison to natural disasters that are difficult to predict and prevent. There are large quantities of chemicals are stored/ processed in industries that are in densely populated areas. Inappropriate and haphazard construction and the lack of awareness and preparedness on the part of the community further enhance their vulnerability.

2.2.10.1 Sources of Chemical Disasters

Chemical accidents may originate in:

- a. Manufacturing and formulation installations and during commissioning and process operations; maintenance and disposal.
- b. Material handling and storage in manufacturing facilities, and isolated storages; warehouses and godowns including tank farms in ports and docks and fuel depots.

- c. Transportation (road, rail, air, water and pipelines).

2.2.10.2 Causative factors leading to Chemical Disasters are

- i. Fire.
- ii. Explosion.
- iii. Toxic release.
- iv. Poisoning.
- v. Combinations of the above.

2.2.11 Nuclear & Radiological Disasters

Nuclear Disaster is a situation, where chances of receiving any early warning are very low. In such a situation where no early warning signals are available, the primary objective of the trigger mechanism shall be to mount immediate isolation.

2.2.12 Livestock Disasters

The Livestock revolution provides a significant opportunity for livestock farmers in the poorer regions to partake in economic activity and may provide a way for many of them to escape poverty. However, for this to occur there is need for an increase in the quantity and quality of animal products for trade at the local level and for a significant improvement in the livestock sector complying with the rules of international trade in animals and its products. In our country not only do livestock provide milk, meat, draught power, transport, manure, hides, wool, etc, but animals also provide a relatively safe investment option and give the owner social security. **Risk and Vulnerability Assessment**

Disasters that could lead to an emergency situation in the animal husbandry sector may arise primarily due to the following four categories of risks:

- (a) Natural disasters: Flood, drought, cyclone, tsunami, earthquake, etc.
- (b) Infectious diseases: Zoonotic and non-zoonotic.
- (c) Fodder poisoning.
- (d) Miscellaneous: War (conventional war, BW or BT).

Livestock disasters arising due to Natural Disasters

India is vulnerable to most types of natural disasters and its vulnerability varies from region to region and a large part of the country is exposed to these natural hazards which often turn into disasters, causing a significant disruption of the social and

economic life of communities arising from the loss of life and property, including livestock. The risk factors required to be included in the risk assessment analysis with respect to a group of natural disasters are listed below:

- i) Cyclic Drought and Famine
 - a. Breeding capacity.
 - b. Fertility.
 - c. Pregnancy and lactation.
 - d. Population drift due to
 - Heavy economic losses
 - Scarcity of feed and fodder
- ii) Tsunami, heavy snowfall and rain, flood
 - a. High mortality rate among livestock due to drowning (generally they are not set free to move to highland areas, making them vulnerable to the situation).
 - b. Unavailability of clean drinking water.
 - c. Outbreak of diseases due to improper disposal of carcasses.
 - d. Public health problems.
- iii) Earthquake
 - a. Injured livestock lead to problems of their maintenance.
 - b. Death or desperation of the owners leads to neglect of the livestock thereby increasing the indirect losses.

The above factors will be used to define the steps of risk and vulnerability assessment. The major recommendations for district/state authorities include:

- i) Development of 'multi-hazard' risk and vulnerability mapping of the districts.
- ii) Development of demographic maps of areas with dense/scarce population of livestock.
- iii) Other factors that compound/reduce the contained risk, including variable climatic conditions and availability of medical logistics.

Infectious Diseases

Emergency animal diseases are not always the same as exotic or foreign animal diseases.

Outbreaks of infectious diseases are of many types:

- i) Any unusual outbreak of an endemic disease in exponential frequency causing significant change in the epidemiological pattern of that particular disease.
- ii) The appearance of a previously unknown disease in a particular region.
- iii) Animal health emergencies caused due to non-disease events, for example, a major chemical residue problem in livestock or a food safety problem such as hemorrhagic uraemic syndrome in humans caused by the contamination of animal products by verotoxic strains of E. coli
- iv) Deliberate introduction of exotic microorganisms in a targeted region.

Fodder Poisoning

In order to keep a check on such cases, awareness among the local community must be created so that they take proper care of their animals and prevent them from eating poisonous toxic materials. Based on the above approach, the following activities will be undertaken:

- i) Listing of the various poisonous materials, including braken fern, Lantana camara, parthenium, rati (Abrusprectorus), dhatura (thorn apple), kaner (oleandar); cyanogenic plants like immature maize, sorghum banchari, cereal affected with egrot, India pea; nitrate and nitrite containing plants, etc.; and the measures to prevent the availability of such materials to livestock.
- ii) Exotic/cross breeds are more susceptible to damage under drought conditions than indigenous breeds. Livestock owners will be made aware of how to take proper care of these exotic/cross breeds.
- iii) Certain areas will be demarcated for fodder production, especially of Crassulacean Acid Metabolism (CAM) varieties of plants, particularly in desert areas. Pastures should also be developed for migratory sheep and goat and clean grain made available for pigs and poultry.

2.2.13 Miscellaneous:

TADs are a major cause of economic losses to the livestock industry and are those infectious diseases which could spread fast and have the potential to cause considerable mortality or losses in productivity. TADs have the capability to seriously affect earnings from export of livestock or its products.

A TAD epidemic such as avian influenza (bird flu) or FMD has the same characteristics as other natural disasters—it is often a sudden and unexpected event, has the potential to cause major socio-economic consequences of national dimensions and even threaten food security, may endanger human life, and requires a rapid national level response. The following diseases are of immense importance from both animal husbandry and public health perspectives:

- i. Non-zoonotic diseases
 - a. FMD*
 - b. Peste des Petits Ruminants (PPR)*
 - c. Rinderpest
 - d. Vesicular stomatitis
 - e. African Swine Fever (ASF)
 - f. Classical Swine Fever (CSF)*
 - g. Contagious Bovine Pleuropneumonia (CBPP)
- ii. Diseases with known zoonotic potential
 - a. Anthrax*
 - b. Bovine Spongiform Encephalopathy (BSE)
 - c. Brucellosis (*B. melitensis*)*
 - d. Crimean Congo hemorrhagic fever
 - e. Ebola virus
 - f. Food-borne diseases
 - g. Highly Pathogenic Avian Influenza (HPAI)*
 - h. Japanese encephalitis*
 - i. Marburg hemorrhagic fever
 - j. New World screwworm
 - k. Nipah virus
 - l. Old World screwworm
 - m. Q fever
 - n. Rabies*
 - o. Sheep pox*/goat pox*
 - p. Tularemia
 - q. Venezuelan equine encephalomyelitis
 - r. West Nile virus

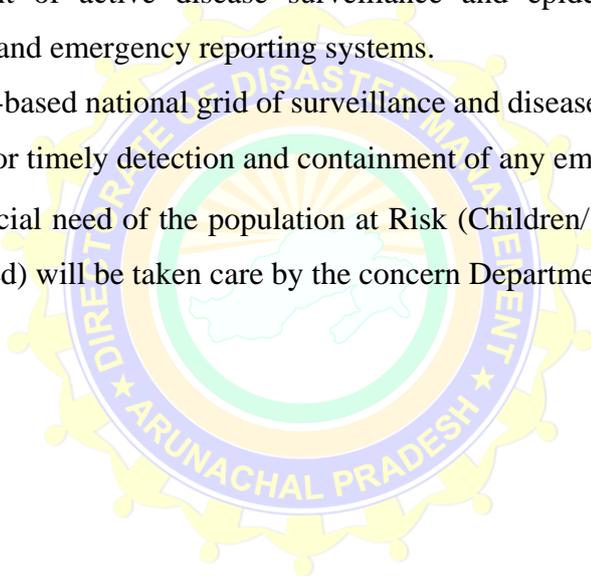
(* indicates presence of the disease in India)

2.2.14 Steps for Prevention, Mitigation and Preparedness

DM plans at all levels will include the following important measures:

- i. Public awareness about natural disasters that different regions of the country are most likely to experience and their consequences on the livestock sector.
- ii. Provisions to establish adequate facilities to predict and warn about the disasters periodically, including forecasting disease outbreaks. This could only be achieved by a well networked surveillance mechanism that proactively monitors emerging infections and epidemics.
- iii. Development and implementation of relevant policies, procedures and legislation for management of disasters in the animal husbandry sector. The livestock health infrastructure in India, modeled to provide routine veterinary cover, needs reorganization in view of emerging epidemics/ challenges. The existing animal husbandry policies will be revisited and if required, modified to cater to changing realities.
- iv. Mobilize the necessary resources, e.g., access to feed, water, health care, sanitation and shelter, which are all short-term measures. In the long term, resettlement programmes, psycho-social, economic and legal needs (e.g., counseling, documentation, insurance) are required to be undertaken.
- v. Another long-term strategy is required to readjust the livestock production system in the country from a biosecurity point of view so that in the event of the entry of any new, dangerous pathogen, the losses could be minimized by segregation.
- vi. Initiation of PPP in livestock emergency management, especially in the field of vaccine production, will go a long way in combating animal health emergencies of infectious origin. Similar partnership in feed manufacturing as well as livestock production will minimize the losses due to other livestock emergencies.
- vii. Commissioning of risk assessments to high-priority disease threats and subsequent identification of those diseases whose occurrence would cause a national emergency.

- viii. Appointment of drafting teams for the preparation, monitoring and approval of contingency plans. Implementation of simulation exercises to test and modify animal health emergency plans and preparedness are also necessary.
- ix. Assessment of resource needs and planning for their provision during animal health emergencies.
- x. Central/state governments will develop/ establish an adequate number of R&D and biosafety laboratories in a phased manner for dealing with animal pathogens.
- xi. A dedicated establishment, preferably under DADF, may be entrusted with the overall monitoring of the national state of preparedness for animal health emergencies
- xii. Development of active disease surveillance and epidemiological analysis capabilities and emergency reporting systems.
- xiii. A computer-based national grid of surveillance and disease reporting should be developed for timely detection and containment of any emergent epidemic.
- xiv. A Psychosocial need of the population at Risk (Children/ women/ adolescent/ Disable/ aged) will be taken care by the concern Department/ Agencies.





CHAPTER 3: PREVENTION AND MITIGATION MEASURES

CHAPTER 3: PREVENTION AND MITIGATION MEASURES

3. Introduction

Prior to the implementation of Disaster Management Act 2005, the approach to Disaster Management has been primarily reactive and relief centric. However, post the DM Act 2005, there has been a paradigm shift at the national level from the erstwhile response centric approach to holistic and integrated management of disasters with emphasis on *prevention, mitigation, and preparedness*. These efforts are aimed to conserve developmental gains and minimize losses to lives, livelihood and property (NDMA, 2021).

Definitions of mitigation varies depending upon the context of the study. Mitigation in the context of hazard management means lessening or limitation of the adverse impacts of hazards and related disasters (UNISDR, 2009). The adverse impacts of hazards often cannot be prevented fully, but their scale or severity can be substantially lessened by various strategies and actions. Mitigation measures encompass engineering techniques and hazard-resistant construction as well as improved environmental policies and public awareness (UNISDR, 2009).

3.1 Manmade Disaster

Manmade disasters are unpredictable and can spread across geographical boundaries. Some disasters in this class are entirely manmade while other may occur because of natural disasters, equipment failures, or if the workers are under trained, ill equipped, less qualified, or over worked resulting into technical errors/ accidents.

Technological disasters include a broad range of incidents. Routes of exposure through water and food, airborne releases, fires and explosions, and hazardous materials or waste (e.g., chemical, biological, or nuclear) released into the environment from a fixed facility or during transport. Fires, explosions, building or bridge collapses, transportation crashes, dam or levee failures, nuclear reactor accidents, and breaks in water, gas, or sewer lines are other examples of technological disasters.

3.2 Natural Disasters

The State approach for disaster prevention and mitigation will be multi-hazard as it is vulnerable to all-major natural hazards such as earthquake, landslide, rockfall, flood, flash flood, cyclone, high speed wind, thunderstorm, hailstorm, heavy snow, fire, forest fire etc. There are several prevention/mitigation activities which will be common for natural hazards. The same are describe in Table 21. Hazard specific measures are mentioned thereafter in this chapter.

3.3 Strategy for Prevention and Mitigation

Strategy for prevention and mitigation measures broadly encompass

- Policy framework on disaster management reflecting the holistic approach involving prevention, mitigation and preparedness in pre-disaster phase.
- Creation of State Mitigation Fund in the lines with National Mitigation Fund.
- Creation of awareness and mainstreaming Disaster Risk Reduction at all level.
- Creating awareness for improving preparedness amongst the communities, using various media / medium, schools, other stakeholders etc.
- Appropriate amendments in the legislative and regulatory instruments along with strengthening of the enforcement mechanisms at different levels.
- Capacity building at local and regional levels for undertaking rapid-assessment surveys and investigations of the nature and extent of damage in post disaster situations.
- Conducting macro/ micro-zonation surveys.
- To ensure use of disaster resistant construction techniques.
- The use of disaster resistant codes, bye laws and guidelines related to disaster resistant construction in all sectors of the society and through various incentives and disincentives.
- To incorporate the study of disaster engineering subjects in architecture and engineering curriculum.
- Psychosocial support into DRR activities, printing / development of IES materials on psychosocial support to create awareness, disaster management capacity building and trainings.
- To create a research-oriented database on disasters and its impacts.

- To promote and encourage Research & Development activities.

3.4 Prevention and Mitigation measures

In the face of increasing menace of hazards, mitigation would remain the key and the most effective strategy to reduce the risks of these hazards. State has to decide its own mitigation strategy according to its own risks, resources and capabilities. Broadly such strategies would be twofold: **structural and non-structural measures**.

Structural measures generally refer to capital investment on physical constructions or other development works, which include engineering measures and construction of hazard resistant and protective structures and other protective infrastructure. Common structural measures for disaster risk reduction include dams, flood wall, dyke, earthquake-resistant construction, and evacuation shelters.

Non-structural measures are measures not involving physical construction which use knowledge, practice or agreement to reduce disaster risks and impacts, in particular through policies and laws, public awareness raising, capacity building, training and education. Common non-structural measures include building codes, land use planning laws and their enforcement, research and assessment, information resources, and public awareness programmes (UNDRR, 2020).

Prevention consists of actions that reduce risk from natural or human made disaster incidents. It is important to list and elaborate all types of measures (like - building codes, floodplain management, storm water management, coastal area zoning and management plan etc.) – planned and implemented by the States as a part of prevention measures.

It is good to have long term mitigation goals in place and connect these goals with measures that State has planned and implemented. These goals may include (but not limited to):

- Provide better early warning methods for flood, storms, cyclone
- Reduce the destruction and loss of life within buildings
- Provide for safer environments for transportation systems
- Eliminate flooding in populated areas
- Ensure redundant water supply systems
- Reduce effects of the natural environment on the infrastructure
- Ensure redundant power systems on critical facilities

- Ensure adequate materials available for road maintenance

3.4.1 Earthquake

In most earthquakes, the collapse of structures like houses, schools, hospitals, and public buildings results in the widespread loss of lives and damage. Past earthquakes show that over 95 per cent of the lives lost were due to the collapse of buildings which were not earthquake-resistant. In such situation, the losses can be reduced if all structures in earthquake-prone areas are built in accordance with earthquake-resistant construction techniques and by following the Building Bye Laws. The earthquake specific mitigation activities are described at Table 17;

Table 17: Structural & Non-Structural Measures for mitigation of earthquake

Sl. No	Task	Activities	Responsibility
Structural measures			
1	Micro-zonation	To undertake micro zonation study according to priority area. To provide or make available seismic micro-zonation map. Provide vulnerability and risk assessment map.	SDMA; SRSAC; Dept of S&T; Dept. of Land Management; Dept. of Town Planning; Dept. of UD & Housing; Dept. of Environment and Forests; NERIST/RGU; District Administration
2	Earthquake Resistance Design for different earthquake zones	To develop earthquake resistant design features for the construction of public utility structures. To develop earthquake resistant design features for the construction of residential structures. To provide earthquake resistant design for incorporating in different types of structures to the line departments.	SDMA /SEC; Dept. of Town Planning; Dept. of UD & Housing; All Line Depts; NERIST; DDMA/ District Administration.
3	Retrofitting of existing structure	Create a database of existing structure in the State; A. Public B. Private Identify the available resources. Identify structures that require retrofitting. Prepare a scheme/programme for retrofitting. Identification and removal of unsafe buildings/structure.	SDMA /SEC, Dept. of Town Planning, Dept. of UD & Housing, All Engg Depts, NERIST, DDMA/ District Administration.
4	Monitoring of seismic activities	Establish seismological network and round the clock monitoring. Dissemination of information and reporting. Conduct seismological research.	SEOC/DEOC, Dept. of IPR, Dept of S & T, Police Control Room, All Depts, GSI, GB Pant Institute of Himalayan Studies and

Sl. No	Task	Activities	Responsibility
			other research institutes of National Importance.
Non-Structural measures			
1	Capacity Building	Departmental earthquake contingency plan. Ensure earthquake related departmental action plan and SOP. Include earthquake engineering topics in curriculum. Provide professional training about earthquake resistance construction to engineers and architects. Provide training to masons. Encourage soil and material testing in laboratories.	SDMA/ SEC, Dept. of DM, Education & Technical Dept, ATI/ SIRD, DDMA/District Administration, SDRF/ Police, All Deptt
2	Awareness	To disseminate earthquake risk to general public residing in earthquake prone zones. Campaign for Earthquake safety tips	SDMA/ DDMA; Dept of DM; Dept of IPR; District Administration; ATI/ SIRD.

3.4.2 Flood / Flash Flood

Flood/ Flash flood being the most common natural disaster, people have, out of experience, devised many ways of coping with them. Various measures, structural and non-structural, for prevention and mitigation to flood is placed in Table 18;

Table 18: Structural & Non-Structural Measures for mitigation of flood

Sl. No	Task	Activities	Responsibility
Structural measures			
1	Construction	Improvement of design for irrigation and flood protective structures. Construction of dams, flood protection wall, flood diverting channels etc. Strengthening/repair of existing roads and bridges and other critical infrastructure in flood plains. Strengthening of dams and canals.	WRD; District Administration; Hydro-power; UD & Housing; Forest; All other Works Dept.
2	Development of catchment area	Development of catchment area of the flood plain through <ul style="list-style-type: none"> o Forestation o Land sloping Small reservoirs/Check dams/ponds etc.	All Engineering Deptt; WRD; Dept. of Forest & Environment/ SFRI; Agriculture/ Horticulture; PRIs/ ULBs; Distt Administration

3	Flood Proofing	Specific building by laws for flood plains.	WRD; Dept. of Town Planning; All Line Dept.
4	Techno-legal regime	Enactment and enforcement of laws regulating developmental activities in flood plain.	SDMA/DDMA; WRD; Dept. of Town Planning; Dept. of Environment and Forests; Dept. of Rural Development; All Line Depts; District Administration
5	Forecasting and Warning	Strengthening and Upgradation of existing Flood forecasting system. Establish infrastructure for flood warning and dissemination.	SDMA/DDMA; WRD; CWC; IMD; District Administration
Non-Structural measures			
1	Capacity building	Departmental flood contingency plan. Flood related departmental action plan and SOP. Imparting training to the stakeholders involved in flood mitigation and management.	WRD; All Line Deptt; Dept. of DM; District Administration
2	Awareness	Disseminate flood risk to general public residing in flood prone zones Campaign for Flood safety tips	SDMA/DDMA;WRD;IPR; CWC/IMD/ PHED; District Administration
3	Review of rules	Review of operational rules for reservoirs	SDMA/DDMA; Hydro-Power; WRD; Dept.of Environment and Forests; Dept. of Planning; All Line Dept; District Administration

3.4.3 Landslide

Landslide also known as mud flows, debris flows, earth failures, slope failures etc., can be triggered by rains, floods, earthquakes and other natural causes as well as human made causes leads to massive destruction in state, need to take effective and sustained mitigation measures. Various measures, structural and non-structural, have been in

Table 19 below;

Table 19: Structural & Non-Structural Measures for mitigation to landslides

S. No.	Task	Activities	Responsibility
Structural Measures			

1	Hazard zonation	To undertake micro zonation study according to priority area. To provide or make available landslide micro-zonation map. Provide vulnerability and risk assessment map.	SDMA; SRSAC; Dept of S&T; GSI; Dept.of UD & Housing; Dept.of Town Planning; PRIs/ULBs; District Administration.
2	Geological & Geotechnical Investigation	To carry out detailed geological & geo-technical investigation on major landslide	SDMA/SEC, GSI, Line Depts./ agencies, DDMA/District Administration.
4	Landslide risk treatment, monitoring & forecasting	Landslide remedial & improvement techniques. Strengthening of buildings & safety of critical facilities. Monitoring & early warning system	GSI; Dept of Sc & T; SRSAC; All Line Deptt/ Agencies; SEOC/DEOC/Police Control Room, District Administration.
Non-Structural Measures			
1	Capacity Building	Departmental Landslide contingency plan. Ensure landslide related departmental action plan and SOP. Provide training.	SDMA/SEC; GSI; All Line Dept/ agencies; ATI/ SIRD; District Administration.
2	Awareness	Awareness on landslide risk reduction; Community awareness and preparedness on landslide.	SDMA/ DDMA; GSI; Resource Institutes; All Line deptt/ agencies; ATI/ SIRD; District Administration.

3.4.4 Urban Flooding

Urban flooding is significantly different from rural flooding as urbanization leads to developed catchments, which increases the flood peaks from 1.8 to 8 times and flood volumes by upto 6 times. Consequently, flooding occurs very quickly due to faster flow times (in a matter of minutes). Urban areas are densely populated and people living in vulnerable areas suffer due to flooding, sometimes resulting in loss of life. It is not only the event of flooding but the secondary effect of exposure to infection also has its toll in terms of human suffering, loss of livelihood and, in extreme cases, loss of life.

Urban areas are also centres of economic activities with vital infrastructure which needs to be protected 24x7. Therefore, management of urban flooding has to be accorded top priority

Increasing trend of urban flooding is a universal phenomenon and poses a great challenge to urban planners. Problems associated with urban floods range from relatively localized incidents to major incidents, resulting in cities being inundated from hours to several days. Therefore, the impact can also be widespread, including

temporary relocation of people, damage to civic amenities, deterioration of water quality and risk of epidemics.

The Department of Urban Development & Housing and Town Planning should plan & prepare and mitigate urban flooding along with District Administration and other line Dept. like PWD, PHED etc.

Table 20: Urban Flooding

S. No.	Task	Activities	Responsibility
Structural Measures			
1	Urban Design	All future roads and rail bridges in cities crossing drains to be designed such that they do not block the flows resulting in backwater effect. All road re-leveling works or strengthening/overlay works to be carried out by milling the existing layers of the road so that the road levels will not be allowed to increase. Ensure protecting of Water Bodies and its restoration/ revival. Remove encroachments and take strict action against the encroachers as per the bye-laws/ regulations	SDMA; Dept. of UD & Housing; Dept. of Town Planning; PRIs/ ULBs; District Administration
2	Establishment of Emergency Operation Centre	Ensure round the clock operations of EOCs during the flood season with adequate manpower/ resources to respond urban flood	SDMA/SEC; Dept. of UD & Housing; PRIs/ ULBs; DDMA/District Administration
3	Hazard resistant construction, strengthening, and retrofitting of all lifeline structures and critical infrastructure	Collaboration with technical agencies and implementation	Dept. of UD & Housing; PRIs/ ULBs; All Line Deptt/ Agencies; Room; District Administration; Dept. of Town Planning
Non-Structural Measures			
1	Preparation of comprehensive Urban Storm Drainage Design Manual (USDDM)	Take initiatives and collaborate with central agencies	SDMA/SEC; Dept. of UD & Housing; PRIs/ ULBs; Dept. of Town Planning
2	Preparation of Storm Water Drainage System Inventory	Coordinate with MoUD in preparing the inventory through ULBs	SDMA/ DDMA; Dept. of UD & Housing; PRIs/ ULBs; Dept. of Town Planning; District Administration

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

3	Operation and Maintenance of Drainage Systems	Adequate budget to be provided to take care of the men, material, equipment and machinery for operation and maintenance of drainage systems on a periodic basis	Dept. of Finance/ Planning; Dept. of UD & Housing; PRIs/ ULBs; Dept. of Town Planning
4	Environment Impact Assessment	To ensure strict compliance with the guidelines	Dept. of UD & Housing; PRIs/ ULBs; Dept. of Town Planning
5	Compliance of Techno-Legal Regime	To ensure strict compliance of Techno-Legal Regime through ULBs	Dept. of UD & Housing; PRIs/ ULBs; Dept. of Town Planning
6	Constitution of Urban Flooding Cell for Integrated UFDM	Nodal Department to constitute Urban Flooding Cell at State level and a DM Cell to be constituted at ULB level for managing urban flooding at local level	Dept. of UD & Housing; PRIs/ ULBs; Dept. of Town Planning
7	Public Private Partnerships	Promote Public Private Partnership in disaster management facilities	Dept. of UD & Housing; PRIs/ ULBs; Dept. of Town Planning

Table 21: Role and responsibilities for Structural & nonstructural measures for all Hazards

Sl. No	Task	Activities	Responsibility
Structural measures			
1	Land use planning	Land use planning of the State in view of hazard, risk and vulnerability of the State	Dept. of Land Management; Dept. of Town Planning; SRSAC, Line Dept; District Administration
		To ensure development schemes of the State are undertaken in view of hazard, risk, vulnerability and micro-zonation	Dept. of State Planning, Dept. of Land Management, Dept. of Town Planning, Line Dept. District Administration
2	Mainstreaming Disaster Management in development programmes	Ensure that each development programme /scheme in the State should be sanctioned/undertaken only if it meets the requirement of disaster management	Dept. of State Planning; Dept. of Finance; All Dept.; SDMA and District Administration.
		Ensure the programme/ scheme/ project is facilitated with the provision for adequate funds of disaster management	
3	Adoption of new technology	Application of Science and technology and engineering inputs to improve infrastructures including dams and reservoirs, building design, construction, etc.	Dept. of Science and Technology; SRSAC; SDMA; CWC; IMD; IT & E-governance; GSI; All Line Dept./Agencies; District Administration.
4	Techno-Legal Regime	Review and revision of building by laws. Review and revision of GDCR/CRZ etc. Review and revision of town planning Act & Rules.	Dept. of Town Planning; Dept. of UD & Housing; RD & Panchayat; ULBs& PRIs; SDMA; Line Dept.

		Ensure strict implementation of Code and Rules. Monitoring of quality construction.	District Administration.
5	Safety Audit	Carrying out structural safety audit of all critical lifeline structures.	SDMA; Dept. of Town Planning; Dept. of UD & Housing; All Line Dept. District Administration
6	Capacity Building	Construction/Strengthening of SEOC/DEOC.	SDMA; Dept. of DM; DDMA; District Administration; ATI/SIRD/ All Line Dept./Agencies
Non-Structural Measures			
1	Planning	Prepare Multi Hazard Disaster Management Plan. Prepare hazard wise contingency planning. Ensure hazard wise Departmental Disaster Management Plan and Standard Operation Procedure (SOP). Conduct mock drills at regular intervals. Update the plan as per the requirement, Monitor similar activities at district & block level.	SDMA/ SEC; Dept. of Home; Dept. of DM; All Dept; ULBs/PRI; DDMA / District Administration.
2	Capacity Building	Develop multi-hazard IEC material for Publication & Distribution. Media campaign for awareness generation in general public. Organize training programmes, seminars and workshops. Include disaster related topics in curriculum. Encourage disaster insurance. Encourage favourable taxation/ incentive.	SDMA/SEC; Dept. of DM; All Dept; DDMA/ District Administration
3	Community based Disaster Management	Strengthening capacity of local self-government entities to understand local vulnerability and risk, disaster prevention needs, preparedness and response capabilities through participatory approach	SDMA; Dept. of DM DDMA/ District Administration; PRI/ ULBs

3.5 Training Needs Analysis

Training Analysis is most often used as part of the system development process. Due to the close tie between the design of the system and the training required, in most cases it runs alongside the development to capture the training requirements. The training need analysis is done considering variable factors of intensity, affected population and severity of damage need to be quickly assessed based on which

government and non-government agencies can allocate and deploy relief. The training requirements would be based on emergency response functions. Each Emergency Response Function [ERF] consists of sub functions. The ERFs are:

- Coordination and Command
- Source and Impact Control
- Population Care
- Medical Care
- Maintaining law and order

Capacity development of stakeholders shall be built across all mission streams and across all stakeholders. It involves development of a cadre of individuals across SDMA and State Departments, DDMA and agencies working/supporting the District Administration and the Local Authority (including the PRIs, Urban Local Bodies).

Standardization of training is important and for this there is a need to develop target-oriented curriculum, conduct Training of Trainers (ToT), evaluation and certification (for select groups say, certification of masons in disaster resistant construction practices, certification of volunteers in Search & Rescue/First-Aid). Reporting of training across the State should be made available through the form of annual report.

Following key areas have been identified (for design and development of modules, implement training);

- Earthquake resistant design for engineers and architects
- Seismic strengthening and retrofitting of buildings and infrastructure
- Construction technology training for construction workers (masons, bar benders among others)
- Assessment of seismic safety of buildings and infrastructure
- Damage and Needs Assessment
- Search and Rescue & First Aid
- Flood Rescue
- Mass Casualty Management
- Trauma Management
- Hospital preparedness and Mass Casualty Management
- Collapsed Structure Search and Rescue and Medical First Response

- Public Health in Emergencies (*Safe drinking water and sanitation, Alternate water resources identification during emergency conditions, Supply management*)
- Procurement procedures for goods and services in emergency situations
- Shelter and Camp Management
- Climate Change and cross cutting themes
- Gender issues in Disaster Management
- Role of PRIs and ULBs in DM (mainstreaming efforts in development planning)
- Preparation of DM Plan (Sector, Department, Administration, Unit Level – School, Hospital, Business establishment etc.)
- Community Based Disaster Preparedness
- Role of Volunteers in Disaster Management

All the government line departments who have a stake in different phases of the disaster management will have to identify their roles and carry out training need analysis of their personnel. The list of the Government Depts. is as under in Table 22;

Table 22: Training needs analysis

Task	Activity	Responsibility
Training Need Analysis	Identification of roles and responsibilities of the department in disaster management	<ul style="list-style-type: none"> • SDMA/SEC • DDMA
	Identification of stakeholders to carry out department's roles and responsibilities	<ul style="list-style-type: none"> • Dept. of DM • All line Dept.
	To carry out training need analysis	<ul style="list-style-type: none"> • General Administration
	Development of training design as per the training need analysis	<ul style="list-style-type: none"> • NGOs & other organizations.
	Arrangement for resources	<ul style="list-style-type: none"> • Public & Private sector.
	Imparting training	<ul style="list-style-type: none"> • ATI/SIRD/ PTC/ BHQ, Chimpu • District Admin.



CHAPTER 4: MAINSTREAMING
DISASTER MANAGEMENT
CONCERNS INTO DEVELOPMENT
PLANS/PROJECTS

CHAPTER 4: MAINSTREAMING DISASTER MANAGEMENT CONCERNS INTO DEVELOPMENT PLANS/PROJECTS

4. Introduction

Mainstreaming Disaster Management Concerns into Development Programmes deals with integration of measures for prevention of disasters and mitigation into developmental plans and projects including mitigation projects and to facilitate provision of adequate funds for DM. Plans may be shown in three broad categories, viz. short, medium and long term. The structural & non-structural measures to be taken may be brought out in each category. Mainstreaming disaster risk reduction into development planning has been a priority concern for the State Government.

The strategy for mainstreaming disaster management concerns into development plans/projects are;

- Mainstreaming risk reduction should result in appropriate measures being taken to reduce disaster risk and ensure that development plans and programmes do not create new forms of vulnerability.
- List of existing Government funded projects/ programmes/ schemes qualifying for the mainstreaming should be given on line with DRR measures.
- In continuation with the efforts to integrate disaster management into development planning especially for new projects that are under preparation stage, the Central Government has revised the formats for pre-approval from **EFC** (Expenditure Finance Committee) and for preparing the **DPR** (Detailed Project Report) to address disaster management concerns.
- The Department of Finance and Planning will ensure that all Disaster Management measures have been incorporated in all projects/ programme/ schemes of various Departments of the State.

