STATE DISASTER MANAGEMENT PLAN

TRIPURA
2023-24

VOLUME 1: PERSPECTIVE PLAN

TRIPURA DISASTER MANAGEMENT AUTHORITY
&
REVENUE DEPARTMENT
GOVERNMENT OF TRIPURA

ABBREVIATIONS

AMCDRR	Asian Ministerial Conference on Disaster Risk Reduction
AMRUT	Atal Mission for Rejuvenation and Urban Transformation
ANM	Auxiliary Nurse Midwife
ASHA	Accredited Social Health Activist
ATI	Administrative Training Institute
BBB	Build Back Better
BDO	Block Development Officer
BRO	Border Roads Organization
CBDR	Community Based Disaster Risk
CBO	Community Based Organization
CCA	Climate Change Adaptation
CFS	Child Friendly Spaces
CMG	Crisis Management Group
COP	Conference of the Parties
CS	Chief Secretary
CSS	Centrally Sponsored Schemes
CSR	Corporate Social Responsibility
CTI	Central Training Institute
CWC	Central Water Commission
DALA	Damage and Loss Assessment
DDMA	District Disaster Management Authority
DDMP	Departmental Disaster Management Plan
DDRC	District Disability Rehabilitation Centre
DEOC	District Emergency Operation Center
Dept.	Department
DFRI	Disaster Risk Financing Instruments
DM	Disaster Management
DMD	Disaster Management Department
DMP	Disaster Management Plan
DMT	Disaster Management Team
DRDA	District Rural Development Agency
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
DWS	Drinking Water and Sanitization
EIA	Environment Impact Assessment
EO	Executive Officer
EOC	Emergency Operations Centre
ERSS	Emergency Response Support System
ESF	Emergency Support Function
F&ES	Fire and Emergency Services
FC	Finance Commission

FY	Financial Year
GAIL	Gas Authority of India Limited
GAR	Global Assessment Report
GP	Gram Panchayat
GoI	Government of India
GIS	Geographic Information System
GSI	Geological Survey of India
HAM	Amateur Radio Networks
HF	High Frequency
HQ	Head Quarter
HG & CD	Home Guard and Civil Defence
HRNA	Human Recovery Needs Assessment
HRVA	Hazard, Risk and Vulnerability Assessment
HRVCA	Hazard Risk, Vulnerability and Capacity Assessment
IAP	Incident Action Plan
IC	Incident Commander
ICA	Information and Cultural Affairs
ICPS	Integrated Child Protection Scheme
ICT	Information Communication Technology
IDRN	Indian Disaster Resource Network
IEC	Information Education Communication
IIT	Indian Institute of Technology
IMD	India Meteorological Department
IMO	Information and Media Officer
IPCC	Inter-Governmental Panel on Climate Change
IRC	Indian Roads Congress
IRCS	Indian Red Cross Society
IRS	Incident Response System
IRT	Incident Response Team
Km	Kilometer
Kwh	Kilowatt / Hour
LO	Liasion Officer
LS	Logistics Section
M&E	Monitoring and Evaluation
MHA	Ministry of Home Affairs
MOEFCC	Ministry of Environment, Forest and Climate Change
MW	Mega Watt
NCC	National Cadet Corps
NCCF	National Calamity Contingency Fund
NCDC	National Centre for Disease Control
NCMC	National Crisis Management Committee
NDMA	National Disaster Management Authority

NDMP	National Disaster Management Plan
NDMF	National Disaster Mitigation Fund
NDRF	National Disaster Response Force
NDRMF	National Disaster Risk Management Fund
NE	North-East
NEC	National Executive Committee
NEOC	National Emergency Operation Centre
NEEPCO	North Eastern Electric Power Corporation Limited
NEPA	North Eastern Police Academy
NESAC	North Eastern Space Applications Centre
NGO	Non-Governmental Organisations
NIDM	National Institute of Disaster Management
NIT	National Institute of Technology
NIEST	North East Institute of Science and Technology
NO	Nodal Officer
NPDM	National Policy on Disaster Management
NSS	National Service Scheme
NSO	National Statistics Office
NYKS	Nehru Yuva Kendra Sangathan
OBC	Other Backward Caste
ONGC	Oil and Natural Gas Corporation
OS	Operation Section
PDNA	Post Disaster Needs Assessment
PESA	Panchayats Extension in Schedule Areas
PMAY	Pradhan Mantri Awas Yojana
PPP	Public Private Partnership
PRI	Panchayati Raj Institutions (District, Block and Village levels)
PS	Planning Section
PWD	Public Works Department
PWD (R&B)	Public Works Department (Roads and Building)
PWD (WR)	Public Works Department (Water Resource)
PWD (DWS)	Public Works Department (Drinking Water and Sanitisation)
PwD	Persons with Disabilities
QRT	Quick Response Team
RC	Relief Commissioner
RD	Revenue Department
RO	Responsible Officer
RTO	Road Transport Office
SAPCC	State Action Plans on Climate Change
SAR	Search and Rescue
SC	Scheduled Caste
SDM	Sub-Divisional Magistrate

SDG	Sustainable Development Goals
SDM	Sub-Divisional Magistrate
SDMA	State Disaster Management Authority
SDMF	State Disaster Mitigation Fund
SDMP	State Disaster Management Plan, Tripura
SDRF	State Disaster Response Force
SDRMF	State Disaster Risk Management Fund
SDRN	State Disaster Resource Network
SEC	State Executive Committee
SEOC	State Emergency Operation Centre
SFDRR	Sendai Framework for Disaster Risk Reduction
SFR	State of Forest Report
SIPARD	State Institute of Public Administration and Rural Development
SIRD	State Institute of Rural Development
SOP	Standard Operating Procedure
SSA	Samagra ShikshaAbhiyaan
SSB	Sashastra Seema Bal
SSA	Samagra ShikshaAbhiyaan
ST	Scheduled Tribe
SW & SE	Social Welfare and Social Education
ToT	Training of Trainers
TDMA	Tripura Disaster Management Authority
TSAC	Tripura State Application Centre
TSECL	Tripura State Electricity Corporation Limited
TSR	Tripura State Rifles
TTAADC	The Tripura Tribal Areas Autonomous District Council
UC	Unified Command
ULB	Urban Local Bodies (municipal corporations, municipalities, nagarpalikas)
UN	United Nations
UNCRPD	UN Convention on the Rights of Persons with Disabilities
UNDP	United Nations Development Programme
UNISDR	United Nations International Strategy for Disaster Reduction now UN Office for DRR
UT	Union Territory
VDMC	Village Disaster Management Committees

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EXECUTIVE SUMMARY

State Disaster Management Plan, Tripura (SDMP, Tripura) 2023-24 is a revised and updated version of the earlier SDMP, Tripura as developed and adopted by the Government of Tripura, in 2016- 2017. Since and along with the formulation of the 2016-2017 Plan, several plans and frameworks such as the Sendai Framework for Disaster Risk Reduction [SFDRR-2015], National Disaster Management Plan [NDMP-2019], Asian Ministerial Conference on Disaster Risk Reduction [New Delhi-2016], the Sustainable Developed Goals [SDGs-2015-2030], Paris Climate Agreement [2015] and the 15th Finance Commission of the Government of India, have come about and informed the disaster management and development policy and practice, globally and in India.

The major improvement in this Plan is in terms of the structure, approach and content of the Plan. The Plan is now in two volumes. While Volume 1 is titled 'Perspective Plan' and spells out the 'risk governance' approach of the planning exercise with focus on understanding risks, social inclusion, mainstreaming, mitigation and risk reduction, Volume 2 is titled 'Action Plan', which presents the hazard wise responsibility matrix for all the government departments and other state and non-state actors involved in disaster management in the State.

In view of the fact that Tripura is a multi-hazard State prone to earthquakes, floods, storms, landslides etc. besides man-made disasters like chemical and industrial hazards and biological disasters like COVID 19, the Plan proposes an 'all-of-society approach' in disaster management planning and action in line with the National Policy and Plan and Sendai Framework for Disaster Risk Reduction (SFDRR). The Plan also presents a DRR Framework and guidance note for DRR Roadmap for the State in Volume 1.

The proposed plan provides the State of Tripura with the roadmap to realize the State's vision of achieving the number 1 status amongst the small states of the country in a disaster resilient fashion. This ambitious vision can be supported adequately with disaster resilient infrastructure development for both rural and urban Tripura. It also focuses on developing the capacity of the State's Human Resources both in rural and urban areas.

The list of infrastructure including highways, roads, bridges, greenfield airports, extensive rail network, production and marketing facilities, health care centres, schools and other institutions, emergency services, housing, drinking water and sanitation facilities, tourism facilities etc. presents both challenges as well as opportunities to build disaster resilient infrastructure and showcase it both nationally and globally. It is based on a disaster resilient approach to achieving Tripura's Sustainable Development Goals and taking the state forward in a robust manner, economically, socially and culturally.

Chronological review of the past major disasters shows possibilities of increasing frequency and intensity of disaster events in future in the state. Climate change and increasing temperature could further accentuate the nature and intensity of hydro-meteorological hazards such as floods, cyclones, landslides, droughts etc. Floods, particularly massive floods in 2018, affecting all the districts, causing widespread damage and loss, are a case in point.

As regards the funds for disaster management, the State is almost entirely dependent on the Central Government for drawing its resources. Own tax and non-tax revenues of the State constitute only 15% of the total Revenue Receipts of the State with the balance coming as share of central taxes, Central grant-in-aid, other grants, Central Plan assistance, borrowings from the Centre, open market borrowings, borrowings from the Public Account.

The findings of the Planning Commission published in National Human Development Report (2019) show that Tripura ranks 25th among 36 States and Union Territories in respect of Human Development Index, a composite of variables capturing attainments in income, education, health etc. As per the Niti Aayog's Multi-Dimensional Poverty Index Report (2023), Tripura is at the 12th rank with 16.62 % population, which is multi-dimensionally poor.

As the growth in infrastructure is associated with new and increased risks, risk reduction has to be the key criterion for planning and implementation of infrastructure and other development projects in order to make it disaster resilient and truly sustainable over an extended period of time.

The institutional infrastructure for disaster management in the State is already in place in line with the national plans and priorities. The Revenue Department including the Directorate of Relief, Rehabilitation & Disaster Management is the nodal agency for coordination of disaster management in the State. Tripura Disaster Management Authority (TDMA) is the apex level institution for steering the disaster management policy and practice at the state level. The institutional arrangements are consistent with the paradigm shift from the relief-centric approach to a holistic and integrated approach for Disaster Risk Reduction (DRR) by way of strengthening disaster preparedness, mitigation and emergency response.

In view of the above, this executive summary presents an overview of different chapters of Volume 1: Perspective Plan. The first three Chapters (Chapter 1, 2 and 3) cover introduction, state's demographic and geo-climatic profile, and the hazard, risk and vulnerability analysis of the state.

The following four Chapters (Chapter 4, 5, 6 and 7) cover the following in that order: disaster management arrangement; disaster response plan; disaster recovery plan; and disaster preparedness, prevention and mitigation plan. The major improvement in this section of the Plan is in terms of risk informed approach to response, recovery, preparedness, prevention and mitigation on the one hand and Build Back Better (BBB) approach to recovery and rehabilitation efforts on the other.

The next four Chapters (Chapter 8,9,10 and 11) deal with the following themes in that order: social inclusion in DRR; mainstreaming DRR and CCA in development; disaster risk governance; capacity development. All these intimately inter-linked themes, dealt with at length, represent the major revision in this new Plan.

Chapter 12 related to Financial Management is a totally new addition that aims at dispelling the myth that there is a shortage of funds to address the various aspects of disaster management adequately at the state level. This Chapter spells out the various avenues and sources of funding

as provided by the Government of India in the light of the recommendations of the 15th Finance Commission and more.

Chapter 13 deals with voluntary, bilateral and multilateral cooperation in the field of disaster management. This chapter spells out the ways in which outside help can be accessed in times of mega disasters with the prior consent and permission of the Government of India.

The final Chapter 14 is regarding the monitoring, maintenance and updating of the Plan in the light of learning about the emerging issues and challenges against the backdrop of a State going for ambitious infrastructure development in the midst of the impact of a changing climate. As per the DM Act 2005, the State Disaster Management Plan, Tripura (SDMP, Tripura) has to be updated annually.

It is envisaged that on the basis of the SDMP, Tripura 2023-24, all the concerned line departments at the state level will prepare or/and update their existing departmental disaster management plans and ensure their efficient and effective implementation in a time bound manner. The same is expected to be done at the district level in the context of district disaster management plans. The Revenue Department including the Directorate of Relief, Rehabilitation & Disaster Management and TDMA will provide the required technical assistance and supportive supervision for the same to happen in real time on the ground.

CHAPTER 1: INTRODUCTION

1.1 Background and Rationale

For preventing and mitigating the impact of disasters and for undertaking a holistic, coordinated and prompt response to any disaster situation, the Disaster Management Act was enacted by the Government of India in 2005 (DM Act, 2005). It lays down institutional and coordination mechanism for effective disaster management at national, state, district and local levels. The multi-tiered institutional system includes National Disaster Management Authority headed by the Prime Minster at national level, State Disaster Management Authority in each State headed by the respective Chief Minister and the District Disaster Management Authority in each district headed by the District Collector/ District Magistrate and co-chaired by the Chairpersons of the local bodies. Besides, in each state, there will be a nodal agency for coordination of disaster management namely Disaster Management Department (DMD). The institutional arrangements have been set up consistent with the paradigm shift from the relief-centric approach to a holistic and integrated approach for Disaster Risk Reduction (DRR) by way of strengthening disaster preparedness, mitigation and emergency response.

The Government of Tripura first formulated the State Disaster Management Plan, Tripura (SDMP, Tripura) in 2016-2017. This document is the updated SDMP, Tripura 2023-2024. Since and along with the formulation of the 2016-2017 Plan, several plans and frameworks such as the revised National Disaster Management Plan, 2019, Prime Minister's 10 point agenda for Disaster Risk Reduction announced during the Asian Ministerial Conference on Disaster Risk Reduction [New Delhi-2016], 2016, Sendai Framework for Disaster Risk Reduction [SFDRR-2015], National Disaster Management Plan [NDMP-2019], the Sustainable Developed Goals [SDGs-2015-2030], Paris Climate Agreement [2015] and the 15th Finance Commission of the Government of India, have emerged in the realm of disaster management and development both globally and in India.

Tripura is a multi-hazard State prone to floods, earthquakes, storms and landslides besides man-made disasters like chemical and industrial hazards and biological disasters like COVID 19. Chronological reviews of the past major disasters show possibilities of similar events in future in the state of Tripura. Climate change and increasing temperature are likely to further accentuate nature and intensity of hydro-meteorological hazards such as flood, cyclone, landslide and drought.

Most of the disasters cause sudden disruption to the normal life of a society and result in damage and loss of lives, property and livelihoods. There is substantial evidence to the effect that the vulnerable sections of the population such as expectant and nursing women, children, elderly, people in poor health, transgenders, differently abled people, socially, economically and educationally backward sections etc. are disproportionately impacted by disasters. Given the population of SCs at 17.8% and that of STs at 31.8% of the total population in Tripura [Census 2011] largely located in vulnerable pockets, over half the population of Tripura is extremely vulnerable to multiple hazards. Climate change is likely to enhance the exposure of these vulnerable groups to intense hazards in the coming years.

The rationale of this exercise is to revise and update the State DM Plan as per the evolving national and global Disaster Management Frameworks and the changing hazard and vulnerability profile and the overall framework of specific evolving risks and development

needs of the state of Tripura. The process followed close consultations with the Tripura State Disaster Management Authority, and all the line departments responsible for different aspects of disaster management.

1.2 Main Pillars of State Disaster Management Plan, Tripura (SDMP, Tripura)

The SDMP, Tripura broadly has five main pillars:
- Conforming to the national legal mandates: the DM Act 2005 and the NPDM 2009
- Being consistent with global agreements including Sendai Framework for Disaster Risk Reduction (SFDRR), Sustainable Development Goals (SDGs) and Paris Agreement on Climate Change, to which India is a signatory
- Prime Minister's Ten Point Agenda for DRR articulating current national priorities
- Social inclusion as a major and cross-cutting principle in Tripura
- Mainstreaming DRR as an integral feature in the plans and programmes of the State Government

1.3 Vision
To make Tripura a disaster resilient State
The updated SDMP, Tripura builds on the vision of the Government of Tripura for its long term sustainable and resilient development. The focus on social, economic and cultural growth and development is reinforced by making "risk reduction" the driving criterion for all development investments and initiatives to ensure sustainability. The results of this approach of substantial and inclusive disaster risk reduction will be reduction in loss of lives and livelihoods, increased protection of property and assets and the enhanced capacity to cope with disasters.