4.1 Expenditure Finance Committee (EFC) Format

To ensure the implementation of key areas, a check list for EFC format and the responsible departments are as shown below in Table 23:

Table 23: Expenditure Finance Committee (EFC) & Responsible Departments

Task	Activity	Responsibility
Mainstreaming disaster management into development planning	<ol style="list-style-type: none"> To ascertain whether project involve any creation/ modification of structural/ engineering assets. To ascertain the possible risks, likelihood and impact from disasters due to the location of project sites. To ascertain whether probable risks have been prioritized and the mitigation measures being contemplated, both structural and non-structural measures. To ascertain whether the design and engineering of the structure has taken into consideration following the National Building Code 2005, the appropriate BIS Codes, other applicable sources as per the type of the project and the NDMA guidelines (List of codes/guidelines for safety of building/structures from natural hazards is given in Annexure 1). To ascertain whether the cost of disaster treatment/ mitigation measures been included in the overall project cost. To ascertain whether the process of risk assessment has been done based on available information and secondary evidence. 	<ul style="list-style-type: none"> ➤ Planning/Finance Deptt ➤ All Departments. <ul style="list-style-type: none"> -WRD -Power -PHED -Health -PWD -Education -UD -All Other line Depts. ➤ Dept. approving the project: <ul style="list-style-type: none"> -Administratively -Financially -Technically To ensure proper implementation of BIS codes ➤ SDMA ➤ DDMA/District Admin. ➤ Local bodies

4.2 Detailed Project Report (DPR) format

To ensure the implementation of key areas, a check list for DPR format and the responsible departments are given in Table 24;

Table 24: Detailed Project Report (DPR) & Responsible Department

Task	Activity	Responsibility
Mainstreaming disaster management into development planning	<ol style="list-style-type: none"> Impact Assessment of project (damage that can be caused to the project by natural disasters, design of the project that could accentuate the vulnerability of the area to disasters and / or lead to rise in damage /loss of lives, property, 	<ul style="list-style-type: none"> ➤ Planning & Finance Dept ➤ District Admin ➤ Social welfare Dept ➤ Health Dept

	<p>livelihood and surrounding environment). Checklist for natural disaster impact assessment is given in Annexure 2</p> <ol style="list-style-type: none"> 2. Risk assessment of project 3. Vulnerability assessment of project (Evaluation of site with regards to parameters such as probable maximum seismicity, probable maximum storm surge, probable maximum wind speed, probable maximum precipitation, probable maximum flood discharge and level, soil liquefaction proneness under probable earthquake intensities) 4. Complacence of <ul style="list-style-type: none"> ➤ Land use management ➤ Building Code ➤ Building use regulation ➤ Directives and legislation ➤ Maintenance requirement 5. Details about the location of the project, proneness of the project area to various hazards and analysis of impact on safety of the project 6. Impact of the project on the environment and the surrounding population with respect to the type of the project and adoption of mitigation measures to reduce the impact of the same 7. Incorporate Psychosocial support into all Plans/ Projects/ Programmes with special reference to all health-related program 	<p>➤ All line Dept</p> <p>To ensure proper implementation of BIS codes</p>
--	--	--

4.3 Scope of integrating DRR in development schemes

Table 25: Suggested for Departments and schemes to incorporate in the planes

Sector/National and State Schemes	Action Points (Probable)
<p>Housing, public buildings and community assets</p> <ul style="list-style-type: none"> • Pradhan Mantri Gramin Awaas Yojana (PMGAY) • Integrated Housing and Slum Development Programme (IHSDP) and other Housing Programmes • MPLADS/MLALADS 	<ul style="list-style-type: none"> • Safety audit of existing housing stock. • Establishing Technology Demonstration Units for education and awareness. • Certification of masons and creating database of master trainers. • Strengthen compliance and enforcement procedures of local building laws in the hazard prone areas. • Adding construction elements for special needs groups in design and planning of all public buildings, mass housing projects and community assets.
<p>Water and Sanitation</p> <ul style="list-style-type: none"> • National Rural Drinking Water Programme (NRDWP). • Swajaldhara, WASMSO Projects 	<ul style="list-style-type: none"> • Rainwater Harvesting. • Water recharge and conservation. • Flood mitigation – retaining wall, strengthening embankment etc.

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

<ul style="list-style-type: none"> • Total Sanitation Campaign • State Investment Programme Management and Implementation Unit 	
<p>Employment and NRM</p> <ul style="list-style-type: none"> • Pradhan Mantri Gramodaya Yojana (PMGY). • Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS). • Integrated Watershed Management Programme (IWMP) 	<ul style="list-style-type: none"> • Prioritizing and taking up works for flood control, drought proofing. • Land development including plantation. • Revival of traditional water harvesting structures including treatment of catchment.
<p>Health</p> <ul style="list-style-type: none"> • NRHM (National Rural Health Mission). • Food for Work Programme (FWP). • National Food Security Mission (NFSM) • State AIDS Control Programme. 	<ul style="list-style-type: none"> • Developing emergency plans and conduct mock drills in hospitals. • Developing projects on community monitoring and reporting in major health and food security schemes.
<p>Education</p> <ul style="list-style-type: none"> • Sarva Siksha Abhiyan (SSA) • Rashtriya Madhyamik Siksha Abhijan (RMSA) • Rashtriya Uchchar Shiksha Abhiyan (RUSA) 	<ul style="list-style-type: none"> • Up-gradation of infrastructure for DRR, special needs of vulnerable groups including disabled children in design of education institution building, amenities and learning processes. • Development and dissemination of learning material on risk awareness, preparedness and preventive measure in school and college curricula and integration of DRR modules in the regular training course of the “Teachers Training Institutes”. • Training in life saving skill such as first aid, search and rescue, swimming to the students, teachers and education administrators. • Preparing disaster preparedness plans and conduct mock drills in educational institutions

CHAPTER 5: PREPAREDNESS MEASURES



CHAPTER-5 PREPAREDNESS MEASURES

5. Introduction

Preparedness to natural disaster is the knowledge and capacities developed by governments, professional response and recovery organizations, communities and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent or current hazard events or conditions. Preparedness involves activities undertaken in advance of an emergency to develop and enhance operational capacity to respond and recover from an emergency. As part of a comprehensive preparedness program, there should be established - plans and procedures, prevention programs, resource management system, MoU/agreements with service providers (PPP), training awareness programs. Preparedness is based on a sound analysis of disaster risks (*risk assessment*) and good linkages with early warning systems, and includes such activities as:

- contingency planning
- stockpiling of equipment and supplies
- the development of arrangements for coordination
- evacuation and public information, and
- associated training and field exercises

5.1 Preparedness Planning:

Planning is the one of the key elements in the preparedness cycle. Preparedness cycle illustrates the way the plans are continuously evaluated and improved through a cycle of planning, organizing, training, equipping, exercising, evaluating, and taking corrective action.

The state government and its departments/ministries are assigned emergency responsibilities in this plan who will prepare appropriate supporting plans and related standard operating procedures that describe how emergency operations will be carried out.

- District Disaster Management Plan
- City Disaster Management Plan
- Hazard specific planning
- Public Private Partnership
- Recovery Plan

District authority and other agencies are encouraged to develop recovery plans prior to the occurrence of a disaster. Such a plan should establish mechanisms for recovery decision-making and identify key participants in the recovery organization, including non-governmental and private sector entities. The plan should also identify processes and procedures for requesting state and central recovery assistance and ensuring that recovery activities are carried out in accordance with the requirements of these programs. Checklist for DM/ Deputy Commissioner for Disaster Preparedness in the district is attached in annexure 3.

5.2 Resource Availability

During past disaster, it has been observed that a comprehensive database of disaster management related inventory is essential for an organized response. More often than not, lack of proper and adequate information has hampered swift and measured response resulting in delay which could be critical in such eventualities. Therefore, a need was felt to prepare a database of such resources, from village/community level to State level.

Table 26: Resource availability

Task	Activity	Responsibility
Resource Mapping	<ol style="list-style-type: none"> Identify available resources viz. Human, financial and equipment for disaster management with <ul style="list-style-type: none"> - State Level - Dist. Level - Block/ Sub-div level - Village level - Public sector - Private sector - Community level Identification of gaps of resources as per the need Process for procurement of lacking resources 	<ul style="list-style-type: none"> • CDBM • All Dept • District Administration • DM Dept. • DDMA/DEOC • To provide data to SDMA/ SEOC
State Disaster Resource Network	<ol style="list-style-type: none"> Collect and compile state resource information Create GIS based state resource network and allot unique username and password Maintain GIS based state resource network Regular updation of resource data 	<ul style="list-style-type: none"> • S&T Dept. • All Depts. • DM Dept. • NIC/ DIOs • District Admin

5.3 India Disaster Resource Network (IDRN)

IDRN, a web-based information system, is a platform for managing the inventory of equipment, skilled human resources and critical supplies for emergency response. The primary focus is to enable the decision makers to find answers on availability of equipment and human resources required to combat any emergency

situation. This database will also enable them to assess the level of preparedness for specific vulnerabilities.

Each user of all districts of the state has been given unique username and password through which they can perform data entry, data up-dation on IDRN for resources available in their district.

The IDRN network has functionality of generating multiple query options based on the specific equipment, skilled human resources and critical supplies with their location and contact details.

5.4 Resource Mobilization

The resources are managed and mobilized as per the Incident Response System guidelines. The available resources of Departments and District have been compiled separately in Resource Inventory Book-2014.

5.5 Community based Disaster Management

Community is not only the victim but invariably the first responder in any disaster. Any disaster revolves around the coping capacity of the community. Therefore, community should be closely associated with prevention, mitigation, preparedness, training, capacity building, response, relief, recovery i.e. short term and long term, rehabilitation and reconstruction.

Table 27: Community Based Disaster Management

Task	Activity	Responsibility
Community Preparedness	<ol style="list-style-type: none"> 1. Selecting vulnerable community and most vulnerable groups at risk (keep gender issues in mind) 2. Disseminate information about vulnerability and risk to the community 3. Promote local level disaster risk management planning through participatory approach 4. Advice and issue direction wherever necessary for community disaster prevention, mitigation and preparedness through local resources and participatory approach 5. Provide necessary resources and support for disaster risk reduction at community level 	<ul style="list-style-type: none"> • All Dept. • All Stakeholders

<ol style="list-style-type: none"> 6. Promote community managed implementations 7. Review the preparedness at community level 8. Take appropriate actions to enhance community preparedness 9. Promote community education, awareness and training 10. Ensure fail safe mechanism for timely dissemination of forecasting and warning of impending disaster to the community 11. Disseminate information to community to deal with any disaster situation 	
---	--

5.6 State Disaster Response Force (SDRF)

The State Government has notified two teams comprising of 47 personnel's each in a team from State Police, STF & AAPBN under State Disaster Response Force. The Commandant 1AAPBN is the Nodal officer for SDRF and is stationed at 1AAP Bn BHQ, Chimpu. Due to limited resources, SDRF is presently available at Capital Complex only.

5.7 Training, capacity building and other proactive measures

Table 28: Training for disaster preparedness

Task	Activity	Responsibility
Training	<ol style="list-style-type: none"> 1. Training to civil defense personal in various aspect of disaster management 2. Training to home Guards personal in various aspect of disaster management including search and rescue 3. Training to NCC and NSS personal in various aspect of disaster management 4. Training to educational and training institutions personal in various aspect of disaster management 5. Training to civil society, CBOs and corporate entities in various aspect of disaster management 6. Training to fire and emergency service personal in various aspect of disaster management 7. Training to police and traffic personal in various aspect of disaster management 8. Training to State Disaster Response Force (SDRF) Teams in various aspect of disaster management 	<ul style="list-style-type: none"> • All Depts/ Agencies • Institutions dealing with the concerned subject matters will provide the training viz; NIDM, NDRF (Gwt), ATI, SIRD, PTC, Dept of DM, all Engg Dept. and others.

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

	<p>9. Training to media in various aspect of disaster management</p> <p>10. Training to govt. officials in various aspect of disaster management</p> <p>11. Training to engineers, architects, structural engineers, builders and masons in various aspect of disaster management</p>	
--	---	--

Table 29: Awareness programme for preparedness

Task	Activity	Responsibility
Information Education and Communication	<p>1. Advertisement, hording, booklets, leaflets, banners, shake-table, demonstration, folk dancing and music, jokes, street play, exhibition, TV Spot, radio spot, audio-visual and documentary, school campaign,</p> <ul style="list-style-type: none"> - Planning and Design - Execution and Dissemination 	<ul style="list-style-type: none"> • SDMA • All Depts. • DDMA/District Admin • IPR

Table 30: Computer based programming for disaster preparedness

Task	Activity	Responsibility
Develop database for Disaster Management	<p>1. Develop GIS based information system for different sectors viz. Medical and health, civil supply, fire and emergency services, etc.</p> <ul style="list-style-type: none"> ○ Collection of information ○ Generation of maps ○ Regular updation of data 	<ul style="list-style-type: none"> • All Depts to provide their data to SDMA/SEC/ DM Dept. • WRD • GSI • Sc &T Dept. • NIC/DIOs • DDMA/District Admin
	<p>2. Develop Flood Disaster Management Information System</p> <ul style="list-style-type: none"> ○ Development of software ○ Collection and Feeding of basic data ○ User's training ○ Regular updation of real-time data 	
	<p>3. Create and disseminate database of contact details, resources, response agencies, NGOs, trained personnel, most vulnerable groups, evacuation routes, available shelters, relief centres, critical infrastructures, storage godowns, etc.</p> <ul style="list-style-type: none"> ○ Regular review and updation of such databases 	

Table 31: Techno-legal Regime

Task	Activity	Responsibility
Institutional Arrangement	1. Creation of State Level Disaster Management Authority	• SDMA
	2. Formation of DM policy, Guidelines and Act.	• SDMA/SEC/ Dept. Of DM
	3. Formulation of professional Civil Engineers Act.	• Concerned Dept

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

4. Creation of regulatory body	
5. Revision of General Development Control Regulations (GDCR)	<ul style="list-style-type: none"> • Concerned Dept.
6. Emergency Medical Service Act <ul style="list-style-type: none"> - Creation of an Emergency Medical Services Authority (EMSA) - Establish paramedic cadre through training programmes and accredit / license them - Impart training to manpower for emergency services - Recognize and accredit trauma centres - Standardize and license ambulance services - Establish statewide medical emergency access number - Creation of City / District EMS councils - Creation of guidelines for Emergency Care of special section of people like children, elders, BPL beneficiaries, citizens of remote and disaster prone areas 	<ul style="list-style-type: none"> • Health
7. Revision of BIS codes <ul style="list-style-type: none"> o Undertake studies, reviews and revision 	<ul style="list-style-type: none"> • Town Planning
8. Preparation and distribution of commentaries and handbooks	<ul style="list-style-type: none"> • Planning & Finance Dept
9. Development of relief norms and packages	<ul style="list-style-type: none"> • MHA, GOI
10. Development and promotion of incentives, insurance, disaster bonds, tax rebate, etc. against the disaster	<ul style="list-style-type: none"> • Planning & Finance Dept.
11. Development of disaster management Plans <ul style="list-style-type: none"> o Hazard-wise State Disaster Management Plans o State Action Plans o State Contingency Plans o Departmental Disaster Management Plans (Guidelines in Annexure 4) o Dist. , City & Village Disaster Management Plans 	<ul style="list-style-type: none"> • SDMA • All Depts • DDMA
12. Regular rehearsal, review and updation of plans	
13. Publication & dissemination of plans	
14. Strengthening of Early Warning System <ul style="list-style-type: none"> o Conduct study o Analyse o Implement 	<ul style="list-style-type: none"> • SDMA • CWC/ IMD • WRD • DDMA/ District Adm.
15. Arrangement with service provider companies for multiple warning messages	
16. Hazard Risk & Vulnerability Assessment for different natural and man-made disasters prone to state <ul style="list-style-type: none"> o Conduct study o Analyse o Mapping o Micro zonation 	<ul style="list-style-type: none"> • Sc & T • GSI • Dept. of Town Planning • DDMA/District Admin
17. Safety Measures <ul style="list-style-type: none"> o Identification of places o Alarm system 	<ul style="list-style-type: none"> • DDMA/ District Admin • Police

	<ul style="list-style-type: none"> ○ Personnel protective equipment's ○ Promotion of life saving methods and techniques 	<ul style="list-style-type: none"> ● All Dept.
	<p>18. Strengthening of relief distribution and accounting system at state and district level</p> <ul style="list-style-type: none"> ○ Identification of centralized system for receipt, storage and distribution of relief ○ Rate contract, procurement and stockpile of relief material 	<ul style="list-style-type: none"> ● SDMA ● DDMA/ District Admin ● All concerned Dept.
	<p>19. Strengthening of EOC at state, region and district level</p> <ul style="list-style-type: none"> ○ Retrofitting of existing buildings ○ Strengthening of resources <ul style="list-style-type: none"> - Task forces - Equipment - SOPs - Financial ○ Arrangement for optional EOC ○ Arrangement of mock drills ○ Arrangement of logistics ○ Strengthening of communication means 	<ul style="list-style-type: none"> ● SDMA/ SEC ● All Line Depts. ● Police Dept. ● DDMA/ District Admin

5.8 Psychosocial Support and Mental Health Services (PSSMHS)

Disasters causes devastating effect on the human life, usually leaving a trail of human agony including short- and long-term psychosocial trauma on the survivors. Generally, in any response the physical effects of survivors get immediate attention and psychosocial needs gets neglected if not intervened which may lead to dysfunction and disability. Timely psycho-social support will prevent development of long-term psychosocial problems and hasten the recovery of survivors. Overall goal of psychosocial support intervention would be to enhance the coping and resiliency of the community towards improving overall well-being. Psychosocial Support and Mental Health Services (PSSMHS) is one of the important cross cutting areas of DM intervention. The plan for PSSMHS shall be a component of overall planning for disaster management with an aim of providing Psychosocial Support and Mental Health Services integrated with preparedness, response, mitigation, relief and rehabilitation. The Ministry of Health and Family Welfare (MoH&FW) is the Nodal Ministry. The plan for the PSSMHS will be developed by the Nodal Ministry; other Line Ministries may prepare their plans based on the nodal ministries plans.

5.8.1 Preparedness Plan for Psychosocial Support and Mental Health Services (PSSMHS)

5.8.1.1 Short term Plan

Preparedness

Capacity development

- Sensitizing and training (Basic and advance) on PSSMHS across identified departments, sectors and levels.
- Strengthening of the national, regional and nodal capacity building institutions and resource centres at district and state level.
- Developing PSSMHS needs assessment indicators and templates.
- Strengthening of District Counselling centres under Dept of Social welfare/ Women and Child Development (WCD).
- Map vulnerable groups and accord priority in preparedness activities.
- Strengthening the resource base and data management/documentation in PSSMHS.

Education & Training

- Inclusion of Disaster PSSMHS in Post-Graduate Curriculum of Psychiatry, Psychology, Social Work, Disaster Management, Emergency Medicine and Health Education.
- Inclusion of PSSMHS in Under Graduate medical studies.
- Integrating with all training programmes in the area of Psychology, Social Work, Mental Health, Emergency Medical Response, Hospital Administration, Nursing and Paramedics.
- Involve and train local community volunteers in basic psychosocial support.
- Mobilize trained psychosocial response teams at national and state level.
- Map vulnerable groups and accord priority in preparedness activities.

Community Based Disaster Management

- Inclusion in the CBDM Plan and training of Panchayat Raj (PRI) team members.
- Developing awareness materials for the community.
- Evolve a mechanism for community outreach education programmes on PSSMHS.

Networking, Awareness other Measures

- Enhance the network of institutions working in the field of mental health, give focus for creating PPP to augment the community resources.

- Take measures to increase public awareness about psychosocial care in disasters.
- Integrating with all training programmes in the area of Psychology, Social Work, Mental Health, Emergency Medical Response, Hospital Administration, Nursing and Paramedics.
- Involve and train local community volunteers in basic psychosocial support.
- Mobilize trained psychosocial response teams at national and state level.
- Map vulnerable groups and accord priority in preparedness activities.

5.8.1.2 Midterm Plan:

- Creation of core group of master trainers at district level
- Strengthening public-private partnership in research & development
- Formation of National PSSMHS resource inventory under National Health Resource Inventory Initiation of distance learning courses for sensitization across various categories of disaster management stakeholders.
- Development and standardization of uniform training packages for different designated target groups.
- Initiation of distance learning courses for sensitization across different categories of disaster management stakeholders.
- Incorporation of PSSMHS trainings in DMHP, district health and hospital plans.

5.8.1.3 Long term Plan:



- Intensive Post Graduate/Post Graduate Diploma courses in PSSMHS
- Streamlining of institutions and their activities

Table 32: Medical Preparedness

Task	Activity	Responsibility
Medical Preparedness	<ol style="list-style-type: none"> 1. Preparation of Authentic medical database for public and private facilities available in the state <ul style="list-style-type: none"> ○ Collection of Data ○ Mapping and gap analysis ○ Strengthening 2. Resource management 	<ul style="list-style-type: none"> ● Health and Family Welfare ● Director health Services to provide data to SDMA ● District Medical Officer

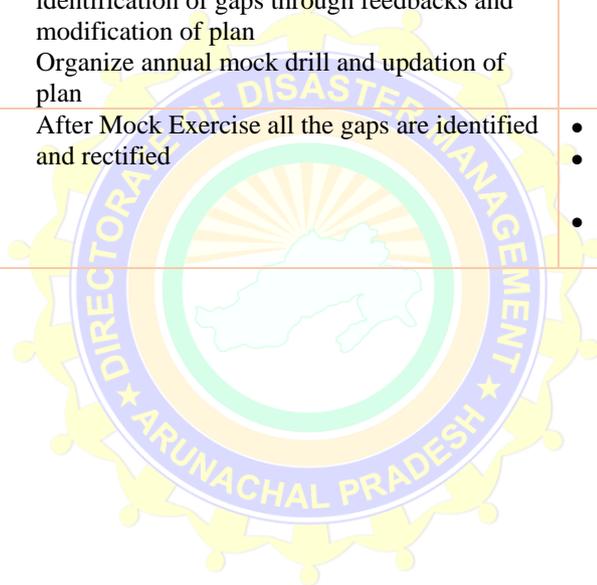
	<ul style="list-style-type: none"> ○ Manpower, logistics, medical equipment, medicines, antidotes, personal protective equipment, disinfectant, vaccine 3. Identification of medical incident command system <ul style="list-style-type: none"> - Incident Commander <ul style="list-style-type: none"> ○ State Level ○ Dist. Level ○ Disaster site - Identification of each section head at each level <ul style="list-style-type: none"> ○ Operation ○ Planning ○ Logistic ○ Administration & Finance ○ Media and Public information - Identification of key members of different task force - Control room arrangement <ul style="list-style-type: none"> ○ Departmental control room ○ State and district control room -Appointment of liaison officer in shifts - Planning <ul style="list-style-type: none"> ○ Preparation of medical management plan <ul style="list-style-type: none"> - State level - Dist. Level -Hospital preparedness plan - Training and capacity building <ul style="list-style-type: none"> ○ Hospital preparedness, ○ Pre hospital care, ○ Mass casualty management, etc. 	<p>to provide data to DDMA/District Admin</p>
--	--	---

Table 33: Knowledge Management

Task	Activity	Responsibility
Knowledge Management	<ul style="list-style-type: none"> - Documentation of disasters and to make it available in easy accessible format - Undertake research studies and application of outcomes in disaster management practices <ul style="list-style-type: none"> - Documenting field data, experience and indigenous technological knowledge from local community - Development of plan by using available resources like SDRN, IDRN, etc. - Sharing of data/information/reports/proceeding through consultation meeting/seminars etc. - Use of Information and communication technology at disaster management centres, state, district, taluka, village EOCs. 	<ul style="list-style-type: none"> • SDMA • DDMA

Table 34: Communication for disaster preparedness

Task	Activity	Responsibility
Fail safe communication and last mile connectivity	<ul style="list-style-type: none"> - Undertake study to establish fail safe two way communication – information system from state level to disaster site connecting state, district, circle and city level. - Undertake study to establish alert/siren with multi-lingual recorded messages in coastal areas - To procure the system and run a pilot project - Establishment of multiple/alternative system - Training/IEC campaign for general public of the vulnerable areas. - Plan for re-establishment of disrupted system 	<ul style="list-style-type: none"> • SDMA • Dept. of Home • BSNL • AIR • DDK • DDMA/District Admin • IPR
Plan testing	<ul style="list-style-type: none"> - Provide copy of the plan to each stakeholder - Organize mock drills and rehearsal for plan testing - Lesson learnt through mock drill; identification of gaps through feedbacks and modification of plan - Organize annual mock drill and updation of plan 	<ul style="list-style-type: none"> • SDMA • DDMA /District Admin • All Dept (subject to availability of fund)
Lesson Learnt	<ul style="list-style-type: none"> - After Mock Exercise all the gaps are identified and rectified 	<ul style="list-style-type: none"> • SDMA • DDMA /District Admin • All Dept (subject to availability of fund)



CHAPTER-6: DISASTER RESPONSE



CHAPTER-6: DISASTER RESPONSE

6. Introduction

Response measures are those which are taken instantly prior to, and following, a disaster aimed at limiting injuries, loss of life and damage to property and the environment and rescuing those who are affected or likely to be affected by disaster (MSDMP, 2020). It refers to the first stage response to any calamity, which include for examples such as setting up control rooms, putting the contingency plan in action, issue warning, action for evacuation, taking people to safer areas, rendering medical aid to the needy etc., simultaneously rendering relief to the homeless, food, drinking water, clothing etc. to the needy, restoration of communication, disbursement of assistance in cash or kind (NIDM, 2021). The process begins as soon as it becomes apparent that a disastrous event is imminent and last until the disaster is declared to be over.

6.1 Approach

The Arunachal Pradesh State Disaster Management Authority (APSDMA) is the Nodal Department for controlling, monitoring and directing measures for organizing rescue, relief and rehabilitation. The approach of APSDMA is to ensure Deptts/Agencies which are responsible for providing a particular emergency response service will further adopt a systematic, planned and coordinated approach to make them most effective in disaster response by utilizing the resources optimally. All other concerned line departments should extend full cooperation in all matters pertaining to the response management of the disaster whenever it occurs. The State Emergency Operation centre (SEOC), District Emergency Operation Centres (DEOCs) and other control rooms at the State level as well as district control rooms should be activated with full strength.

6.2 Resource Support

A three-tier framework (circle/ block, district and State) exists for implementing response to emergencies. The responsibility for response in the first instance rest with the Village & Circle/ Block. At the Circle/ Block level, resources owned or under the control of the circle/ block will be used. As the effects of the emergency escalate or the

resource requirements are in excess of what is available locally, District, State and external resources will be explored.

6.3 Co-ordination

The district level will ensure co-ordination of resources to support operations which cannot be resourced locally, or which extend over more than one block. The highest level of operational coordination and support takes place at the State level. It is at this level that resource support from other States, Central Government and/or other agencies is assessed and requested.

6.4 Procedures

Where an agency/department requires resources beyond its own capacity to satisfactorily complete a task, it will request for assistance as appropriate:

- If at the village level, from the CO/BDO
- If the request cannot be disposed at the local level, then via the CO/BDO to the DC
- If the request cannot be disposed at District level, then request will be made to the State Govt. (SEC)
- If a request cannot be satisfied from resources within the State, the SEC will seek Central assistance or external assistance

6.5 Implementation of Incident Response System for Effective Disaster Response

The Government of Arunachal Pradesh has notified Incident Response Teams at State level and District Level dated 5th Sept, 2014 as given in section 6.5.2.2.4 and 6.5.2.2.6. Activation of the IRS will be crucial for effective disaster response at the State as well at the district level.

6.5.1 Incident Response System (IRS)

The Incident Response System (IRS) is an effective mechanism for reducing the scope for ad-hoc measures in response. It incorporates all the tasks that may be performed during DM irrespective of their level of complexity. It envisages a composite team with various sections to attend to all the possible response requirements. The IRS identifies and designates officers to perform various duties and get them trained in their

respective roles. If IRS is put in place and stakeholders trained and made aware of their roles, it will greatly help in reducing chaos and confusion during the response phase. Everyone will know what needs to be done, who will do it and who is in command, etc. IRS is a flexible system and all the sections, branches and units need not be activated at the same time. Some sections, branches and units need to be activated only as and when they are required.

6.5.2 IRS Organization

The IRS organization functions through Incident Response Teams (IRTs) in the field. In line with our administrative structure and DM Act 2005, Responsible Officers (ROs) have been designated at the State and District level as overall in charge of the incident response management. The RO may however delegate responsibilities to the Incident Commander (IC), who in turn will manage the incident through IRTs. The IRTs will be pre-designated at all levels; State, District, Sub-Division and Tehsil/Block. On receipt of Early Warning, the RO will activate them. In case a disaster occurs without any warning, the local IRT will respond and contact RO for further support, if required. A Nodal Officer (NO) has to be designated for proper coordination between the District, State and National level in activating air support for response.

Apart from the RO and Nodal Officer (NO), the IRS has two main components; a) Command Staff and b) General Staff. The structure is shown in Figure 16.

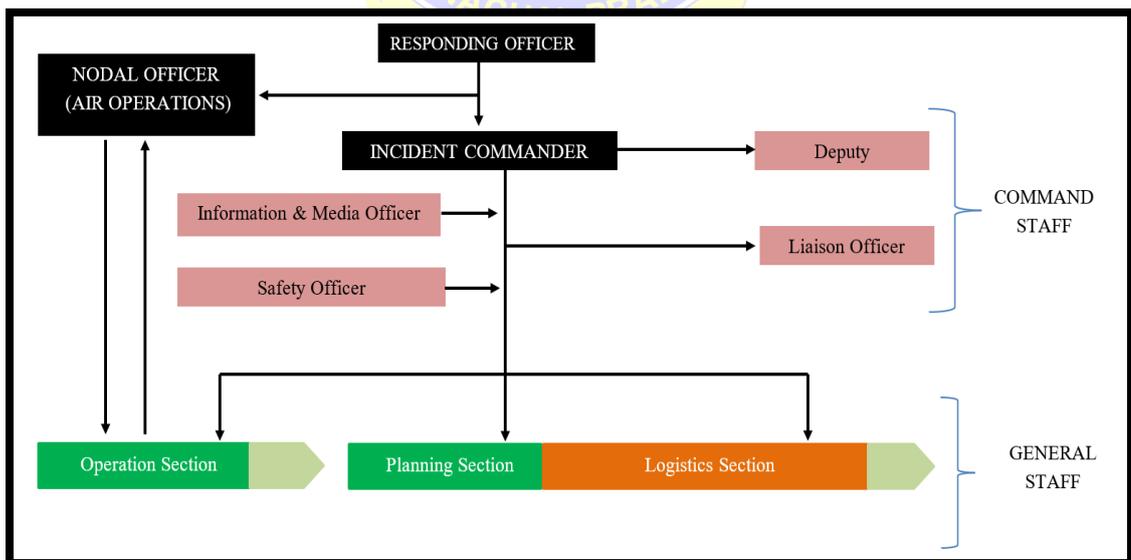


Figure 16: Structure of Incident Response System

6.5.2.1 Command Staff

The Command Staff consists of Incident Commander (IC), Information & Media Officer (IMO), Safety Officer (SO) and Liaison Officer (LO). They report directly to the IC and may have assistants. The Command Staff may or may not have supporting organizations under them. The main function of the Command Staff is to assist the IC in the discharge of his functions

6.5.2.2 General Staff

The General Staff has three components which are as follows;

6.5.2.2.1 Operations Section (OS)

The OS is responsible for directing the required tactical actions to meet incident objectives. Management of disaster may not immediately require activation of branch, division and group. Expansion of the OS depends on the enormity of the situation and number of different types and kinds of functional groups required in the response management.

6.5.2.2.2 Planning Section (PS)

The PS is responsible for collection, evaluation and display of incident information, maintaining and tracking resources, preparing the Incident Action Plan (IAP) and other necessary incident related documentation. They will assess the requirement of additional resources, propose from where it can be mobilized and keep IC informed. This Section also prepares the demobilization plan.