1.4 Mission

Create disaster resilient institutions and communities by "supporting institutions, people and communities to protect themselves from disasters, and substantially reduce disaster risks and losses to lives, livelihoods and health at the local level and in the economic, physical, social, cultural and environmental assets of persons, businesses and communities."

The main mission of this plan is to pursue coordinated efforts to have an effective disaster management strategy for the State, which will reduce the existing disaster risks and minimise the impact of future disasters. The other main focus area of this plan is to have extremely quick, efficient and coordinated response and recovery plans in place from the Panchayat/Autonomous Councils to the State level with a mechanism that will ensure increasing community participation in all disaster preparedness activities.

1.5 Aim
The aim of SDMP, Tripura 2023-24 is to realize its vision and mission by pursuing some well-defined objectives as described in the paragraph 1.6. It is envisaged that this would entail guiding the multi-hazard risk reduction and management of disaster risk in development processes at all the levels and across all the sectors in Government of Tripura. It seeks to strengthen DRR in Tripura and its integration into policies of the Government of Tripura.

1.6 Objectives

The vision, mission and aim of the SDMP, Tripura, its five broad objectives and the related sub-objectives are articulated as under:

1.6.1 Improve the understanding of disaster risks, hazards, & vulnerabilities
- Design and undertake comprehensive studies and surveys on multi-hazard disaster risks and development of state level disaster risk assessments and maps that will include climate change scenarios.

1.6.2 Strengthen disaster risk governance at all levels, from local to the state level
- Promote the activity of disaster risk prevention and mitigation at all levels.
- Define the roles and responsibilities of various Departments and Officers involved in different aspects of disaster management.
- Internalize the culture and practice of Disaster Risk Reduction within institutional functioning and mitigate the effects of any disaster by promoting training and capacity building and generating awareness among its employees and their families and also communities living close to its establishments.
- Ensure that DRM is socially inclusive, gender sensitive and empowering.

1.6.3 Invest in disaster risk reduction for resilience
- Ensure investment in disaster risk reduction (DRR) initiatives aimed at preventing disasters and achieving substantial reduction of disaster risk and losses in lives, livelihoods, health, and assets (economic, physical, social, cultural and environmental).
- Stimulate the implementation of integrated and inclusive economic, structural, legal, social, cultural, educational, environmental, technological, political and institutional measures to prevent and reduce hazard exposure and vulnerabilities to disasters.
- Empower both local authorities and communities as partners to reduce and manage disaster risks.
- Strengthen scientific and technical capabilities in all aspects of disaster management.

1.6.4 Enhance disaster preparedness for effective response.
- Strengthen disaster risk modelling, assessment, mapping, monitoring and multi-hazard early warning systems.
- Implementation of ecosystem-based approaches regarding shared resources, such as within river basins and mountainous regions.
- Effective use of science, technology and traditional knowledge in all aspects of DRM.

1.6.5 Promote "Build Back Better" in recovery, rehabilitation and reconstruction.
- Build community capacity to function as disaster managers during recovery, rehabilitation, and reconstruction.
- Promote women's leadership and active participation in disaster management planning and action at all levels including the local level.

1.7 Guiding Principles

The guiding principles for the preparation and implementation of SDMP, Tripura 2023-2024 are as follows:

- Resilience-building
- Enable others to take action (Shared Responsibility)
- Gender equity and inclusiveness
- "Leave no one behind" ensuring focus on disadvantaged and marginalised communities
- Coordination
- Sustainable Development

1.8 Plan Implementation

Section 23 of the DM Act 2005 states that the State Plan shall be prepared by the State Executive Committee having regard to the guidelines laid down by the National Authority and after such consultation with local authorities, district authorities and people's representatives as the State Executive Committee may deem fit. Section 22 also clarifies inter alia that the State Executive Committee shall have the responsibility for implementing the National Plan and the State Plan and act as the coordinating and monitoring body for management of disasters in the State.

Accordingly, the Departments of Government of Tripura have been developing and updating their DM Plans as per the needs and priorities identified during the course of implementation. They are encouraged to adopt a holistic approach and build multi-stakeholder partnerships at all levels, as appropriate, for the implementation of the DM plans.

The SDMP, Tripura is not a department centric Plan. It is the overall State Plan that will be financed from the State budget through various Departments and Government agencies contributing to the overall planning agenda and priorities. The Plan is proposed to be funded both by the centrally allocated finances such as National Disaster Response Fund and State Disaster Response Fund including the State Disaster Mitigation Fund. Since DRR mainstreaming is an integral part of the main plans of Centre, Central ministries, States/UTs and State/UT-level agencies, no separate financial allocations are provisioned and provisions for such functions should constitute a part of the schemes being implemented by the concerned departments, as a component of the relevant project/ programme.

This is an ambitious and aspirational plan whose total implementation, as intended, is likely to be challenging in various ways and at various levels. However, it must be underlined here that both the TDMA and Departments have already made considerable progress since the preparation of the State Disaster Management Plan, Tripura (2016-2017) and are committed to making sincere efforts for the implementation of SDMP, Tripura 2023-2024, along with respective Departmental Disaster Management Plans (DDMPs), already in place, or being prepared.

CHAPTER 2: STATE PROFILE

2.1 Location, Administration, Demography, Economy
2.1.1   Location, Geography, Size

Tripura extends from 22° 56´ N to 24° 32´ N latitude and between 91° 10´ E to 92° 20´ E longitude with a total area of 10,491.69 Sq.Km. The state accounts for about 0.32 % of the total area of India. Tripura is a landlocked state in the North East of India and is bordered by Assam in the north east, Mizoram in the east and Bangladesh to the west, north and south. Tripura ranks third in smallest states in the country after Goa and Sikkim.

Map 2A: Location of Tripura
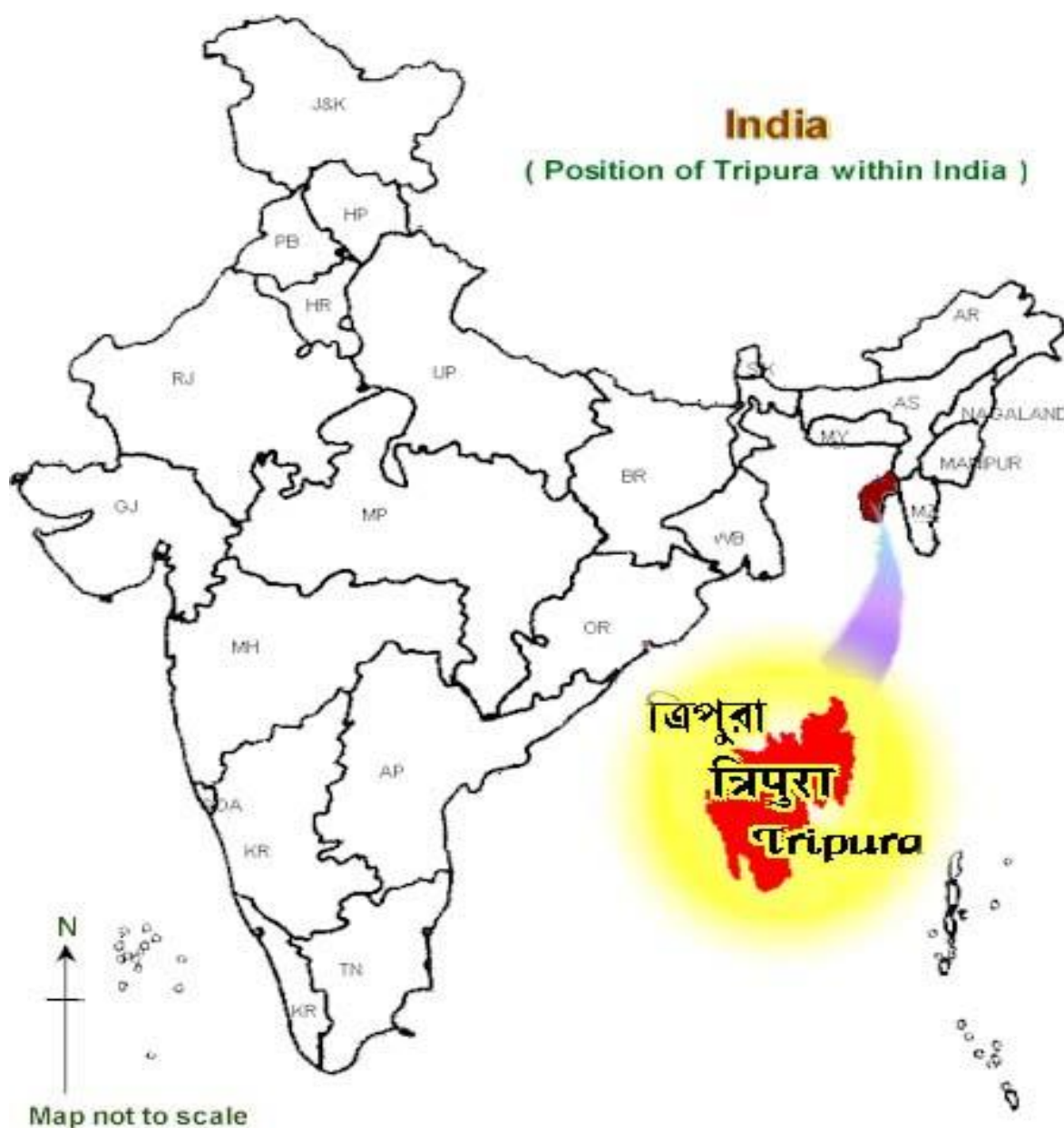
Source: www.tripura.gov.in

2.1.2 Administrative Profile

Tripura was a princely state till it acceded to the Union of India on the 15th October, 1949. It became a Union Territory on the 18th July, 1963 and acquired Statehood on the 21st January, 1972. The State is sub-divided into 8 Districts, 23 Sub-divisions, 58 Development Blocks, 591 Gram Panchayats, 8 Zilla Parishads, 9 Nagar Panchayats, 10 Municipal Councils and 1 Municipal Corporation. The Tripura Tribal Areas Autonomous District Council [TTAADC] constituted under the 8th Schedule of the Constitution of India, administers about 68.10% of the total area of the state which have a predominantly tribal population.

The TTAADC containing 18 Departments operating across 8 Zones and 587 village committees has exclusive control and administration for:

1. Allotment, occupation, use or using a part of land other than reserved forests.
2. Management of forests not being reserved forest;
3. Use of canal water & water course for agriculture;
4. Jhum;
5. Village Committee or council;
6. Any other matter relating to administration including public health and sanitation.

Table 2A: The administrative divisions in the Tripura state

District	Sub-Division	Block
West Tripura	Sadar	Dukli
	Mohanpur	Mohanpur
		Bamutia
		Lefunga
		Hezamara
	Jirania	Jirania
		Old Agartala
		Mandawi
		Belbari
Sepahijala	Bishalgarh	Bishalgarh
		Charilam
	Sonamura	Kathalia
		Boxanagar
		Nalchar
		Mohanbhog
	Jampuijala	Jampuijala
Gomati	Udaipur	Matabari
		Kakraban
		Tepania
		Killa
	Amarpur	Ompi
		Amarpur
	Karbook	Karbook
		Silachari
South Tripura	Santir Bazar	Bagafa
		Julaibari

	Belonia	Hrishyamukh
		Rajnagar
		Bharat Chandra
	Sabroom	Satchand
		Rupaichari
		Puangbari
North Tripura	Dharmanagar	Kadamtala
		Kalachara
		Jubaraj Nagar
	Kanchanpur	Jampuihill
		Lal juri
		Dasda
	Panisagar	Panisagar
		Damchara
Unakoti	Kailasahar	Gournagar
		Chandipur
	Kumarghat	Kumarghat
		Pecharthal
Khowai	Teliamura	Teliamura
		Mungiakami
		Kalyanpur
	Khowai	Khowai
		Tulashikhar
		Padmabil
Dhalai	Ambassa	Ambassa
		Ganganagar
	Kamalpur	Salema
		Durga Chwomuhani
	Gandachara	Damburnagar
		Raisa Bari
	LT Valley	Manu
		Chawmanu
Total – 8 Districts	**23 Sub-Divisions**	**58 Blocks**

2.1.3   Demographic Profile

As per the Census of India 2011, the state had a population of 37.66 lakhs an increase from 32 lakhs in the 2001 census. The state thus accounted for 0.30% of India's population. The urban population in the state was 26.17 % whereas the rural population was 73.83 %. The decadal population growth rate for Tripura is estimated at 14.84 %, compared to 17.6 % for the country. The estimated population for 2019-2020 is 40.12 Lakhs.

The state has a population density of 350 persons per square km [compared to 382 nationally]. In 2011, of the total population, the Scheduled Caste (SC) population constituted 17.83 % and the Scheduled Tribe (ST) population constituted 31.76%. The sex ratio according to the 2011 census was 960 F/1000 M [rural -955 F/1000 M, urban – 973 F/1000 M], compared to the national sex ratio at 943 F/ 1000 M. The effective literacy rate of the state was 87.22 % [Male-

91.53 % and female at 82.73%]. Female literacy plays an important role in contributing to Human Development that helps the achievement of the Sustainable Development Goals and several national strategies. The female literacy rate increased from 64.91 % [Census 2001] to 81.73% [Census 2011], the overall female literacy rate of Tripura is higher than the National average of 64.6 % [Census 2011].

Map 2B: Districts in Tripura

Source:www.mapsofindia.com

Tripura, according to the Report "Women and Men in India 2022, Participation in Economy" published by the Ministry of Statistics & Programme Implementation, Government of India, the average wage earning of females in rural areas and urban areas is ₹255.25 and ₹262.75 respectively compared to the national figures of ₹265 in rural areas and ₹333 in urban areas. The report also highlights that the proportion of women involved in contributing to the

economy through their labour activities in rural areas is 15.8 % and 20.1% in urban areas [National average is 26.4 % and 20.4 % respectively]. In Tripura, 28.3 % of women in rural areas and 30.1 % in urban areas are unemployed [National average of 3.5 % for rural areas and 9.8 % in urban areas].

Table 2B: Census of Tripura

District	ADC	Sub-division	Block	Gram Panchayat	Total Population	Male	Female	No. of SC	No. of ST
West Tripura	85	3	9	85	918200	466152	452048	270969	229078
North Tripura	60	3	8	69	444579	225031	219548	82798	109648
South Tripura	70	3	8	99	453079	234118	218961	74020	162463
Unakoti	7	2	4	85	216428	109024	107404	51833	19261
Sephahijala	52	3	7	111	542731	275968	266763	97674	141423
Gomati	103	3	8	700	441538	225428	216110	74430	188554
Khowai	68	2	6	56	371722	167401	160163	63062	139537
Dhalai	110	4	8	41	378230	194544	183686	61688	210608
Total - 8 Districts	**555**	**23**	**58**	**1246**	**3766507**	**1897666**	**1824683**	**776474**	**1200572**

Source: District Project Officers, Tripura

2.1.4 Economic Profile

According to the Directorate of Economics and Statistics, Planning Department, Government of Tripura, the Gross Domestic Product [GSDP] of the state at current price was ₹ 58,879.53 Crore during the financial year 2020-21, which increased to ₹ 64,778.09 in the financial year 2021-22. The GSDP at constant price [2011-12] was ₹ 40,480.47 during 2021-22. According to the economic survey of the state, the per capita income [at current price] rose from ₹1,29,995.00 in 2020-21 to ₹1,40,803.00 in 2021-22, marking an increase of 8.32% from the previous year.

The State is almost entirely dependent on the Central Government for drawing its resources. Tax and non-tax revenues of the State constitute only 15% of the total revenue receipts of the State with the balance coming as share of central taxes. Central revenue coming into the State comprise the following: Central grant-in-aid; other Central grants; Central Plan assistance; borrowings from the Centre; open market borrowings; borrowings from the Public Account.

2.2 Natural Resources in Tripura

Tripura is divided into 3 Physiographic Zones namely hill ranges, undulating plateau land and low-lying alluvial land. The State's geology is represented by the sedimentary rocks ranging in age from Miocene to loosely consolidated sediments of recent age. Tripura has humid sub-tropical climate characterised by high rainfall. The terrain of the state includes parallel hills and ridges alternated with narrow valleys. The State has five major hill ranges which lie in the north-south direction. Tripura is under the "Mild Tropical Plain Zone" in terms of the Agro Climate Zonation.

The state has 10 major rivers (Longai, Juri, Deo, Manu, Dhalai, Khowai, Haroa, Gumti, Muhuri and Fenni) that originate in the hill ranges and are rain fed and ephemeral in nature.

According to the Forest Survey of India Report 2019, the forest cover in Tripura is 7,725.59 square km of which 633.51 square km is very dense forest, 5,236.19 square km is moderately dense forest and the remaining 1,835.89 square km is open forest. The forest cover of the State constitutes 73.68 % of the state's geographical area. The total carbon stock in the State is 76.06 million tonnes [278.89 million tonnes of CO_2 equivalent] which is 1.07 % of total forest carbon of the country.

2.3 Energy Profile

As of 2021-22, all villages have been electrified. According to the Central Electricity Authority Installed Capacity Report Jan 2021, RBI Publication- Energy 2018-19, Load Generation Balance Report 2020, the total installed capacity of the state during 2018-19 was 752 MW. Per capita availability of power in 2018-19 was 500.4 Kwh. During 2018-19, power requirement in the state was 186 Net Crore Units whereas power availability was 184 Net Crore Units.

The state achieved 100% household electrification (139,090 new connections) in March 2019 under Sahaj Bijli Har Ghar Yojana (Saubhagya) scheme by increasing the consumer base of the state by about 20%. The state's per capita electricity consumption has grown steadily from 325 kilowatt-hours (kWh) in FY2015 to 514 kWh in FY2018—still only about half the national average of 1,181 kWh for the same year. Demand is expected to continue increasing following the growth of Tripura's economy. The average annual growth rate in real terms of gross state domestic product was 8.14% between FY2019 and FY2021, and has been increasing further in the post COVID-19 recovery phase. Power demand is estimated to grow at about 6% annually with the peak in-state demand projected to rise to 480 MW–525 MW by FY2027 (compared with 320 MW in 2020). [Source: https://www.adb.org/sites/default/files/project-documents/51308/51308-009-rrp-en.pdf]

2.4 Climate Profile

The state observes moderately warm temperature during summer and moderately cold temperature during winter. Due to the presence of Bay of Bengal in the South, the humidity in the state is fairly high during summer. During pre-monsoon season (March-May), temperatures start rising from March which also brings thunderstorms (Kalbaisakhi) accompanied with rain to the state. Sometimes thunderstorms are accompanied by squall, with wind speed of more than 150 km per hour or hail. It is the secondary rainy season of the state, with nearly 30 % of the annual rainfall. On an average, thunderstorm occurs more than 30 days in Tripura during this season. Normally the South-West monsoon enters the state in the first week of June. It is the main rainy season for the state with an average rainfall of more than 1300 mm. It is about 60 % of the annual rainfall. June is the rainiest month of the year with more than 400 mm of average rainfall. The South-West Monsoon normally withdraws from the state during mid-October. An analysis of the rainfall data from 2010-2021, reveals that the state has been receiving less rainfall compared to the annual average of 2213 mm. Climate and Rainfall data have been attached as **Annexure 8**.

CHAPTER 3: HAZARD, VULNERABILITY AND RISK ASSESSMENT

3.1 State Hazard Profile

Tripura, one of the most vulnerable states in India, is prone to both natural and human induced disasters due to its geographic location as well as socio-economic, geological and climatic conditions. Earthquakes, floods, cyclone, landslides, hailstorm, lightening, dry spells and human induced hazards such as epidemics, fire and road accidents are major hazards of the State.

A look at the past disasters in Tripura, as in the related table in the following section, clearly establishes the multi-hazard prone nature of the disaster profile of the State, along with the increasing frequency and intensity, particularly of hydro-meteorological disasters including floods, cyclones and landslides. Floods in particular continue to ravage many parts of the state almost every year and incidences of landslides, lightning strikes, fires and other disasters are being increasingly reported.

3.2 Past Disasters in the State

Table 3A: Past disasters in the state

Natural Disasters	Major events in the recent past.	Types of Damages
Earthquake	▪ 2021 Mizoram Earthquake 6.1 magnitude ▪ 2017 Tripura Earthquake 5.7 magnitude ▪ 2016 Manipur Earthquake of 6.7 magnitude ▪ 2015 Sikkim Earthquakes of 7 magnitude ▪ Assam Earthquake of 1950 Mw 8.6 ▪ Great Shillong Earthquake-Mw 8.7 of 1897	▪ Few deaths. ▪ Landslides in several places. ▪ Houses fully and partially damaged. ▪ Instance of liquefaction in India in 2017 Dhalai earthquake. ▪ Diversion of river beds.
Floods	Almost all districts of the state are vulnerable to floods and flooding events in the past are: ▪ North Tripura [2021, 2020,2019, 2018, 2017, 2008, 2006, 2005] ▪ South Tripura & all districts [2021, 2020, 2019, 2018, 2017, 2004] ▪ West Tripura [2021, 2020,2019, 2018, 2017, 2003] ▪ Dhalai [2022, 2021, 2020,2019, 2018, 2017, 2006, 2004, 2003, 2001] ▪ Across districts [2021, 2020, 2019, 2018, 2017]	Lives lost; large number of houses damaged, crops loss, infrastructures severely damaged, livestock loss, horticulture loss.
Cyclone	2022 [Cyclone Sitrang], 2021 [Cyclone Jawad], 2020 [Cyclone Amphan], 2019 [Cyclone Fani], 2013 [Cyclone Mahasen), West and South Tripura [2012], West	No loss of lives, some injury and extensive damage to houses and property, crop damage etc. Trees and

	Tripura [2011, 2010, 2003, 2002], North Tripura [2005], Dhalai district [2003, 2002, 2001]	electric poles uprooted; roads blocked
Landslide	Gomati-2023, 2021, Khowai – 2023, North Tripura – 2022, West Tripura -2022, the state faces events of landslides across 7 districts.	2 persons lost lives, damage to houses and property, roads blocked, trees uprooted
Fire	West Tripura – 2023, 2022, 2020, Dhalai district –2022, 2021, 2020, South Tripura – 2023, 2021, 2017, North Tripura – 2022, 2021, All districts face fire incidents across the year	Some lives lost. Injury and extensive loss to houses and business establishments.
Extreme Rainfall and Storm	Dhalai, Gomati, Khowi, North Tripura, Sepahijala, Unakoti, West Tripura - 2023, 2022, 2021, 2019, 2018, 2017, 2016, 2015, 2013	Lives lost; population displacement, large number of houses damaged, crops lost, infrastructures severely damaged
Thunderstorm	Khowai, Unakoti, North Tripura - 2023, Dhalai, Gomati – 2022, North Tripura – 2021, Gomati, Dhalai, Sepahijala – 2020 the State is heavily affected by events of Thunderstorm across all Districts	Lives lost, injury, population displacement, house damage, crops damage and infrastructure damage, roads blocked,
Drowning	West Tripura, Unakoti, Gomati, Khowai – 2023, 2022, 2021, 2020	Lives lost, injury
Lightning	South Tripura, Sepahijala – 2023, Khowai, Dhalai, Unakoti – 2022, 2021, Gomati - 2021, 2020, 2017, 2016	Lives lost (Human and Livestock); injury, large number of houses damaged
Bus Accident	2023 Bisalgarh bus accident, 2018Dhalai Bus accident 2016 Belonia bus accident	25 persons injured 30 persons injured 6 deaths and 15 injured

The multi-hazard proneness of Tripura state along with probable hazard intensity is presented at Figure 3A.

Figure 3A: Hazard Intensity of Districts

4=Very High	3=High	2=Medium	1=Low
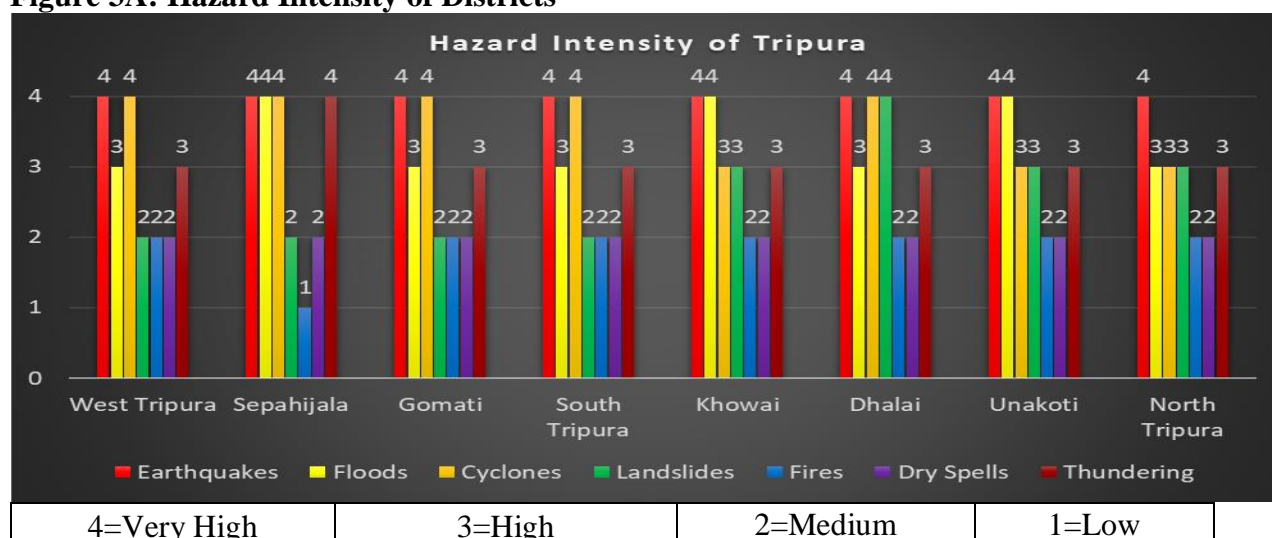
Source: Revenue Department

3.2.2 Vulnerability to Natural Hazards

According to the Hazard Intensity Ranking of districts, Sepahijala and Dhalai districts are most vulnerable in the state. Sepahijala has very high risk of earthquakes, floods and cyclones whereas Dhalai has very high risk of earthquakes, cyclones and landslides, besides high risk of floods.

3.2.3 STATE SPECIFIC DISATERS NOTIFIED BY REVENUE DEPARTMENT (GOVERNMNET OF TRIPURA)

In addition to the hazards identified by the Government of India, the Government of Tripura has identified the hazards that are state specific and notified these appropriately.

Table 3B: State Specific notified Hazards

S. No	Hazard	Date of Notification
1	Wild Animal attack	5.7.2023
2	Forest fire	5.7.2023
3	Erosion (River bank, Land etc. due to flow of flood water), Heavy rain, Storm, Strong wind, Heatwave, Sun burn, Sun stroke	22.7.2020
4	Drowning in rivers ponds, deep hole, lakes	22.1.2020
5	Mass tragedy / accidents i.e road accidents, rail and air accidents, boat tragedy, gas leakage, poisoning etc.	22.1.2020
6	Lightning / Thundering	21.9.2016
7	Fire in shops and houses	20.7.2016

3.3 Vulnerability to Natural and other Hazards

3.3.1   Earthquakes:

According to the Seismic Zonation Map of India, Tripura falls within the highest earthquake risk zone i.e. Zone V. A number of earthquakes of moderate to high magnitude have occurred within the state boundary as well as within a radius of 100 km over last more than 150 years or so. In 1869, an earthquake of magnitude 7.5 on the Richter scale, with its epicentre within 18 km of the district town of Dharmanagar, caused widespread destruction of infrastructure and loss of lives. Another major earthquake known as the Great Shillong Earthquake of the intensity of 8.7 Richter scale hit the State of Tripura badly. The Ujjayanta Palace in Agartala was totally damaged as a result. In 1950, an earthquake of magnitude 6.3 occurred within North Tripura district damaging buildings and other infrastructure.

In 2017, a moderate intensity earthquake measuring 5.7 on the Richter scale, with its epicentre in Dhalai district struck Tripura on 3rd January 2017. This resulted in 7263 houses getting damaged and more than 3000 buildings and houses getting partially affected, with cracks in their walls. This also reportedly triggered landslides in the hilly areas of the state leaving a woman dead and four others injured. According to the National Centre for Seismology, the epicentre of the temblor which occurred at 1439 hrs was in Dhalai district in Tripura at a depth

of 28 km. Although the impact of this earthquake was minimal, the seismo-tectonic features and occurrence of liquefaction within the risk zone of the earthquake indicate a possible significant threat in the future.

Tripura is situated in the northeastern part of India, adjacent to the Himalayan belt that is seismically very active due to the convergent boundary of the Indian plate with the Eurasian plate. The Indian plate is currently moving toward northeast at 5 cm per year while the movement of Eurasian plate is relatively slow. The fault line along both directions is the reverse fault due to which subduction (sideways and downward movement of the edge of a plate of the earth's crust into the mantle beneath another plate) and over-thrust occur. In this region, earthquakes of small to moderate magnitude occur quite often. The entire state of Tripura falls in seismic zone V as per Indian Standard Code (IS 1893 2002) with a zone factor of 0.36, which clearly signifies the severity of earthquake hazards in the region. The current Indian Seismic Zonation map was prepared based on past Seismicity and Seismo-Tectonic information. However, this zonation map does not reflect the possible future seismic hazard and associated geotechnical hazards of site effects, liquefaction and landslide in the region.

Map 3B: Tripura Earthquake Hazard Map

Source: mapsofindia.com, customized in-house

In addition to the plate boundaries, the unceasing seismic threat for the state are from the Madhupur fault located in Bangladesh, the Dawki fault passing through Meghalaya and the northern segment of Tripura that follows the International Border between India and Bangladesh. At present, the southernmost thrust in the Himalaya-Shillong Plateau region is believed to be taking place along the southern fringe of the plateau coinciding with the Dawki fault.

Figure 3B: Seismotectonic map of Tripura and adjoining regions *[ISC & JHI: 1964-2008]*
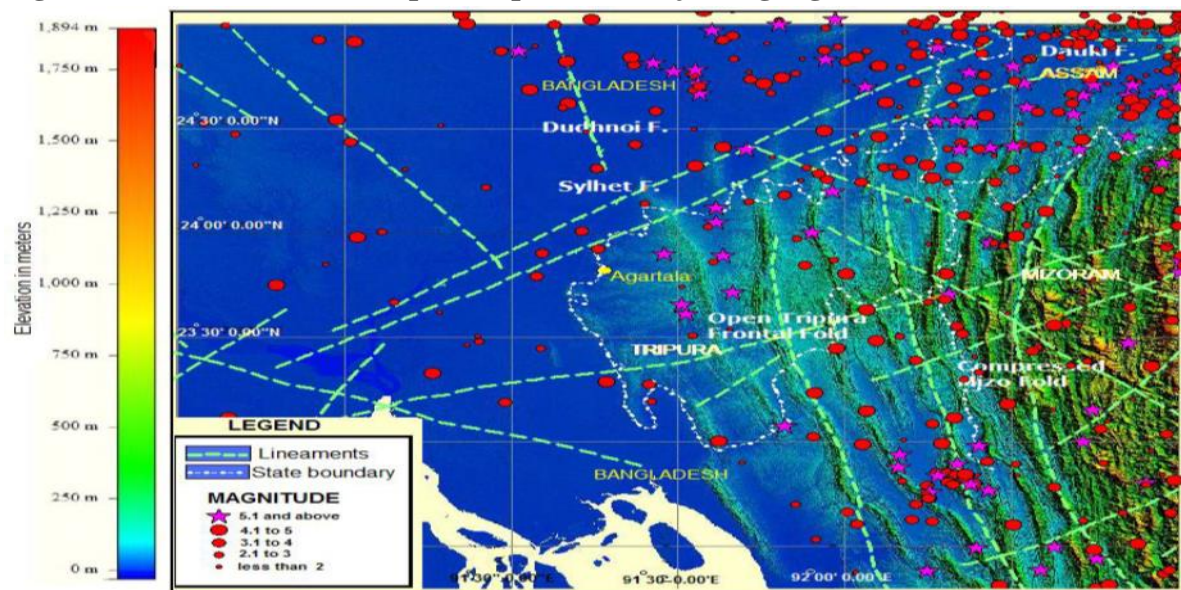
Tripura is located between the co-ordinates 22.933°N to 24.333°N latitude and 91.15°E15°E to 92.333°E longitude. A very large number of moderate to strong magnitude earthquakes took place within the state boundary and its 100 km radius around it. In December 1950, Tripura witnessed another earthquake of moderate magnitude 5.9. The epicenter of this event was 9.1 km from Ambassa in southern direction. Then, 33 years later in 1984, another earthquake of magnitude 5.3 occurred and epicenter distance was approximately 34 km from Ambassa. Since 1950, there are four earthquakes of moderate magnitude in the state of Tripura and all the epicenters were located very close to Ambassa.