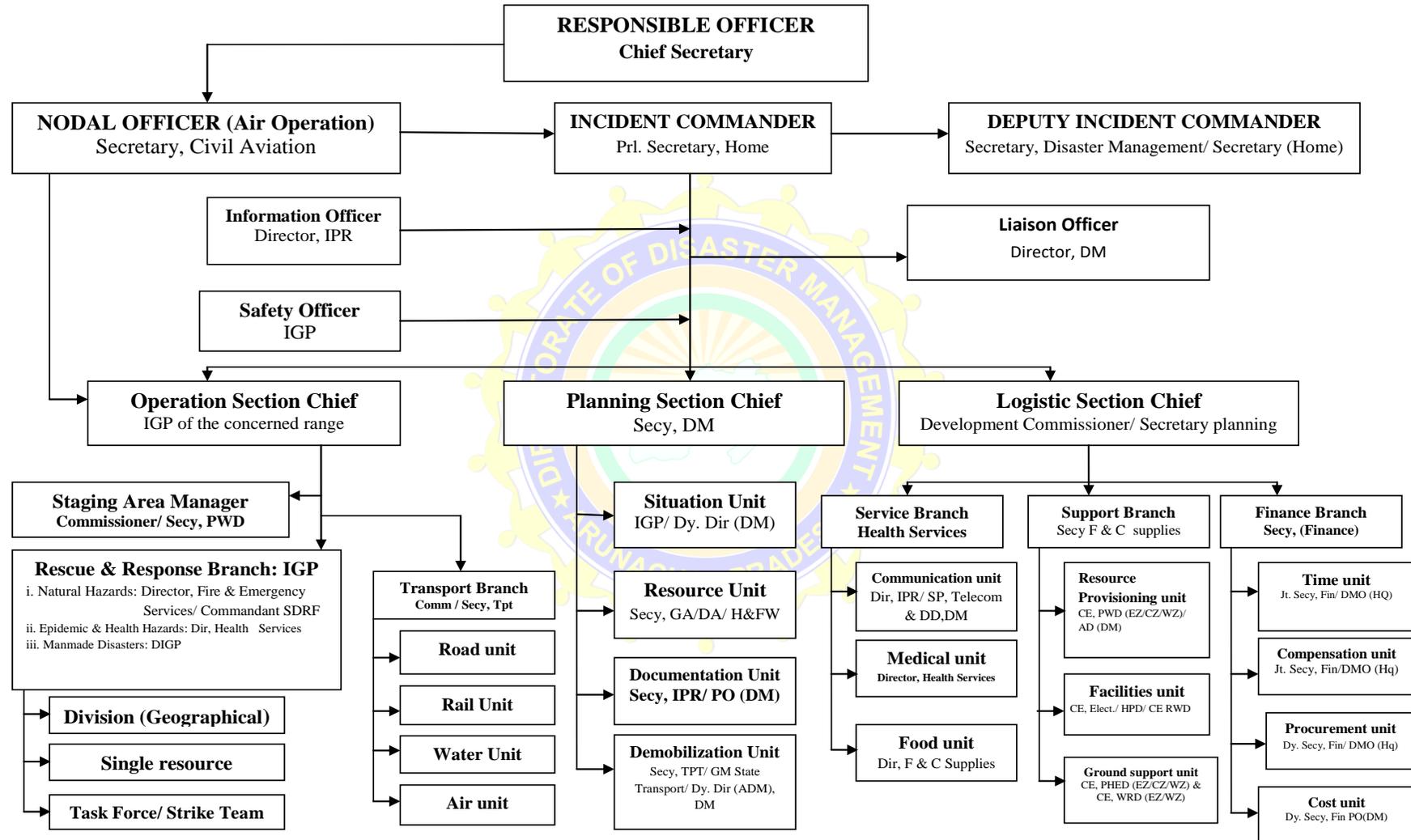
6.5.2.2.3 Logistics Section (LS)

The LS is responsible for providing facilities, services, materials, equipment and other resources in support of the incident response. The Section Chief participates in development and implementation of the IAP, activates and supervises Branches and Units of his section. In order to ensure prompt and smooth procurement and supply of resources as per financial rules, the Finance Branch has been included in the LS.

The Government of Arunachal Pradesh has notified Incident Response System Teams at State level (See section 6.5.2.2.5) and District Level (See section 6.5.2.2.7) dated 5th Sept, 2014.

6.5.2.2.4 Incident Response Team State

INCIDENT RESPONSE TEAM - STATE LEVEL: ARUNACHAL PRADESH



6.5.2.2.5 State Level Notification of Incident Response System Team

**GOVERNMENT OF ARUNACHAL PRADESH
DEPT: OF DISASTER MANAGEMENT
ITANAGAR
NOTIFICATION**

NO. SEOC/DRR&DM-18/2009-10

Dated 5th Sept, 2014

The Governor of Arunachal Pradesh is pleased to notify Incident Response System Team for the State of Arunachal Pradesh at the State level to respond to any major disaster in the State. The implementation/ response under incident Response System will be taken at the State level by the Incident Response Team notified as follows: -

- | | | |
|----|--------------------------------|---|
| 1 | Responsible Officer: | Chief Secretary, Govt. of A.P |
| 2 | Incident Commander: | Prl. Secretary, Home |
| 3 | Deputy Incident Commander: | Secretary Disaster Management/ Secretary (Home) |
| 4 | Nodal Officer (Air Operator): | Secretary, Civil Aviation |
| 5 | Safety Officers: | IGP |
| 6 | Liaison Officer: | Director, DM |
| 7 | Information & Media Officer: | Director, IPR |
| 8 | Operation Section Chief: | IGP of the concerned range |
| | a) Staging Area Manager: | Commissioner/ Secretary, PWD |
| | b) Rescue & Health Hazard: | Inspector General of Police |
| | i. Natural Disaster: | Director Fire & Emergency Service/ Commandant SDRF |
| | ii. Epidemic & Health Hazard: | Director, Health Service |
| | iii. Manmade Disasters: | DIGP |
| | c) Transport Branch (Road): | |
| | Rail. Water & Air Unit: | Commissioner/ Secretary, Transport |
| 9 | Planning Section Chief: | Secretary Disaster Management |
| | a) Situation Unit: | IGP/ DD (DM) |
| | b) Resource Unit: | Secretary, GA/DA/ Health & Family Welfare |
| | c) Documentation Unit: | Secretary, GA/DA/ Health & Family Welfare |
| | d) Demobilization Unit: | Secretary, TPT/ GM state transport/DD (Adm), DM |
| 10 | Logistic Section Chief: | Development Commissioner/Secretary Planning |
| | a) Service Branch: | Secretary, Health & family welfare |
| | i. Communication Unit: | Director, IPR/SP, Telecom & DD, DM |
| | ii. Medical Unit: | Director, Health Services |
| | iii. Food Unit: | Director, Food & Civil Supplies |
| | b) Support Branch: | Secretary, Food & Civil Supplies |
| | i. Resource Provisioning Unit: | CE, PWD (EZ/CZ/WZ)/ AD (DM) |
| | ii. Facilities Unit: | CE, Elect./ HPD/, CE, RWD |
| | iii. Ground Support Unit: | CE, PHED(EZ/CZ/WZ) & CE, WRD |
| | c) Finance Branch: | Secretary, Finance |
| | i. Time Unit: | Joint Secretary, Finance/ Disaster Management Officer(Hq) |
| | ii. Compensation Unit: | Joint Secretary, Finance/ Disaster Management Officer(Hq) |
| | iii. Procurement Unit: | Dy. Secretary, Finance/ Disaster Management Officer(Hq) |
| | iv. Cost Unit: | Dy. Secretary, Finance/ Project Officer (DM) |

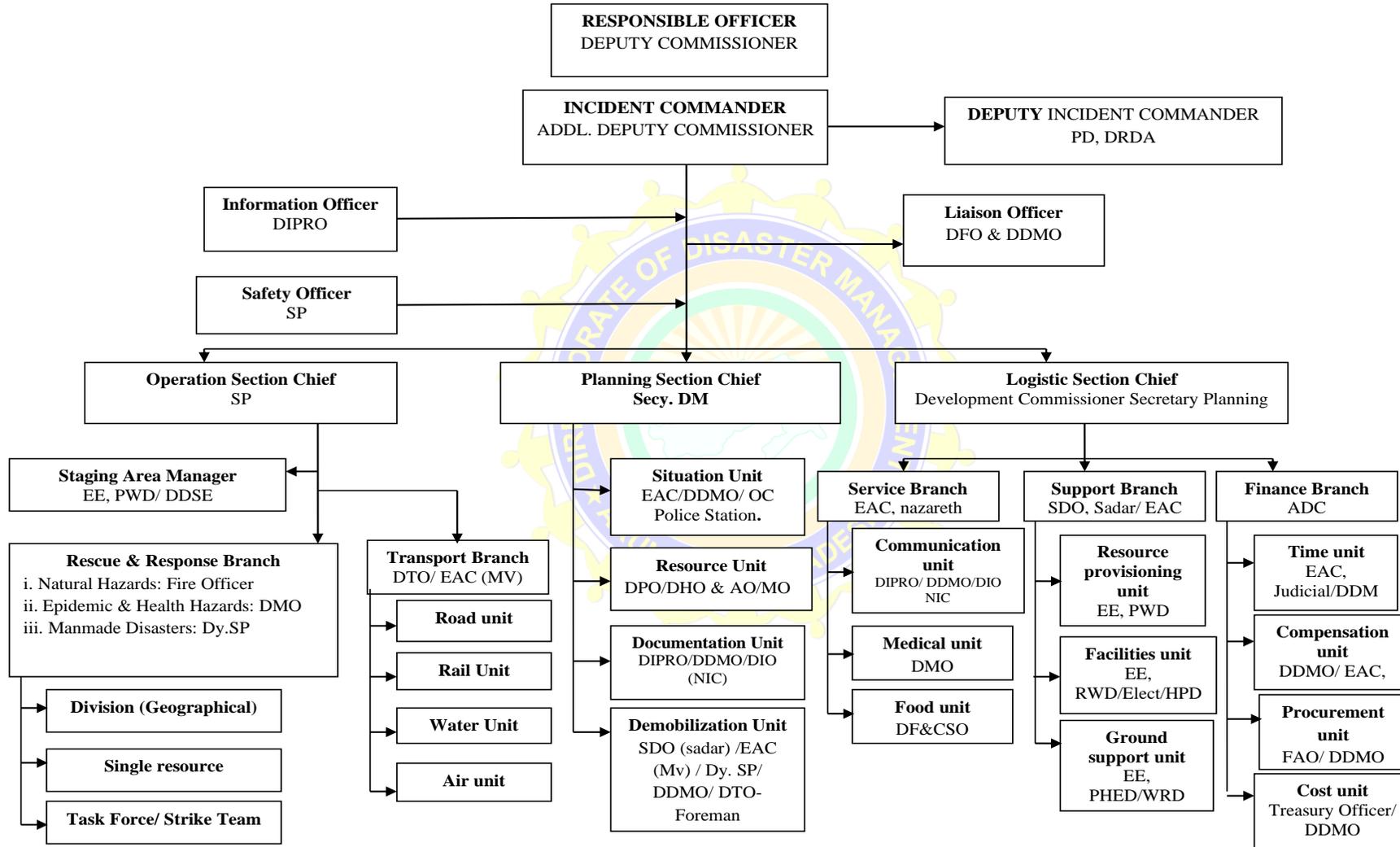
The State Level Incident Response Team (IRT) will be activated by the Responsible Officer in the event of any major disaster.

This will come into force with effect from the date of publication of this notification.


Chief Secretary
Government of Arunachal Pradesh
Itanagar

6.5.2.2.6 Incident Response Team District Level

INCIDENT RESPONSE TEAM- DISTRICT LEVEL



6.5.2.2.7 District level Notification of Incident Response System Team

GOVERNMENT OF ARUNACHAL PRADESH
DEPT: OF DISASTER MANAGEMENT
ITANAGAR
NOTIFICATION

NO. SEOC/DRR&DM-18/2009-10

Dated 5th Sept, 2014

The Governor of Arunachal Pradesh is pleased to notify Incident Response System Team at the District level for all districts in the State to respond to any major disaster in the district. The implementation/ response under Incident Response System will be taken at the district level by the Incident Response Team notified as follows: -

- 1 Responsible Officer: Deputy Commissioner
- 2 Incident Commander: Addl. Deputy Commissioner
- 3 Deputy Incident Commander: PD, DRDA
- 4 Safety Officers: Supdt. Of Police
- 5 Liaison Officer: DFO & District Disaster Management Officer
- 6 Information & Media Officer: DIPRO
- 7 Operation Section Chief: Supdt. Of Police
 - a) Staging Area Manager: EE, PWD/DDSE
 - b) Rescue & Health Hazard:
 - i. Natural Disaster: Fire Officer
 - ii. Epidemic & Health Hazard: District Medical Officer
 - iii. Manmade Disasters: Dy. Supdt Of Police
 - c) Transport Branch (Road):
Rail. Water & Air Unit: District Transport Officer/EAC(Mv)
- 8 Planning Section Chief: Addl. Deputy Commissioner
 - a) Situation Unit: EAC/District Disaster Management Officer/OC Police station
 - b) Resource Unit: District Planning Officer/DHO & DAO/MO
 - c) Documentation Unit: DIPRO/DDMO/DIO(NIC)
 - d) Demobilization Unit: SDO (Sadar)/EAC(MV) Dy.Supdt. Of Police/DDMO/DTO-Foremen
- 9 Logistic Section Chief: Addl. Deputy Commissioner (Nazareth)
 - a) Service Branch: EAC, Nazareth
 - i. Communication Unit: DIPRO/DDMO/DIO NIC
 - ii. Medical Unit: DMO
 - iii. Food Unit: DF & CSO
 - b) Support Branch: SDO, Sadar/EAC
 - i. Resource Provisioning Unit: EE, PWD
 - ii. Facilities Unit: EE, RWD/Elect/HPD
 - iii. Ground Support Unit: EE, PHED/WRD
 - c) Finance Branch: ADC
 - i. Time Unit: EAC, Judicial/DDMO
 - ii. Compensation Unit: DDMO/EAC Judicial
 - iii. Procurement Unit: Finance & Accounts Officer/DDMO
 - iv. Cost Unit: Treasury Officer/DDMO

The District Level Incident Response Team (IRT) will be activated by the Responsible Officer in the event of any major disaster.

This will come into force with effect from the date of publication of this notification.


Chief Secretary
Government of Arunachal Pradesh
Itanagar

6.6 Response Activities

6.6.1 Warning

a. Most of the disasters except earthquake and fires can be predicted and the community likely to be affected forewarned about any impending disaster through a proper warning mechanism. Floods, droughts, cyclones, pest attacks, epidemics, industrial and chemical disasters are some of the disasters for which adequate warning can be given.

b. Disasters for which warning is not possible include earthquakes, landslide, dam bursts, thunder and lightning, fire, chemical and industrial disasters, and all accident-related disasters.

c. At the State level the following departments/ agencies (Table 35) are made responsible to issue warning in respect of disasters which usually affect the State.

Table 35: Departments/agencies responsible for issue of warnings during disasters

Type of Emergency	Agency
Earthquakes	SEOC/DEOC/Distt. Adm/ PWD/ DM / WRD/ PHED/ RWD/All Deptt. / Police Control Room (PCR)
Floods	WRD/DEOC/Distt. Adm/IMD/ CWC/ SEOC / PHED /PCR
Cyclones/Storms	DEOC /Distt. Adm/ IMD/ SEOC/PCR
Landslides	DEOC/ District Admin./UD/ GSI/ SEOC/ PWD/ RWD/ PHED/ All Deptt./PCR
Epidemics	Distt. Adm/DEOC/ Health Department/ PHED/SEOC
Biological Disaster	DEOC/District Admin/Health Department/ Home/SEOC/PCR
Drought/ Dry spells	DEOC/ District Admin/Agriculture Deptt/ Horticulture Deptt./SEOC
Pest Attacks	DEOC/District Admin./Agricultural Deptt/ Horticulture Deptt/SEOC.
Human induced Disaster	DEOC/District Admin/Home Deptt/ PCR/SEOC

d. Advanced technology like remote sensing, GIS, etc., have made predictions about imminent disasters, especially for weather and climate related ones more precise and reliable. It will be ensured that the state-of-the-art technology will be used for predictions. The State Govt. and DCs of the districts affected by floods will maintain regular contact with districts or neighboring states/ areas upstream for advance warning.

e. The warning should be given in clear and unambiguous terms at the earliest in vulnerable pockets in local languages/ dialects with clear advice of what the people should do before the impending emergency- whether they should stay indoors or get ready to evacuate.

f. Emphasis to be given on regular use of communication system during normal time to ensure that they are always functional and to publicize and update all the emergency telephone numbers. Warning to people through the Govt. field functionaries will be disseminated.

This system of alert may range from alarms (fires), sirens (industrial disaster), to public announcement systems like radio, television, cable T.V., loud speakers and traditional systems i.e., beating of drums etc. On receipt of warning, the district/block level machinery and the concerned departments at the State level will be systematically activated for response measures at the earliest.

g. De-Warning

In case the disaster does not occur as predicted, the responsible agency as per Table 35 will issue a de-warning. The de-warning will initiate the following:

- Dissemination of De-warnings by respective districts and blocks
- SEOC will revert to normal functioning.
- The specialized teams (defense/search and rescue/medical), QRTs shall also stand-down.
- Material resources may be returned/stored back.

6.7 Evacuation

6.7.1 Definition

Evacuation is the planned relocation of persons from dangerous or potentially dangerous areas to safer areas and eventual return.

6.7.2 Legal and Operational Considerations

The decision to order evacuation rests with the DDMA/ Deputy Commissioners on the basis of advice from CO/ BDO, police and other experts, unless time constraints prevent this consultation. Once the decision is made, the CO/BDO and the local Police will be responsible for carrying out the evacuation process.

6.7.3 Evacuation Process

Evacuated people are taken or directed to a place of relative safety, usually to an identified shelter or an emergency relief centre as per the Village/Block disaster management plans.

CO/ BDOs/ OCs, Police Station will be responsible to ensure the registration of the evacuated people. Emergency relief will be provided to evacuees as needed. They

will remain at the centre or in other emergency shelters until the danger is over and it is safe for them to return home. The evacuation process includes the returning of evacuees to their homes. In situations when evacuated persons have to remain away from home for an extended period, temporary accommodations may be necessary. This will be managed under the DDMA/District Administration.

6.7.3.1 Operating Procedures for evacuation

- Shelter sites will be identified by District Administration in consultation with the local administration ensuring safety of all concerns.
- Alternate routes to be identified /planned well in advance.
- For appropriate security and law and order, evacuation will be carried out with assistance from police, fire brigade, local community leaders and NGOs/CBOs working in the community.

Care will be taken to ensure the following:

- To evacuate the entire family together as a unit as far as possible.
- In view of inadequate transport or limited time, encourage community emergency evacuation in the following order:
 1. Seriously injured and sick
 2. Children, women and physically challenged
 3. Old
 4. Others

6.7.3.2 Evacuation of marooned persons

Even with all the measures taken for early warning and evacuation, there may not be adequate time or opportunity for evacuating all persons. Some may be marooned and, in such cases,

- Evacuation must be carried out within the shortest possible time.
- The marooned persons have to be transferred to the transit camps.
- Emergency transport for the seriously injured persons by appropriate means to be ensured.
- A senior medical officer to accompany the rescue team as far as practicable.
- Marooned persons to be provided with water, medicines, first-aid and cooked food/ dry food.
- Pregnant women/lactating mother/infants/old and sick to be given top priority.

6.7.3.3 Do's & Don'ts for Public

Families will be encouraged to take adequate supplies of water, food, clothing and other emergency items. People will be advised to

- Shut off electrical switches, gas appliances.
- Secure their homes. Close and lock their doors and windows.
- Leave early enough to avoid being trapped.
- Follow recommended evacuation routes.
- Stay away from broken / fallen power lines.
- Set the livestock free.

The families will be encouraged to assemble the following items in their disaster supplies kit, which they will carry when evacuating:

- Adequate supply of safe water in closed unbreakable containers.
- Adequate supply of non-perishable, dry ration.
- Extra clothes and rain gear.
- Blankets, plates and glasses.
- Toiletries.
- A battery powered radio, torch, lantern, and matches.
- Cash, jewellery, medicines, important documents.
- Food and prescribed medicine, if any, for infant and people needing special care.

6.7.4 Emergency relief

This section covers the provision of emergency relief to persons affected in disaster.

- a. The State Govt. will specify minimum standards of relief from time to time and legal provisions will be made to ensure that all Depts./Agencies adhere to the specified standards. These will also be incorporation in guidelines for special care and provisions for children, pregnant women, lactating mothers, physically challenged, elders and sick persons.
- b. The District IRTs/ DDMA will be responsible for coordinating emergency relief at the local level. The relief function roles of the chosen/ designated agencies for food relief, emergency relief centres and material need at the local level will be designated in the District Disaster Management Plan. Should the event exceed the capacity of the

specified committee to perform this function, the CO/ BDO through the DC will arrange for the State or District Authorities to assume coordination.

c. If the magnitude of disaster is very great and assistance from outside the State is required then co-ordination of relief operations assumes significance. The State level IRTs will be activated. The flow of materials and manpower from outside will be coordinated by the State IRTs/ SEC, who will organize the Arrival point for flow of such assistance.

i. The SEC will activate the nearest Airport, Rail Head and Bus Terminal and Information & Arrival Centres which will be manned by State Level IRTs. These will be the key points for arrival and dispatch of relief materials and rescue workers. The incoming assets from outside the State will be clearly allotted and assigned to various disaster sites by these Centers. At these centers there will be provision for: -

Storage: Storage facility at the arrival point where material is categorized and if needed, packed for dispatch will be established.

Briefing cell: This cell will give specific briefing for different types of field workers.

Donation Management Cell: At the arrival point, the donations (in kind) from other states and international agencies are packed and readied for further distribution.

ii. The services of **Resident Commissioner** will be utilized in indicating to outside agencies about the type of relief material/personnel required and the place of collection of the relief material/personnel.

iii. **Precaution:** Arrangement shall be made to ensure that no donor whether National or International, NGOs/INGOs should operate independently, without the prior intimation to and the approval of the State/District Administration regarding their type of support and area of operation. This will help to avoid duplication and other administrative related issues/complications.

6.7.5 Emergency Operations Centre (EOC)

Emergency Operation Centres (EOC) is a physical location and normally includes the space, facilities and protection necessary for communication, collaboration, coordination and emergency information management.

The EOCs will be the hub of activity in a disaster situation. This is however, not to underestimate its normal time activities. The EOCs, the key organizational structure, is flexible to expand when demand increases, and contracts when the situation comes to normal.

6.7.6 Activation of EOC

The EOC is a Nodal Point for the overall coordination and control of relief work. In case of an L₁ Disaster the DEOC will be activated, in case of an L₂ disaster SEOC will be activated along with the DEOC.

The primary function of an EOC

- Receive, monitor, and assess disaster information.
- Keep track of available resources.
- Monitor, assess, and track response units and resource requests.
- Manage resource deployment for optimal usage.
- Make policy decisions and proclaim local emergencies as needed.
- Provide direction and management for EOC operations through Standard Operations Guide (SOG), set priorities and establish strategies.
- Coordinate operations of all responding units, including law enforcement, fire, medical, logistics etc.
- Augment comprehensive emergency communication from EOC to any field operation when needed or appropriate.
- Maintain EOC security and access control.
- Provide recovery assistance in response to the situations and available resources
- Keep senior, subordinate and tenant officials informed.
- Keep local jurisdictions (Village/town/City, district and State) informed.
- Operate a message centre log and post all key disaster information.
- Develop and disseminate public information warnings and instructions.
- Provide information to the news media.
- Manage donation / aids.

6.7.7 Command & Control of EOCs

The EOC, its system, and procedures are designed in such a way that information can be promptly assessed and relayed to concerned parties. Immediate dissemination of information contributes to quick response and effective decision-making during emergency. Being the main coordination and control point for all disaster specific efforts, the EOC is the place of decision-making under a unified command.

The EOC in normal circumstances will work under the supervision of SEC at the State level and under the Deputy Commissioner at the district level. It is the nerve centre to support, co-ordinate and monitor the disaster management activities at the district level. In a disaster situation, the EOC will come under the direct control of Chief Secretary or any other person designated by the Chief Secretary as Chief of Operations.

6.8 Emergency Operation Centre [EOC]

6.8.1 EOC at the State Level

The SEC headed by Chief Secretary at the State level & DC at the district level or his/her designee will initiate the activation of emergency services of the EOC. The EOC will be manned by a skeleton staff throughout the year. In the event of emergency, it will be fully activated with participants from key departments like Health, Agriculture, Veterinary, Police, Civil Defence etc., apart from the personnel belonging to the Disaster Management Department (members of IRTs). The Chief Secretary / DC will announce the alternative location in case the State/District EOC is affected by any eventuality/ emergency. Nodal officers of various departments posted at the EOCs will be responsible for maintaining communications through radio/telephone/mobiles/any other means of communication with their respective departments at the District and Block levels. The SEC/DDMA will requisite staff as required for effective functioning of the EOCs during the time of emergencies

6.8.2 Organizational set up of EOC

EOC in charge: While the SEC will be overall in charge of the EOC, the day-to-day operations of the EOC will vest with an official in charge from the Department of Disaster Management and will be responsible for assisting the SEC and the Nodal Officers of other departments and members of IRTs for overall coordination and

effective functioning of the EOC. Similar arrangement will be made by DC in the district EOCs.

The State Government will take steps for establishing EOCs as per MHA, GoI, guidelines in State and District H.Q., where all the Emergency Support Functions (ESFs) will be located during emergencies.

6.8.3 Communication Section:

The hotlines, V-SAT and wireless communication will be established at the EOCs at the State level with the following:

- Chief Minister
- Chief Secretary
- DG Police
- Deputy Commissioner
- Local Army and Air force Command
- Related Departments (Primary Agencies)
- Information and arrival point at the State
- Information and arrival point at the affected Districts

6.9 Tasks for all EOCs

- Determine policies during disaster and post disaster period.
- Adjudicate conflicting, claims and /or request for emergency personnel, equipment, and other resources.
- Designate responsibilities and duties, as necessary to maintain the optimal use of resources.
- Provide operating units with requested resources for sustained operations
Maintain documentation of resource allocation and availability.

6.10 Alert Mechanism – Early Warning

On the receipt of warning or alert from any such agency which is competent to issue such a warning, or based on reports from District Collector of the occurrence of a disaster, the response structure of the State Government will be put into operation. The Chief Secretary will assume the role of the Responsible Officer and activate the State level IRTs during the emergency.

6.11 Co-ordinational roles of disaster management key officials

6.11.1 Action by SEC when a disaster is imminent/strikes.

6.11.1.1 When the Incident Response System (IRS)/ Incident Response Teams (IRTs) are adopted in the administrative system;

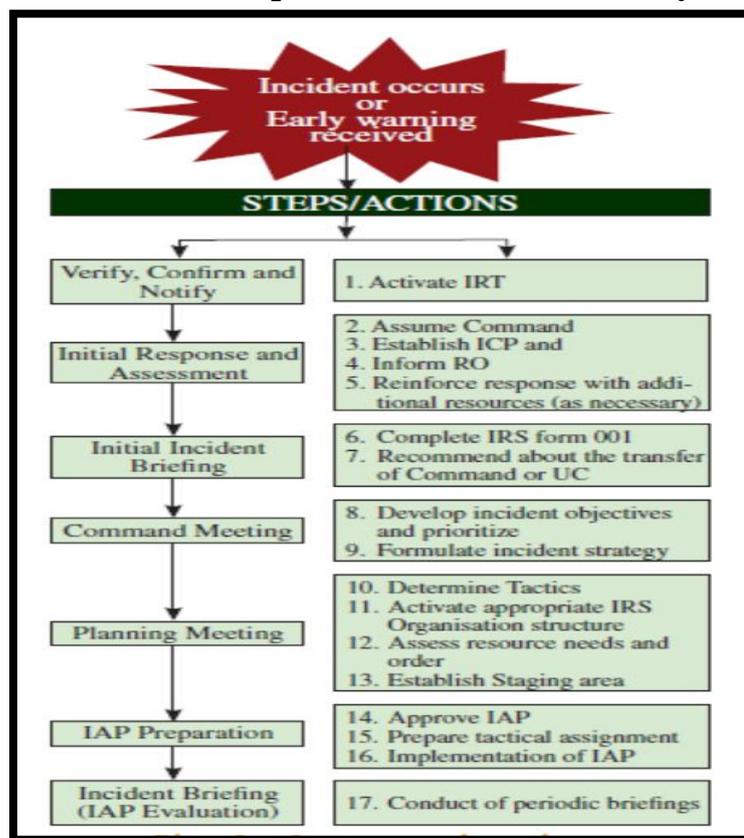


Figure 17: Steps and Action for Response

OR

Procedure to be adopted till the Incident Response System (IRS)/ Incident Response Teams (IRTs) are implemented in the administrative setup;

Once the alert stage has been activated or disaster has struck, within the first two hours of the event a meeting of SEC will be held in any location/ office as decided by the Competent Authority to;

- 1) Review the situation.
- 2) Official declaration of disaster/emergency.
- 3) Prepare a factual status report to Government with recommendations.
- 4) Meeting of the State Committees.
- 5) Appraisal of situation to the SDMA/State cabinet.
- 6) Ensure activation of Emergency Operations Centres (EOCs), at State & Districts concerned (The role of functions of EOC is as per Annexure 5).

2) The following activities will be initiated parallel to the SEC meeting;

- Briefing of officers of the concerned Departments/Nodal Officers for each ESF arranging for all required inventories from the concerned Departments.
- It will be ensured that all officers remain in headquarters/respective locations until the situation gets back to normal. No one will leave their location without obtaining prior permission from the Competent Authority.
- Departure of first assessment team.
- Arrange Damage assessment {Report as per lines suggested in Annexure 2}
- Departure of first search and rescue team with NDRF/SDRF/specialized teams/army personnel, if required.
- Arrange for reconnaissance flights and army assistance, if required.

3) The Secretaries of concerned Depts. involved in ESF will meet as often as necessary under the Chairmanship of SEC / Designated officers and be responsible for the following:

- Ensure that the officers of concerned Departments immediately inspect the affected area and take appropriate protective and restorative action within the ambit of their budgetary provisions.
- Assessment of relief materials required will be made. Stock piling of relief materials/ Medicine, ORS packets/Essentials items etc., at strategic points will be ensured. Take decisions on more resources and relief material that may be required. Identify the nodal transport points for the affected Districts.
- Send specialized teams to priority areas.
- Review the actions taken for clearance of roads for movement of traffic, rescue of and relief to the marooned people, disposal of dead bodies and carcasses, restoration of communication, power and drinking water.
- Establishment of communication with the district and block and ensuring regular flow of information. Regular contact with all control rooms to be maintained. Set up information desks at critical locations.
- Latitude-longitude book will be kept handy for identifying the probable air dropping zones and preparation of an advanced list of villages where air droppings may be needed will be made available.
- Spare copies of block maps will be kept ready.

- Document the resources (manpower and material) support that has already been dispatched to the affected area.
- Civil society organizations will be alerted and a plan of action for working in coordination with Govt. functionaries will be drawn up.
- Emergency meeting of important NGOs/CBOs will be convened and clear indications will be given about their expected role.
- Submission of preliminary and final damage reports of the circumstance as well as loss sustained.
- Briefing of Press at regular intervals.

6.11.2 Action by DDMA/DEPUTY COMMISSIONER when a disaster is imminent/strikes.

6.11.2.1 Procedure to be adopted till the Incident Response System (IRS)/ Incident Response Teams (IRTs) are implemented in the administrative setup;

The Deputy Commissioner will be the Response Coordinator at the district level. He will be responsible for the effective coordination of resources or services within the district and also report to SEC/ Concerned Authority.

The response roles, responsibilities and duties of the District Response Coordinator are:

- Operationalize the E.O.C. (As per Annexure 4)
- Undertake assessment of situation.
- Co-ordinate with ESF Depts. / Agencies for provision of emergency relief and supply.
- Ensure that consideration has been given to;
 - Alerting the public to existing and potential dangers arising from serious emergency
 - The need for evacuation
 - Other public information
- Review and dispatch situation reports to the SEC/ Concerned Authority.
- In an emergency, arrange to provide requested resources to the CO/ BDOs from:
 - Within the District
 - Outside the District through the SEC/Concerned Authority
- In the event of uncertainty, determine which agency is to perform its statutory response role within the district or within a specified area of the District, where more than one agency / department is empowered to perform similar role.