Figure 3C.1: Damages due to Earthquake
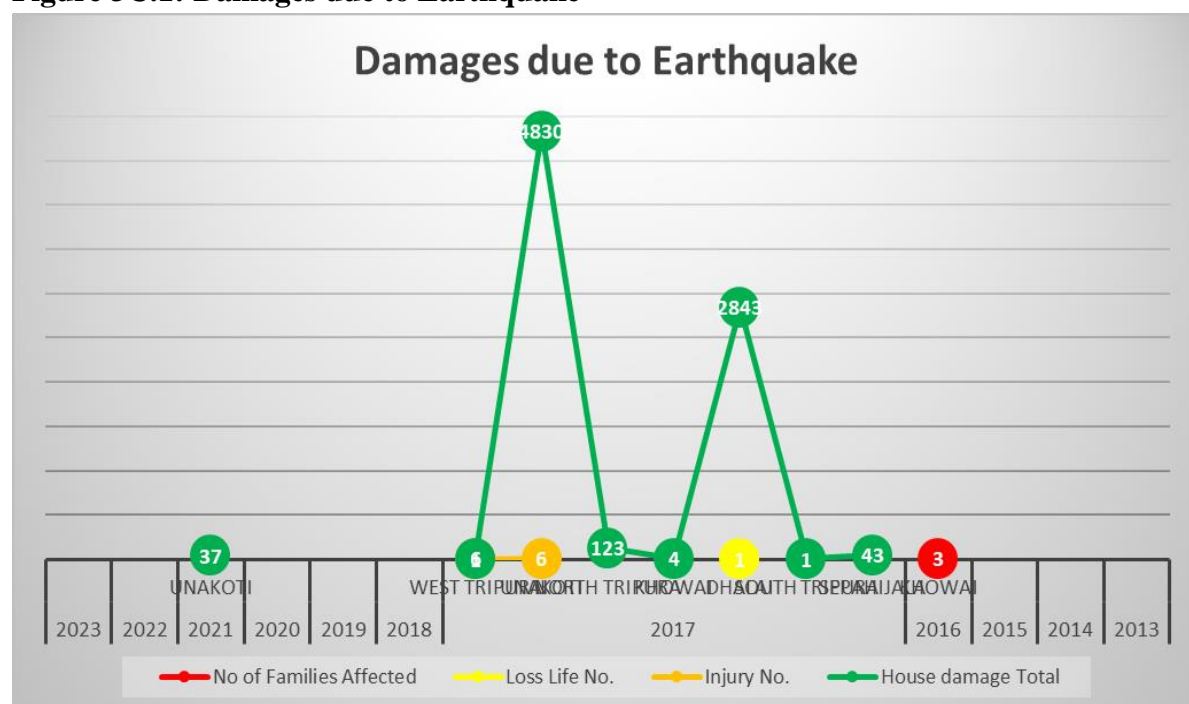
Source: SEOC, Agartala

Figure 3C.2: House Damages due to Earthquakes
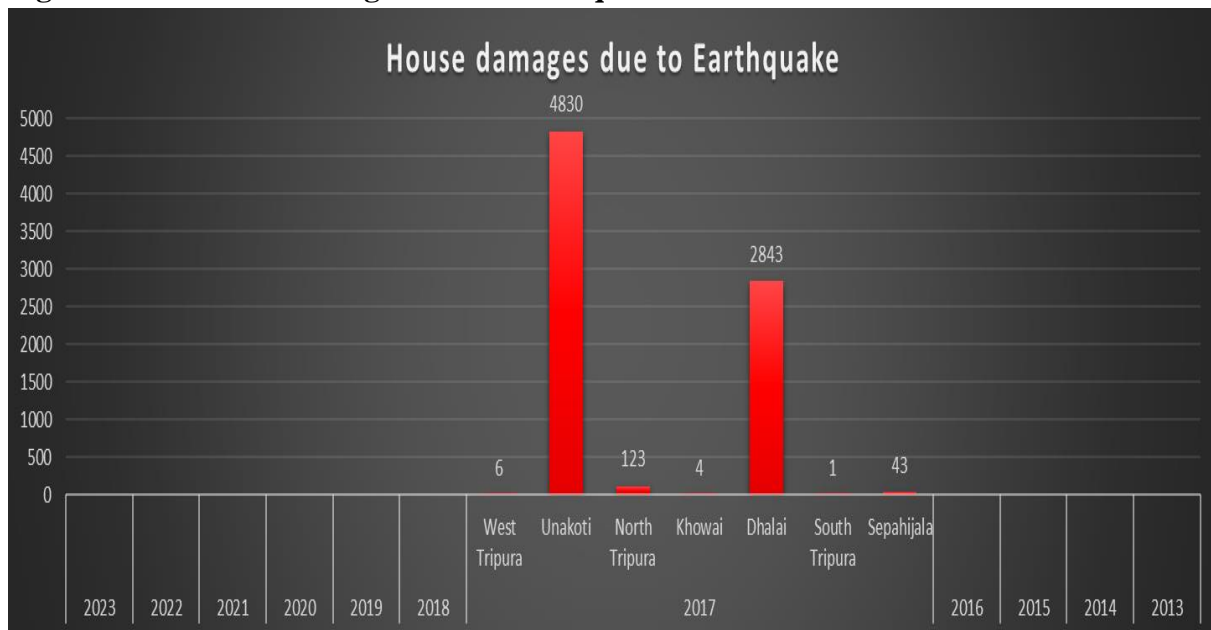
Source: SEOC, Agartala

The 2017 Dhalai earthquake, is attributed to have increased river bank erosion of the Dhalai River and liquefactions in agricultural areas close to the epicenter. However, this is controversial and contested, but needs to be pursued in order to map out the existing and emerging risks due to earthquakes in the State. Most of the researchers working on the seismicity of the Himalayan region believe that the Tripura or northeast region still possess a high potential for the next major earthquake.

Agartala the state capital of Tripura as well as one of the populated and fast-growing cities in NE India has experienced several mild to severe earthquakes during the recent past. Although, the death and damage due to these past earthquakes have been small, the growing human settlement in the city continually increases the risk of damage and loss. The current land-use pattern and demography of the city show increased population concentration along sediment filled low-lying plains and narrow alluvial tracts. The risk posed by the increased population concentration is further compounded by the degradation of the physical environment and construction of massive multi-storied buildings in filled-up areas and unconsolidated soil located in several parts of the city. Site response studies based on geotechnical data for seismic micro zonation of Agartala city, conducted by NEIST- Jorhat, indicate that the central part of Agartala city is relatively more vulnerable to seismic hazard.

About 41.2% of all houses in the state are "Kutcha houses" (mud, and unburnt brick). These Kutcha houses are likely to experience severe damage including collapse during moderate intensity earthquakes. About 50.2 % of the houses are built with bamboo and have thatch / metal sheets for roofing, these structures perform well during earthquakes and do not pose as great a risk as poorly designed concrete and kutcha houses.

3.3.2 Vulnerability to Floods

The State is bestowed with a relatively high average annual rainfall of 212.2 cm with average number of rainy days at 92. Normally rain arrives in the State in late April and continues up to October. However, the intensity of rainfall increases during the months of June to September. Higher rainfall occurring during this period causing floods in low lying areas and erosion of land throughout most of the State has become a regular feature in the State. The State has in the past witnessed major disasters caused by floods, particularly during 2016-19, with the massive floods of 2018 affecting all the districts, rendering normal life paralysed by way of disruption of means of communications caused due to damage of roads and bridges and also blockage of roads due to landslides.

Map 3C: Flood affecting areas of Tripura

FLOOD HAZARD MAP OF TRIPURA
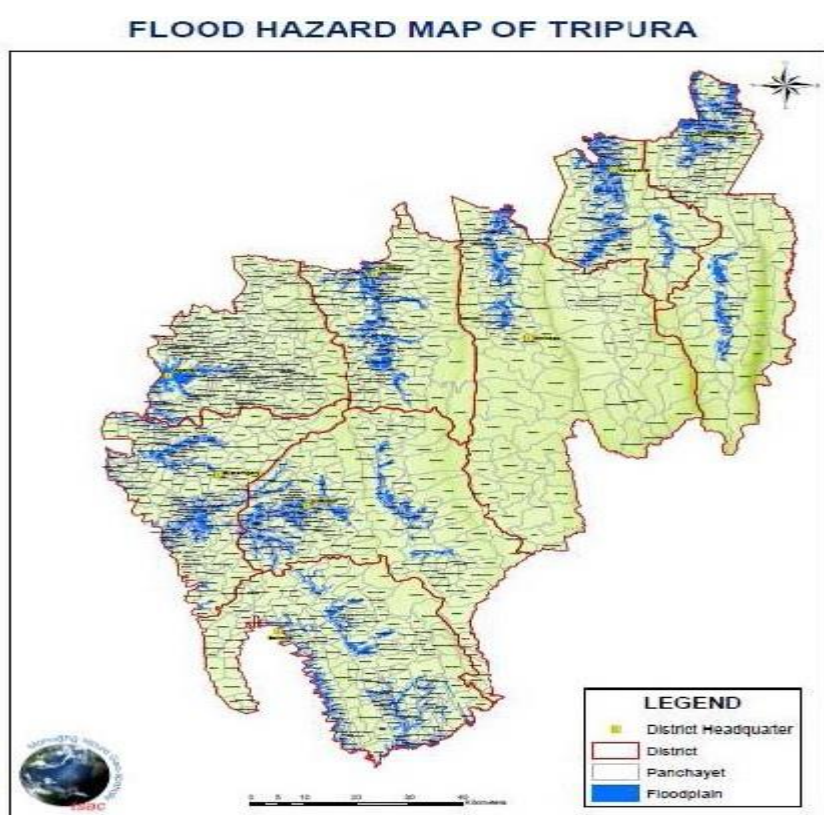
Source: Tripura State Application Centre (TSAC)

With increased urbanization and uncharacterised rainfall, the phenomena of urban floods are increasingly being reported across the urban centres of the state. In 2022, the capital city of Agartala experienced flooding. "The normal rainfall for Agartala was predicted to be 195 mm for the month of June, however, the city received 180 mm of rain in 24 hours, triggering inundation and water logging in the city. This was the second instance of high intensity rainfall in a month and the localised event quickly overwhelmed the city's drainage system causing water logging to persist for many days in the low-lying areas of the city. More maps related to district wise flood, inundation and river basin have been added as **Annexure 17**.

Based on the analysis of the monthly rainfall data for the period 1910-2020 [www://indiawris.gov.in], floods in Tripura, based on their severity are classified hereunder.

Moderate	Severe	Extreme
1905, 1915, 1923,1928, 1930, 1934,1936, 1959, 1960,1975, 1984, 1989,1991	1910, 1956,1974, 2004, 2020, 2021	1976, 1988,1993, 2017, 2018, 2019

Figure 3D.1: Lives lost due to Floods (2017-19) Tripura
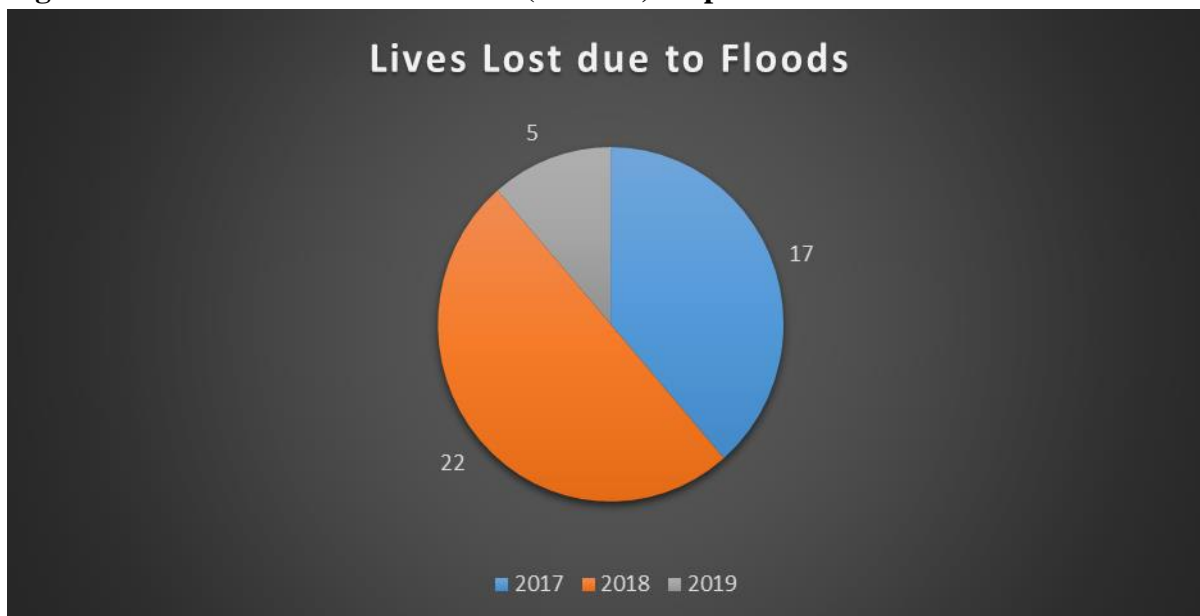
Source: SEOC, Tripura

Figure 3D.2: Damage and loss due to floods (2017-19)
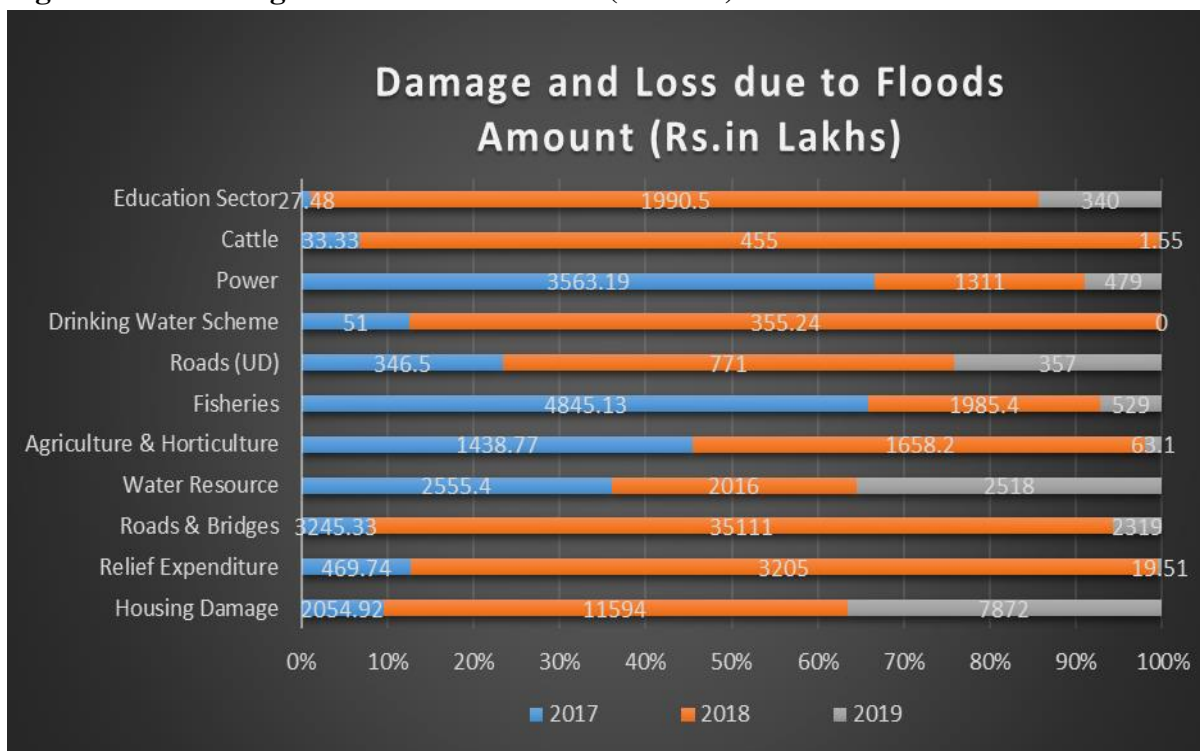
Source: SEOC, Tripura

Figure 3D.3: Damage due to floods
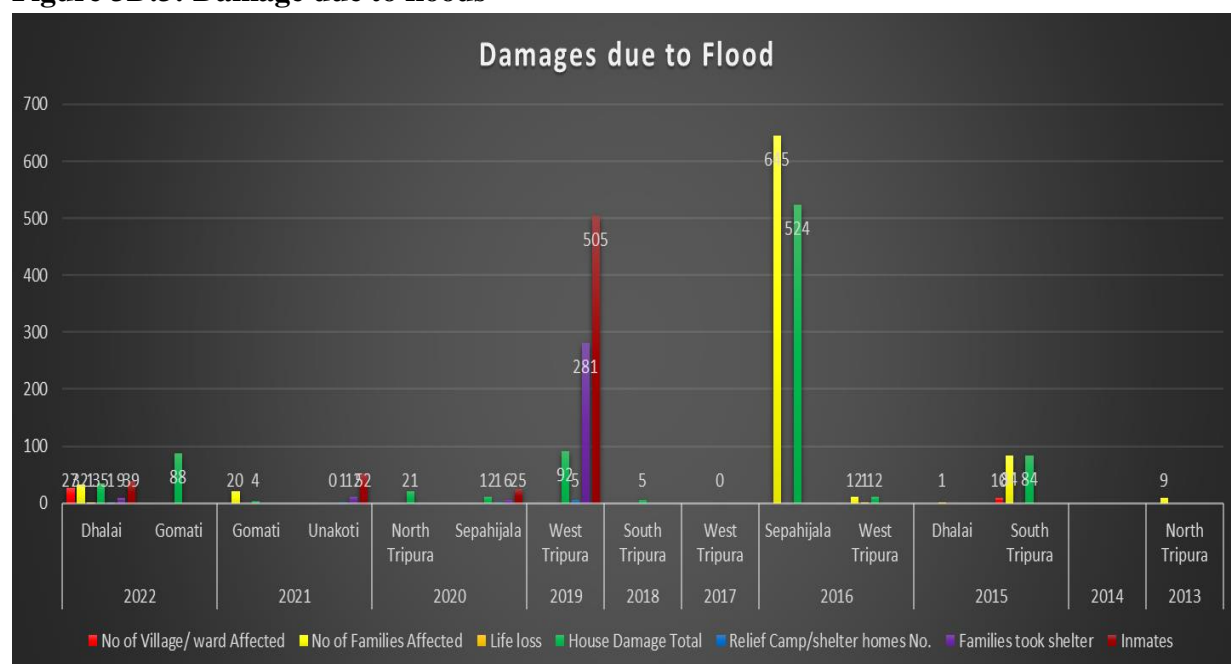
Source: SEOC, Tripura

Increased siltation, high intensity rainfall over short durations, narrow river channels, urbanization and unauthorised constructions along drainage channels, along with transboundary issues at the point of discharge are issues that have challenged flood management in Tripura.

A detailed list of incidents of heavy rainfall and consequent response activities is presented in **Annexure 13 at 13.1**.

3.3.3 Vulnerability to Cyclones/ Wind Storms:

So far as wind hazard is concerned, the design wind speed in the whole State is cyclonic, 55m/s (198km/h) which occasionally reach the State after crossing Bangladesh. In such events, poorly built houses and those having sloping roofs such as using thatch and tiles and A.C. sheet and corrugated Galvanized Iron sheet roofs which are not fully anchored and integrated are likely to suffer damage.

Map 3D: Wind hazard map of Tripura
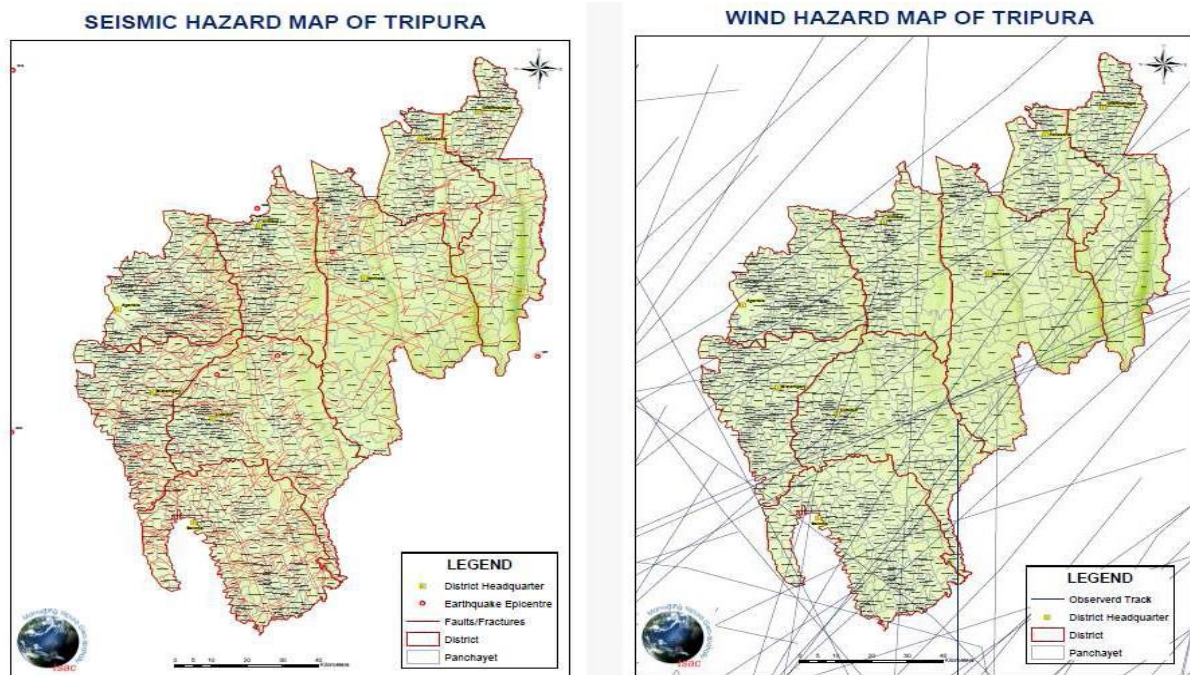
Map Source: Tripura State Application Centre (TSAC)

The state has a history of being impacted by Cyclones that originate in the Bay of Bengal and make landfall in either Bangladesh or West Bengal. The state witnesses high intensity winds and rainfall as the Cyclonic systems make their way inland and gradually dissipate.

Prominent cyclones that have originated in the Bay of Bengal in recent years and made landfall in either Bangladesh and West Bengal and caused heavy rainfall and high-speed winds in Tripura, include Cyclone "Sidr" in 2007, Cyclone "Mahasen" in 2013, Cyclone "Fani" in 2019, Cyclone "Amphan" in 2020, Cyclone Jawad in 2021, Cyclone "Sitrang" in 2022. These cyclones brought heavy rains along with strong winds and caused widespread destruction to agriculture and horticulture crops, damages to houses and infrastructure, uprooting of tress and electrical poles causing road blockages and injury to many.

3.3.4 Vulnerability to Landslides

Map 3E: Landslide incidence map   **Source: TSAC**

LANDSLIDE HAZARD MAP OF TRIPURA

LEGEND
- District Headquarter
- District
- Panchayet

Vulnerability
- High
- Moderate to Low
- Unlikely
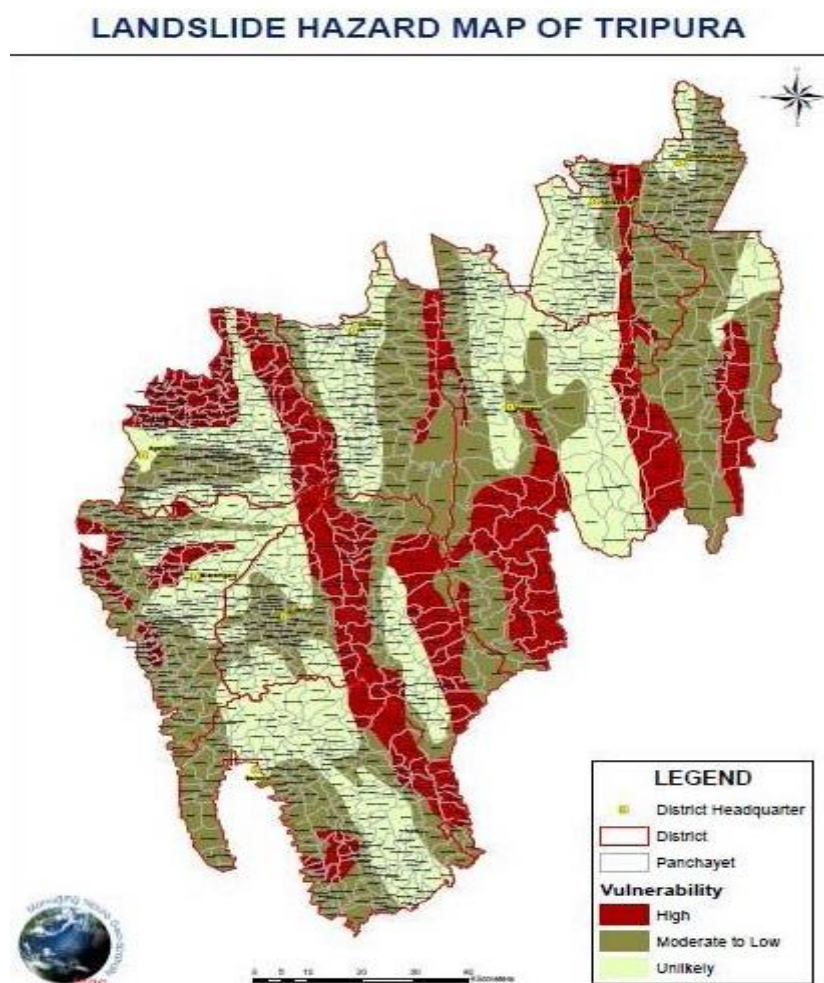
Many parts of Tripura, particularly the hilly regions, are vulnerable to landslides. Landslide is a natural hydro-geological hazard in which earth material is dislodged under the influence of gravity triggered by intense rainfall, earthquake, volcanic activity, changes in groundwater and anthropogenic activities. The occurrence of landslides is common in geo-dynamically sensitive zones and areas affected by frequent earthquakes and other tectonic activities. Landscape changes, threat to life, destruction of property and damage to natural resources are some of the major consequences of landslides. Environmental forces are responsible for such catastrophes that are mostly enforced by human induced activities such as deforestation and mining. Other human interventions such as construction of buildings, roads and railways, and hydropower projects also disturb the natural slopes thereby making the hills more susceptible to landslides. In recent times, the occurrence of landslides has increased both in intensity and frequency resulting from a combination of several such attributes causing instability in land slope. This trend is likely to continue in future also because of rapid urbanisation, deforestation and increased regional precipitation intensity resulting from climate change in landslide-prone areas.

Tripura experiences landslides almost each year during monsoon season causing casualties and economic losses. As per the landslide susceptibility maps developed for the state, most of the areas of the state come under very low to moderate landslide susceptibility zones. Around 73.2% area of the state is found to be under low landslide susceptible zones during the pre-monsoon season, around 62% area is prone to landslides with moderate susceptibility during monsoon season and 68.5% area comes under landslides with low susceptibility zones during the post-monsoon season.

Successful mitigation of disasters resulting from landslides requires in-depth knowledge about the character, expected frequency and magnitude of the mass movement in an area. Hence, the determination of high potential landslide areas is essential for better decision making and land-use planning. But the collection of data from inaccessible areas like hilly region for predicting landslide susceptibility becomes challenging. It can be solved with the help of remote sensing and geographic information system (GIS).

Remote sensing plays an important role in the development of landslide inventory and generation of landslide susceptibility maps of a region. Remote sensing has been widely adopted by government agencies as well as the research community for landslide mapping, which is essential for rapid response and recovery after the occurrence of the hazard. GIS integrated with remote sensing data has been an effective tool in geological analysis and the development of landslide susceptibility maps. In recent times accessibility and availability of a variety of remote sensing data has made it possible to prepare landslide hazard maps using thematic layers of landslide causative factors.

Figure 3E.1: Death / Injury due to landslides
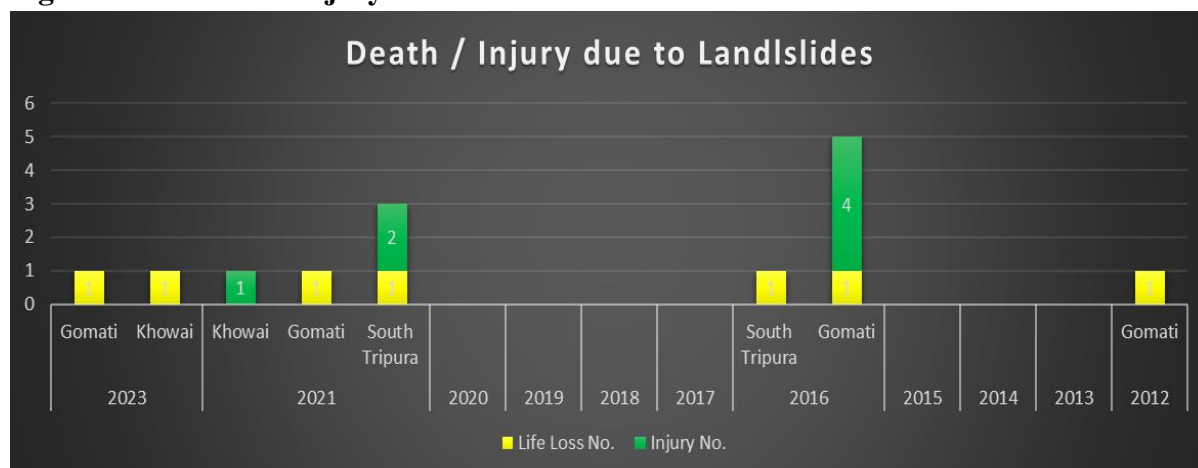
Source: SEOC, Tripura

Figure 3E.2: Loss due to landslides
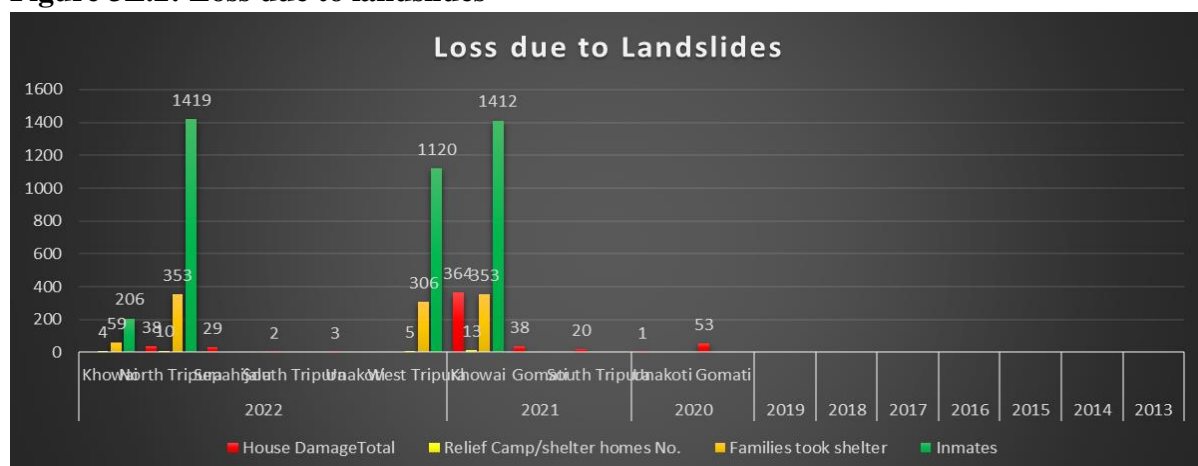
Source: SEOC, Agartala

3.3.5 Vulnerability to Forest Fire / Fire

Forest fire is a frequent and constant natural disaster in the forest ecosystems of Tripura. The slash and burn shifting cultivation, or locally known as jhum, as the predominant form of agriculture in the hill tracts is found to be the major cause of forest fire in the region. In northeast India, indigenous institutions play an important role in forest management. Based on the information collected by Forest Survey of India officials in consultation with field officials of the State Forest Departments, the main reasons for the change in the forest cover has been summarized to be due to the shortening of the shifting cultivation and biotic pressure besides other reasons of encroachment and illicit felling (SFR,2011).

The forest fire vulnerability map shows that about 52 % of the area in Tripura is highly prone to fire hazard.