- In the event of imminent disaster or the event occurring He/ She will take following action:
- Set up information desks at critical locations.
 - Concerned officers in Disaster Management, Public Health, Agriculture, Veterinary, Police, Power, Telecom, PWD, RD, RWD, PHED, Food & Civil Supply, Transport and other Depts. to be called to fulfill their respective ESF function.
 - Concerned departments will be directed to get ready with emergency tool kits and necessary personnel.
 - It will be ensured that all officers remain in headquarters until the situation gets back to normal. No one will leave their location without obtaining prior permission from the Competent Authority.
 - Arrangements for generators, radios, batteries, extra vehicles, Satellite telephones etc.
 - Assessment of relief materials required will be made.
 - Adequate fuel for generators and vehicles.
 - Availability of food /kerosene etc., at block/ circle headquarters/affected locations, storage agents and other inaccessible pockets.
 - Stock piling of relief materials/ ORS packets at strategic points.
 - Private stockiest/ wholesalers and godowns will be directed to remain open till the situation gets back to normal.
 - Adequate number of small, medium and heavy vehicles will be immediately requisitioned and kept in readiness.
 - If necessary, boats / elephants etc., will be requisitioned. Availability of vaccines and fodder stock with the veterinary department.
 - A rapid assessment of the medicines, bleaching powders and halogen tables will be made and if necessary, more will be requisitioned immediately.
 - Start movement of medicines to hospitals, other points lacking adequate stock.
 - If needed, all the educational institutions will be closed.
 - Latitude and longitude book will be kept handy for identifying the probable air dropping zones and preparation of a list of villages where air droppings may be needed (List of helipads/landing grounds in Arunachal Pradesh is attached in Annexure 6).

- Spare copies of block maps will be kept ready.
- Civil society organizations will be alerted and a plan of action for working in coordination with Govt. functionaries will be drawn up.
- After quick review of the preparations taken, emergency meeting of important officials and non-Govt. agencies will be convened and clear instructions will be given about their expected role.
 1. Arrangements for evacuation.
 2. Registration of persons evacuated or otherwise affected.
 3. Provision of relief needs of evacuees where ever necessary.
- All search and rescue agencies and volunteers to be pressed into service.
 1. Provision of medical treatment / first aid.
 2. Fact gathering for inquests or judicial inquiries.
 3. Maintenance of law & order.
 4. Briefing the press at regular intervals.
 5. Maintenance of proper records.
 6. Demobilization.

6.11.3 Action by the Sub-Divisional Magistrate/ Block Development Officer

The ADC/SDM/SDO/ BDO/ Circle Officer will be the Emergency Response Coordinator at the sub-division/ block level/ Circle level. The responsibilities and duties of the Sub-Division/ Block/ Circle Coordinator will be to:

- Ensure that immediate relief provisions are available and their movement activated in the event of an emergency.
- Regularly apprise the District Disaster Management Authority/Deputy Commissioner, if the emergency cannot be controlled within the available resources.

On occurrence of an emergency, he/she will take following action:

- Arrangements for generators, radios, batteries, extra vehicles, satellite telephones etc., to meet emergency situation will be made.
- Adequate fuel for generators and vehicles will be arranged.
- Godown for storage of relief materials and parking places for trucks carrying relief materials will be identified and inspected.
- Availability of food and kerosene at respective headquarters, storage agents and other inaccessible pockets will be checked.

- Private stockiest/ wholesalers and godowns will be directed to remain open till the situation gets back to normal.
- Stock piling of relief materials/ ORS packets/ essential items at strategic points will be ensured.
- A rapid assessment of the medicines, bleaching powders and halogen tables will be made and if necessary, more will be requisitioned immediately.
- Start movement of medicines to hospitals, other points lacking adequate stock.
- Location of sites for operation of camps will be identified.
- Adequate number of small, medium and heavy vehicles will be immediately requisitioned and kept in readiness.
- Position of boats/JCBs already deployed will be assessed and if necessary additional boats /JCBs will be requisitioned.
- Assessment of vaccines and fodder stock available with the veterinary department will be made.
- Lat-long book will be kept handy for identifying the probable air dropping zones and preparation of an advanced list of villages where air droppings may be needed will be made available.
- Necessary arrangements for evacuation will be made.
- All search and rescue agencies and volunteers will be alerted/ pressed into service
- Provision of medical treatment / first aid.
- Registration of persons evacuated or otherwise affected.
- Provision of relief needs of evacuees, where necessary.
- Maintenance of law & order.
- Fact gathering for inquests or judicial inquiries.
- Maintenance of proper records.

6.12 Emergency Support Functions (ESFs) in managing response to disaster

The ESFs, comprising of various supporting Agencies/Depts. will manage and coordinate specific kinds of assistance, which are common to all types of disasters. For each ESF there will be a lead Department or Agency responsible for the delivery of goods and services to the disaster area. These lead agencies could be supported by a number of other department/agencies.

The proposed agencies performing the ESFs will identify requirements, mobilize and deploy resources to the affected areas and assist the districts/ affected areas in their response action under ESFs.

The ESFs will come into operation on either receipt of warning of an expected calamity or in the event of a sudden emergency.

The responsibilities, initial activities on receipt of warning and minimum standards for each ESF are given in Table 36. The details of the primary and support agencies for each type of ESF are given below in Table 37 .

Table 36: The responsibilities, initial activities on receipt of warning and minimum standards for each ESF

1-Early warning	<ul style="list-style-type: none"> • Setting up Control Room/ Emergency Operation Centre round the clock • Arrangement of vehicle and sound system for information dissemination • Proper record keeping and transmission of information to all the level • Ensure functioning of warning system & communication systems • Create awareness with the target groups
2-Evacuation	<ul style="list-style-type: none"> • To warn people about the impending danger & to leave for safer places. Mobilize people to go to identified/safer shelter • Organize trained task force members • To co-ordinate with Civil Defence/NGOs/CBOs/Rajya Sainik Board/Police/SDRF/NDRF/Army etc., for support. • Arrangement of boats/vehicles/elephants etc., for evacuation • Deployment of Boats/Elephants/Vehicles for evacuation • Evacuate people of marooned areas and administer emergent relief • Deployment of police for maintaining law & order & peace keeping during evacuation
3-Search and Rescue	<ul style="list-style-type: none"> • Deployment of Police/Fire and Emergency Services/ SDRF/NDRF/Army etc for search and rescue • Co-ordination with the NCC/ NSS/ Civil Defense/ Rajya Sainik Board etc. for rescue operation • Ensure availability of the rescue materials • Prepare inventory of shelter places and map indicating the shelter centres • Provide & arrange Rescue kit at risk areas

<p>4-Medical aid</p>	<ul style="list-style-type: none"> • Deployment of Medical staff • Stock piling of Life saving drugs/ORS packets/Halogen tablets. • Protocol on medical aid • Treatment of the injured persons and Transportation of the injured to hospitals. • Awareness message to stop the outbreak of epidemics • Disease surveillance and transmission of reports to the higher authorities on a daily basis • Vaccination • Constitute mobile teams and visit the worst affected areas • Disinfections of Drinking water sources • Identification of site operation camps • To obtain/transmit information on natural calamities to District Emergency Operation Centres • Advance inoculation programme in the flood/Cyclone prone areas. • Arrangement of corpse disposal • Arrangement of fodder/medicines for the animal's vaccination, site operation camps, Carcasses disposal
<p>5-Shelter Management</p>	<ul style="list-style-type: none"> • Identification of Shelter/Temporary shelter at appropriate places and arrangement of tents etc • Arrangement of Food/Drinking water/Medicine etc., in the shelter places • Arrangement of transportation • Arrangement for safe shelter for animals • Providing the lighting facilities at shelter places • Deployment of Police Personnel • Temporary supply of safe drinking water
<p>6-Emergent Relief/Free Kitchen Operation</p>	<ul style="list-style-type: none"> • Deployment of vehicle • Procurement and transportation of Relief materials to affected pockets/areas • Provision of kitchen in the shelter camps & affected areas • Assigning of free kitchen in the shelter camps & affected areas • Assigning responsibilities to officials for distribution of emergent relief/running of free kitchen • Coordinating with the NGOs/Other voluntary organization & PSUs / UNDP/ REDCROSS etc for continuing Relief Operation • Monitoring
<p>7- Water Supply and Sanitation</p>	<ul style="list-style-type: none"> • Ensuring supply of safe drinking water arrangement for supply of safe drinking water

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

	<ul style="list-style-type: none"> Disinfectant for purification of water Arrangement of mobile team and assigning specific operational area for supply of water Involvement of volunteers/village level workers in inaccessible pockets for health /sanitation awareness campaign
8- Infrastructure Restoration	<ul style="list-style-type: none"> Formation of task force with specific equipment Assigning responsibilities for specific areas Emergency cleaning of debris to enable reconnaissance Coordinate road-cleaning activities to assist relief work Begin clearing roads, assemble casual labour provide a work team carrying emergency tool kits Towing vehicles, Earth moving equipment, cranes, construct temporary roads Keep National & other Highways clear from disaster effects. Damage assessment & Monitoring

Table 37: The details of the primary and support agencies for each type of ESF

ESF No.	Service Function	Primary Agency	Support Agencies	Nodal Agencies
1	Communication	Police Dist. Admin	S.P. Signals Doordarshan All India Radio BSNL IMD Private Mobile Operators SDRF/NDRF/Army etc	SDMA SEC DDMA
2	Public Health	Department of Health and Family Welfare Dist. Admin	SDRF/NDRF /Army NGOs/CBOs (Health) Dept of Transport PHED Civil Aviation etc	SDMA SEC DDMA
3	Transport	Department of Transport Dist. Admin	Home Department SDRF/NDRF/Army etc Civil Aviation Pvt. Association of Buses/Auto/Taxis etc	SDMA SEC DDMA
4	Power	Department of Power Dist.Admin	SDRF/NDRF /Army Public/Private Power Sectors	SDMA SEC DDMA
5	Search and Rescue, Evacuation	Police Dist. Admin	Fire &Emergency Services Concerned Depts. SDRF/NDRF/Army etc NGOs/CBOs/Volunteers etc, Civil Aviation	SDMA SEC DDMA
6	Restoration of Infrastructure	Public Works Department Dist. Admin	All works / Engg. Depts. Public/Private Construction Agencies etc	SDMA SEC DDMA

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

7	Relief Supplies and Food	Dept. of Food & Civil Supplies Dist. Admin.	Dept. of Transport Civil Aviation Dept. of Social Welfare All Concerned Depts. SDRF/NDRF/Army etc NGOs/CBOs etc	SDMA SEC DDMA
8	Water Supply and Sanitation	PHED Dist. Admin	Health WRD SDRF/NDRF/Army etc NGOs/CBOs etc	SDMA SEC DDMA
9	Animal Health	Dept. of Animal Husbandry & Vety. Dist. Admin	Dept. of Transport NGOs/CBOs etc	SDMA SEC DDMA
10	Shelter	PWD Dist.Admin	Urban Dev & Housing Town Planning (Municipality) Panchayat(PRIs) RD NGOs/CBOs etc	SDMA SEC DDMA
11	Media	IPR Dist. Admin	DM Dept.	SDMA SEC DDMA
12	Law & Order	Home Department Dist.Admin.	General Admin &DA SDRF/NDRF/Army etc	SDMA SEC DDMA
13	Damage Assessment	Dist. Admin Dept. of DM	All concerned Depts.	SDMA SEC DDMA

Table 38: Role and Responsibility of Government Departments/ Stakeholders

Department / Agency	Roles and Responsibilities
Agriculture	<ul style="list-style-type: none"> • Establishing coordination in implementing and providing technological know-how on drought management to the farming community through agricultural extension services • Create assured irrigation facilities and availability of water to the agricultural fields • Continue educating farmers on soil and water conservation technologies through implementation of watershed projects and know-how of drought resistant crops • Drought tracking and communication outreach • Implementing calamity (like flood, drought etc.) relief programmes • Conduct damage to crops and allied infrastructure in case of disaster • Increase in agricultural production of the State by introduction of high yielding variety crops with the help of agriculture extension services, thereby contributing to food security of the State
Animal Husbandry and Veterinary	<ul style="list-style-type: none"> • Disease control

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

	<ul style="list-style-type: none"> • Undertake fodder assessment and develop contingency plan in case of drought or drought like conditions • Conduct assessment of damage and economic loss due to disasters
Education	<ul style="list-style-type: none"> • Incorporate disaster management into education curriculum of schools • Maintain and ensure school facilities across the state which can stand safe from known hazard risks, and they continue to function in post-disaster environment • Identify/Designate school buildings and infrastructure for providing shelter during emergency situations. Ensure necessary facilities are built in to cater support to the evacuated • Direct and monitor preparation of School DM Plan across the state • Undertake training and capacity building initiatives and develop a resource pool of teachers and students trained in DM • Ensure regular mock drills
Environment and Forests	<ul style="list-style-type: none"> • Undertake effective forest management practices • Check erosion and management of environment infrastructure of the state • Protection and sustainable use of natural resources • Safeguard the forest and wildlife of the State • Environment Education • Support income generation activities under JFM scheme • Forest fire prevention and assessment of damages
Fire & Emergency Services	<ul style="list-style-type: none"> ▪ Fire Fighting in case of fire accidents ▪ To save life & property of all citizens in case of fire hazards and in other natural calamities. ▪ Awareness on fire prevention & protection of all buildings, industries, commercial & public places etc. ▪ Inspection of all high-rise buildings & other establishments & assess their fire preventive & preparedness & effectiveness of firefighting equipment installed by the owners from time to time ▪ Law & order duty with local police at <i>mela</i> or any large-scale meetings & functions ▪ To raise public awareness and conduct periodical training programmes from time to time and to organize demonstrations showing rescue operation during the fire & other natural calamities etc. to educate the general public
Finance	<ul style="list-style-type: none"> • Support towards making provisions for establishing State Disaster/Hazard Mitigation Fund

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

	<ul style="list-style-type: none"> • Arrange necessary funds in case of disaster • Direct development planning activities/schemes to incorporate or build-in safety nets/mitigation measures
Fisheries	<ul style="list-style-type: none"> • To increase fish and fish seeds production in the state and contribute to the overall food security in the State • Undertake activities to address risk mitigation within the fishery sector, including the processing industries for Pre-During –Post disaster
Food & Civil Supplies	<ul style="list-style-type: none"> • Maintain adequate stock of food supplies and provide food security in the State • Identify supply of food needs to be dispatched in case of declaration of disaster • Build reserve stock of supplies in most vulnerable and difficult to access regions of the state • Coordinate / Manage transportation of essential supplies to communities at risk, or in post-disaster situations • Enforcement of law and Rules relating to trading of essential commodities especially in post-disaster situations or drought like scenario
General Administration	<ul style="list-style-type: none"> • Handle all protocol matters of VVIPs/ VIPs to disaster affected areas • Assist the SDMA/SEC/Dept of DM/ DDMA/ Dist.Admin/ concerned Dept. as and when required. • Assess all key Government buildings (residential/nonresidential) in the state are hazard resilient
Health and Family Welfare	<ul style="list-style-type: none"> ▪ Provide health and medical care in normal and disaster situations ▪ Develop adequate health infrastructure in the state and implement programmes towards improvement of health across all sections of the society ▪ Deployment of medical response team in case of health emergency or disaster ▪ Coordinate and transport necessary medical supplies to disaster prone areas ▪ Undertake activities towards preparation of Hospital Contingency Plan for all major hospitals across the state ▪ Conduct vulnerability assessment of all health facilities across the state and undertake preparedness and mitigation measures ▪ Prepare mass casualty plan for the state (earthquake hazard, floods, epidemics etc)

	<ul style="list-style-type: none"> ▪ Maintain ambulance network and networking among medical practitioners /medical institutions to facilitate quick mobility of doctors in rural areas (normal/emergency situation) ▪ Undertake efforts and develop networking of hospitals for special care/mass casualty care networking arrangement ▪ Conduct first-aid training programmes with support of line departments/agencies of the state
Home	<ul style="list-style-type: none"> ▪ Providing security to the state during normal and in disaster situation ▪ Assisting the Civil Administration in times of disaster ▪ Establishment and training of Home Guards and Civil Defence ▪ Help Police Administration in maintaining General law & order as well as control of crime ▪ Fire Safety and Security to individuals and public properties ▪ Training of Fire Services Officers ▪ Emergency assistance in disasters ▪ Primary agency to handle Nuclear Biological Chemical[NBC] events/disasters ▪ Management of the dead ▪ Emergency communication
Industries & Commerce	<ul style="list-style-type: none"> ▪ Responsible for safe industrial development in the state ▪ Undertake steps towards management of risks posed by industries (Chemical hazard release/ technological accidents, human caused failure/ transportation of raw or finished products) ▪ Guide the industries towards establishment of On-Site/ Off- Site Plans, Hazard specific contingency plans (earthquakes and floods in particular), Business Continuity Plan ▪ Establish mechanism for capacity building and training of industry personnel in disaster management
Information & Public Relations	<ul style="list-style-type: none"> ▪ Organize various exercises to generate public awareness ▪ Broadcasting of official announcement needing immediate public attention ▪ Dissemination of official news for Pre- During-Post disaster to print and electronic media ▪ Disseminate early warning to communities at risk (in association with warning protocol institutions) ▪ Bring out publications concerning public welfare ▪ Disaster education and awareness ▪ Collect reliable statistics of damage and needs during post-disaster operations

Information Technology	<ul style="list-style-type: none"> ▪ Development of disaster resilient ICT in the State ▪ Support development of ICT intervention in DM ▪ Undertake activities towards IT disaster recovery for disasters, protection of important data at all levels
Panchayat & Rural Development	<ul style="list-style-type: none"> ▪ Responsible for development activities in the rural areas ▪ Identify the area liable to threat/damage from local hazards ▪ Form key committees of the youth/villagers in the village or cluster of villages to address DM (mainstreaming disaster risk reduction in development and emergency response) ▪ Equip the volunteers in terms with basic tools and knowledge to address and monitor hazard risks ▪ Encourage regular mock drill /practices etc. ▪ Facilitate the mechanism of passing resolutions by Gram Panchayat for disaster preparedness ▪ Ensure/Monitor steps are taken to include the most unprivileged set of people, especially women, adolescent children, pregnant women, old and infirm, physically/mentally challenge etc.
Planning/ Finance	<ul style="list-style-type: none"> ▪ Responsible for formulation and implementation of the state plan schemes, incorporation of DRR concerns in all schemes ▪ The Department maintains vertical relation with the Centre and horizontal relation with the line departments of the State (in respect of formation, implementation and review as well as maintenance/reporting of records on physical progress and financial achievement) ▪ Department prepares draft Annual Plans and Five Year Plans as per the guidelines of the Centre and as per needs and aspirations of the people/State. Department to lay emphasis on mitigation and preparedness in all developmental schemes ▪ Facilitate provision towards mainstreaming DRR in all State Plan Schemes ▪ Ensure utilization of resources take into consideration of DM concerns, enabling to create durable/long lasting assets
Public Health Engineering	<ul style="list-style-type: none"> ▪ Nodal department of the State Government entrusted with the responsibilities of providing safe drinking water to the people of Arunachal Pradesh ▪ Responsible for ensuring safe hygiene through Total Sanitation Campaign (TSC) ▪ Providing safe drinking water to all the schools and other institutions located in urban/ rural areas

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

	<ul style="list-style-type: none"> ▪ Provide emergency supply of safe drinking water in disaster situations ▪ Assess the impacts of extreme events (natural and man-induced) on facilities of the department and propose/undertake mitigation measures ▪ Undertake risk assessment and management of ground water resources in emergency situations
Public Work	<ul style="list-style-type: none"> ▪ Develop infrastructure of transport & communication across the state ▪ Construction and repair of road, bridges, culverts in the state including construction and repair /restoration of public buildings of the state ▪ Keep infrastructure in operational condition, facilitate the movement of goods and services, emergency supplies ▪ Undertake prevention / protection / structural rehabilitation / retrofitting measures of critical infrastructures or connectivity links ▪ Undertake emergency repairs/restoration ▪ Provide regular capacity building/ training for staff to undertake vulnerability assessment of critical lifelines, develop mitigation options ▪ Ensure design and construction of buildings are in compliance to Indian Construction Codes of Practice (BIS)
Power	<ul style="list-style-type: none"> • Coordinate development of the power sector in the state • Provide adequate and quality power to the people and consumers during normal times and as well as during the period of disaster • Undertake risk assessment of the lifeline infrastructure (generation/ transmission /distribution systems etc) to hazard risks and address through mitigation measures • Carry out disaster management activities pertaining to the sector through Dept. of Power • Prepare disaster/hazard specific contingency plan
Science and Technology	<ul style="list-style-type: none"> ▪ Draw upon subordinate organizations on technical and scientific knowledge support to address DM concerns in the State
Social Welfare	<ul style="list-style-type: none"> ▪ Ensure proper care of the uncared (Women/Child/ Vulnerable Groups/Old Aged/ Weaker sections/ physically challenged etc.) ▪ Protection of the most vulnerable sections of the society and creation of an environment which is conducive to the all round development of children, women and physically challenged persons ▪ Integrate DM concerns in the ongoing welfare development schemes in the State

	<ul style="list-style-type: none"> ▪ Develop social safety nets taking into consideration of the hazard risks in the region where the welfare schemes are under implementation
Sports and Youth Welfare	<ul style="list-style-type: none"> ▪ Training of NCC, /NSS Volunteers / youth etc in disaster management ▪ Conduct of awareness programme in the State ▪ Integrate DM into the activity forum
Tourism	<ul style="list-style-type: none"> ▪ Undertake protection and response planning measures at all tourist destinations of the State ▪ Establish mechanism to address distress call of foreign and Indian nationals ▪ Liaison with departments responsible for protection of cultural heritage properties from hazard risks / disasters ▪ To keep record of all tourists (Domestic/International) visiting the state
Department of Transport	<ul style="list-style-type: none"> ▪ Ensure functioning of Mainland and Inland Water Transport (ferry/cargo/commercial/ passenger services etc) across the State ▪ Road safety (Accident prevention) ▪ Education and awareness ▪ Arrange vehicles for transport of people and relief supplies, navigation aid
Urban Development & Housing	<ul style="list-style-type: none"> ▪ Implementation of development schemes (services) ▪ Up-gradation of services in cities and towns ▪ Construction of disaster resilient buildings ▪ Implementation of techno-legal regime in all development schemes ▪ Monitoring/Enforcement mechanism to ensure earthquake resistant design and construction of buildings, including third party audit for high-rise buildings ▪ Training and capacity building of engineer/masons etc.
Water Resource Dept.	<ul style="list-style-type: none"> ▪ Flood and erosion management ▪ Construction/strengthening/maintenance of embankment

6.13 Standard Operation Procedures

6.13.1 General Preparedness:

Each Department and Govt. agency involved in Disaster Management and mitigation will:

- Designate a Nodal officer for emergency response who will act as the contact person for that department / agency.

- Ensure establishment of failsafe two-way communication with the State, District and other emergency control rooms and within the organization.
- Emphasis on communication systems used regularly in normal times with more focus on the use of VHF's with automatic repeaters, mobile phones with publicized numbers, HF radio sets etc. It should be remembered that SAT phones fail during prolonged emergencies and electric failure if the phones cannot be re-charged.

All agencies will work under the overall supervision of the SEC / the district Collectors during emergencies.

6.13.2 Department of Home

6.13.2.1 Advance Preparedness

- Establishment of State Disaster Response Force and regular conduct of training activities.
- Conduct scenario exercises / table-top exercises / full scale exercises to determine the state of preparedness of key response institutions and provide feedback for improvement.
- Ensure operational readiness of the key units functional within the Home Department.
- Strengthen firefighting capability of State and initiate backing up the Fire and Emergency Services with Paramedics Unit.
- Develop fail safe emergency communication plan and initiate measures to reach out to distant communities situated in high altitude or inaccessible areas.
- Ensure that all Response Forces/First Responders are housed in structurally safe buildings and are backed with adequate tools to stage full scale response.
- Undertake vulnerability assessment of all facilities and initiate mitigation actions.
- Maintain line of communication as per the protocol.

6.13.2.2 During/Post-Disaster

- Mobilize response teams to hazard prone locations based on the warning information.
- Coordinate with the State Disaster Information Centre (State EOC).
- Facilitate evacuation orders, enforce / monitor process through Police.
- Dispatch response teams to the affected areas.

- Provide resource support to conduct Search & Rescue Operations.
- Maintain law and order at all times.
- Initiate further actions based on SITREP prepared by State Disaster Information Centre.
- Relay information through emergency communication lines.
- Provide support to Fire & Emergency Services to undertake swift actions.
- Relay information to agencies at State Level in case of external support.
- Provide security cover / arrangements for VIP visits.
- Assist administration in supply and distribution, maintaining law and order in the State.
- Ensure smooth functioning of recovery and rehabilitation efforts.
- Assist in management of the dead.

6.13.3 Police Department

Task: Maintain Law & order

- Undertake search & rescue works as well as orderly evacuation to safer places
- Undertake firefighting, if occurs
- Protection of supply & convoys and assist in orderly distribution of relief assistance.

6.13.3.1 Advance Preparedness

- Formation of teams & delegation of areas
- Skill up gradation trainings for the officers and supporting staffs & wardens/post wardens
- Mock drills according to plans (Concept and process of Mock Drill is attached in Annexure 7)
- Equipment/ machines upgraded & are in working condition
- Emergency Control Rooms operational
- Adequate warning mechanism for evacuation
- Identification of alternative routes
- Important telephone/ contact details available
- Unsocial elements/ groups identified
- Identification of sensitive areas and patrolling
- Patrolling on important buildings/ highways

- Support to administration on training to volunteers
- Keeping close contact with administration

6.13.3.2 During/Post-Disaster

- Establish linkages with State/ District Control Rooms
- Close contact with Armed Forces for specialized assistance/ equipment for search and rescue establish Radio Communication to assist evacuation, information dissemination and checking rumors
- Evacuation of People & immediate reporting to higher authority
- Assist seriously injured persons to go to treatment centers
- Maintain law and order
- Assist fire brigade personnel in their efforts
- Assist and encourage the community in road-clearing operation
- Traffic management and patrolling as required
- Salvage operation
- Provide security in transit and relief camps, affected areas, lifeline infrastructures & services, ensure identified are cordoned off
- Provide security arrangement for visiting VVIPs and VIPs
- Assist administration to take necessary actions against hoarders, black marketers and those manipulating relief materials
- Identify and register the names of the dead and disposed persons
- Support administration, Medical ,Community members in disposing dead bodies
- Assist administration in supply and distribution of relief materials
- Deploy police personnel near relief godowns
- Escort relief carrier vehicle and personnel
- Regular reporting to higher authorities about the situation including expenditure statement etc.
- In post operation phase, sit with the teams, discuss problems, suggest remedies, collect feedback etc., to upgrade mitigation as well as action plans

6.13.4 State Disaster Response Force [SDRF]

The SDRF 1st BN Chimpu will provide emergency support to the State Govt. in the event of natural and man-made disaster in regards to the following:-

Task

- Undertake search & rescue to save life of victim and evacuate them to safer places
- To give medical aid to victims
- Specialized response during disaster
- Proactive deployment during impending disaster situation
- Liaison reconnaissance, rehearsals and mock drill
- To organized capacity building training to police personal and civilian

6.13.4.1 Advance preparedness

- Formation of teams and delegation of areas
- To organized capacity building programme
- To organized awareness campaign
- Mock drill
- Emergency control room operations
- Adequate warning mechanism & evacuation
- Identification of alternate routes
- Identification of sensitive areas and disaster-prone areas
- Patrolling of important buildings/ highways etc.,
- Keep close contact with administration
- Advance planning and operations preparation for different disaster accordingly

6.13.4.2 During Disaster

- Undertake search and rescue works as well as evacuation of victim and affected to safer places
- To give medical first-aid to victims
- Specialized response
- Proactive deployment

6.13.4.3 Post-Disaster

- Established linkage with State/ District control rooms
- Evacuation of victims and immediate reporting to higher authority
- Distribution of relief packages provided by Govt. and NGO's
- Assist and encourage the community in road cleaning operation
- Assist the affected people in hygiene, cloths and shelter

- Assist the affected peoples to stabilized the situation and in restoration process

6.13.5 Department of Agriculture

6.13.5.1 Task

Assist in assessment of damage to agriculture & farming community and help them to restart their agriculture/farming operations.

6.13.5.2 Advance Preparedness

- Identify hazard prone zones
- Skill up gradation trainings for the officers/supporting staffs & volunteers
- Formation of teams & delegation of areas
- Plan for emergency accommodation for agriculture staff & other officers from outside area
- Equipment/machines etc., upgraded & are in working condition
- List of alternative safe routes
- Important telephone/contact details available
- Keeping close contact with administration
- Encourage & ensure crop insurance by farmers
- Determine the quantity, type of seeds/plants/medicines/tools and equipment etc., which will be required per district/block/village, in case of an emergency
- Ensure people/farmers take the advantage of new schemes, technology and facilities provided by the government.
- List of possible storage godowns
- Pre-contract with suppliers (seeds/plants/medicines/manure/tools/equipment)
- Estimate & maintain register of type of agriculture practices, land use pattern, type of crops according to seasons, quantity of production, amount of cultivated area, insured crops etc & keep it updating
- Monitor pest & disease control
- Drought Management (PRE-DURING-POST)
- Generate awareness on community level preparedness

6.13.5.3 During/Post - Disaster

- Establish linkages with State/District Control Rooms
- Ensure availability of staff and teams (extension officers and others) visiting/stationed at respective disasters sites with necessary equipment,

medicines, logistic support and authority as planned and establish communication links.

- Assess the extent of damage to soil, crop, plantation, micro-irrigation systems, storage facilities and the required intervention (estimate the requirement of seeds, fertilizers, pesticides, labour, tools and equipment etc)
- Ensure stock of seeds/plants/medicines/manure/tools/ equipment, which are needed and to supply immediately.
- Requisition of seeds/plants/medicines/manure/tools/equipment etc., as per the pre-contract with the suppliers
- Clearance of debris, if any, due to land slide and flash flood and assist community in developing agricultural land.
- Organize transport, storage and distribution of the relief aid with adequate record keeping procedure.
- Establish contact with water testing laboratories/office
- Restore the agricultural operations (including soil conditions)
- Crop protection
- Restore agriculture produce market.
- Arrangement of alternative power/ energy sources, as planned, to operate agriculture Dept. / field offices.
- Establish public information center to let the people know about the type of job done and the necessary relief aid/new schemes etc.
- Monitor pest and disease control
- Assist community/farmers getting insurance benefit.
- All valuable equipment/ instruments/seeds/manure/ fertilizers and medicines etc., should be packed in protective coverings and stored in a safer place.
- Regular reporting to higher authorities about the situation including expenditure statement etc
- In post operation phase, sit with the teams, review situation, discuss problems, suggest remedies, collect feedback etc., to upgrade mitigation as well as action plans

6.13.6 Department of Health Services & Family Welfare

6.13.6.1 Tasks

- To provide immediate medical, health and public hygiene services

- To check outbreak of epidemics and provide onsite OT and Trauma Services
- Awareness generation on public health

6.13.6.2 Advance Preparedness

- Identify likely diseases associated with disasters
- Setting of quick response teams with team leaders and supporting staff
(Identify by name & allocation)
- Skill up gradation trainings for the officers/supporting staffs & volunteers
- Plan for emergency accommodation for staff & other officers from outside area
- Equipment/machines etc., upgraded & are in working condition
- Emergency fuel stored, vehicles including its batteries inspected & are in working condition
- List of alternative safe routes
- Important telephone/contact details available
- Keeping close contact with administration
- Determine the quantity, type of medicines, medical support, equipment etc., that will be required per day/district/block/village, including relief camps etc., in case of an emergency
- Maintain inventory including portable equipment at different locations

6.13.6.3 During/ Post - Disaster

- Establish linkages with State/ District Control Room
- Close contact with administration
- Large stock of surgical packs be sterilized to last for one week, at least & kept in a safer place
- Arrange for emergency supplies of anesthetic drugs
- Requisition of medicines/equipment etc., as per the pre-contract with the suppliers
- Ensure stock of equipment and drugs, which are needed and/or request HQ, on priority basis, to supply to the hospital immediately
- Arrangement of alternative power/ energy sources, as planned, to operate hospital centers
- Deployment of teams with necessary equipment, medicines etc., and logistic support and authority as planned and establish communication links

- Ensure storage of safe drinking water and encourage water savings in the hospital
- Ensure emergency admission procedures with adequate record keeping & establish public information center to let the people know about the type of job done and the necessary relief aid/new schemes, etc.
- Ensure availability of staff and teams of doctors and assistants visiting disasters sites
- Assist volunteers/village headman/police personnel in rescue & evacuation and/or disposal of dead bodies claimed/ unclaimed after observing all codal formalities
- Assist administration for setting up transit and relief camps, feeding centers and ensure adequate sanitary conditions.
- All valuable equipment/ instruments and medicines should be packed in protective coverings and stored in a safer place
- Regular reporting to higher authorities about the situation including expenditure statement etc.
- In post operation phase, sit with the teams, review situation, discuss problems, suggest remedies, collect feedback etc., to upgrade mitigation as well as action plans

6.13.7 Department of Animal Husbandry & Veterinary

6.13.7.1 Tasks: Disposal of dead cattle and others animals to prevent outbreak of health and sanitation problems

- Management of livestock in emergency
- Assist Police and Civil Defense & police in disposal of dead bodies, claimed/ unclaimed, after observing all formalities

6.13.7.2 Advance Preparedness

- Skill up gradation trainings for the officers/ supporting staffs & volunteers
- Formation of teams & delegation of areas
- Plan for emergency accommodation for veterinary staff & other officers from outside area
- Equipment/machines etc., are in working condition
- Emergency fuel stored, vehicles including its batteries inspected & are in working condition

- List of alternative safe routes
- Important telephone/contact details available
- Keeping close contact with administration
- Determine the quantity, type of fodder/ medicines etc., which will be required per day/ district/block/village, including relief camps etc., in case of an emergency
- List of possible storage godowns
- List of possible shelters (camps) for animals
- Pre-contract with suppliers (fodders/ medicines/ equipment)
- Maintain livestock update
- Identify hazard prone zones
- Monitor disease control
- Encourage farmers for insurance of their livestock

6.13.7.3 During/Post Disaster

- Establish linkages with State/ District Control Rooms
- Close contact with administration
- Requisition of fodders/ medicines/ equipment etc., as per the pre-contact with the suppliers
- Deployment of teams with necessary equipment, medicines etc., and logistic support and authority as planned and establish communication links
- Ensure storage of drinking of safe drinking water and encourage water savings in the hospital
- Treatment of injured cattle/ livestock
- Protection and care of abandoned/ lost livestock
- Assist volunteers/ village headman/ police personnel in rescue & evacuation and/ or disposal of carcass as well as get insurance benefit
- Assist administration for setting up transit and relief camps, feeding centers and ensure adequate sanitary conditions
- Organize transfer of seriously injured livestock from villages to veterinary aid centers wherever possible
- Establish cattle camps and additional veterinary aid centers at disaster sites and designate an Officer-in-Charge for the Camp

- Estimate the requirement of water, fodder, medicines and animal feed and organize the same
- Regular reporting to higher authorities about the situation including expenditure statement etc.
- In post operation phase, sit with the teams, review situation, discuss problems, suggest remedies, collect feedback etc., to upgrade mitigation as well as action plans

6.13.8 Public Health & Engineering Department

6.13.8.1 Task:

To provide immediate supply of clean drinking water in the disaster affected areas and in the relief camps and hospitals etc.

6.13.8.2 Advance Preparedness:

- Identify hazard prone zones. Maintain a list of weak points/ disaster prone area
- Skill up gradation trainings for the officers/ supporting staffs
- Formation of teams & delegation of areas
- Plan for emergency accommodation for staff & other officers from outside area
- Equipment/ machines etc., upgraded & are in working condition
- Emergency fuel stored, vehicles including its batteries inspected & are in working condition
- List of alternative safe routes
- Important telephone/ contact details available
- Mitigations undertaken as per the plan
- Keeping close contact with administration
- Pre-contract with suppliers (tools/ equipment)
- Generate awareness on community level preparedness

6.13.8.3 During/Post - Disaster

- Establish linkages with State/ District Control Rooms
- Close contact with administration
- Deployment of teams with necessary equipment/ tools, logistic support & authority, as planned and establish communication links
- Undertake inspection to ensure the safety of intake structures, pumping stations, water sources (catchment areas/reservoirs/tanks/wells etc.), treatment plants,

storage tanks (hospital etc.), and sewerage lines and of other equipment and review extent of damage. Issue necessary safety measures and guidelines

- Undertake chlorination, bacteriological analysis, and determination of chlorine residue & restoration of water works. Daily determination of the chlorine residual in public water to avoid the presence of Escherichia coli & other contamination in public water supply
- Recruit casual labours on an emergency basis for clearing damaged pipes, blocked sewerage and salvage of important equipment and accessories
- Check the condition & contamination level of private water sources including water from streams, wells, tube wells etc, if any, and use scientific methods of de-contamination to make it edible/ use worthy
- Restore and ensure uninterrupted water supply to all vital installation, facilities and sites (life-line buildings, relief camps, feeding centers, godowns hospitals, etc)
- Assist health authorities to identify appropriate sources of potable water
- Encourage public for economic use of water
- Make provisions to acquire tankers and establish other temporary means of distributing water on an emergency basis
- Requisition of equipment etc., as per the pre-contract with the suppliers
- A minimum level of stock should be maintained for emergencies and should include extra length of pipes, connections, joints, hydrants and disinfectant/ bleaching powder
- Adequate tools should be on hand to carry out emergency repairs
- Arrangement of alternative power/ energy sources, as planned, to operate PHE centers
- Cover and guard the pumps/ motors with adequate protection so that it is not damaged or stolen
- Regular reporting to higher authorities about the situation including expenditure statement etc.

6.13.9 Department of Food & Civil Supplies

6.13.9.1 Tasks:

- To meet the shortage of supply of food, baby food, P.O.L, S.K.O., LPG, Candles & Batteries

- Action against black marketers, hoarders, etc.

6.13.9.2 Advance Preparedness:

- Identify hazard prone zones. Formation of teams & delegation of areas
- Determine the quantity & type of supplies required in a disaster (e.g. dry food, ready to eat food, essential commodities, SKO, LPG. P.O.L, toiletries, blankets etc) & tie up with suppliers
- Identify storage facilities, location & capacity wise
- Maintain a list of suppliers of different commodities in the State & outside the State(in NE region)
- Plan for emergency accommodation for officers & staff from outside area
- Emergency fuel stored, vehicles including its batteries inspected & are in working condition
- List of alternative safe routes
- Important telephone/ contact details available
- Pre-contract with suppliers

6.13.9.3 During/Post Disaster

- Arrange and dispatch supplies to affected areas as per the requisition
- Arrange distribution of commodities to the affected people
- Take action against black marketers, hoarders etc., and maintain price line
- Regular reporting to higher authorities about the situation including expenditure statement etc.
- In post operation phase, have review meeting, gather proper feedbacks and proper reporting

6.13.10 Public Works Department

6.13.10.1 Task

- To clear roads, replace collapsed bridges by temporary bridging equipment or making temporary arrangements
- Assist concerned authorities to repair damaged air-stripes, helipads
- Providing engineering support to Search & Rescue Teams (SRT)
- Providing support of heavy equipment i.e., Earth Movers, Bulldozers, etc.
- Assist Revenue Department to provide temporary shelters/ tents

6.13.10.2 Advance Preparedness

- Formation of teams & delegation of areas
- Skill up gradation trainings for the officers and supporting staffs
- Mock drills according to plans
- Identify weak structures/ weak points vulnerable to Earthquake/ Landslide
- Inspect all roads, bridges, including under water inspection of foundation and piers. A full check should be made on all concrete and steel work
- Equipment/ machines etc., upgraded & are in working condition; procurement of tentage equipment
- Emergency fuel stored, vehicles including its batteries inspected & are in working condition
- Preparation of possible helipads; inform its longitude/ latitude to State/ District Control rooms
- Non-destructive test & retrofitting of lifeline buildings & important structure to ensure seismic proof (along with the Urban Affairs Department)
- Heavy equipment, such as front-end loaders, should be moved to areas likely to be damaged and secured in a safe place.
- Retrofitting of roads
- List of safe alternative routes
- Important telephone/contact details available
- Training of masons on retrofitting and building bye-laws (along with the Urban Affairs Department)
- Keeping close contact with administration
- Pre-contract arrangement with suppliers for requisite equipment/ stores
- Generate awareness on community level preparedness

6.13.10.3 During/Post - Disaster

- Establish linkages with State/ District Control Rooms
- Close contact with administration
- Requisition of vehicle, debris cleaning equipment etc., as per the pre-contract with the suppliers
- Deployment of teams with necessary equipment, such as towing vehicles, earth moving equipment, cranes etc., as planned and establish communication links

- Adequate road signs should be installed to guide and assist the drivers
- Recruiting casual labors to work with experienced staff and divide into work gangs
- Assist fire brigade/ police personnel in rescue & evacuation by clearing debris
- Undertake cleaning of ditches, grass cutting, the burning or removal of debris and the cutting of dangerous trees along the road side in the affected area
- Restoration of roads to their normal conditions by establishing a priority listing of which roads will be opened first. Among the most important are the roads to hospitals and main trunk routes, routes to relief godowns, camps etc. undertake cleaning of all paved and unpaved road surfaces including edge metaling, pothole patching and any failure of surface foundation the affected areas and keep monitoring their conditions
- Mobilize community/ headmen/ volunteers in road-cleaning operation
- Repair/reconstruction of public utilities and buildings
- If people are evacuating an area, the evacuation routes should be checked and people assisted
- Assist administration for setting up transit and relief camps, feeding centers, hospitals
- Work under construction should be secured with ropes, sandbags and covered within tarpaulins, if necessary
- Regular reporting to higher authorities about the situation including expenditure statement etc.
- In post operation phase, sit with the teams, review situation, discuss problems, suggest remedies, collect feedback etc., to upgrade mitigation as well as action plans

6.13.11 Department of Power & Hydro Power

6.13.11.1 Tasks:

- Restoration of power supply
- Provision of power/ electricity to hospitals, lifeline buildings, feeding centers

6.13.11.2 Advance Preparedness:

- Clear definition of individual domain - who will do what?
- Skill up gradation trainings for the officers/ supporting staffs
- Identify hazard prone zones. Formation of teams & delegation of areas

- Plan for emergency accommodation for officers & staff from outside area.
- Equipment/ machines etc., are in working condition
- Emergency fuel stored, vehicles including its batteries inspected & are in working condition
- List of alternative safe routes
- Important telephone/ contact details available
- Tie-up in advance with suppliers (equipment)
- Arrange disaster management tool kit, at each sub-station, comprising cable cutters, pulley blocks, jungle knives, axes, crowbars, ropes, back saws spanners and tents for crews
- Generate awareness on community level preparedness

6.13.11.3 During/Post - Disaster

- Establish linkages with State/ District Control Rooms
- Deployment of teams with necessary equipment, logistic support and authority as planned and establish communication links
- Switch off the power supply immediately to avoid further damage to life and property during the time of disaster
- Immediately undertake inspection of Power grids, barrage, high tension lines, towers, substations, transformers, insulators, poles, and other equipment and review extent of damage. Undertake restoration works
- Restore power supply and ensure uninterrupted power to all vital installation, facilities and sites (relief camps, feeding centers, and godowns).
- Recruit casual labors on an emergency basis for clearing damaged poles and salvage of important equipment and accessories.
- Requisition of equipment etc, as per the pre-contract with the suppliers
- Arrangement of alternative power/ energy sources, as planned, to operate hospital centers and lifeline buildings (DC Office/ State Control Room/ Police Stations/ Tele-communication Buildings/ IMD etc)
- Regular reporting to higher authorities about the situation including expenditure statement etc
- In post operation phase, sit with the teams, review situation, discuss problems, suggest remedies, collect feedback etc., to upgrade mitigation as well as action plans

6.13.12 Department of Environment & Forests

6.13.12.1 Advance Preparedness

- Promotion of shelter belt plantation
- Publishing for public knowledge details of forest cover, use of land under the forest department, the rate of depletion and its causes
- Keep saws (both power and manual) in working conditions
- Provision of seedling to the community and encouraging plantation activities, promoting nurseries for providing seedlings in case of destruction of trees during natural disasters
- IEC activities for greater awareness regarding the role of trees and forests for protection during emergencies and also to minimize environmental impact which result as a result of deforestation like climate change, soil erosion, etc.
- Increasing involvement of the community, NGOs and CBOs in plantation, protection and other forest protection, rejuvenation and restoration activities.
- Plan for reducing the incidence, and minimize the impact of forest fire
- During and Post Disaster Management
- Assist in road clearance
- Provide tree cutting equipment
- Units for tree cutting and disposal to be put under the control of SRC, DC during emergency
- Provide building materials such as bamboos etc., for construction of shelters
- Take up plantation to make good the damage caused to tree cover

6.13.13 Department of State Transport Service

6.13.13.1 Task:

- Arrangement of transport for reaching supplies to affected areas
- Transport for evacuation of people
- Transport of medical teams

6.13.13.2 Advance Preparedness: -

- Identify hazard prone zones. Formation of teams & delegation of areas
- Plan for emergency accommodation for officers & staff from outside area
- Emergency fuel stored, vehicles including its batteries inspected & are in working condition
- List of alternative safe routes

- Important telephone/ contact details available
- Pre-contract with suppliers
- Provide list of important telephone/ contact numbers
- Assessment of the likely requirement in the event of a disaster
- Information about various classes/ types of vehicles available, location-wise
- Keep vehicle requisition forms ready in sufficient numbers

6.13.13.3 During/Post –Disaster

- Get in touch with State/ District Control Rooms
- Ascertain the actual requirement from Control Room, Supplies Dept., Housing Dept
- Medical Department
- Arrange vehicle for evacuation, maintenance of supplies and medical aid etc.
- Regular reporting to higher authorities about the situation including expenditure statement etc.
- In post operation phase, sit with the teams, review situation, discuss problems, suggest remedies, collect feedback etc., to upgrade mitigation as well as action plans

6.13.14 Department of Rural Development/ Panchayat

6.13.14.1 Advance Preparedness

- Develop prevention/ mitigation strategies for risk reduction at community level
- Training of public representatives on various aspects of disaster management
- Public awareness on various aspects of disaster management
- Organize mock drills
- Promote and support community-based disaster management plans
- Support strengthening response mechanisms at the village level (e.g., better communication, local storage, search & rescue equipments, etc.)
- Ensure alternative routes/ means of communication for movement of relief materials and personnel to marooned areas or areas likely to be marooned
- Assist all the government departments to plan and prioritize prevention and preparedness activities while ensuring active community participation

6.13.14.2 During/ Post Disaster

- Train up the BDC/ BSC Members and support for timely and appropriate delivery of warning to the community

- Construct alternative temporary roads to restore communication to the villages
- Operationalize emergency relief centers and emergency shelter
- Sanitation, drinking water and medical aid arrangements
- Participate in post impact assessment of emergency situation
- Support in search, rescue and first aid
- Provision of personal support services e.g. Counseling
- Repair/ restoration of infrastructure e.g. roads, bridges, public amenities
- Supporting the villages in development of storage and in playing a key role and in the coordination of management and distribution of relief and rehabilitation materials
- Provide training so that the elected representatives can act as effective supportive
- Agencies for reconstruction and recovery activities

6.13.15 Department of Urban Development & Housing

6.13.15.1 Task

- Implementation of development schemes (services)
- Up-gradation of services in cities and towns
- Implementation of techno-legal regime in all development schemes.
- Monitoring/ enforcement mechanism to ensure earthquake resistant design and construction of building

6.13.15.2 Advance Preparedness

- Training and capacity building of engineers and masons on safe construction
- Identify mechanism for outreach of information to people residing in urban areas
- Support activities to undertake risk assessment of the urban areas/ towns
- Facilitate developing a robust plan in urban areas

6.13.15.3 During/ Post Disaster

- Undertake rapid assessment of damage areas
- Housing back people to homes that are determined safe
- Work with other line departments/ agency for removal of debris
- Mobilize efforts for undertaking heavy urban search & rescue, medical care/ mass causality care

- Provision of shelter to the needy and minimize failure of basic services
- Restoration of basic services
- Provision of temporary housing for relief & rehabilitation in urban areas

6.13.16 Water Resources Department

6.13.16.1 Task

- Flood and erosion management
- Construction/ strengthening/ maintenance of embankment

6.13.16.2 Advance Preparedness

- Update embankment maintenance manual
- Activate flood monitoring in all flood prone areas
- Establish coordination linkages with village teams for embankment strengthening and safety
- Observe and collect local data to determine flash floods
- Coordinate with IMD & CWC
- Undertake mapping of vulnerable areas and risk spots
- Conduct pre-monsoon preparedness meeting to take stock of current status, discuss about critical areas, preparedness checks etc.
- Under take mitigation actions as per the guidelines

6.13.16.3 During/ Post Disaster

- Translate department action based on rainfall forecast and flood information
- Activate response plan
- Ensure safety of embankments; take immediate protection measures to prevent breach
- Undertake possible interventions to minimize further damage
- Undertake emergency and long-term flood protection works, embankments etc.

6.13.17 Fire and Emergency Services

6.13.17.1 Task

- Fire Fighting in case of fire accidents

6.13.17.2 Advance Preparedness

- Inspection of all high-rise buildings, other establishments and assess their fire preventive and preparedness and effectiveness of firefighting equipment
- Conducting awareness programme for fire safety and organize drill at public places or prominent areas

- Conduct periodical trainings on rescue operation from fire and other natural calamities

6.13.17.3 During/ Post Disaster

- Fire Fighting in case of fire accidents
- To save life and property in case of fire hazards and other natural calamities

6.13.18 Department of Information and Public Relations

6.13.18.1 General Tasks

- Creation of public awareness regarding various types of disasters through media propagation
- Dissemination of information to public and others concerned regarding do's and don'ts of various disasters
- Regular liaison with the media Response Activities
- Setting up of a control room to provide authentic information to public regarding impending emergencies
- Daily press briefings at fixed times at state & district levels to provide official version
- Keep the public informed about the latest of the emergency situation (area affected, lives lost, etc)
- Keep the public informed about various post disaster assistances and recovery programmes
- Documentation

6.13.19 Department of Education

6.13.19.1 Advance Preparedness

- Develop a department wide plan in DM
- Ensure all schools/institutions within the department jurisdiction (Govt and Private) have Building Level Emergency Response/Preparedness Plan
- Undertake training of teachers in preparation of School Disaster Management Plan
- Undertake training of children and school staff in basic first-aid, select search and rescue methods
- Organize rally and education programmes to raise awareness
- Encourage to volunteer and participate in DM activities, conduct preparedness drills

- Undertake vulnerability assessment of education infrastructure and publish analysis/findings Identify structural and non-structural risk reduction/mitigation measures
- Develop state level mitigation plan
- Work towards developing safety policy and safety rules that can be applicable to Govt and Private run institutions. Ensuring hazard resistant design is an integral part of design and construction of new buildings/new rooms or any expansion activity
- Convey appropriate information to the administration staff in the department, further relay of information based on established protocol

6.13.19.2 During/ Post Disaster

- Undertake rapid damage assessment of health facilities. Declare facilities fit for continuing operations
- Notify continuation of activities or temporary closure till situation is normalized
- Based on the notification / disaster declaration, provide necessary support for schools to function as temporary shelters / relief distribution centres
- Detailed damage assessment of education infrastructure
- Ensure DRR concerns are considered in design of new facilities/strengthening of existing facilities

6.13.20 Department of Planning/ Finance

6.13.20.1 Advance Preparedness

- Garner Support towards making provisions for establishing State Disaster/Hazard Mitigation Fund
- Establish State Disaster/Hazard Mitigation Fund
- Direct development planning activities/schemes to incorporate or build-in safety nets/mitigation measures

6.13.20.2 During/ Post Disaster

- Determine preliminary allocation of funds to undertake relief efforts
- Mobilization of resources

6.13.21 Department of Social Welfare

6.13.21.1 Advance Preparedness

- Integrate DM concerns in the ongoing welfare development schemes in the State

- Identify vulnerable population and social groups which require special attention during disaster times
- Undertake training of communities and build awareness of local environment and associated hazard risks, community measures which can reduce vulnerability within their location, promote Community based disaster risk management
- Identifying/communicate resource management at local level/community level to assist themselves to meet immediate needs of water, food, clothing and shelter (promote self-help)
- Develop social safety nets taking into consideration of the hazard risks in the region where the welfare schemes are under implementation

6.13.21.2 During/ Post Disaster

- Identify evacuation points/ centres for communities
- Facilitate provision of services to meet people's needs in risk prone areas
- Provide welfare services to disaster affected people
- Ensure proper care of the uncared
- Provide protection of the most vulnerable sections of the society
- Facilitate the process of financial assistance
- Participate and involve in recovery efforts and community rehabilitation
- Administer relief/financial assistance is made eligible to disaster affected individuals/communities
- Create an environment which is conducive to the all-round development of children, women and physically challenged persons

6.13.22 Department of Fisheries

6.13.22.1 Preparedness, Planning and Mapping:

- Awareness Campaign
- Training/Capacity Building
- Co- ordination
- Identification of resources / locations
- Action on spot
- Enforcement of laws/regulation

6.13.22.2 During Disaster / outbreak:

- Warning deliberation through media / face book, SMS, person etc

- Action/ Combat
- Co-ordination
- Report and information dissemination
- Maintaining Records
- Revision and reaction

6.13.22.3 Post -disaster:

- Preparation of report and submission
- Planning of alternative fish seeds/fingerlings
- Identification of location / resource
- Mobilization of resources
- Action through Extension service
- Restoration, Revision and Reaction

6.13.23 Department Of Disaster Management

6.13.23.1 Preparedness

- Coordinate with SDMA/SEC on all preparedness activities in the State.
- Establish infrastructure and human resource support at Department level to undertake DM activities
- Periodic check of 'state of readiness' for all hazard risks/conduct preparedness activities and direct actions
- Establish South West Monsoon readiness in the state along with the support of Administration (State & District) /line departments/ Agencies
- Report to SEC on preparedness level of departments and administration units minimum once a year

6.13.23.2 Prevention & Mitigation

- Establish State Disaster Mitigation on the line of National Disaster Mitigation Fund
- Review of mitigation and prevention measures taken by the department and line agencies
- Review of hazard risk and vulnerability assessment of the state and direct actions as and when required
- Vulnerability reduction in rural areas

6.13.23.3 Alert & Warning Stage

- Establish early warning systems in the state for hazard risks.
- Establish working relationship with warning agencies in the state and at the national level.
- Establish protocols for dissemination of warning information (if needed, simplified through color coded information) through DEOC/District Administration/ Agencies/Line Departments/SEOC
- Continuously monitor the field situation and determine activation/deactivation of disaster response through SEOC/DEOC/District Administration/ Agencies/Line Departments
- Prepare situation reports and update SEC members and all line departments, administration units
- Dispatch/preposition teams (quick response team, medical response team, search and rescue team, paramedics) in high-risk prone areas which are under the influence of certain intensity hazard. This will only be done when it is requisition by the affected DDMA/Dist.Admin and it is approved by SDMA/SEC/DDMA/Dist.Admin

6.13.23.4 Response

- Coordinate and manage response actions (incident/disaster)
- Address the injured and minimize casualties, take immediate actions to reduce exposure to hazard condition
- Deploy rapid damage assessment to gather field information
- Take support from agencies equipped with disaster information systems to share satellite data and related analysis indicating the level of hazard or vulnerability or potential threat/risk
- Conduct assessment of damage and estimate relief needs
- Distribution of relief material and direct restoration of basic services to the affected community/region as per Govt. of India norms
- Direct agencies to set up temporary elements for affected population, ensure departments cater to minimum operating standards for distribution of relief
- Coordinate with all possible stakeholders including the donors, NGOs, INGOs, Media, Private & Voluntary Sector

6.14 Information Management

The objective of information management is to provide the right information to the right person at the right time in the right format. During emergency response activities, all participating agencies, persons affected and the wider communities need information. Dissemination of critical information required during emergencies through use of display boards, etc. can minimize confusion. Training of persons responsible for briefing the media is required. A lot of confusion can be avoided through regular press briefings.

6.15 Media Liaison

Media management during a disaster is an important aspect. The SDMA/SEC/DDMA/DC will ensure that up to date and accurate information is made available.

A media centre should be established with the involvement of Dept. of IPR at the state level and DIPRO in the district(s) affected.

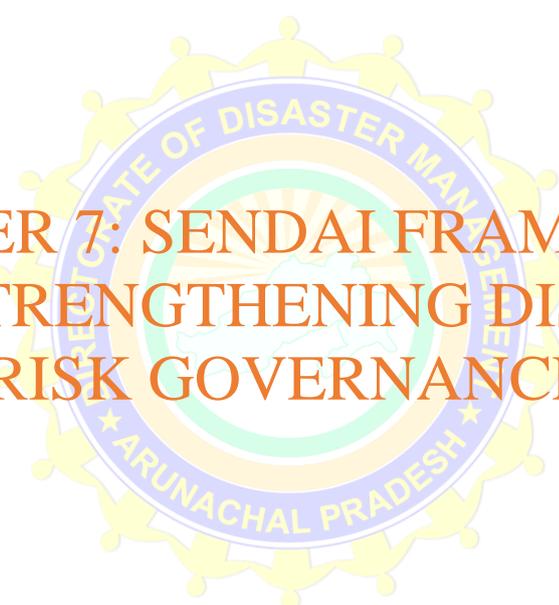
The office of the SEC will also establish a Media Centre attached to the State Emergency Operation Center to be operated by the DIPRO.

6.16 Post-operational Debriefing

The SEC/DDMA/DC is responsible for convening a debriefing conference as soon as practicable after cessation of response activities. All agencies that participated in those activities will be represented with a view to assessing the adequacy of the response and to recommend any changes to the relevant plan(s).

6.17 Green Corridor for NDRF Convoy

The Department of PWD, UD & Housing, RWD and Home will ensure the provision of Green Corridor for NDRF convoy deployed during Disaster situation.



CHAPTER 7: SENDAI FRAMEWORK
AND STRENGTHENING DISASTER
RISK GOVERNANCE

CHAPTER 7: SENDAI FRAMEWORK AND STRENGTHENING DISASTER RISK GOVERNANCE

7. Introduction

The Sendai framework for Disaster Risk Reduction 2015-2030 was adopted on Third (14-18th March 2015) United Nations World Conference on Disaster Risk Reduction at SENDAI city Japan, which represented a unique opportunity for countries (United Nations, 2015):

- To adopt a *concise, focused, forward looking and action-oriented* framework for disaster risk reduction
- To complete the *assessment and review* of the implementation of the Hyogo Framework for Action
- Used the *experienced gained* to plan for disaster risk reduction
- To identify modalities of *cooperation based* on the commitments to implement a post 2015 framework for disaster risk reduction
- To determine modalities for the *periodic review* of the implementation of a post 2015 framework for disaster risk reduction

7.1 Expected outcome and goal

While some progress in building resilience and reducing losses and damages has been achieved, a substantial reduction of disaster risk requires perseverance and persistence, with a more explicit focus on people and their health and livelihoods, and regular follow-up. Building on the Hyogo Framework for Action, the present Framework aims to achieve the following outcome and goals over the next 15 years:

- ▶ Outcome: Substantial reduction of disaster risk and losses in lives, livelihoods and health and in economic, physical, social, cultural and environmental assets of persons, business, communities and countries
- ▶ Goal: Prevent new and reduce existing disaster risk through the implementation of integrated and inclusive socio-economic measures (*economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional*) that prevent and reduce hazard exposure and vulnerability to disaster, increase preparedness for response and recovery and thus strengthen resilience.

7.2 Targets to achieve the outcome and goal

To support the assessment of global progress in achieving the outcome and goal of the present Framework, seven global targets have been agreed. These targets will be measured at the global level and will be complemented by work to develop appropriate indicators. National targets and indicators will contribute to the achievement of the outcome and goal of the present Framework. The seven global targets and its implementation in the context of Arunachal Pradesh are:

Table 39: Targets of the Sendai Framework and its implementation in the context of Arunachal Pradesh

Sl. No	Targets	Context of Arunachal Pradesh
1	Substantially reduce disaster mortality by 2030	Relocation of the exposed communities in disaster prone areas such as flash floods, landslides, etc., to a safe zone through Government incentives such as subsidized housing, sanitation facilities, subsidized agriculture etc.
2	Substantially reduce the number of affected people	
3	Reduce direct disaster economic loss	Insurance mechanism for buildings, crops, livestock etc.
4	Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities,	Better infrastructure, mechanism for immediate restoration of roads, buildings damaged due to disasters etc.

7.3 Priorities for action

Considering the experience gained through the implementation of the Hyogo Framework for Action, and in pursuance of the expected outcome and goal, there is a need for focused action within and across sectors by States at local, national, regional and global levels in the following four priority areas:

- **Priority 1:** Understanding disaster risk.
- **Priority 2:** Strengthening disaster risk governance to manage disaster risk.
- **Priority 3:** Investing in disaster risk reduction for resilience.
- **Priority 4:** Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation, and reconstruction.

7.3.1 Priority 1: Understanding disaster risk.

Understanding underlying causes of disaster such as underlying causes hazards, vulnerability, exposure, adaptation, mitigation, etc., is crucial for reducing disaster risk. Therefore, it is important for carrying out pre-disaster risk assessment, for prevention and mitigation and for the development and implementation of appropriate preparedness and effective response to disasters. Action plan to achieve the targets are given in Table 40.

Table 40: Targets for achieving priority 1 in the context of Arunachal Pradesh

Sl. No	Target	Methods to achieve the target in the context of Arunachal Pradesh
1	Collection, analysis, manage and use relevant data and practical information and ensure its dissemination	Collect district/block/village level data on 1. Climate parameters (Rainfall, temperature for the last 30 years) 2. Socio-economic data (% of BPL HH, % of Agri dependent households, livestock, % of landless, marginal and small farmers, literacy rate, etc. 3. Bio-physical data: % of area greater than 30% slope, drainage density, % of area under water bodies, Road Density, Type of roads connecting the villages, Forest Cover etc.
2	Assess disaster risks, vulnerability, capacity, exposure, hazard characteristics and its impacts	1. Develop Vulnerability Profile of each district, block and villages to disaster such as flash flood, landslides etc. 2. Develop Hazard zone maps of each district, block and villages to disaster such as flash flood, landslides etc. 3. Seismic Micro Zonation Mapping for Itanagar City by National Institute of Seismology
3	Periodically update and disseminate location-based disaster risk information to policy makers, public, communities at risk to exposure	1. Share vulnerability profile maps and hazard zone maps with DCs, DDMOs, Officers from line departments, disaster volunteers, and community members 2. Train DDMOs/COs/SDOs/BDOs on methods for Vulnerability and Risk Assessments, data collection process, hazard zone mapping 3. Share the findings of vulnerability assessments with community members
4	Systematically evaluate, record, share and publicly account for disaster losses and understand the economic, social, health, education, environmental and cultural heritage impacts	1. Detailed reports to be prepared after each disaster 2. Reports to include extend of damage, loss in terms of physical damage, human lives, agriculture, and other economic factors 3. Impacts of the disaster on socio-economic, cultural, and environmental indicators
5	Make non-sensitive hazard exposure, vulnerability, risk, disaster, and loss-disaggregated information freely available and accessible as appropriate	1. Upload all reports of hazard zonation, vulnerability profile, disaster loss and damage in the Department website
6	Real time data and use of GIS	1. Collaborate with IMDs for real time weather data 2. Collaborate with Scientific institution such as NESAC Shillong, SRSAC Arunachal Pradesh etc., for collection, analysis and dissemination of data

		3. Installation of Automatic Weather Stations at each of the DDMO's office in each district
7	Training & Capacity Building	<ol style="list-style-type: none"> 1. Develop training modules (Flash Floods, Landslides etc.) 2. Training & Capacity Building of Government Officials at all level, civil society, communities, volunteers, public sectors etc. 3. Level of Trainings: District level officials; Block level officials; and community level
8	Scientific and Technological Corporation	1. Coordinate with various scientific institutions, universities for facilitation of science-policy interface for effective decision making
9	Traditional, indigenous and local knowledge for DRR	<ol style="list-style-type: none"> 1. Documentation of various traditional, indigenous and local knowledge on Disaster Management 2. Integrate the local knowledge with scientific knowledge to disaster risk reduction
10	Strengthen Scientific and Technical Knowledge	1. Collaborate with scientific and technical institutions to develop and apply methodologies and models to assess disaster risk, vulnerabilities and exposure to all hazards
11	Investment in Innovation and Technology	1. Invite technical companies for developing apps for prediction, modelling etc.
12	Incorporation of DRR in Education	1. Integrate concepts of disaster risk, disaster prevention, mitigation, preparedness, response, recovery, and rehabilitation in school, college and university curriculum
13	Promote national strategies on DRR	1. Promote DRR strategies through training, social media, awareness programme etc.