Figure 3F.1: Year wise Forest fire incidents in Tripura [2000-2017]
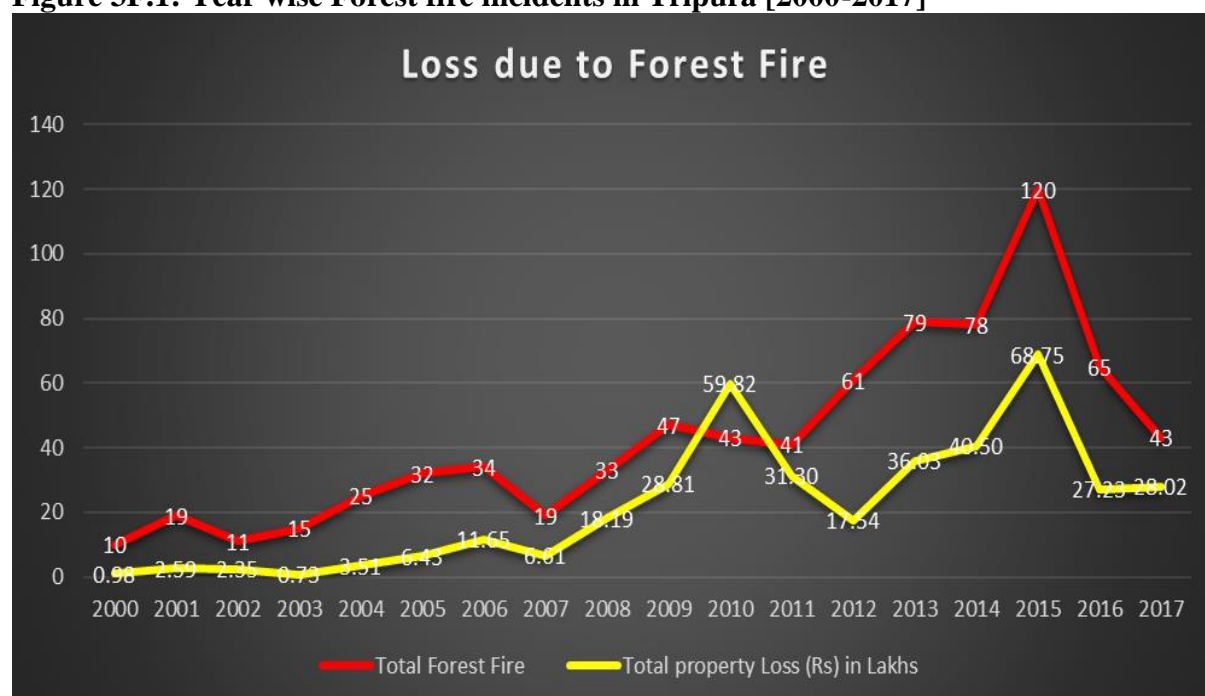
Source: SEOC, Tripura

A precise evaluation of forest fire problems and decision on solutions can only be satisfactory when a fire risk zone mapping is available. Geospatial technology, including Remote Sensing (RS) and Geographic Information Systems (GIS), provides the information and the tools necessary to develop a forest fire susceptibility map to identify, classify and map fire hazard area.
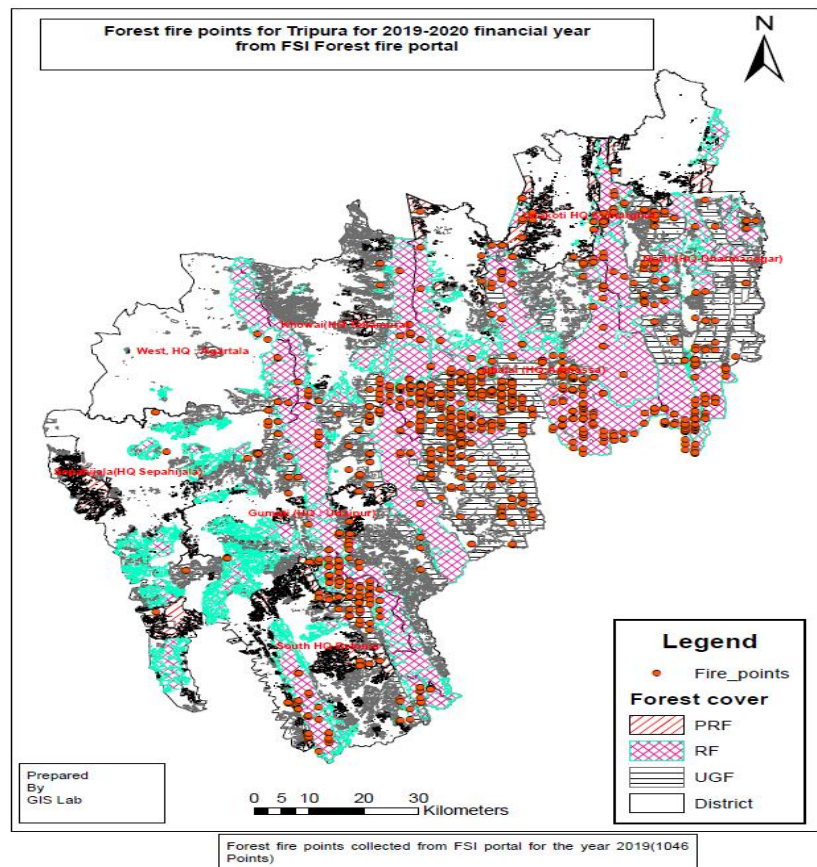
The Government of Tripura has prepared the State Action Plan on Forest Fires. Most of the fire incidents in Tripura are anthropogenic in nature. To meet the challenges of forest fire mitigation activities in Tripura, it is recommended that during fire season it is very important to build a strong communication network between the forest departments and the community and the respective departments engaged in providing alerts. It is very important that the forest department and the local community are aware of the fire risk zones where forest fire can spread rapidly by taking up awareness programs.

Besides forest fires, fire in houses, markets and other establishments are common in the state, while much of these are due to anthropogenic reasons such as lack of awareness, illegal power hooking, vandalism etc. these fires have the potential to cause immense loss of life and properties.

Figure 3F.3: Fire Reports in Tripura [2012-2023]
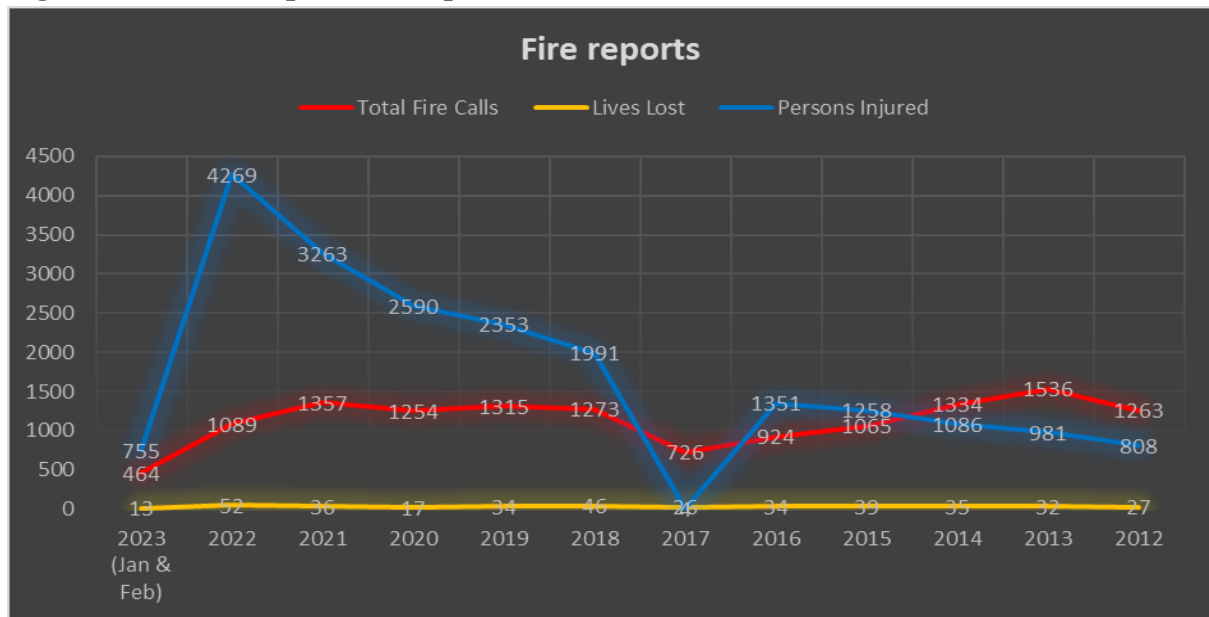
Source: Fire & Emergency Service Dept., State Office, Agartala

Figure 3F.4: Damage and loss due to Fire
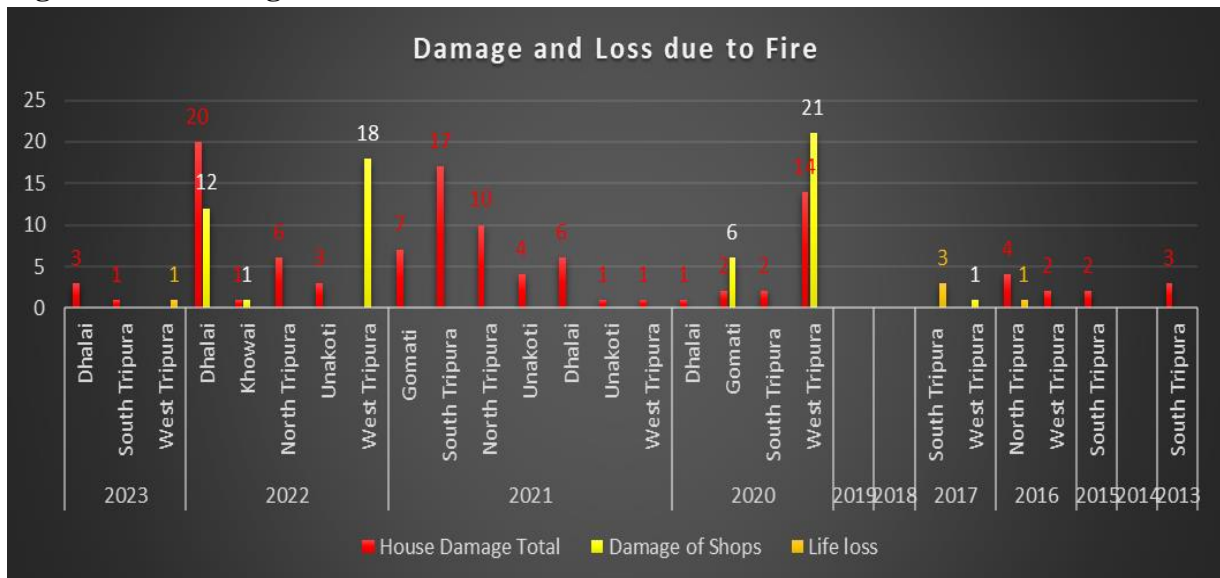
Source: Fire & Emergency Service Dept., State Office, Agartala

Figure 3F.5: Annual Loss of Property due to Fires (2012-23)
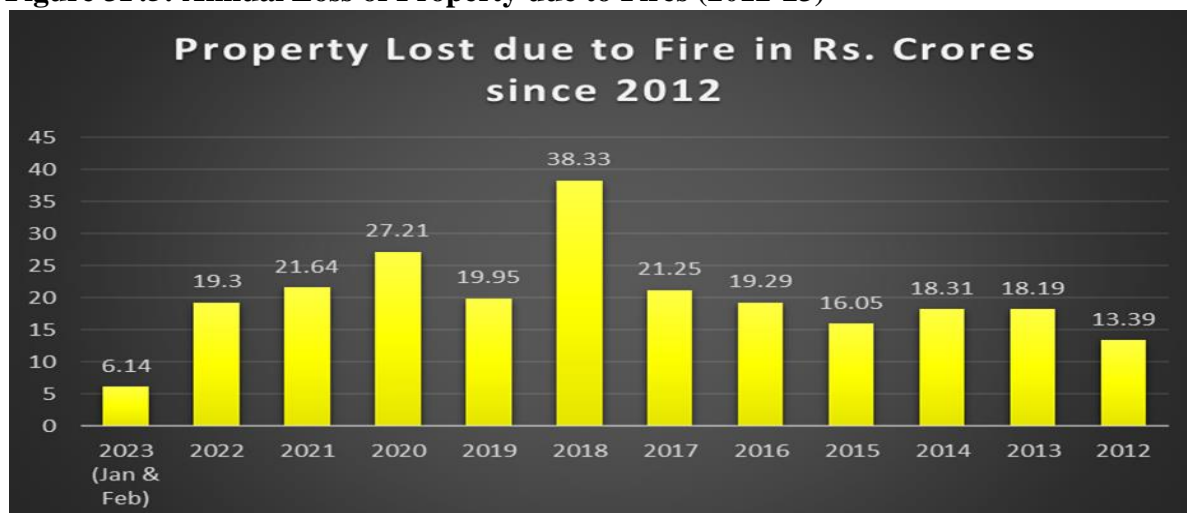
Source: Fire & Emergency Service Dept., State Office, Agartala

3.3.6 Dry Spells (Drought)

Parts of Tripura experience dry spells, which do not really create drought conditions per se, but are pretty close in some instances. However, with the changing climate and the associated uncertainty and unpredictability, drought like conditions cannot be fully ruled out in the state in future.

Drought is an extreme hydrological event that relates to rainfall amount, duration, intensity, frequency and distribution. Extreme variability of parameters such as temperature, evaporation, relative humidity and wind speed leads to occurrence of climate hazards including droughts. Frequent droughts and inappropriate management of Agro ecosystem makes dry land susceptible to rapid degradation. Based on its impact, drought can be categorized into four kinds viz. meteorological, hydrological, agricultural and socioeconomic.

According to India Meteorological Department (IMD) the deviation from the normal rainfall with 75% less than normal is declared drought. Drought events are more prevalent in the north-eastern region of India in comparison with western region of the country.

The State of Tripura having an area of 10,492 km2 is situated between the latitudes of 22° 56' N and 24° 32' N and the longitudes of 90° 09' E and 92° 10' E with elevation ranging from 600 to 900 m above mean sea level. The average precipitation of the area is about 2100 mm and climate is humid tropical.

A study "**Assessment of Meteorological Drought with Application of Standardized Precipitation Evapotranspiration Index (SPEI) for Tripura, conducted by the Department of Soil and Water Conservation Engineering, College of Agricultural Engineering and Post Harvest Technology, Sikkim** reports that the overall drought analysis by Standardized Precipitation Index 6 (6 months' time scale) for the entire region of Tripura revealed that total of 22 droughts have been observed comprising of 14 moderate drought, 4

severe drought and 4 extreme droughts. The study period [1980-2013] exhibited moderate drought conditions dominantly over the entire state. The most affected drought district in 3 months' time scale was Dhalai in 2011, West Tripura in 6 months' time scale in 1985 and South Tripura in 12 months' time scale in 1985.

The persistence of drought is particularly during the wet season of the region, so need for contingency plan for agriculture farmers should be on priority. Spatial visualization of Standardized Precipitation Evapotranspiration Index with GIS technique aids to better depict drought conditions all over Tripura and help stakeholders to lay drought contingency plans leading to holistic drought management strategies. Identification of affected area will provide significant aid to take up the mitigation as well as future prospect management on priority basis. Hence, drought study particularly defining the spatial and quantitative aspects will assist the state in formulating adequate drought management plans.

3.3.7 Thundering / Lightening/ Thunderstorm

Thundering & Lightning / Thunderstorm/ Squall/ Dust Storm/Hailstorm and Strong Winds have emerged as major weather hazards in recent years affecting different parts of Tripura.

Thundering

South Tripura is most affected district by the thundering causing a lot of loss in lives and property damage.

Figure 3G.1: Number of villages affected, number of families affected, lives lost and injury due to Thundering in Tripura
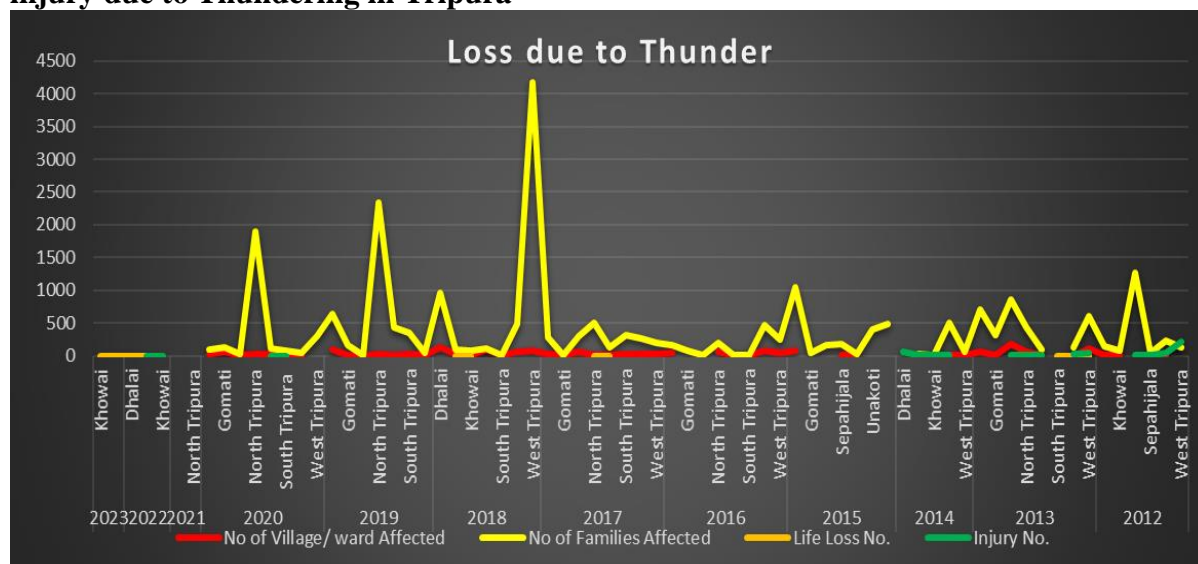
Source: SEOC, Agartala

Thunderstorms have some typical characteristics such as the formation of a squall, strong updraft and downdraft, towering cumulonimbus clouds associated with turbulence and icing, in-cloud electrification and associated lightning, localized strong rain and hailstorm. A dust storm, associated with a thunderstorm and strong winds, generally occurs in arid and semi-arid regions. It lifts loose dust from dry land area.