7.3.2 Priority 2: Strengthening disaster risk governance to manage disaster risk

Disaster risk governance at the national, regional and global level is of great importance for an effective and efficient management of disaster; Clear vision, plans, competence, guidance and coordination within and across sectors as well as participation of relevant stakeholders are needed. The Sendai Framework states that disaster risk governance at different levels is of great importance for an effective and efficient management of disaster risk. It also requires clear vision, plans, competence, guidance and coordination within and across sectors, as well as participation of relevant stakeholders. Strengthening disaster risk governance is necessary to foster collaboration and partnerships for the implementation of disaster risk reduction and sustainable development. The targets to strengthen disaster risk governance and its implementation in the context of Arunachal Pradesh is given in Table 41 .

Table 41: Targets to strengthen disaster risk governance and its implementation in the context of Arunachal Pradesh

Sl. No	Target	Methods to achieve the target in the context of Arunachal Pradesh
1	Mainstream and integrate disaster risk reduction within and across sectors	<ol style="list-style-type: none"> 1. Define roles and responsibility of each of the line departments in Disaster Risk Reduction (<i>Update the role and responsibility in the SDMA 2021</i>) 2. Mainstream DRR in Development policies (e.g. town planning, urban planning, PWD, Rural Works) (<i>Define Building Guidelines, Urbanization plans etc</i>) 3. Incentives for actions by persons, households, communities, and business (e.g. Incentives for relocation from vulnerable zone, for plantations in flash floods/landslide zones, incentives for giving up zhum cultivation etc.) 4. Training and capacity building of officials 5. Setting up mechanism for response and organizational setup
2	Local level disaster risk reduction strategies and plans	<ol style="list-style-type: none"> 1. Prepare and update action plans for flash floods, landslides, earthquake, forest fire etc. 2. Prepare and document various structural and non-structural adaptation measures to various disasters 3. Prepare reports on impacts of disaster on socio-economic, health and environment and action plan for building resilience of the communities to disaster
3	Technical, financial and administrative disaster management capacity	<ol style="list-style-type: none"> 1. Assess the technical capacity of the State in DRR (e.g –Manpower, technical setup, technical advisory team etc.,) 2. Allocate fund for rescue, relief and disaster management 3. Define role and responsibility of each of the administrative setup (review and update it in the SDMP)
4	Establishment of mechanism and incentives for compliance for DRR	<ol style="list-style-type: none"> 1. Define rules and regulation for land use and urban planning, building codes, environmental and resource management, and health and safety standards 2. Frame guidelines for incentives 3. Publish the rules, regulation and the guidelines
5	Progress on national and local plans	<ol style="list-style-type: none"> 1. Preparation and submissions of timely progress reports on achievements on the targeted national and local action plans and guidelines
6	Involvement of community members	<ol style="list-style-type: none"> 1. Assign roles and responsibility to the community members/disaster volunteers on DRR through legal framework 2. Undertake comprehensive public and community consultations during the development of such laws and regulations to support their implementation
7	Empower Local Authorities	<ol style="list-style-type: none"> 1. Empower local authorities as appropriate through regulatory and financial means to work and coordinate with civil societies, communities and indigenous peoples in Disaster Risk Management

7.3.3 Priority 3: Investing in disaster risk reduction for resilience.

Public and private investment in Disaster Risk Prevention and Reduction through Structural and Non-Structural Measures are essential to enhance the economic, social, health, and cultural resilience of person, communities, countries and their assets as well

as their environment. The action plan in the context of Arunachal Pradesh is given in Table 42.

Table 42: Targets for investing in Disaster Risk reduction for resilience and action plan for implementation in the context of Arunachal Pradesh

Sl. No	Target	Methods to achieve the target in the context of Arunachal Pradesh
1	Allocate resource	1. Allocate resource including finance and logistic as appropriate at all levels of administration for the development and implementation of disaster risk reduction strategies, policies, plans, laws and regulation in all relevant sectors.
2	Mechanism for disaster risk transfer, insurance and risk sharing	1. Encourage public and private investments in risk sharing, retention and financial protection. E.g., Invite private companies for investment in insurance of buildings, crops, livelihoods etc.
3	Public and Private Investment	1. Encourage public and private investments. Seek funding source from development agencies for both Structural and Non-structural measures (<i>UNDP, International Organization for Migration (IOM), Climate Finance, National adaptation fund on Climate Change, Green Climate Fund etc.</i>). Detailed Project Report on DRR to be prepared and submitted to funding agencies.
4	Protection of cultural, historical, and religious sites	1. Identification and documentation of cultural, historical and religious sites 2. Initiate action for protection of cultural, historical and religious sites in Arunachal Pradesh.
5	Mainstream Disaster Risk Assessment	1. Mainstream the risk assessments into land use policy development, and implementation, urban planning, land degradation assessments, rural development planning, management of landslides, flash floods, earthquake etc.
6	Revision of existing or development of new building codes	1. Review and develop the present building codes, policies of informal and marginal human settlement, urban settlement, and upgrade keeping in my disaster risk reduction.
7	Enhance the resilience of National Health System	1. Capacity building of health workers on disaster risk reduction’ 2. Training and awareness generation of health workers related to disaster management, disaster medicine, health programmes, implementation of health regulations (2005) of the world health organization.
8	Inclusive and social safety nets	1. Encourage livelihood enhancement programmes, access to basic health services, maternal new born and child health, sexual and reproduction health, 2. Food, housing, and educational security etc.
9	Policies for citizens with chronic disease, specially abled citizens	1. People with life threatening and chronic disease, especially able citizens etc., should be included in the policies for DRR.
10	Financial instruments	1. Integration of DRR considerations and measures in financial and fiscal instrument
11	Sustainable use and management of ecosystem	1. Integrate environmental and natural resource management approached in DRR.
12	Protection of livelihood and livestock	1. Design Mechanism for protection of livelihood, livestock, tools seeds etc.

13	Tourism Industry	<ol style="list-style-type: none"> Promote and integrate Disaster Risk Management approaches throughout tourism sector. Coordinate with tourism department.
----	------------------	---

7.3.4 Priority 4: Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction.

There is a need to further strengthen disaster preparedness for response, take action in anticipation of events, integrate disaster risk reduction in response and recovery at all level. Targets and action plan is given in Table 43.

Table 43: Targets and action plan for Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction

Sl. No	Target	Methods to achieve the target in the context of Arunachal Pradesh
1	Prepare, review and update DRR preparedness, plans and policies	<ol style="list-style-type: none"> Prepare annual disaster preparedness plans, action plans for natural disasters, initiate programmes and policies for DRR Review the existing annual disaster preparedness plans, action plans for natural disaster, initiate programmes and policies for DRR Periodically update the existing annual disaster preparedness plans, action plans for natural disaster, initiate programmes and policies for DRR
2	Warning system	<ol style="list-style-type: none"> Invest in people centered multi hazard, multisectoral forecasting and early warning system Disaster risk and emergency communications mechanism, Social technologies and hazard monitoring telecommunication system Application of simple and low-cost early warning equipment and facilities
3	Resilience of infrastructure	<ol style="list-style-type: none"> Critical Infrastructure Development Water transportation and telecommunication infrastructure Educational facilities Hospitals and other health facilities
4	Community centers	<ol style="list-style-type: none"> Set up community centers in each block for the promotion of public awareness and the stockpiling of necessary materials to implement rescue and relief activities
5	Public policies and action to support coordination and funding mechanism	<ol style="list-style-type: none"> Public policies and action to support coordination and funding mechanism and procedures for relief assistance and plan and prepare for post disaster recovery
6	Training and capacity building	<ol style="list-style-type: none"> Develop training modules Training of the existing workforce in disaster response, strengthen technical and logistic capacities and funding mechanism Training of community volunteers in disaster response, strengthen technical and logistic capacities
7	Awareness programmes	<ol style="list-style-type: none"> Regular awareness programmes on disaster preparedness, response, and recovery exercise including evacuation drills, training and the establishment of area based support system

8	Corporation of diverse institutions, multiple authorities, and related stakeholders	2. Corporation diverse institutions, multiple authorities, and related stakeholders during post disaster reconstructions phase
9	Incorporation of Disaster Risk Management (DRM)	1. Incorporation of DRM into post disaster recovery and rehabilitation processes, facilitate the link between relief, rehabilitation and development, use opportunities during the recovery phase to develop capacities that reduce disaster risk in the short, medium and long term

7.4 Responsibility Matrix for Strengthening Disaster Risk Governance

The generalized responsibility matrix given in this section summarizes the theme for strengthening Disaster Risk Governance and specifies agencies at the State and Districts with their respective roles (Table 44). The matrix has six thematic areas in which Government have to take actions to strengthen disaster risk governance:

1. Mainstream and integrate Disaster Risk Reduction and Institutional Strengthening.
2. Capacity Development
3. Promote Participatory Approaches
4. Work with Elected Representatives
5. Grievance Redressal Mechanism
6. Promote Quality Standards, Certifications and Awards for Disaster Risk Management.

Table 44: Responsibility Matrix for Strengthening Disaster Risk Governance

Strengthening Disaster Risk Governance		
State/ District Agencies and their responsibilities		
Major Theme	State	Responsibility
1	<ul style="list-style-type: none"> • Mainstream and integrate disaster risk reduction within and across all sectors 	<ul style="list-style-type: none"> • SDMA, DDMA, PRIs, ULBs, all Departments involved in disaster management • Promote the coherence and development of relevant laws, regulations and public policies • Adopt and implement disaster risk reduction strategies and plans, across different levels and timescale • Carryout assessment of the technical, financial and administrative capacity for disaster risk management at the State, Districts and Local levels • Make institutions efficient and responsive • Improve work culture • Develop mechanisms and processes to ensure transparency and accountability • Enhance relevant mechanisms and initiatives for transparency

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

			<ul style="list-style-type: none"> Strengthen/ establish coordination and convergence mechanisms at State, Districts and local levels Promote necessary mechanisms and incentives to ensure high levels of compliance with the safety-enhancing provisions
2	<ul style="list-style-type: none"> Capacity Development (Hazard-wise) 	SDMA, DDMA, PRIs, ULBs, all Departments involved in disaster management	<ul style="list-style-type: none"> Implementation in State Ministries, Departments/ Agencies Involving communities, Panchayats, Municipalities, and ULBs, elected representatives, Civil Society Organization, private sectors and educational institutions. Develop capabilities at State, Districts, Blocks and local levels to understand disaster risk, develop DM plans, implement relevant policies, laws and ensure compliance with risk reduction safety standards
3	<ul style="list-style-type: none"> Promote Participatory Approaches 	SDMA, DDMA, DRD, UD, PRIs, ULBs, all Departments involved in disaster management	<ul style="list-style-type: none"> Empower local authorities Implement participatory approaches in disaster management based on a multi-hazard approach, with emphasis on hazards more frequent in the region/ location Establish and strengthen Government coordination forums composed of relevant stakeholders Promote for participation of individuals, households, communities and businesses in all aspects of disaster management
4	<ul style="list-style-type: none"> Work with elected representatives 	SDMA, DDMA, DRD, UD, PRIs, ULBs, all Departments involved in disaster management	<ul style="list-style-type: none"> Sensitize the political leadership Involve the political leadership at State, District, Block and local levels in discussions on disaster management
5	<ul style="list-style-type: none"> Grievance redressal mechanism 	SDMA, DDMA, PRIs, ULBs, all Departments involved in disaster management	<ul style="list-style-type: none"> Ensuring the functioning of a sound grievance redress mechanism in all the Ministries/ Agencies involved in disaster response
6	<ul style="list-style-type: none"> Promote quality standards, such as certification and awards for disaster risk management (Hazard-wise) 	SDMA, DDMA, PRIs, ULBs, all Departments involved in disaster management	<ul style="list-style-type: none"> Ensure implementation of standards Develop suitable bye-laws specially for urban and rural areas Monitor compliance

CHAPTER 8: PARTNERSHIP WITH STAKEHOLDERS



CHAPTER 8: PARTNERSHIP WITH STAKEHOLDERS

8. Introduction

Disaster Management is an inclusive field and requires contribution from all stakeholders in order to effectively manage the emergency situation. Coordination amongst various stakeholders hence becomes extremely important to achieve the desired results.

There are various agencies/organizations/departments and authorities that constitute a core network for implementing various disaster management related functions /activities. It also includes academic, scientific and technical organizations which have an important role to play in various facets of disaster management. A brief note on the role and activities of such functionaries and the existing system of coordination established by the State Government with them is mentioned below.

8.1 NDMA

- The National Disaster Management Authority (NDMA), as the apex body in the GOI, has the responsibility of laying down policies, plans and guidelines for DM and coordinating their enforcement and implementation for ensuring timely and effective response to disasters.
- The guidelines assist the central ministries, departments and states to formulate their respective plans. It also approves the National Disaster Management plan prepared by the National Executive Committee (NEC) and plans of the central ministries and departments.
- It takes such other measures as it may consider necessary, for the prevention of disasters, mitigation, preparedness and capacity building for dealing with a threatening disaster situation or disaster.
- It also oversees the provision and application of funds for mitigation and preparedness measures. It has the power to authorize the departments or authorities concerned, to make emergency procurement of provisions or materials for rescue and relief in a threatening disaster situation or disaster. It further provides such support to other countries in times of disasters as may be determined by the central government.

- The State keeps in touch with the NDMA for implementing various projects / schemes which are being funded through the Central Government. The State also appraises the NDMA about the action taken by the State Government regarding preparation of DM plans and implementation of guidelines issued by NDMA for various hazards from time to time.

8.2 National Institute of Disaster Management (NIDM)

- The NIDM, in partnership with other research institutions has capacity development as one of its major responsibilities, along with training, research, documentation and development of a National level information base. It networks with other knowledge-based institutions and function within the broad policies and guidelines laid down by the NDMA.

- It organizes training of trainers, DM officials and other stakeholders as per the training calendar finalized in consultation with the respective State Governments.

8.3 National Disaster Response Force (NDRF)

- For the purpose of specialized response to a threatening disaster situation or disasters/emergencies both natural and man-made, the National Disaster Management Act has mandated the constitution of a National Disaster Response Force (NDRF).

- The general superintendence, direction and control of this force is vested in and exercised by the NDMA and the command and supervision of the Force is vested in an officer appointed by the Central Government as the Director General of Civil Defense and National Disaster Response Force. Presently, the NDRF comprises eight battalions and further expansion may be considered in due course. These battalions are positioned at different locations across the State.

- NDRF units maintain close liaison with the designated State Governments and are available to them in the event of any serious threatening disaster situation. While the handling of natural disasters rest with all the NDRF battalions, four battalions are equipped and trained to respond to situations arising out of CBRN emergencies.

- Training centers are also set up by respective paramilitary forces to train personnel from NDRF battalions of respective forces and also meets the training requirements of State/UT Disaster Response Forces. The NDRF units also impart basic training to all the stakeholders identified by the State Governments in their respective

locations. In addition, the State Government also utilizes the services of the NDRF whenever required during emergency search, rescue and response.

- Location to stationing the NDRF teams have been identified by State Govt.

8.4 Armed Forces

- Conceptually, the Armed Forces are called upon to assist the civil administration only when the situation is beyond the coping capability of the State Government. In practice, however, the Armed Forces form an important part of the Government's response capacity and are immediate responders in all serious disaster situations.

- On account of their vast potential to meet any adverse challenge, speed of operational response and the resources and capabilities at their disposal, the Armed Forces have historically played a major role in emergency support functions. These include communication, search and rescue operations, health and medical facilities, and transportation, especially in the immediate aftermath of a disaster. Airlift, Heli-lift and movement of assistance to neighboring countries primarily fall within the expertise and domain of the Armed Forces.

- The Armed Forces also participates in imparting training to trainers and DM managers, especially in CBRN aspects, high-altitude rescue, waterman ship and training of paramedics. At the State and District levels, the local representatives of the Armed Forces have been included in their executive committees to ensure closer coordination and cohesion in all aspects related to Disaster Management.

8.5 Indian Railways

- Indian Railways is spread over a vast geographical area over 63,327 route kilometers. Unlike in other countries where the role of Railways, in the event of a disaster, is restricted to clearing and restoring the traffic, in our country Indian Railways handles the rescue and relief operations. Railways are preferred mode of transport both for the movement of people and relief material in bulk, if accessible.

- Railways should have a provision for transportation of mass community and proper handling and distribution of relief material (through special trains, if required) in their disaster management plan.

8.6 Indian Meteorological Department (IMD)

- The meteorological department undertakes observations, communications, forecasting and weather services. IMD was also the first organization in India to have a message switching computer for supporting its global data exchange.

- In collaboration with the Indian Space Research Organization, the IMD also uses the Indian National Satellite System (INSAT) for weather monitoring of the Indian subcontinent, being the first weather bureau of a developing country to develop and maintain its own geostationary satellite system.

- Earthquakes occurring in the State which are of magnitude 3.0 and above on Richter Scale are also reported by the IMD to the State Government immediately.

8.7 State Disaster Response Force (SDRF)

- As per the provisions of the National Disaster Management Act, the States are being encouraged to create response capabilities from within their existing resources on similar pattern of NDRF.

- APSDMA, through the Home Department, has nominated 2(two) teams from the State police personnel as State Disaster Response Force (SDRF) teams, each having strength of 47 personnel each with a total strength of 94 personnel.

8.8 State Fire & Emergency Services

- The State Fire & Emergency Services are crucial immediate responders during any disaster. They are the first responders (during the Golden Hour after a disaster) and hence play a vital role in saving lives and property immediately after a disaster.

- The State Government has therefore paid apt attention in equipping and strengthening the capacities of the Fire Services in responding to various disasters.

- Continuous training is also being provided to the fire staff in using and maintaining the equipment. Several officers of the rank of Fire Officers are also sent to training organized by NIDM and other institutes of the Central /State Government from time to time.

8.9 State Disaster Management Authority:

- State Authority shall have the responsibility for laying down policies and plans for disaster management in the State.
- Without prejudice to the generality of provisions contained in sub-section (1) of the Disaster Management Act 2005, the State Authority may-
 - Lay down the State Disaster Management Policy;
 - Approve the State Plan in accordance with the guidelines laid down by the National Authority;
 - Approve the disaster management plans prepared by the departments of the Government of the State;
 - Lay down guidelines to be followed by the line departments of the Government of the State for the purposes of integration of measures for prevention of disasters and mitigation in their development plans and projects and provide necessary technical assistance therefore;
 - Coordinate the implementation of the State Plan;
 - Recommend provision of funds for mitigation and preparedness measures;
 - Review the development plans of the different departments of the State and ensure that prevention and mitigation measures are integrated therein;
 - Review the measures being taken for mitigation, capacity building and preparedness by the departments of the Government of the State and issue such guidelines as may be necessary.
 - The Chairperson of the State Authority shall, in the case of emergency, have power to exercise all or any of the powers of the State Authority but the exercise of such powers shall be subject to ex post facto ratification of the State Authority.

The State Government shall constitute a State Executive Committee (SEC) to assist the SDMA in the performance of its functions. The SEC will be headed by the Chief Secretary to the State Government and coordinate and monitor the implementation of the National Policy, the National Plan and the State Plan. The SEC will also provide information to the NDMA relating to different aspects of DM.

8.10 District Disaster Management Authority (DDMA)

The DDMA will be headed by the District Collector, Deputy Commissioner or District Magistrate as the case may be, with the elected representative of the local authority as the Co-Chairperson. DDMA will act as the planning, coordinating and implementing body for DM at District level and take all necessary measures for the purposes of DM in accordance with the guidelines laid down by the NDMA and SDMA. It will, inter alia prepare the District DM plan for the district and monitor the implementation of the National Policy, the State Policy, the National Plan, the State Plan and the District Plan. DDMA will also ensure that the guidelines for prevention, mitigation, preparedness and response measures laid down by the NDMA and the SDMA are followed by all Departments of the State Government at the District level and the local authorities in the district. Following are the specific functions of the DDMA

- The District Authority shall act as the district planning; coordinating and implementing body for disaster management and take all measures for the purposes of disaster management in the district in accordance with the guidelines laid down by the National Authority and the State Authority.
- Without prejudice to the generality of the provisions of sub-section (1) of the Disaster Management Act 2005, the District Authority may-
 - Prepare a disaster management plan including district response plan for the district;
 - Coordinate and monitor the implementation of the National Policy, State Policy, National Plan, State Plan and District Plan;
 - Ensure that the areas in the district vulnerable to disasters are identified and measures for the prevention of disasters and the mitigation of its effects are undertaken by the departments of the Government at the district level as well as by the local authorities;
 - Ensure that the guidelines for prevention of disasters, mitigation of its effects, preparedness and response measures as laid down by the National Authority and the State Authority are followed by all departments of the Government at the district level and the local authorities in the district;

- Give directions to different authorities at the district level and local authorities to take such other measures for the prevention or mitigation of disasters as may be necessary;
- Lay down guidelines for prevention of disaster management plans by the department of the Government at the district level and local authorities in the district;
- Monitor the implementation of disaster management plans prepared by the Departments of the Government at the district level;
- Lay down guidelines to be followed by the Departments of the Government at the district level for purposes of integration of measures for prevention of disasters and mitigation in their development plans and projects and provide necessary technical assistance therefore;
- Monitor the implementation of measures referred to in clause (viii);
- Review the state capabilities for responding to any disaster or threatening disaster situation in the district and give directions to the relevant departments or authorities at the district level for their up gradation as may be necessary;
- Review the preparedness measures and give directions to the concerned departments at the district level or other concerned authorities, where necessary, for bringing the preparedness measures to the levels required for responding effectively to any disaster or threatening disaster situation;
- Organize and coordinate specialized training programmes for different levels of officers, employees and voluntary rescue workers in the district;
- Facilitate community training and awareness programmes for prevention of disaster or mitigation with the support of local authorities, governmental and non-governmental organizations;
- Set up, maintain, review and upgrade the mechanism for early warnings and dissemination of proper information to public;
- Prepare, review and update district level response plan and guidelines;
- Coordinate response to any threatening disaster situation or disaster;

- Ensure that the Departments of the Government at the district level and the local authorities prepare their response plans in accordance with the district response plan;
- Lay down guidelines for, or give direction to, the concerned Department of the Government at the district level or any other authorities within the local limits of the district to take measures to respond effectively to any threatening disaster situation or disaster;
- Advise, assist and coordinate the activities of the Departments of the Government at the district level, statutory bodies and other governmental and non-governmental organizations in the district engaged in the disaster management;
- Coordinate with, and give guidelines to, local authorities in the district to ensure that measures for the prevention or mitigation of threatening disaster situation or disaster in the district are carried out promptly and effectively;
- Provide necessary technical assistance or give advice to the local authorities in the district for carrying out their functions;
- Review development plans prepared by the Departments of the Government at the district level, statutory authorities or local authorities with a view to make necessary provisions therein for prevention/mitigation of disaster;
- Examine the construction in any area in the district and, if it is of the opinion that the standards for the prevention of disaster or mitigation laid down for such construction is not being or has not been followed, may direct the concerned authority to take such action as may be necessary to secure compliance of such standards;
- Identify buildings and places which could, in the event of any threatening disaster situation or disaster, be used as relief centers or camps and make arrangements for water supply and sanitation in such buildings or places;
- Establish stockpiles of relief and rescue materials or ensure preparedness to make such materials available at a short notice;
- Provide information to the State Authority relating to different aspects of disaster management;

- Encourage the involvement of non-governmental organizations and voluntary social welfare institutions working at the grassroots level in the district for disaster management;
- Ensure communication systems are in order and disaster management drills are carried out periodically;
- Perform such other functions as the State Government or State Authority may assign to it or as it deems necessary for disaster management in the district.

8.11 Media

- Reducing the losses of life and property caused by natural hazards is a compelling objective now receiving worldwide attention. It is now being increasingly believed that the knowledge and technology base potentially applicable to the mitigation of natural hazards has grown so dramatically that it would be possible, through a concerted cooperative effort, to save many lives and reduce human suffering, dislocation, and economic losses simply by better information, communication and awareness.

- Timely mass media communication about impending disasters can lead to appropriate individual and community action, which is the key to implementing effective prevention strategies including evacuation and survival of people. Such communications can educate, warn, inform, and empower people to take practical steps to protect themselves from natural hazards.

- The role of media, both print and electronic, in informing the people and the authorities during emergencies thus, becomes critical, especially the ways in which media can play a vital role in public awareness and preparedness through educating the public about disasters; warning of hazards; gathering and transmitting information about affected areas; alerting government officials, helping relief organizations and the public towards specific needs; and even in facilitating discussions about disaster preparedness and response. During any emergency, people seek up-to-date, reliable and detailed information.

- The State Government has established an effective system of partnering with the media during emergency situations. At the State Emergency Operation Centre

(SEOC), a special media cell has to be created which is made fully operational during emergency situations. Both print and electronic media is regularly briefed at predetermined time intervals about the events as they occur and the prevailing situation on ground. The State Government has also ensured that the interaction with media is a two-way process through which not only the State Government provides the information / updates to the media but the media too, through their own sources / resources draws the attention of the Government officials to the need and requirement of the affected people. This helps the State Government to control the flow of information and prevent rumors which could create a panic situation during the disasters. The State Government also partners with the media during Information Education and Communication (IEC) campaigns carried out for creating awareness amongst general public towards the precautions to be taken for prevention and mitigation of various hazards / events. A similar set up is also active at the District Emergency Operation Centre (DEOC).

- Apart from coordination with the media during disasters, the State Government regularly partners the print and electronic media to publish / broadcast safety messages.

8.12 Non-Governmental Organization(s) and Other Stakeholders

- Community based organizations like NGOs, Self Help Groups (SHGs), Youth Organizations, volunteer of NYK, NSS, NCC, Civil Defense & Home Guard etc., and workers of different projects funded by Government of India such as National Rural Health Mission, Integrated Child Development Services (ICDS), MGNREGA etc., can volunteer their services in the aftermath of disaster.

- A large number of community-based disaster management teams were also formed during GOI-UNDP DRM Programme and their services can be rendered during disaster situation at various grassroot level viz; District/ Sub-div/ Block/ Circle/ Village.

- The above volunteer will also be placed under Operation Section Chief where the skills and the services may be utilized systematically in the form of Single Resource, Strike Team and Task Force under IRS Structure.



CHAPTER 9: FINANCIAL ARRANGEMENTS

CHAPTER 9: FINANCIAL ARRANGEMENTS

9. Funding Mechanism at Various Levels

To ensure the long-term sustenance and permanency of the organisation, funds are generated and deployed on an ongoing basis. Financial mechanism for disaster management is already in place at national, state and district level. Additionally, there are various projects, programmes and initiatives catering to different phases of disaster management at nation, state, and district level.

9.1 Centre Level

9.1.1 National Disaster Response Fund

This fund has been created under the legal framework of National Disaster Management Act, 2005. Under the existing guidelines, it is available for assistance from avalanches, cyclone, cloud burst, drought, earthquake/ tsunami, fire, flood, hailstorm, landslides, pest attack and frost & cold wave.

In case of calamity of severe nature when State Disaster Response Fund is insufficient to meet the relief requirements, additional central assistance is provided from NDRF to the State Government by following the laid down procedures.

9.1.2 Prime Minister's National Relief Fund (PMNRF)

PMNRF provides immediate relief to families of those killed in natural calamities and to the victims of major accidents and riots. The fund is raised entirely by public contributions.

9.2 State Level

9.2.1 State Budget

APSDMA submits to the State Government for approval a budget in the prescribed form for the next financial year showing the estimated receipts and expenditure, and the sums which would be required from the State Government during that financial year.

The GoG also allocates funds in the State Budget for relief activities. In addition, funds may be available through the State Disaster Response Fund.

9.2.2 State Disaster Response Fund

There is a provision for State Disaster Response Fund which is made available to Department of Disaster Management, Government of Arunachal Pradesh. The Central and State Government share 90% and 10% respectively. This was meant for meeting expenditure for providing immediate relief to the victims of cyclone, drought, earthquake, fire, flood, tsunami, hailstorm, avalanche, cloud burst and pest attack

9.2.3 Chief Minister Relief Fund

This provides immediate support to the distressed people affected by the natural calamities, or road, air or railway accidents.

9.3 Other Sources of Funds

9.3.1 Public Private Partnership

There are projects/schemes in which funding can be done by a public sector authority and a private party in partnership. In this State Govt. along with Private organizations and with Central Govt. share their part.

9.3.2 Grant In Aid

State government may receive a grant in aid from Central Govt., World Bank, other departments, bilateral or multilateral funding agencies, etc. to carry out specific projects/schemes related to disaster management/ mitigation/ capacity building.

9.3.3 Loan

Authority may borrow money from the open market with the previous approval of State government to carry out disaster management functions as described in DM Act 2003.

9.3.4 Disaster Bonds

State government can also raise funds for major disasters by exploring the options of long term disaster bonds.

9.3.5 Donations

As per the provisions of The Gujarat State Disaster Management Act, 2003 the Authority may accept grants, subventions, donations, and gifts from

the Central or State Government or a local authority or any individual or body, whether incorporated or not.

9.3.6 Recovery Measures

The GoG shall finalise and implement select recovery measures such as imposing tax surcharge levies (central), imposing local taxes, facilitation of funding responsibility sharing by beneficiaries etc.

9.4 Funds Disbursement and Audit

The funds raised from funding agencies are usually accompanied by stringent disbursement and usage restrictions. It is therefore important to monitor the disbursement of such funds to ensure that none of the covenants are breached. GSDMA, in conjunction with relevant agencies, shall monitor disbursement of funds by:

- Prioritizing resource allocation across approved projects
- Establishing mechanisms (like a chain of banks, collection centres, nature of accounts, spread etc) for collection of funds
- Ongoing monitoring and control of fund usage throughout actual project implementation

CHAPTER 10: REHABILITATION & RECONSTRUCTION



CHAPTER 10: REHABILITATION & RECONSTRUCTION

10. Introduction

Reconstruction and rehabilitation activities come under the post-disaster phase. The activities in this phase will be primarily carried out by the District Administration, local bodies (Gram Panchayat, Municipals etc.) and various Government Departments and Boards. However, their activities in this phase shall be in accordance with the reconstruction and rehabilitation plans framed by APSDMA, in conjunction with implementing authorities.

The reconstruction and rehabilitation plan designed specifically for worst case scenario. It is activated in case of L3 type of disaster in which the capacity of State and District authorities have been overwhelmed and require assistance from the Central Government for re-establishing normalcy in the State.

The key activities in this phase are as below;

10.1 Detailed damage assessment

While a preliminary damage assessment is carried out during disaster phase, a detailed assessment must be conducted before commencing reconstruction and rehabilitation activities. The relevant Government Departments and Local Authorities shall initiate detailed assessment at their respective level for damages sustained in housing, industry/services, infrastructure, agriculture and health / education assets in the affected regions.

10.2 Assistance to restore houses and dwelling units

Government of Arunachal Pradesh, may, if needed, formulate a policy of assistance to help the affected to restore damaged houses/dwellings which would require to follow certain guidelines. This should neither be treated as compensation for damage nor as an automatic entitlement.

10.3 Relocation (Need based)

The Government of Arunachal Pradesh believes that need-based considerations and not extraneous factors drive relocation of people. The Local Authorities, in consultation with the people affected as per the notification no.LM-20/2005 dated 17th August 2011 by the Department of Land Management along with District Authority

shall determine relocation needs taking into account criteria relevant to the nature of the calamity and the extent of damage. Relocation efforts will include activities like:

- Gaining consent of the affected population
- Land acquisition
- Urban/ rural land use planning
- Customizing relocation packages
- Obtaining due legal clearances for relocation
- Getting the necessary authorization for rehabilitation
- Livelihood rehabilitation measures for relocated communities, wherever necessary

10.4 Finalizing reconstruction & rehabilitation plan

The effectiveness of any reconstruction and rehabilitation is based on detailed planning and careful monitoring of the relevant projects. SDMA will oversee reconstruction and rehabilitation work undertaken by DDMA and ensure that it takes into account the overall development plans for the state. SDMA/SEC will approve reconstruction and rehabilitation projects based on:

- Identification of suitable projects by relevant Departments;
- Project detailing and approval by the relevant technical authority.

10.5 Funds generation

Reconstruction & rehabilitation projects are fairly resource intensive. Govt. of Arunachal Pradesh shall finalize the fund generation mechanism, including the covenants and measures that govern fund inflow and disbursement and usage. This includes:

- Estimation of funds required based on detailed damage assessment reports and consolidation of the same under sectoral and regional heads;
- Contracting with funding agencies and evolving detailed operating procedures for fund flow and corresponding covenants.

10.6 Funds disbursement and audit

The funds raised from funding agencies are usually accompanied by stringent disbursement and usage restrictions. It is, therefore, important to monitor the disbursement of such funds to ensure that none of the covenants are breached. SDMA,

in conjunction with relevant Departments/Agencies, shall monitor disbursement of funds by:

- Prioritizing resource allocation across approved projects;
- Establishing mechanisms (like a chain of banks, collection centers, nature of accounts, spread etc) for collection of funds;
- Ongoing monitoring and control of fund usage throughout actual project implementation.

10.7 Project Management

Since rehabilitation and reconstruction effort typically involves the coordinated efforts of several entities, the Govt. of Arunachal Pradesh shall encourage the respective entities to strengthen programme management capabilities to ensure that synergies across and within entities are managed efficiently. In addition, it is also necessary to constantly monitor the activity to ensure that the project is executed on time, in accordance with the technical specifications. SDMA, in conjunction with relevant Government Departments, will monitor the reconstruction activity that is carried out by various implementation Departments/Agencies. Typical implementation activities would include:

- Disaster proofing and retrofitting of houses;
- Creation/ Retrofitting of structures – including roads, bridges, dams, canals etc., that may have been destroyed/ damaged due to the disaster;
- Restoration of basic infrastructure facilities, for example airports, power stations etc.;
- Creation of health centers, first aid centers, hospitals, groups of doctors and surgeons etc.;
- Restoration of the industrial viability of the affected area.;
- Restoration of livelihood.

10.8 Information, Education and Communication

Communication activities are necessary to convey to the larger community the scope and nature of the proposed reconstruction and rehabilitation effort so as to increase the stakeholder awareness and buy-in for the ongoing activities. Hence, SDMA and relevant Government Departments, District Administration and Local Authorities shall undertake:

- Ongoing Media Management/ Public Relations: To ensure accurate communication of the reconstruction and rehabilitation measures being taken to various stakeholders;
- Community management: This includes communicating to the affected communities with a view to appraising them of efforts being made for their relocation/ rehabilitation/ reconstruction;
- Feedback mechanisms: Using the communication network to get feedback on reconstruction and rehabilitation measures.

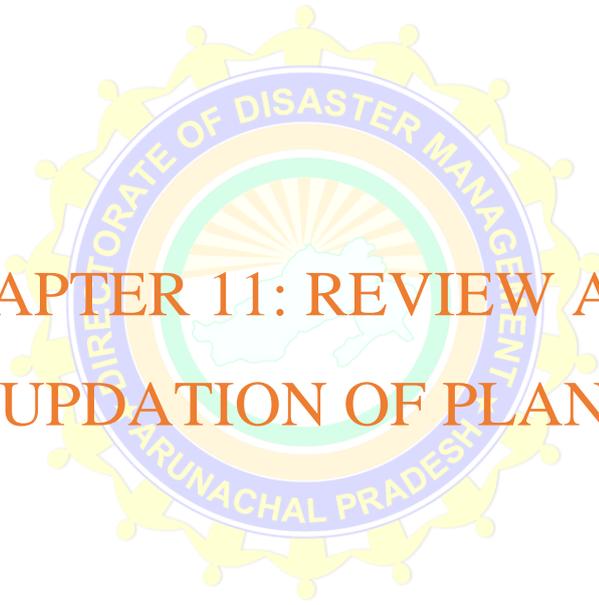
10.9 Dispute resolution mechanisms

SDMA/DDMAs, in conjunction with relevant agencies, shall institutionalize mechanisms to address victims /affected people grievances at various levels, as well as explore innovative ways of dispute minimization like involving the community in reconstruction initiatives. Appropriate mechanism with penalties for dealing with false claims will be evolved to prevent misuse of assistance.

10.10 Implementing initiatives for recovery of reconstruction costs

The Government of Arunachal Pradesh shall finalize and implement select recovery measures such as:

- Imposing tax surcharge levies (central);
- Imposing local taxes;
- Facilitation of funding responsibility sharing by beneficiaries etc.



CHAPTER 11: REVIEW AND
UPDATION OF PLAN

CHAPTER 11: REVIEW AND UPDATION

11. Introduction

Plan maintenance is a dynamic process of updating the plan on a periodic basis. The back-bone of maintaining the plan is carrying out mock drills and updating the plan based on the lesson learnt as an outcome of the mock exercise which consists of identifying the gaps and putting in place a system to fill the same.

11.1 Plan Testing

The SEC/ Dept of DM shall prepare, review and update State Disaster Management Plan as provided for in the DM Act (Section 23 (5)). The SEC/ Dept of DM shall direct Concerned Authority/ Departments/ Agencies to ensure that disaster management drills and rehearsals are carried out periodically.

While updating the plan the following aspects need to be considered by the SEC/ Dept of DM every year:

- i) Critical analysis of the outcome of exercises & mock drills as part of Plan testing.
- ii) Incorporation of lessons learnt in the updated plan as an outcome of mock exercises through identification of gaps and measures to fill them.

The Plan must be thoroughly tested and evaluated on a regular basis once in a year. After Plan testing and incorporation of lesson learnt, the SEC/ Dept of DM should send a copy of the revised and updated plan to the following officials:

- (a) Chief Secretary, Government of Arunachal Pradesh
- (b) Secretary, DM Dept
- (c) Head of all Line Depts.
- (d) State EOC
- (e) District Administration/DEOCs

The main objectives of plan testing are to:

- (i) Determine the feasibility and compatibility of back up facilities and procedures
- (ii) Identity areas in the plan that need modification.
- (iii) Identify training needs of key stakeholders.
- (iv) Assess the ability of the Organization/Department to respond to disasters.

All the Departments, which have specific roles and responsibilities in State Disaster Management Plan, must have a system to ensure that all Officers of their Departments who have a specific role to play are fully conversant with their responsibilities/tasks.

11.2 Debrief and Evaluation-Mock Drills

- After the mock exercise, debriefing and evaluation is very important. It is of critical importance that these insights are collected from participants (who participated in the exercise) and used to modify the plan.
- Debriefing is very effective as it is carried out immediately after the exercise. It also includes documentation in terms of recommendations and improvement of the plan.
- The lessons learned from the mock exercise are likely to be similar to those from real events. The only major difference is that exercises are controlled events, specifically designed to test procedures and they can be repeated again and again until sound/workable arrangements are in place.

11.3 Review / Updation of Plan

The State Disaster Management Plan should be reviewed and updated regularly based on inputs as under:

- (a) Drills and Rehearsals
- (b) Recommendations from all Depts. in their Annual DM Report
- (c) Lessons learnt from any disaster event in other states and countries
- (d) Directions from Ministry of Home Affairs, National Disaster Management Authority, Government of India, etc.

SDMA and all other Concerned Depts. should encourage formal and informal interaction with various stakeholders at different levels to learn and document their experiences, so that such experiences can contribute constructively towards updation of State Disaster Management Plan for further improving the capability to deal with future disasters.

CHAPTER 12: FOLLOW-UP ACTIONS



CHAPTER 12: FOLLOW-UP ACTIONS

12. Follow-Up Actions

This chapter discusses follow up actions that will be undertaken by various agencies/ departments to **operationalise the Plan**.

The priority areas which need immediate attention are:

- Preparation of district, block and village disaster management plans.
- Preparation of Standard Operationing Procedures and ESFs.
- Preparation of various Handbooks and Checklists for prevention, preparedness, response, mitigation activities
- Modernization of existing control rooms and strengthening of infrastructure in disaster prone areas keeping in mind the vulnerability to different hazards.
- Preparation and updating technical and quality control aspects of all civil constructions and non-civil installations based on review of past disasters.
- Preparation of State/ District/ Sub-division/ Block level GIS maps giving location of all items/ information required for response and recovery measures
- Review existing developmental schemes/ projects and incorporate disaster management principle in all schemes and all plans
- Ensuring sensitivity and incorporation of environment, gender, ethnicity, vulnerability of socioeconomically disadvantaged groups (Children, elders and the physically challenged etc), food and income security, disaster proofing measure in all development initiatives, response and recovery plans
- Updating of existing Laws, Rules and Codes for better administration of relief and recovery measures as per Government of India norms/ guidelines.
- Enforcement of Relevant Laws and Rules pertaining to Disaster Management: provisions of few Acts like Arunachal Pradesh Building Bye Laws, Town and Country Planning Regulations, Factories Act, Environment Protection Act and Forest Act are some of the relevant acts whose enforcement will assist in minimizing risks and ensuring more effective disaster management practices in the State.

Annexure 1: Checklist for DM/ Deputy Commissioner for disaster preparedness in the district

Activities	(Y/N)	Remarks
Institutional Strengthening		
Whether DDMA is functioning on quarterly basis		
Whether district DM Cell, district nodal officer and Dept. Nodal Officers have been identified and oriented		
Whether the DM activities are delineated and assigned to the concerned Officials		
Awareness		
Whether regular awareness programme organized at all levels		
Whether resource materials in CD/ DVDs shared with ADC/SDMs/BDOs/ Schools/ Panchayat/ Depts		
IEC materials like posters, hoardings handouts, resource materials prepared/ collected and shared with ADC/SDMs/ BDOs/ Schools/ Panchayat/ Depts		
Whether line Depts like health, education etc incorporated disaster safety components in their awareness programmes.		
Whether flood awareness programme conducted at all levels in the district		
Whether print and electronic media been involved for dissemination of warnings, awareness to the public		
Whether Dy. Commission / ADC/ SDM/ BDO given flood/ flash flood preparedness talk in radio/ DDK etc		
EOC (Control Room)		
Whether District EOC is functioning round the clock		
Whether other control rooms like hospitals, police, fire service, water resource, CWC linked up with the DEOC.		
Whether OIC-DEOC identified and his/her contact no. shared with all stakeholders		
Whether four digit telephone (1077) and IP phones other than the normal telephone installed in DEOC and publicised		
Whether weather report, rainfall info, river flow info etc are being received from IMD, CWC, Water Resource Deptts on daily basis		
Whether the DEOC has communication redundancy (telephone, wireless phone, VHF, UHF, IP phone, internet, mega phone, mobile phone)		
Whether daily situation report is being sent to SEOC		
Whether the DEOC receives daily weather report from IMD by email/ fax/ phone		
Whether the district level hazard and risk maps, maps showing resources, equipment, safe shelters etc available and displayed in EOC		
Equipment		
Whether the equipment available in the district have been physically tested		

Annexure 2: Emergency Operation Centre (E.O.C.)

a) Establishment and Location of EOCs

- The EOC is set up in the office of the SRC & district headquarters

b) Concept of Operation of EOC at the State Level

- The SEC headed by Chief Secretary at the State level & DC at the district level or his/her designee will initiate the activation of emergency services of the EOC.
- The EOC will be manned by a skeleton staff throughout the year. In the event of emergency it will be fully activated with participants from key departments like Health, Agriculture, Veterinary, Police, Civil Defence etc, apart from the personnel belonging to the Disaster Management Department.
- The SEC/ DC will announce the alternative location in case the State/District EOC is affected by any eventuality/ emergency.
- Nodal officers of various Depts. posted at the EOC will be responsible for maintaining communications through radio and telephone with their respective departments at the District and Block levels.
- The SEC will requisition necessary staff as required for effective functioning of the EOC during the time of emergencies

(c) Organisational set up of EOC

1. EOC in charge: While the SEC will be overall in charge of the EOC, the day-to-day Operations of the EOC will vest with an official in charge of Disaster Management Deptt. & will be responsible for assisting the SEC and other nodal officers for overall coordination and effective functioning of the EOC. Similar arrangement will be made by DC in the district EOCs.
2. The State Government will take steps for establishing EOCs as per GoI-MHA guidelines in state and district H.Q., where all the Emergency Support Functions (ESFs) will be located during emergencies.

d) Communication Section:

The hotlines, V-SAT and wireless communication will be established at the EOC at the State level with the following:

- Chief Minister
- Chief Secretary

- DG Police
- Deputy Commissioner
- Local Army and Air force Command
- Related Departments (Primary Agencies)
- Information and arrival point at the State
- Information and arrival point at the affected Districts

e) Tasks for all EOCs

- Determine policies during disaster and post disaster period Adjudicate conflicting, claims and /or request for emergency personnel, equipment, and other resources
- Designate responsibilities and duties, as necessary to maintain the optimal use of resources
- Provide operating units with requested resources for sustained operations
Maintain documentation of resource allocation and availability



Annexure 3: Mock Drill- Concept and Process

What is a Mock drill?

- **It is process**
 - **To get acquainted with a plan prepared for the specific purpose.**
 - **To evaluate the practicability and suitability of the plan.**
 - **To get prepared for any on to do situations.**

Where?

The concept has been used by the Armed forces/ Para Military Forces.

It is needed because;

- Perfection/accuracy is needed to save loss of life and property.
- In war there is no second chance, means kill or get killed.
- War Fitness.
- To get acquainted with situations, mass destructive weapons and commands.

Why mock drill in Disaster Management?

- To achieve accuracy for saving lives and property.
- To make Response more cost effective.
- To minimize response time.
- To create trained manpower to deal with disasters.
- Awareness generation leads to acceptance by the community.
- To evaluate suitability/ practicability of the DM plan.
- To get acquainted with the roles and responsibilities.

Requirements

- A complete Response/ESF plan
- Incident/ event
- Managers/ Teams
- Venue/ place of occurrence
- Any fixed date
- Organizers
- Observers/Evaluators/ experts from external agencies.
- Documentation team.

Process

- Meeting of the DMC members/ command heads.
- Discuss and draw a plan for mock drill.
- When, where, on which event, area of coverage, process of documentation, delegation of responsibility to organize etc.
- Discuss on the response plan of each team.
- DMTs to be ready with all necessary equipments, stationary and check list for the drill.
- Finalize duration for pre, during and post disaster activities.
- Inform the community people in advance and ensure their participation.
- Make security arrangement for the location where the drill has to be conducted.
- Verify all the arrangements on the presiding day.
- Discuss details of mock drill plan with the expert team in advance.
- Organize the drill as per the plan.

Important points

- Give your 100%.
- Get involved seriously.
- Community around should be informed about the drill to avoid panic.
- Follow the plan.
- Stick to time.
- If possible record the drill with the help of Video Camera.
- Discuss the comments given by the experts and rectify the plan.
- Share report of the drill with others.
- Plan for a next drill.
- Link the drill with the local festivals/ functions.
- Do not use the term "Drama"
- Invite nearby Village DMC members to see the entire process.
- Involve all the institutions in and around the village.

Annexure 4: District wise contact details of Deputy Commissioners

Sl.No	District	DC	CONTACTS No.	MAIL-ID
1	Tawang	Smti Namgyal Angmo	9818386296	dc-twng-arn@nic.in
2	West Kameng	Smti Akriti Sagar ,IAS	7503743418	dc-arn-wkmg@nic.in
3	East Kameng	Shri. Himanshu Nigam, IAS	8476806016	dc-ekmg-arn@nic.in
4	PakkeKessang	Bani Lego	7630866989	dcpakkekessang123@gmail.com/dc-pkks-g-am@gov.in
5	Papumpare	Ms. Vishakha Yadav, IAS	7085425500	Ddmoyupia20@gmail.com
6	Kurung Kumey	Cheechung Chukhu	7085425500	dckoloriang@gmail.com
7	KraDaadi	Charu Nili	7085232804	dckradaadi@gmail.com
8	Lower Subansiri	Smti. Oli Perme	8118909802	dc-lsuban-arn@nic.in
9	Kamle	J.T. Obi	7627931918	dckamle2018@gmail.com
10	Upper Subansiri	Shri Gambo Tasso	9436054034	dc-uppersubansiri@gmail.com/dc-usurban-arn@nic.in
11	Lower Siang	Rujjum Rakshap	8527035030	dc-siang-arn@gov.in
12	Leparada	Himani Meena	9013286469	dclrd25@gmail.com
13	West Siang	Mamu hage	9953462311	dc-wsiang-arn@nic.in
14	Shi Yomi	Liyi bagra	8119090671/9436836666	dc-shy-arn@gov.in
15	East Siang	Smti Sonalika Jiwani	8860668337	dcesiang-arn@gov.in
16	Siang	Shri Tai Tagu	9436044085	dc-siang-arn@gov.in/ dcsiang2014@gmail.com
17	Upper Siang	Talo Jerang	8414915408/9436053080	dc-usiang-arn@nic.in
18	Dibang valley	Shri Bekir Nyorak	7085833773	dcanini12@gmail.com
19	Lower Dibang Valley	Shri Fwrrman Brahma	9560800782	dc-ldcalley-arn@nic.in
20	Namsai	Shri C.R. Khampa	7629959907	dc-namsai-arn@gov.in
21	Anjaw	Shri Millo kojim	8131048226	dc-anjaw-arn@nic.in
22	Lohit	Kesang Ngurup Damo	9436049001	dc-lohit-arn@nic.in
23	Changlang	Shri Vishal Sha	7903717591	ddmachanglang@gmail.com
24	Tirap	Shri Techu Aran	8259079737/03786222217	dc-tirap-arn@nic.in
25	Longding	Shri Kunal Yadav , IAS	8800381278	longdingdc@gmail.com
26	ICR	Shri Toko Babu	8131911839	dcitanagar@gmail.com
27	Keyi Panyor	Sweta Nagarkoti, IAS	7982243973	Dckpd31@gmail.com
28	Bichom	Bopai Puroik	7085333922	Dcbichom2024@gmail.com

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

Annexure 5: District wise contact details of Superintendent of Police

Sl. No.	District	SP	Contact Details	Mail ID
1	Tawang	Dr. D.W. Thungun	9436639043	sptawang@rediffmail.com
2	West Kameng	Sudhanshu Dhama (IPS)	9436045081	spbdl@arunpol.nic.in / bomdilapolice@gmail.com
3	East Kameng	Kamdani Sikom	7085800479	spspaap@gmail.com
4	PakkeKessang	Tasi Darang	9402452987	sppakkesssang@gmail.com
5	Papumpare	Taru Gusar	8731996987	sprul@arunpol.nic.in
6	Kurung Kumey	Bomken Basar	7085327618	spkoloriang007@gmail.com
7	KraDaadi	Neelam Nega	8974946317	spkra66@gmail.com
8	Lower Subansiri	Keni Bagra	9436636041/8794616414	spziro2013@gmail.com
9	Kamle	Shri Tachi Hanyir	8014516481/8730854973	dispolkamle@gmail.com
10	Upper Subansiri	Shri USD Mridul	9953634759	spdaporijo@gmail.com
11	Lower Siang	Gothombu Dajangju	9436238317	splikabali@gmail.com
12	Leparada	Thupten Jambey	7629976667	spleparada01@gmail.com
13	West Siang	Shri Aalo Kardak	8729943336	spalg.arunpol@nic.in
14	Shi Yomi	S.K Thongdok	9436050889	spshiyomi@gmail.com
15	East Siang	Shri Pankaj IPS	9772234306	psighatasp@gmail.com
16	Siang	Shri J.K. Lego	7085327997	sp-siang-arn@gov.in
17	Upper Siang	Token Saring	9436058166	spykg.arunpol@nic.in
18	Dibang valley	Ringu Ngupok	9862908556	spanini12@gmail.com
19	Lower Dibang Valley	Shri Ringu Ngupok	9862908556	spofficeroing@gmail.com
20	Namsai	Sangey Thinley	8974882837 / 9485230738	
21	Anjaw	Shri Anurag Dwivedi	9108371490	
22	Lohit	Thutan Jamba	7630090058	splohit10@gmail.com
23	Changlang	Shri Kirli Padu	8730011599	spchanglang@yahoo.com
24	Tirap	Rahul Singh (IPS)	9873194415	spksa@arunpol.nic.in
25	Longding	Dekoi Gumja	7085690466	
26	ICR	Shri Jomar Basar	9436040006	spitanagar@gmail.com
27	Keyi Panyor	Angad Mehta (IPS)	9366058887	spkeyipanyor@gmail.com
28	Bichom	Shri Pawan Kumar Yadav (IPS)	8375097536	

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

Annexure 6: District wise contact details of District Disaster Management Officers (DDMOs)

Sl. No	District	Name of the DDMO	Contact no.	Mail-ID
1	Tawang	Smti. Genden Tsomu	9436053326	ddmotawang@gmail.com
2	Namsai	Smti. Tongchin	8259003656	tongdrrodm@gmail.com
3	Papumpare	Shri. Nima Tashi	8837317622 / 9862954800	nima.tashi80@arn.gov.in
4	West Kameng	Smti. Mindu Yangzom	8729947950	dmwk04@gmail.com
5	Siang	Shri Obang Apum	9436632759 / 9366853594	ddmosiang123@gmail.com
6	Lower Dibang Valley	Shri Tsering Ngurup	8794757424	tseringngurupk37@gmail.com
7	Dibang valley	Shri Kebang Lego	8974594024/9436046732	ddmoanini@gmail.com
8	West Siang	Shri Dorjee Nima	7085427209 / 9436200007	dnima4u@gmail.com
9	Upper Siang	Ms Anie M. Yangfo	9612566324	dmuppersaing@gmail.com
10	Tirap	Ms. Emily Tingkhatra	8787757540	dmcelltirap@gmail.com
11	East Kameng	Sh. Kelay Sono	8798352766	kelay.sono@arn.gov.in
12	KurungKumey	Sh. Karan Kholie	9436804280	kholiekaran12@gmail.com
13	Longding	Smti.Tana Mercy	8132977429/ DEOC-9485236991	ddmolongdingar10@gmail.com
14	KraDaadi	Shri. Langbia Aka	9485236735 / 9383366936 / 8794621958	langbiaaka@gmail.com
15	Leparada	Smti.Thutan Pema	9436251233 / 9485237015	thutanpema11@gmail.com
16	PakkeKessang	Smti. Tumchik Gadi	8521105874	tumchikgadi@gmail.com.
17	Bichom	Sh. L.W Bapu (I/C)	8257981887	lwbapu1976@gmail.com
18	East Siang	Sh. Tsangpa Tashi	9436220356	ddmoesg@gmail.com
19	Shi Yomi	Sh. Vijay Mitte	7085870432	mitte.13.vijay84@gmail.com
20	Upper Subansiri	Smti. Ronya Marbom	9485236667	ddmous@gmail.com
21	Anjaw	Smti Nang Chingni Choupoo	9362922910/9436673652	nangchoupoo.cc@gmail.com
22	Changlang	Shri Lobsang	9402877729	ddmachanglang@gmail.com
23	Lohit	Smt. Dr.Asmi Mega (I/C)	9485236852	asmi.mega11@gmail.com
24	Lower Subansiri	Smti. Nima Drema	9436045746 / 8794311083	Drro.ziro@gmail.com
25	ICR	Smti.Moromi Dodum	8787336331 / 9436415828	moromidodum123@icloud.com
26	Kamle	Smt.Taku Natung Nabam	9485221855 / 8259088872	ragaddmo@gmail.com
27	Keyi Panyor	Shri Beru Dulom	8132887868 / 8787475757	ddmokeyipanyor@gmail.com
28	Lower Siang	Shri.Alokong Perme	9436046786	ddmolowersiang@gmail.com

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

Annexure 7: List of Airports/ALGs/Helipads in Arunachal Pradesh

SI. No.	Name of the Districts	Name of the Airports/ALGs/Helipads	Latitude	Longitude
1	Papum Pare	Donyi Polo Airport(ARP)	26.9697300	93.6433700
2	Lohit	Tezu Airport(ARP)	27.9421200	96.1338900
3	Lower Subansiri	ALG Ziro	27.5900000	93.8285600
4	Upper Siang	ALG Tuting	28.9666700	94.8666700
5	Shi-Yomi	ALG Mechuka	28.6050000	94.1113900
6	East Siang	ALG Pasighat	28.0833300	95.3666700
7	West Siang	ALG Aalo	28.1738900	94.8012800
8	Changlang	ALG Vijaynagar	27.1833300	96.9833300
9	Anjaw	ALG Walong	28.1166700	97.0333100
10	Tawang	Tawang	27.5895300	91.8707900
11	Tawang	Mago	27.7000000	92.2166700
12	Tawang	Thingbu	27.6500000	92.1166700
13	Tawang	Luguthang	27.6000000	92.1833300
14	Tawang	Jang	27.5666700	92.9833300
15	Tawang	Jangda	27.6000000	92.9666701
16	Tawang	Bomgleng	27.4666700	91.7166700
17	Tawang	Mukto	27.5000000	91.9166702
18	Tawang	Khet	27.5333300	91.8666700
19	Tawang	Gyamgdong	27.3000000	91.8666700
20	Tawang	Bomja	27.5166700	91.7833300
21	Tawang	Lumla	27.5388900	91.7027800
22	West Kameng	Bomdila	27.2558900	92.4036700
23	West Kameng	Dirang	27.3638900	92.2611100
24	West Kameng	Dirang(near SSB)	27.3700000	92.2391170
25	West Kameng	Bhalukpong	27.0155600	92.6383300
26	West Kameng	Naira	27.3738900	92.5404700
27	West Kameng	Buragaon	27.2555000	92.6687400
28	West Kameng	Thrizino	27.3405600	92.7394400

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

29	West Kameng	Singchung	27.2154000	92.4985600
30	West Kameng	Kalaktang	27.1047790	92.1187600
31	West Kameng	Shergaon	27.1284200	92.2636500
32	West Kameng	Balemu	26.9105600	92.1227800
33	West Kameng	Bichom	27.3069400	92.6135600
34	West Kameng	Rupa	27.2052800	92.3936100
35	West Kameng	Kimmi	27.1774000	92.7015400
36	East Kameng	Seppa	27.3608300	93.0405600
37	East Kameng	Bana	27.2930600	92.8897200
38	East Kameng	Bameng	27.7313900	93.1388900
39	East Kameng	Chyangtajo	28.1375000	93.2347200
40	East Kameng	Khenewa	27.6266700	93.0247200
41	East Kameng	Pipu	27.5630600	93.1213900
42	East Kameng	Lada	27.5630600	93.7927800
43	East Kameng	Lumdung	27.2898900	93.0520800
44	Pakke Kessang	Pakke Kessang	27.0161100	93.1086100
45	Itanagar Capital Region	Naharlagun Helipad	27.1014400	93.7005600
46	Itanagar Capital Region	Rajbhawan Helipad	27.1000000	93.6166700
47	Papum Pare	Pilla Helipad	27.1083300	93.2416700
48	Papum Pare	Silsango Helipad	27.2083300	93.1722200
49	Papum Pare	Mengio Helipad	27.1111100	93.2666700
50	Papum Pare	Kullung Helipad	27.1083300	93.2416700
51	Papum Pare	Leporiang Helipad	27.4497200	93.4900000
52	Papum Pare	Toru Helipad	27.3311100	93.8083300
53	Papum Pare	Pill Putu Helipad	27.2444170	93.5052800
54	Papum Pare	Taraso	26.9425000	93.3441700
55	Papum Pare	Sangdupota	27.0320200	93.4107600
56	Papum Pare	IO^Bn ITBP Ground	27.2969400	93.9880830
57	Papum Pare	Kimin	27.1952800	95.4669400
58	Kurung Kumey	Damin (New)	28.1022200	93.3308300
59	Kurung Kumey	Kolorinang	27.9000000	93.3500000

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

60	Kurung Kumey	Parsi Parlo	27.9886100	93.5097200
61	Kurung Kumey	Sangram	27.8102800	93.5333300
62	Kurung Kumey	Nyapin	27.7494400	93.3886100
63	Kurung Kumey	Nyobia	27.8530600	93.5433300
64	Kurung Kumey	Lungsa	27.7227800	93.2825000
65	Kamle	Raga(Dokum)	28.0500000	93.9666700
66	Kra-Dadi	Tali	28.2500000	93.7500000
67	Kra-Dadi	Palin	27.6972200	93.8000000
68	Kra-Dadi	Pipsorang	28.1533300	93.6766700
69	Kra-Dadi	Chambang	27.8061100	93.7755600
70	Kra-Dadi	Yangte	27.8242830	93.6134080
71	Lower Subansiri	Yachuli	28.0500000	93.9666700
72	Upper Subansiri	Daporijio	28.3500000	93.5666700
73	Upper Subansiri	Giba	28.5666700	95.5666700
74	Upper Subansiri	Taliha(Kodak)	28.2833300	94.0666700
75	Upper Subansiri	Nacho	28.3833300	93.8666700
76	Upper Subansiri	Lemeking	28.3500000	93.5666700
77	Upper Subansiri	Taksing	28.4363900	93.2080600
78	Upper Subansiri	Siyum	28.3666700	94.0666700
79	Leparada	Tirbin	28.0211100	94.5594400
80	West Siang	Payum	28.5833300	94.6666700
81	West Siang	Yapik	28.5000000	94.5000000
82	West Siang	Ridi	28.5833300	94.3333300
83	West Siang	Rumgong	28.4166700	94.6666700
84	West Siang	Zido	28.9833300	94.8333300
85	West Siang	Liromoba	28.0666700	94.5000000
86	West Siang	Payum	28.5833300	94.6666700
87	Shi-Yomi	Tato	28.5317430	94.3771670
88	Shi-Yomi	Monigong	28.7850580	94.2783660
89	Shi-Yomi	Pidi	28.7846060	94.2785910
90	East Siang	Sibum	28.3166700	96.1500000

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

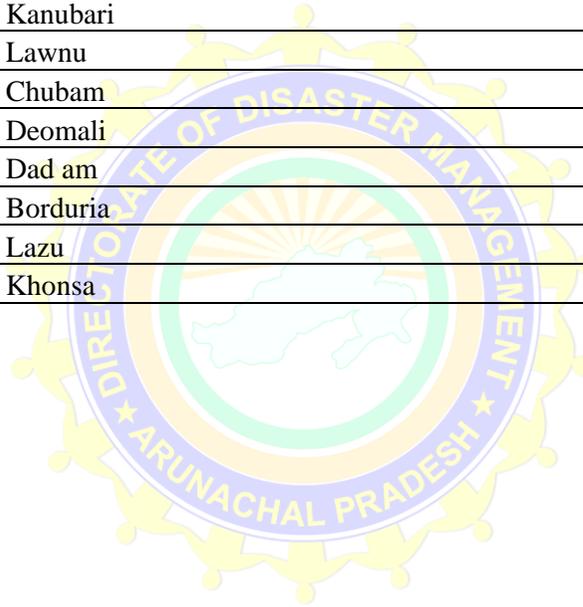
91	East Siang	Mebo Helipad	28.2500000	95.2500000
92	Siang	Boleng	28.2333300	94.9500000
93	Siang	Pangin	28.2088900	95.0088900
94	Lower Siang	Nari Helipad	27.7963900	95.0541700
95	Lower Siang	Gensi Helipad	27.8411100	94.6327800
96	Lower Siang	Koyu	27.9833300	95.9500000
97	Lower Siang	Likhabali	27.6508300	94.7027800
98	Upper Siang	Jengging-Karko	28.5666700	95.0666700
99	Upper Siang	Palling	28.8333300	94.8166700
100	Upper Siang	Nyulkong	28.8333300	95.1166700
101	Upper Siang	Gelling	29.0833300	95.0000000
102	Upper Siang	Singha	28.8000000	95.2500000
103	Upper Siang	Mariang	28.8833300	95.0666700
104	Upper Siang	Yingkiong	28.6333300	95.0166700
105	Upper Siang	Gibe	28.5833300	95.0666700
106	Upper Siang	Ramsing	28.6500000	95.0166700
107	Upper Siang	Kugging	28.9605600	94.9869400
108	Upper Siang	Bishing	29.1319400	95.0650000
109	Upper Siang	Mankot	28.8888900	95.0969400
110	Upper Siang	Tashigaon	28.8575000	95.1497200
111	Upper Siang	Panggo	28.8877800	94.7738900
112	Upper Siang	Janbo	28.7958300	94.8500000
113	Upper Siang	Bomdo	28.8105600	94.7944400
114	Upper Siang	Mosing	28.8105600	94.7944400
115	Upper Siang	Mayung	29.0977200	95.0316700
116	Upper Siang	Likor	28.8305600	95.9000000
117	Upper Siang	Geku	28.4208300	95.0958300
118	Dibang Valley	Aniniye	28.6666700	95.7500000
119	Dibang Valley	Dambuine	28.9311100	95.9738900
120	Dibang Valley	Etalin	28.7500000	95.8333300
121	Dibang Valley	Kronli	28.8166700	95.8333300