Thunderstorm

Figure 3G.2: Damages due to Thunderstorm in Tripura
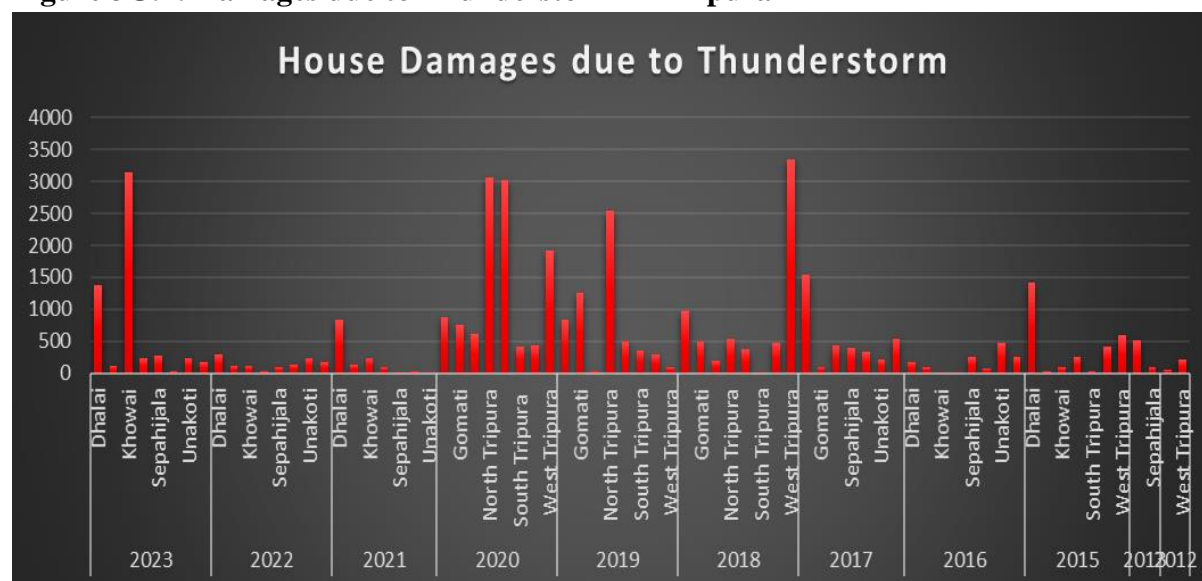
Source: SEOC, Agartala

Figure 3G.3: Number of families affected by Thunderstorm
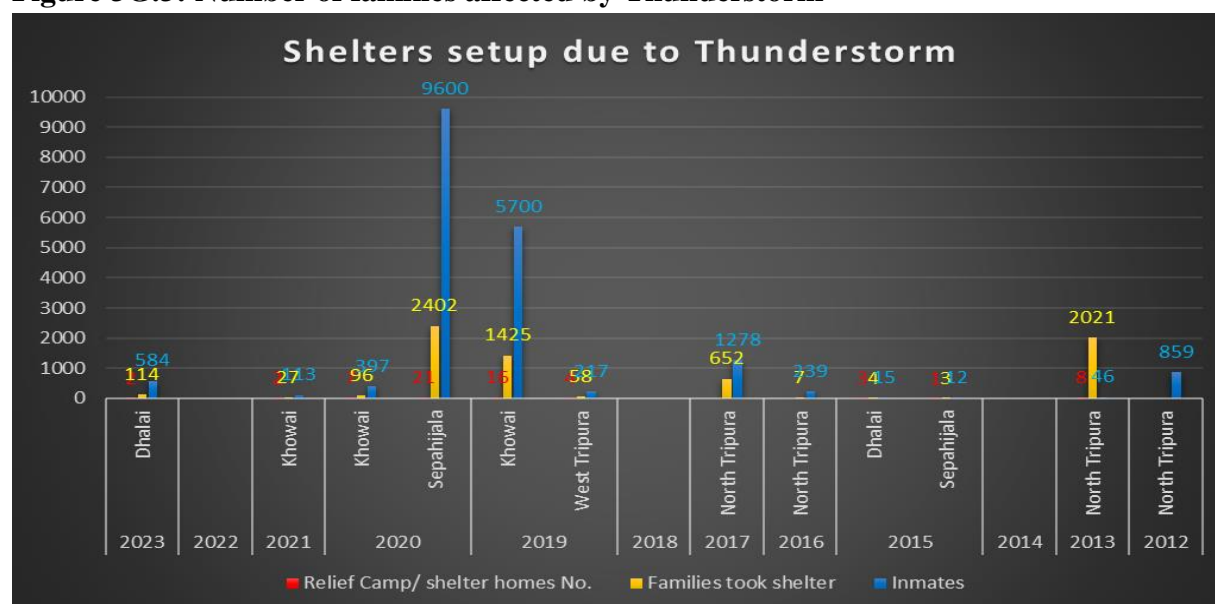
Source: SEOC, Agartala

A list of thundering/ lightening/ thunderbolt etc. events in Tripura is presented in **Annexure 13 at 13.3**.

Figure 3H.1: Lives lost (Human and Livestock) and injury due to Lightning
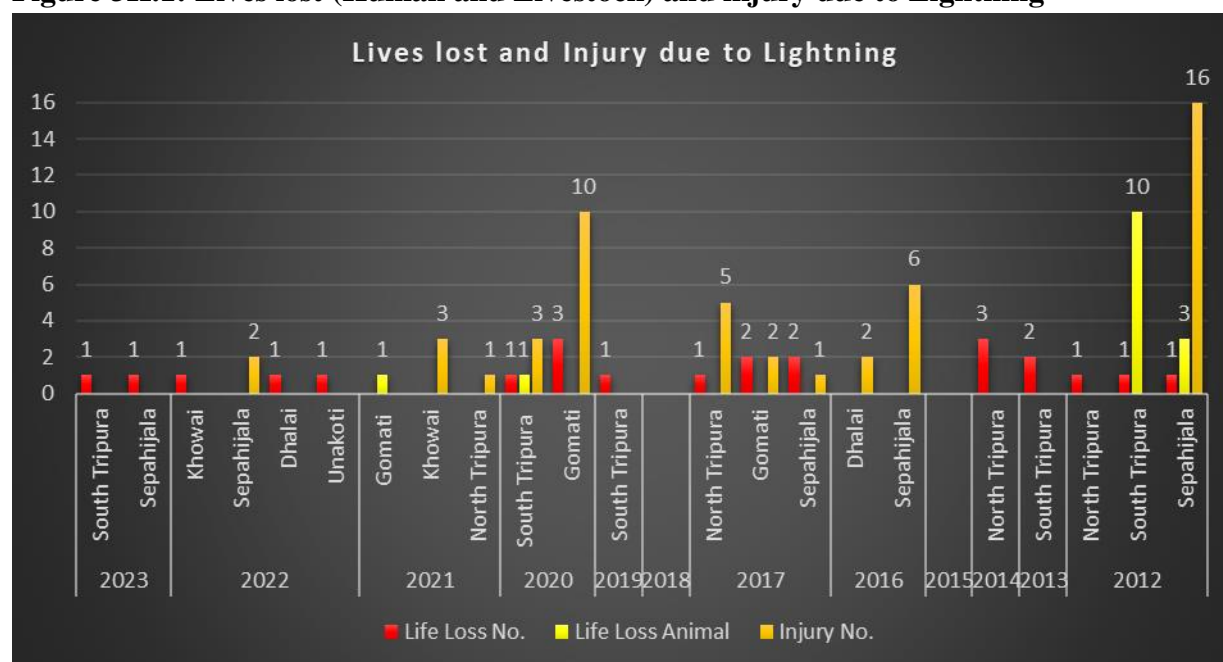
Source: SEOC, Agartala

Figure 3H.2: Loss due to Lightning
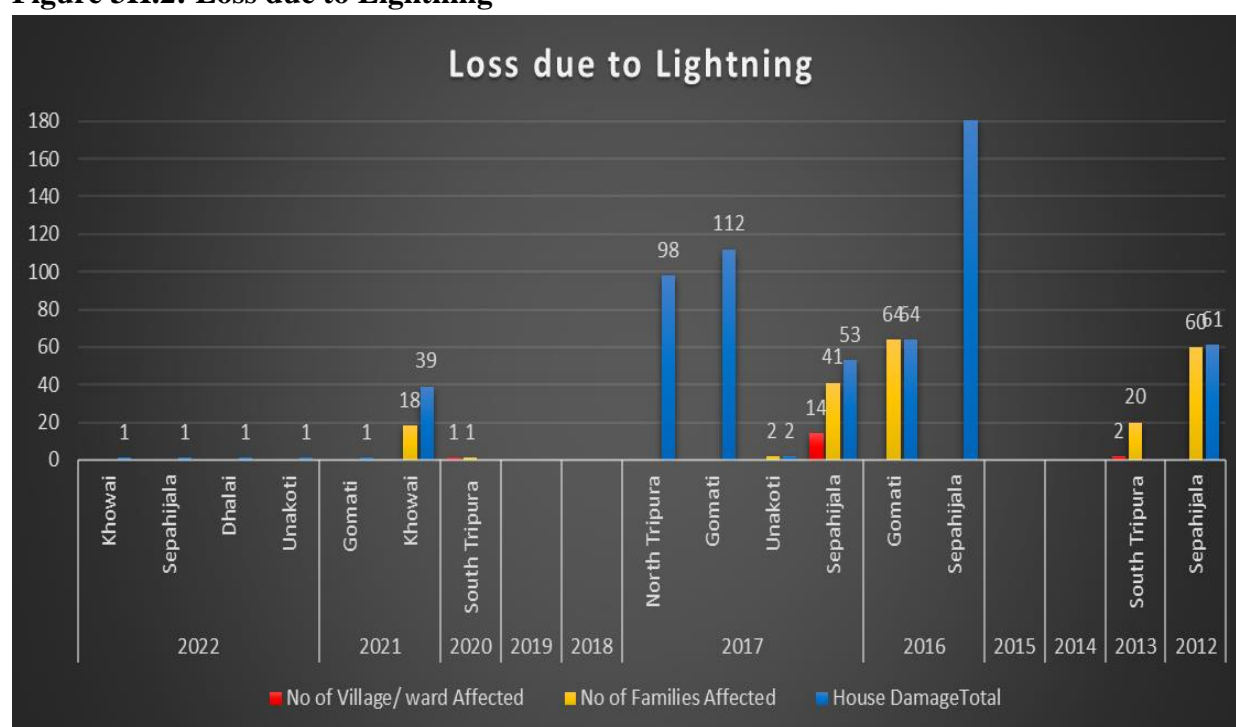
Source: SEOC, Agartala

Experts believe that due to rising global temperature and climate change (IPCC Special Report, 2018 - Global Warming of 1.5 °C), the severity and frequency of thunderstorms/dust storms will rise in the years ahead. India, including Tripura, may also experience an increase in the severity and frequency of these incidents in future. Hence, there is a need for prevention, preparedness and mitigation measures, and to invest in Disaster Risk Reduction (DRR), which

will save lives, livestock, property and infrastructure. This is also in line with the Sendai Framework to which India is a signatory.

The Government of India has published the "Guidelines for preparation of Action Plan – Prevention and Management of Thunderstorm & Lightning/ Squall Dust/Hailstorm and Strong Winds". The Guidelines aim to facilitate and improve the capacity of the States in preparing their Action Plans and respond promptly and effectively to mitigate the adverse effects of these incidents. It will help develop measures for the assessment, forecast, preparedness and mitigation through coordinated efforts with multiple agencies and undertake reconstruction as an opportunity to build disaster-resilient infrastructure.

3.3.8 Road Accidents

The figures of road accidents indicate a rising trend in Tripura due to increase in the number of vehicles, the quality of roads, and inadequate adherence to traffic rules. Except for the observance of the Traffic Week in the first week of January every year in the State, there is very little regular and sustained campaigns to prevent and reduce road accidents, which need to be given more focused attention.

The figure 3I shows that the number of accidents and deaths have increased in past 5 years. Therefore, Police department, PWD needs to have a look and identify the black spots and to come up with risk reduction plans in advance.

Figure 3I: Road Accidents in Tripura
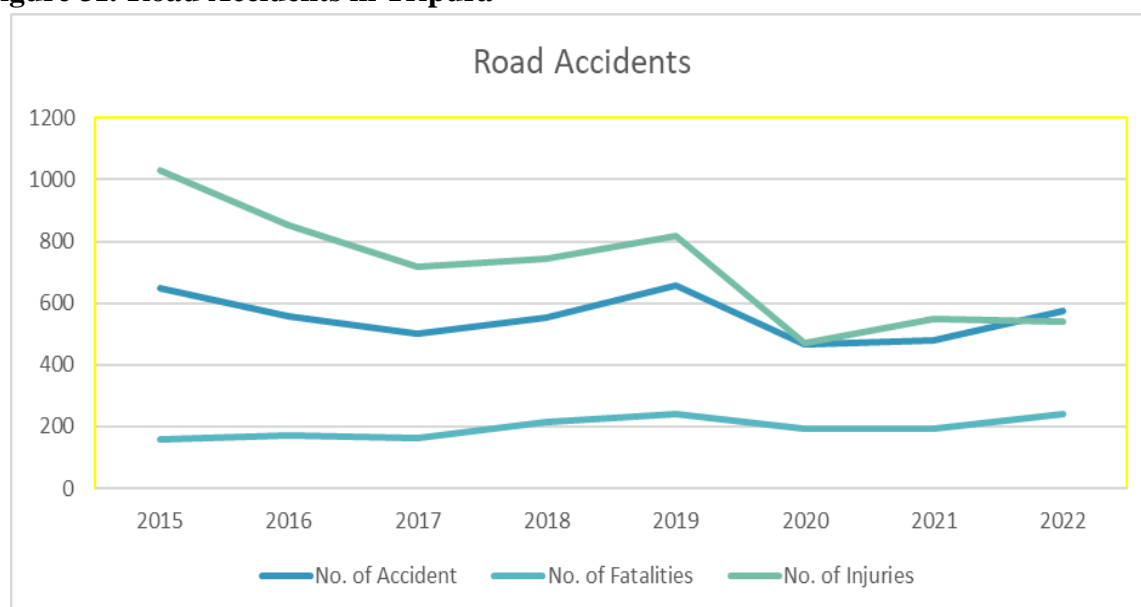
Source: RTO, Tripura