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

122	Dibang Valley	Malinye	28.6747420	96.1562780
123	Dibang Valley	Mipi	28.9166700	95.9166700
124	Dibang Valley	Anini	28.7972200	96.0991700
125	Lower Dibang Valley	Dambuk	28.2666700	95.6166700
126	Lower Dibang Valley	Paglam	27.9000000	95.5500000
127	Lower Dibang Valley	Roing	28.1333300	95.8333300
128	Lower Dibang Valley	Hunli	28.3166700	95.9666700
129	Lower Dibang Valley	Desali	29.2833300	96.1000000
130	Anjaw	Kibithoo	28.2500000	96.9000000
131	Anjaw	Chaglagam	28.3166700	96.5666700
132	Anjaw	Hawai	27.8833300	96.8000000
133	Anjaw	Hayuliang	28.0733300	96.5836100
134	Anjaw	Goiliang	28.4166700	95.2500000
135	Anjaw	Manchai	27.9797200	96.6583300
136	Lohit	Yeliang General Ground	27.8531400	95.9166700
137	Lohit	Wakro	27.7779880	96.3496960
138	Lohit	Pasuram Kund	27.8755050	96.3550160
139	Namsai	Namsai Helipad	27.6757300	95.8535600
140	Namsai	Nalung Helipad	27.8036500	95.9998500
141	Namsai	Mahadevpur Helipad	27.6341700	95.8113900
142	Changlang	Miao	27.4927120	96.2139860
143	Changlang	Gandhigram	27.5108300	97.0763900
144	Changlang	Diyun	27.6686100	96.1736100
145	Changlang	Nampong	27.3166700	96.1166700
146	Changlang	Pangsupass	27.4500000	96.0333300
147	Changlang	Bordumsa	27.8363900	96.4800000
148	Changlang	Changlang	27.1455600	95.7472200
149	Changlang	Khimiang	27.1455600	95.7355600
150	Changlang	Jairampur	27.0002800	96.1666700
151	Changlang	Namtok	27.2333300	95.6500000
152	Longding	Longding	26.8666700	95.3000000

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

153	Longding	Pumao	26.8166700	95.2333300
154	Longding	Pongchau	26.7166700	95.2833300
155	Longding	Wakka	26.8000000	95.3833300
156	Longding	Nginu (Longchan)	26.8500000	95.3833300
157	Longding	Kamhua Noknu	26.7666700	95.3000000
158	Longding	Kamhua Noksa	26.7000000	95.4000000
159	Longding	Khasa	26.7258300	95.3536100
160	Longding	Konnu	26.7166700	95.3000000
161	Longding	Kanubari	27.0269400	95.1988900
162	Longding	Lawnu	27.0936100	95.4208300
163	Longding	Chubam	26.9550000	95.3366700
164	Tirap	Deomali	27.1955240	95.4670970
165	Tirap	Dad am	26.9166700	95.4666700
166	Tirap	Borduria	27.0333300	95.4833300
167	Tirap	Lazu	26.8911100	95.5763900
168	Tirap	Khonsa	27.0000000	95.5333300



ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

Annexure 8: Coordinates and Contact details of important Resources of the Districts

Sl.No	Name of Districts	Resources	Address	Geo-Coordinates	Contact No
1	Tawang	Hospital	KDS, District Hospital, Tawang	27°35'20"N 91°51'53"E	Control Room Distt. Hospital 03794-224432 8258088493
		DEOC	DCs office Tawang	27°35'38"N 91°51'59"E	9485236630
		Police Station	PS Tawang	27°35'22"N 91°51'55"E	OC, PS Tawang: 9402065155
		Fire Station	Near SP	27°35'49"N 91°52'27"E	SFO, Tawang 9436601475/ 8258872382
		Relief Camp/ Shelter	Girls Hostel, GHSS, Tawang	27°35'21"N 91°52'11"E	i/c Principal, GHSS, Tawang 8414080275
2	West Kameng	Hospital (Both Govt. & Pvt)	DMO, General Hospital, Bomdila	27.265801°N 92.420525°E	03782-222331
		DEOC	DC office, Bomdila	27.265304°N 92.422781°E	03782- 223826/9485236626
		Police Station	OC, Police Station Bomdila	27.26535°N 92.422205°E	6033920831
		NDRF/SDRF	RRC, Bomdila	27.26275°N 92.422121°E	8178403943/ 8729947950
		Fire Station	SFO, Bomdila	27.264752°N 92.423892°E	03782-222006/ 9774558114
		Relief Camp/ Shelter	Girls Hostel of Govt. Hr. Sec. School, Bomdila	27.262525°N 92.422134°E	8729947950 7085356565
3	East Kameng	Hospitals (Both Govt. & Pvt.)	District Hospital, Seppa	27.35339 N 27°21'12.21556" E 93.0428 E 93°2'34.07716"	District Medical Supt. Seppa 8132974907
		DEOC	DDMO Office, Seppa	27.36289 N 27°21'46.40875" E 93.03943 E 93°2'21.93925"	9485236634
		Police Station	Police Station, Seppa	27.34809 N 27°20'53.13962" E 93.03943 E 93°2'21.93925"	OC, PS, Seppa 8132028974
		Fire Station	Fire Station, Seppa	27.34849 N 27°20'54.57116 E 93.03962 E 93°2'22.64338"	OC, Fire Station, Seppa 9436632063

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

		Relief Camp/ Shelter	(a) Type-II M.E School, Seppa	27.36383 N 27°21'49.79.99" 93.04083 E 93°2'26.98138"	DDMO Seppa 8131820107
			(b) Bazar Line Hr. Sc. School, Seppa	27.3555 N 27°21'19.80684" 93.04166 E 93°2'29.99065"	Principal Govt, Hr. Sc. School, Bazar Line8119961009
4	Papum Pare	Hospital (Both Govt. & Pvt)	1. (CHC) DKH		Dr, L. Chuki 9436836132
			2.(PTC) Health Centre B.Dewa		Dr, G. Tali 9089077172
			3. (UPHC) Karshingsa.		Dr, Bini Mausami Lokam 8974737661
			4. (PHC) Poma		Dr, H.Nanya 9436044654
			5. (PHC) Kimin		Dr, Tana James 8256920230
			6. (CHC) Lenka		Dr, Tajum Potom 9436224186
			7. (PHC) Hollongi		Dr, T. Boje 9436658410
			8. (CHC) Leporing		Dr, Doma Ronya 9402476583
			9. (PCH) Toru		Dr.Tai Machung 9436238622
			10. (PCH) Parang		Dr. Yamini Talo 9401189114
			11.(CHC) Balijan		NA Dr.Taw Kaku
			12. (PHC) Sangdupota		NA
			13. (PHC) Taraso		Dr.S. Borah 9435675774
			14. (CHC) Sagalee		Dr. Bomjar Bam 9436875299

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

			15. (PHC) Kakoi		Dr.Tana James 8256920230		
			16. (PHC) Mengio		Dr.Jacob Saroh 9436681013		
		DEOC	DC office, Yupia		Pige Ligu 9436040004		
			SP. Yupia		Dr.Neelam Nega 8974946317		
			PCR		0360-2284940		
			DDMO		9485236652		
		Police Station	Doimukh		Inya Ete (INSPR) 3602277220		
			Balijan		T.M Nekam (OC) 3602661229		
			Sagalee		Joram Takap (SI) 3809241301		
			Kimin		Nabam Had (INSPR) 3602255225		
			B/Dewa		NA		
			Mengio		NA		
		NDRF/SDRF	(12 Bn NDRF) Doimukh		Rajesh Thakur Commandant 9435545951		
			(NDRF) Hollongi		9485235464		
		Fire Station	Nil				
		Relief Camp/ Shelter	Nil				
		5	ICR	Hospitals (Both Govt.& Pvt.)	1) TRIHMS, Naharlagun	N 27.104090° E 93.690954°	9463222910
					2) RKMH, Itanagar	N 27.086474° E 93.609009°	8259001981
					3) Heema Hospital, C Sector Itanagar	N 27.100853° E 93.621110°	9856713694

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

		4) Itafort UPHC, C Sector Itanagar	N27.098862° E 93.628634°	9862237715
		5) Niba Hospital, Papunallah Naharlagun	N 27.097489° E93.676890°	8974788823
		6) Tago Memorial Hospital, Nirjuli	N 27.130027° E 93.747457°	7892501977
		7) BTM Hospital A - Sector, Naharlagun	N 27.095330° E93.678247°	9612757994
	DEOC	DC office, Chandranagar Itanagar	N 27.082563° E 93.600773°	1077 (Toll Free No.) 8787336331
	Police Station	1) PS, C - Sector Itanagar	N 27.098980° E 93.627595°	9774795818
		2) WPS, C- Sector Itanagar	N 27.099000° E 93.628066°	9863048305
		3) PS, A - Sector, Naharlagun	N 27.107430° E 27.107430°	9463228583
		4) PS Nirjuli	N 27.128949° E 93.737312°	8132897717
	NDRF/SDRF	1) D- Company (NDRF), Lekhi	N 27°7'53.37" E 93°43'47.45"	9485236143
		2) SDRF Chimpu Itanagar	27°04'20.9" N 93°36'20.6" E	9863885548
	Fire Station	1) C- Sector Itanagar	N 27.099406° E 93.628103°	9366846967
		2) A- Sector Naharlagun	N 27.1075150° E 93.693958°	8119860108
	Relief Camp/ Shelter	1) Arunodaya GHSS, H- Sector, Itanagar	N 27.084458° E 93.605997°	9436637676
		2) GHSS Konkarnallah, Model Village, Naharlagun	N 27.108800° E 93.711551°	9436055852

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

6	Kurung Kumey	Hospital (Both Govt. & Pvt)	CTDH, Koloriang	N 27.910355° E 93.351215°	9899278166
		DEOC	Mini Secretariat Building, Koloriang	N 27.904801° E 93.344912°	9485236766
		Police Station	Police Station, Koloriang	N 27.903976° E 93.35403°	7629962958
		NDRF/SDRF	Nil	Nil	Nil
		Fire Station	Near Old DC office, Koloriang	N 27.90454° E 93.353403°	7085754550
		Relief Camp/ Shelter	Indoor stadium, near IB, Koloriang	N 27.9055923° E 93.3555043°	7085525543
7	Kra Daadi	Hospitals	Jorung, Palin	N 27.674327 E 93.623954	DMO 9612216935 CMO 730849852 DRCHO 9862330116
		DEOC	Palin Town	N27.698807 E93.635744	9485236735
		Police Station	SSB, Colony, Palin	N27.69727 E 93.633208	SP 9862685921 OC 87299019848
		NDRF/SDRF			
		Relief Camp/ Shelter	Indoor Hall, Palin	N 27.693257 E 93.633545	DDMO 9485236735
Nyokum Hall, Palin	N 93.694029 E 93.635555		DDMO 9485236735		
8	Lower Subansiri	Hospital (Both Govt. & Pvt)	Gyati Taka General Hospital, Hapoli	N 27.538965 E 93.821122	9436228396/ 8119890858
		DEOC	Mini Secretariat, Hapoli	N 27.539783 E 93.816083	9485236658

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

		Police Station	Pai gate, Hapoli	N 27.544189 E 93.812285	3788224235/ 8731835263
		Fire Station	1.Fire Station Hapoli 2.Fire Station Old Ziro	N 27.545367 E 93.81524 N 27.595084 E 93.82709	1..9436010577/ 7085754978 2..9774891978/ 8731094077
		Relief Camp/ Shelter	1.Abotani Hall, Hapoli 2.LBS School, Hapoli	N 27.539783 E 93.816083 N 27.539833 E 93.817845	1.. 9436229739/ 6909755783 2..9856048414
9	Upper Subansiri	Hospitals (Both Govt.& Pvt.)	District Hospital Daporijo	N 27.98153, E 94.21738	9436054038
		DEOC	DDMO's office Daporijo	N 27.99103, E 94.21908	9485236667
		Police Station	Police Station Daporijo	N 27.98478, E 94.22281	7085883896
		NDRF/SDRF	Nil	Nil	Nil
		Fire Station	Fire Station Daporijo	N 27.98478, E 94.22151	8259981312
		Relief Camp/ Shelter	Urban Camp/Shelter	N 27.98137, E 94.21742	7085705717
10	West Siang	Hospital (Both Govt. & Pvt)	General Hospital, Aalo	N 28°10'8" E 94°48'5"E	8794124764/ 7628850865
		DEOC	DEOC, Aalo	N 28°10'11" E 94°47'57"	9485236779
		Police Station	PS, Aalo	N 28°10'22" E 94°47'59"	8974381615
		NDRF/SDRF			
		Fire Station	FS, Aalo	N 28°10'22" E 94°47'59"	8731008286

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

		Relief Camp/ Shelter	Aalo Club	N 28°10'17" E 94°47'56"	9485236779
11	East Siang	ASSA Lab	Near TB Hospital, Pasighat	N 28.067946 E 95.322156	9436043026 9436043310
		BPGHP	Opposite Horticulture College, Pasighat	N 28.07193 E 95 .324136	JDHS 9436043029 03682224285
		DEOC	DC's Office campus	N 28.0622 E 95.326229	9485236821
		Police Station	Lower market area near Mamang Borang petrol pump	N 28.057128 E 95.331575	03682224001 9436043100
		SDRF	2Mile, Gumin nagar area	N 28.042176 E 95.33907	9485236821/ 700562860
		Fire Station	near Outdoor Stadium, Pasighat	N 28.072919 E 95.330667	OC fire service 8257923145
		Relief Camp/ Shelter	Town Club High region, Pasighat	N 28.069665 E 95.327832	9436044037
		NEIFM	Opposite TB Hospital	N 28.07051 E 95.321203	Nil
12	Upper Siang	Hospital (Both Govt. & Pvt)	Yingkiong	N 28.642050 E 95.024944	7628062382
		DEOC	Yingkiong	N 28.634172 E 95.025876	9485236592

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

		Police Station	Yingkiong	N 28.638932 E 95.024616	9436055000
		NDRF/SDRF			
		Fire Station	Yingkiong	N 28.644088 E 95.022460	9402400046
		Relief Camp/ Shelter	Yingkiong		
13	Siang	Hospitals (Both Govt.& Pvt.)	Boleng	N 28.3214° E 94.9540°	8729994514
		DEOC	Boleng	N 28.4373° E 94.6695°	9485237053
		Police Station	Pangin	N 28.1403° E 94.2763°	8732872821
			Boleng	N 28.3360° E 94.9617°	7085855722
			Rumgong	N 28.3109° E 94.8872°	8414999916
			Kaying	N 28.4373° E 94.6695°	6909423862
		NDRF/SDRF			
		Fire Station			
		Relief Camp/ Shelter	GHSS, Boleng	N 28.196 E 94.956	9868182095
14	Dibang Valley	Hospital (Both Govt. & Pvt)	Dist, Hospital Anini.	N 28°47'47" E 95°54'37"	9436058627 9485290778
		DEOC	DEOC, Anini	N 28°47'30" E 95°53'49"	9485236819
		Police Station	Police Station Anini	N 28°48'2" E 95°54'13"	6033975171
		NDRF/SDRF			

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

		Fire Station	Fire Station, Anini	N 28°47'41" E 95°53'49"	9402875975
		Relief Camp/ Shelter	Anini Town Club	N 28°47'58" E 95°54'14"	NA
15	L/D Valley	Hospital (Both Govt. & Pvt)	Distt. Hospital, Roing	N 28°08'27" E 95°50'26"	03803222444/ 9436631434
		DEOC	DEOC, Roing	N 28°08'34" E 95°50'22"	9485236815
		Police Station	Roing	N 28°08'31" E 95°50'28"	03803222229/ 8415852461
		NDRF/SDRF			
		Fire Station	Roing	N 28°08'34" E 95°50'21"	3803222203
16	Lohit	Hospital (Both Govt. & Pvt)	Zonal General Hospital (Govt)	N27°55'37.60" E96°9'27.78"	DMO Tezu 762986446
			Karuna Trust (Pvt)	27°55'6.76" N 96°10'37.79"E	
		DEOC	Dist. Mini Secreteriat Building Tezu	N 27°55'21.10" E 96°10'0.45"	9485236852/ 03804224761
		Police Station	PS Tezu	N 27°55'26.10" E 96°9'45.63"	8787825870 (OC/PS Tezu)
		NDRF/SDRF	RRC Tezu	N 27°55'21.10" E 96°10'0.45"	9485236852/ 9436049782 (DDMO Tezu)
		Fire Station	OC FS Tezu	N 27°55'32.63" E 96°10'7.06"	9862911680/ 7005732118

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

		Relief Camp/ Shelter	Amik Ringya Hall	N 27°55'8.89" E 96°10'64"	9485236852/ 9436049782 (DDMO Tezu)
17	Anjaw	Hospital (Govt)	KPMDH Hospital, Swamy Camp Hayuliang	N' 28.04444 E' 096.30004	9436221723
			CHC Hayuliang	N' 28.04932 E'096.31485	9436221723
			CHC Hawaii	N' 27.35258 E '096.47921	9612455933
			CHC Metengliang	N' 28.12338 E'096.31865	8131886337
			CHC Manchal	N' 27.59129 E'096.38367	9485220714
			CHC Goihang	N'28.08670 E'096.38319	9402924082
			PHC Walong	N' 28.07745 E'097.00896	9436615735
			PHC Chaglagam	N' 28.18538 E' 096.36145	6909414808
			PHC Kherang, Hawaii Circle	N' 27'56313 E' 096.46435	6033938269
			PHC Kibitho	N' 28.16986 E'097.00967	9436437371
			PHC Quibang, Manchal Circle	N' 27.51621 E' 096.41731	8131053292
			PHC Paya, Hayuliang Circle	N' 27.59568 E'096.25048	8119027303
			SC Amliang Hayuliang Circle	N' 28.03491 E' 096.28309	962151084
			SC Wamhang Hawaii Circle	N' 27.56960 E' 096.42543	

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

		SC Siet Manchal Circle	N' 27.59884 E'096.44877	6909424770
		SC Yatong Manchal Circle	N' 28.01308 E' 096.37354	9612601918
		Naraliang in place Mohikong (Change of nome nelature) SC Hayuliang Circle	N'28.03233 E0'96.27479	9383001894
		SC Supliang Hayuliang Circle	N' 28.02949 E'096.34973	8730945941
		SC Lautul Hawai Circle	N'27.57347 E' 096.43232	8415092867
		SC Yassong Walong Circle	N' 27.58430 E' 096.58063	9402814869
		SC Sarti Walong Circle	N' 28.010850 E'096.58006	
		SC Blong Hawai Circle	N' 27.55512 E'096.46308	
	DEOC	DC Office Hawai, Urban- 792104	N' 27°53'10.47 E' 96°48'42.36	9485236885
	Police Station	a)PS Hawai, Urban- 792104 b) PS Hayuliang- 792140	N' 27°52'5859 E' 96°49'6.66 E' 96°48990 N'28°06575	OC PS Hawai- 9402939699 OC PS Hig- 6909187793
		Kibithoo	N 28°15' E 96°34'	CO Kibithoo 9402410988
		Hawai	N 27°53' E 96°48'	DFCSO Anjaw 9435008078

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

		Goiliang	N 28°25' E 95°15'	CO Goiliang 6033874784/ 7085955583
		Chaglagam	N 28°19' E 96°34'	ADC Hayuliang 9436256224/ 8731092812
		Metengliang	N 28°32' 09" E 96°12'25"	ADC Hayuliang 9436256224/ 8731092812
		Manchal	N 27°58'47" E 96°38'90"	CO Manchal- 9402741723/ 6033822160
		Kaho (Kibithoo)	N 28°16' E 96°30'	CO Kibithoo 9402410988
		Yatong (Manchal)	N 28°37'25" E 96°01'15"	CO Manchal- 9402741723/ 6033822160
		Khuiliang (Manchal)	N 28°36'13" E 96°02'17"	CO Manchal- 9402741723/ 6033822160
		Roiliang (Mentangliang)	N 28°32' E 96°09'19"	ADC Hayuliang 9436256224/ 8731092812
		Doringko (Chaglagam)	N 28°29'12" E 96°11'07"	ADC Hayuliang 9436256224/ 8731092812
	Fire Station	Fire Station Hawaii, Near SP's office, Urban Hawaii - 792104	N' 27°52'55.88 E' 96°49'5.90	SFO Hawaii 6026089624
	NDRF/SDRF			

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

18	Namsai	Hospitals	DMO, Namsai	N 27.66461 E 95.86829	8259078723
		DEOC	Distt. Secretariat	N 27.66789 E 95.86728	9485236882
		Police Station	Namsai	N 27.665657 E 95.862676	8974183093
			Mahadevpur	N 27.636449 E 95.807004	9436069219
			Chongkham	N 27.811017 E 66.041672	763082279
		NDRF/SDRF			
		Fire Station	OC Fire Service	N 27.6650497 E 95.8694914	9436226678
		Relief Camp/ Shelter	Namsai Mengkengmiri		9612793320
			Lekang Rongalibeel	N 27.69320 E 95.79021	9436030427
			Chongkham Alubari	N 27.83487 E 96.01132	7005499603
			Piyong Jenglai		9612011846
19	Changlang	Hospitals	Distt, Hos[pital Changlang	N 27°14'02.45" E 95°73,81.4"	9774586078 (Indoor Contact No.)
		DEOC	Disaster Management Branch Cum DEOC Changlang	N 27°13,64.35" E 95°74'36.95"	9485236971
		Police Station	Police Station Changlang	N 27°13'94.25" E 95°74'21,17"	03808222271 (O) 03808222272 (O) 9436057170 (M)
		NDRF/SDRF	Nil	Nil	Nil

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

		Fire Station	SFO, 101, SP Offiic Changlang	N 27°13,94.25" E 95074,21.17"	03808222271 (O) 03808222272 (O) 9485236566 (M)
		Relief Camp/ Shelter	Circuite House, Multi - Porpose Hall Changlang	N 27°13,83.97" E 95°74,25.32" E	03808223808 (O) 03808222437 (O) 09774219320 (M)
20	Tirap	Hospital (Both Govt. & Pvt)	Distt. Hospital Tirap Disst, Khonsa	N 26°59'31.83" E 95°30'0286"	Indoor Contact No. 8731965943
		DEOC	Office of the Deputy Commissioner Tirap Distt, Khonsa	N 26°59'23.89" E 95°30'06.89"	Toll Free No.1077 03786222675 9485236975
		Police Station	Police Station, Khonsa, Tirap Distt.	N 26°59'15.25" E 95°30'15.79"	Control Room No. 03786222257 03786222359 OC PS: 7085674879
		NDRF/SDRF	SDRF Regional Centre, Khonsa DC's Office Complex Tirap Distt.	N 26°59'23.41" E 95°30'06.05"	Toll Free No.1077 03786222675 9485236975
		Fire Station	Fire Station, Khonsa Near SP's Office Tirap Distt.	N26°59'39.54" E 95°30'22.94"	Control Room No. 03786222257
		Relief Camp/ Shelter	N/A	N/A	N/A
21	Longding	Hospital (Both Govt. & Pvt)	Dist Hospital Longding	N 26.885118 E 95.321415	9957460844
		DEOC	DC's Office, Longding	N 26.8874023 E 95.3192363	9485236991
		Police Station	PS Longding Distt.	N 26.886283 E 95.322847	8974907392
		Fire Station	Longding Distt.	N 26.886283 E 95.322847	8974907392

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

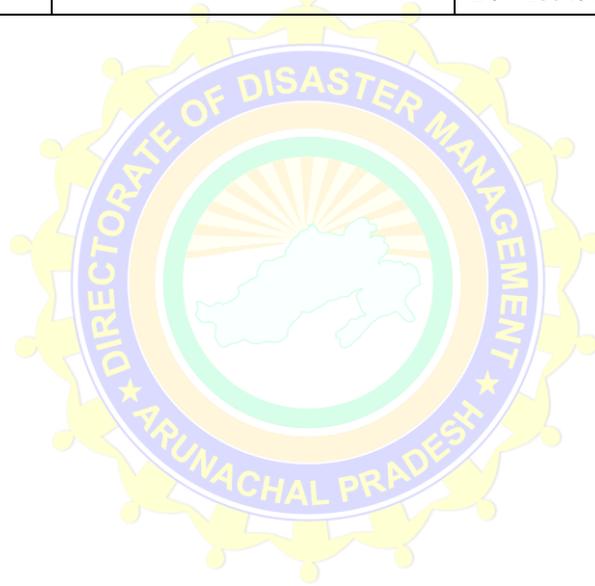
		Relief Camp/ Shelter	GHSS Longding Distt.	N 26.886282 E 95.322832	8974395950
			Tingpong Wangham Badminton Hall, Longding Distt.	N 26.886895 E 95.320918	8974950473
22	Lower Siang	Hospitals	Likabali	N 27.65 E 94.70	DMO, LSD 7085594055
		DEOC	Likabali	N 27.65 E 94.71	9485236826
		Police Station	Likabali	N 27.65 E 94.70	SP LSD 8826360729
		Fire Station	Likabali	N 27.65 E 94.70	SFO 8732075913
23	Kamle	Hospitals (Both Govt.& Pvt.)	Nido Techhi Dist, Hospital Raga.	N 27.792832 E 94.064662	9862149080
		DEOC	DC Office, Raga	N 27.794533 E 94.068441	9485237032
		Police Station	OC Police Station Raga.	N 27.793994 E 94.066714	8014378455
24	Leparada	Hospital (Govt)	DMO Leparada	N 27.98077 E 94.68422	7085226811/ 9774718765
		DEOC	DC office Leparada Distt: Basar	N 27.9794398 E 94.6892289	9485237015
		Police Station	OC Police Station Leparada Distt. Basar	N 27.98189 E 94.69014	8974975447
		NDRF/SDRF			
		Fire Station	OC Fire Leparada Distt. Basar	N 27.97861 E 94.6859	7085674277

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

		Relief Camp/ Shelter	Multipurpose Cultural Hall, Town Club	N 27.98053 E 94.6881	8257878973
25	Pakke Kesang	Hospital (Both Govt. & Pvt)	Community Health Centre Lemmi.	N 27'936.479" E 93'13'4766' E	8729831722. 7085868370 7630814767 9362566759
		DEOC	DEOC Lemmi	N 27'945.034" E 93'13'35.295"	9485236639
		Police Station	PS Lemmi	N 27'9'38.735" E 93'13'4.726"	8729921999 6909423324
		NDRF/SDRF	RRC, Bomdila, West Kameng Distt.	N 27'26.275" E 92'42.2121"	8178403943 8729947950
		Fire Station	FS, Lemmi	N 27 38.732" E 93"4.726"	8729927199 6909423324
		Relief Camp/ Shelter	N/A	N/A	N/A
26	Shi Yomi	Hospitals	CHC, Mechukha	N 28.597538 E 94.1359147	9402925523

ARUNACHAL PRADESH STATE DISASTER MANAGEMENT PLAN 2025

			PHC Tato	N 28.597544 E 94.135915	9436232788
			PHC Monigong	N 28° 47'00" E 94° 16'99"	6033914183
	DEOC		DEOC, Shi Yomi	N 28.59981 E 94.134446	9485236724
	Police Station		Police Station Mechukha	N 28.599096 E 94.135798	



Bibliography

- Ahmad, F., Goparaju, L., & Qayum, A. (2018). Himalayan forest fire characterization in relation to topography, socio-economy and meteorology parameters in Arunachal Pradesh, India. . *Spatial Information Research*, 26, 305-315. doi:<https://doi.org/10.1007/s41324-018-0175-1>
- ASC. (2021). *Earthquake in Arunachal Pradesh*. Retrieved from <http://asc-india.org/seismi/seis-arunachal-pradesh/htm>
- ASDMA. (2015). *Assam State Disaster Management Plan* . Guwahati: Government of Assam.
- Barua, A., Katyaini, S., Gooch, P., & Mili, B. (2014). Climate Change and Poverty: Building Resilience of Rural Mountain Communities in South Sikkim, Eastern Himalaya, India. *Regional Environment Change*, 14, 267-280.
- Census. (2011). *Census of India*. New Delhi: Government of India.
- Forest Survey of India. (2012). *Vulnerability of India's Forest to Fire*. Dehradun: MoEF&CC, GoI.
- Forest Survey of India. (2017). *Forest Survey of India report 2017*. Dehradun: Government of India.
- FSI. (2019). *Forest Survey of India Report: Arunachal Pradesh*. Forest Survey of India. Dehradun: Government of India. Retrieved from <https://fsi.nic.in/isfr19/vol2/isfr-2019-vol-ii-arunachal-pradesh.pdf>
- Gon Chae, B., Park, H.-J., Catani, F., Simoni, A., & Berti, M. (2017). Landslide prediction, monitoring and early warning: a concise review of state-of-the-art. *Geosciences Journal*, 21(6), 1033-1070 .
- Government of Assam. (2015). *Assam Disaster Management Manual 2015*. Guwahati: Revenue & Disaster Management Department, Government of Assam.
- Government of India. (2011). *Agriculture Census of India*. New Delhi: Department of Agriculture & Co-Operation, Ministry of Agriculture.
- Hodam, S., Chitrasen, L., Ngasepam, M., Marak, R. N., Sangma, A., Marak, J. C., & Bandyopadhyay, A. (2008). Classification of Districts of Arunachal Pradesh Based on Vulneability to Floods. *J. Indian Water Resources Soc*, 38(4).
- Hodam, S., L, C., Ngasepam, M., Marak, R. N., Sangma, A., Marak, J. C., . . . Bhadra, A. (2008). Classification of Districts of Arunachal Pradesh Based on Vulneability to Floods. *J. Indian Water Resources Soc*, 38(4).

- IPCC. (2007). *The Physical Sciences Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge, United Kingdom and New York, USA: Cambridge University Press.
- MSDMP. (2020). *Mizoram State Disaster Management Plan*. Aizawl: Government of Mizoram.
- Mukerjee, P., Sogani, R., Gureng, N., Rastogi, A., & Swiderska, K. (2018). *Smallholder farming systems in the Indian Himalayas: Key trends and innovations*. London: IIED's Natural Resources.
- NDMA. (2021). *Mitigation*. Retrieved from National Disaster Management Authority, Government of India: <https://ndma.gov.in/about-us/division/Mitigation>
- NIDM. (2021). *Understanding Disasters*. New Delhi: National Institute of Disaster Management, Government of India.
- NRHM. (2017). *Infant Mortality Rate*. Naharlagun: Government of Arunachal Pradesh.
- Ramakrishnan, P. (2007). Sustainable Mountain Development: The Himalayan Tragedy. *Current Science*, 92, 308-316.
- SAPCC. (2011). *State Action Plan on Climate Change*. Itanagar: Government of Arunachal Pradesh.
- Satendra, & Kaushik, A. D. (2014). *Forest Fire Disaster Management*. New Delhi: National Institute of Disaster Management.
- UNDRR. (2020). *Structural and non-structural measures*. Retrieved from United Nations Office for Disaster Risk Reduction : <https://www.undrr.org/terminology/structural-and-non-structural-measures>
- UNISDR. (2009). *UNISDR Terminology on Disaster Risk Reduction*. Geneva, Switzerland: United Nations.
- United Nations. (2015). *Sendai Framework for Disaster Risk Reduction 2015 - 2030*. United Nations .