Map 3F: Most road accident points in Tripura
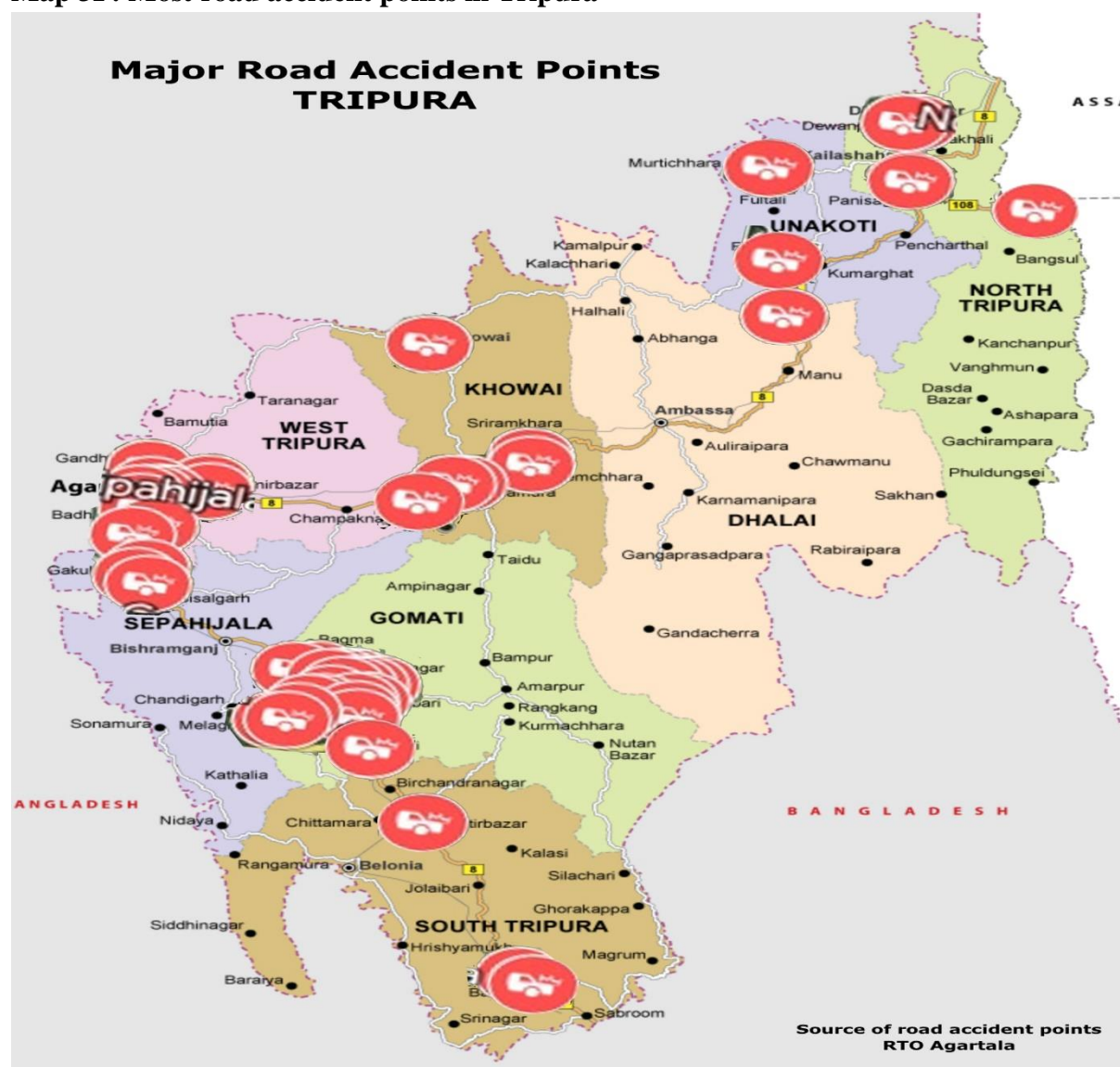
Source: RTO Agartala, **customized in-house**

With increased emphasis on improving the road connectivity across the state, it will be essential that proper systems of management are installed to prevent the number of accidents as well as to minimise the loss of lives. A system to identify "Black Spots" could be taken up by the Transport Department and equip these identified accident hotspots with Trauma Care and emergency medical support. Districts should also prepare an inventory of equipment to remove vehicles involved in accidents and reopen roads at the earliest.

A study of fire incidents, road accidents and development of infrastructure as a measure of urbanisation shows that disaster risk reduction has yet to be fully integrated with mainstream development initiatives and programmes.

3.3.9 Heavy Rains

Heavy rains have been reported across the state over the years, particularly during 2017-19 in the recent past. They impact the lives and livelihoods of people and disrupt their normal life in

the affected areas. As a result, the affected families need to take shelter during heavy rains. Table of heavy rain has been annexed as **Annexure 13 at 13.1.**

Figure 3J.1: Damages due to Heavy Rains
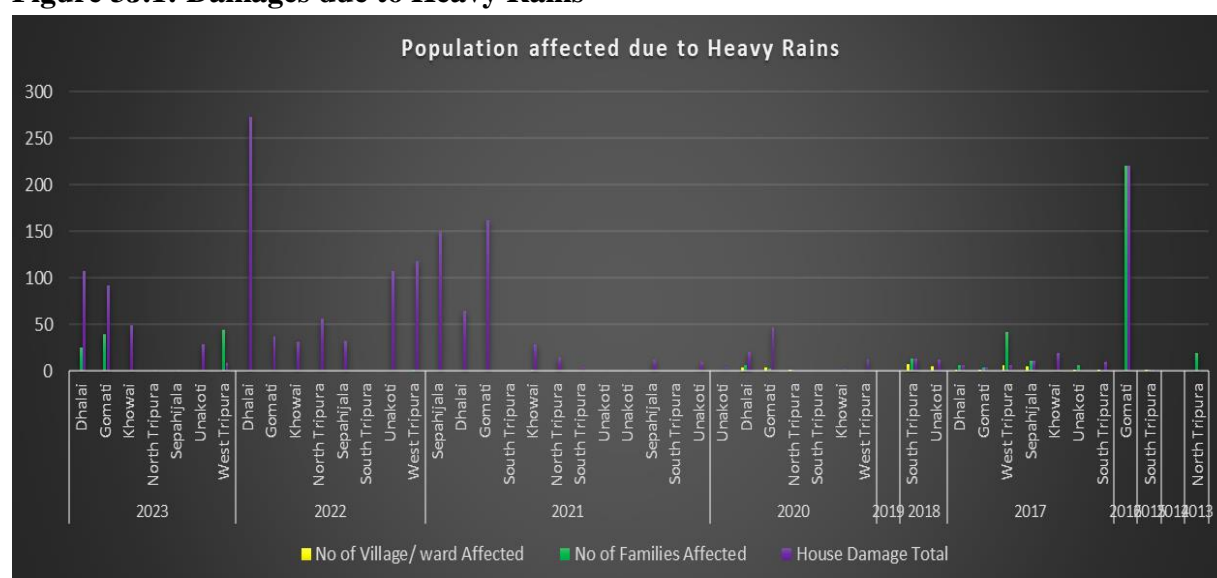
Source: SEOC, Agartala

Figure 3J.2: Shelter homes setup for families and inmates due to Heavy Rains
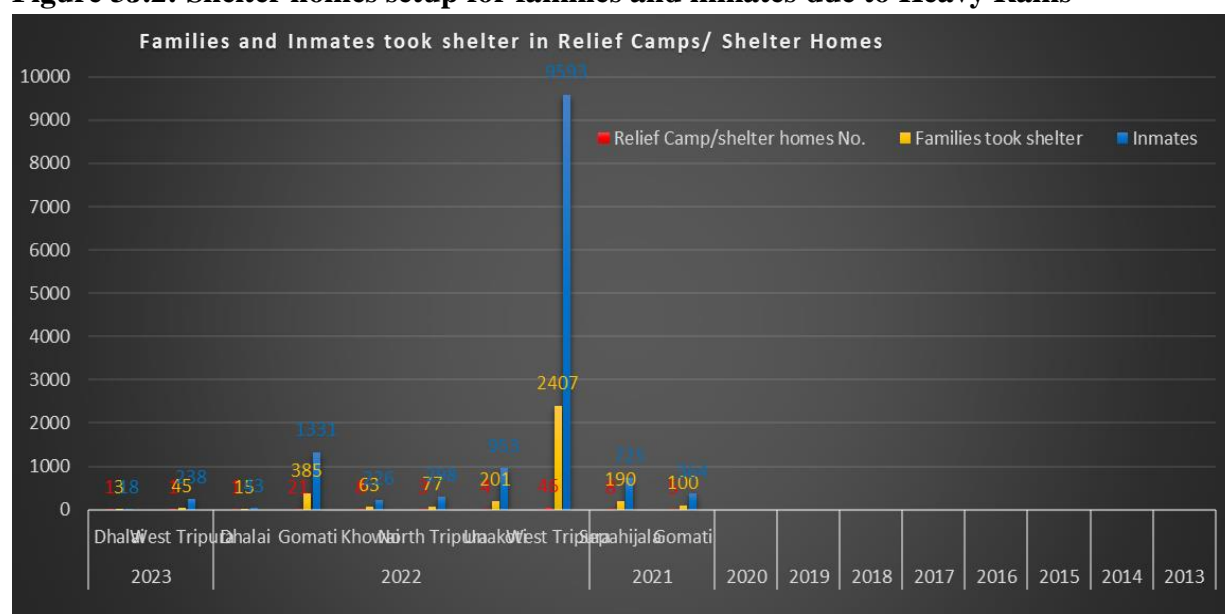
Source: SEOC, Agartala

3.3.10 Drowning

Several cases of drowning have been reported across the state over the years. The vulnerability to hydro-meteorological events in the state increases the risks of drowning. Table of drowning cases has been annexed as **Annexure 13 at 13.8.**

The available data shows that Gomati and Dhalai districts have deaths due to drowning almost every year and the Gomati River and Manu River are the most vulnerable rivers that need to have trained divers deployed at identified vulnerable places.

In view of the fact that the state has an ambitious plan to increase tourism, it will be important that tourist destinations, particularly lakes, ponds, rivers etc., are adequately equipped and prepared to reduce cases of death/ injuries by drowning.

Figure 3K: Lives lost due to Drowning in River, Pond, Lake and Well
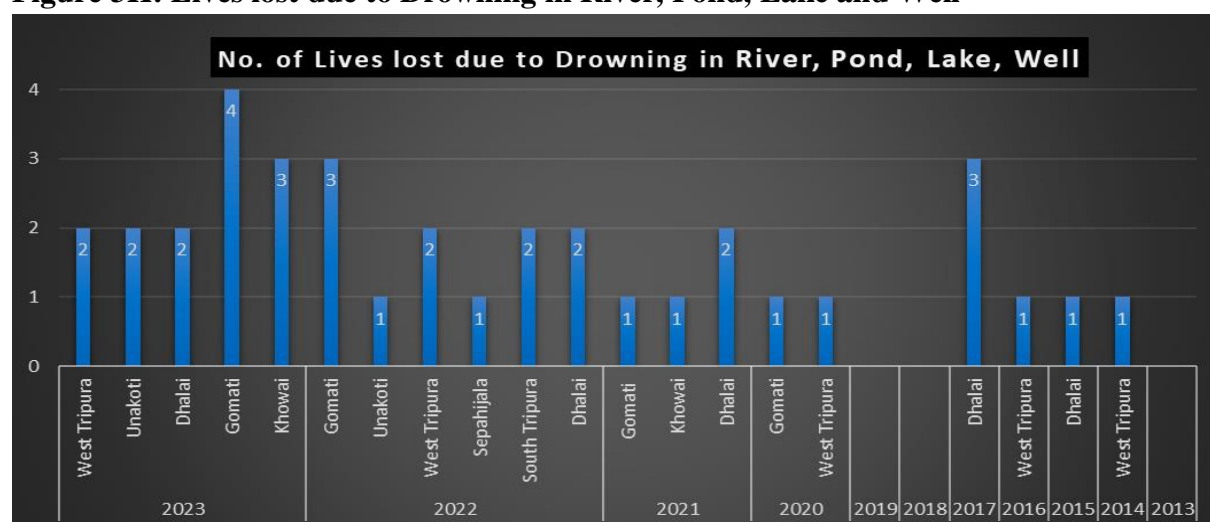
Source: SEOC, Agartala

3.4 Socio-Economic Vulnerability

3.4.1 Social and Economic Status: In Tripura, the physically, economically, and socially weaker segments of the population i.e. SC & ST, nursing and expectant women, children and differently abled people, who are nearly 50% of total population are the ones that are most vulnerable to disasters. Within the vulnerable groups, elderly persons, nursing and expectant women, and children, vulnerable women are often rendered destitute and children orphaned on account of disasters and the differently abled groups are exposed to higher risks. According to the 76th round of the NSO survey conducted during July to December 2018, in Tripura, published in 2021, 1.3 percent of men had multiple disabilities, while this was at 1.1 percent among females.

In Tripura, 66.81% of the total rural families are living below poverty line. About 70% of population is that of the farmers whose livelihoods depend on cultivation. As a result, majority of people in the state are vulnerable to multiple hazards and their adverse impact on their lives and livelihoods.

Poor economy, low per capital income and significant poverty contribute to the overall vulnerability of people. The economy is underdeveloped as is apparent from the fact that agriculture is the mainstay of the people of the State and accounts for direct and indirect employment to around 66 % of the total work force and contributes 33% of the Net State

Domestic Product in the state. However, agriculture, which is the primary sector of the state, is characterised by low productivity due to traditional practices, inadequate capital formation, low investment, inadequate irrigation facilities and uneconomic size of the holdings. Only 9.89% of land is available for cultivation and agriculture is mainly rain fed with attendant disadvantages.

3.4.2 Access to Information Services and Infrastructure: The State is handicapped due to inadequate electrification, irrigation facilities, insufficient storage facilities, insufficient marketing/credit institutions and poor road, rail, ports, and airports, logistic waterways, energy and healthcare infrastructure. Basic services like health, market, are also inadequate in certain hilly and remote areas. Poor access to microfinance for setting up micro-enterprises, skill training, and alternative employment further increases the vulnerability of the population during disasters.

3.4.3 Sensitivity of Agricultural Production: Tripura is traditionally an agricultural economy with 66 % people dependent on primary activities such as farming, livestock and horticulture. It is quite sensitive to hydro-meteorological disturbances or variations. With climate change and variability, the frequency and intensity of rainfall, heat wave conditions and drought, cyclone, water availability and increased pest will impact both quantity and quality of crops, horticulture products and livestock making the livelihood of the people vulnerable to shocks and stress.

3.4.4 Urbanization: The State has increasing trends of people migrating from rural areas to towns, particularly Agartala and Dharmanagar in search of employment and other means of livelihoods. Other towns like Udaipur, Khowai, Teliamura, Ambassa, Kumarghat, Kailashahar, Belonia and Amarpurare are also the sites of increasing habitations. This has led to an increase in the density of population in towns. The majority of the migrants usually belong to the lower income strata of population. The increasing influx of poor migrants to an area adds pressure on the existing infrastructure. Being poor, these migrants settle in slums or areas vulnerable to disasters lacking in basic infrastructure like safe drinking water, sanitation and drainage facilities. Lack of spatial urban planning, poor land use and poor enforcement of development control guidelines and building code have led to unplanned growth of towns. There is inadequate drainage, waste management and sanitation facilities. This makes the population highly vulnerable to various diseases. Narrow roads, poorly maintained overhead electric and telephone wires, and congested drains make these settlements vulnerable during floods and earthquake.

3.4.5 Land Use change in Agartala city: Explosive population growth and the development trend that transformed agriculture land, vegetative cover land, marshy land to built up areas. Agartala Municipal Corporation is divided into 49 Wards and 4 zones. The population of Agartala is 5,26,292 with 1,25,486 number of families (as on 31/12/18) with its annual growth rate of 10.06 percent. The area of the city is 62.02 sq.km (approx.). Uncontrolled growth of population due to migration from rural to urban area and immigration from Bangladesh makes

development and infrastructural growth of the city quite chaotic. Change in land use with fast urbanization all these years has contributed to the vulnerability of the city.

3.4.6 Housing: Quality and design specifications of houses as well as materials used for housing, particularly for roofing and walling, have a bearing on the vulnerability of houses to earthquakes, storms, strong wind, hailstorm, floods and fires. The houses, primarily due to their type of construction and materials used for the walls and roofs, are vulnerable to disaster impacts and the damage risk to such type of houses is very high. The house types in the State, as whole, numbering 8,42,781 as per the 2011 Census, consist of 41.2 % kutcha (mud and unburnt brick) 9.5% burnt brick walls, 9.5% concrete and wood wall and 48.4% other materials. These are classified as Category A (mud, and unburnt brick), and Category B (burnt brick walls). These two category houses are vulnerable to severe damage including collapse in MSK IX and VIII and heavy damage even in Intensity VII. The concrete and wood frame houses, placed in Category C account for 9.5% and behave much better with only a few collapses in MSK IX. The others consisting of thatch/metal sheet huts account for majority of the housing, 48.4%. These suffer very little damage in earthquakes, and do not pose threat to life as the Category A and B housing.

3.4.7 Education: Education is a basic requirement that helps improve the coping capacities of the population. The State's literacy rate is one of the highest in the country at 91.53%, and for women it is 82.73% which is impressive (Census 2011). This offers an opportunity for eradicating poverty in the State by exploring multiple occupational or professional employment avenues. Adequate education becomes a strong detriment for reducing disaster risks in the state and supplementing knowledge and skills towards economic development as well. The school/college buildings and related infrastructures are yet to be ensured with disaster resistant components. Hence, there is a need for integrating disaster management in educational curriculum and strengthening education infrastructure under Samagra Shiksha Scheme (SSS) and other departmental schemes for reducing disaster impacts on both lives and properties.

3.4.8 High Mortality: The health care system and health infrastructure of the State are inadequate. The Infant mortality rate is 27 (Per '000 population) which is very high. Hospitals and medical personnel are not prepared for big health emergencies and surge scenarios. All these add to the vulnerability of people to the disasters.

Below figure 3L shows the number of confirmed cases and number of persons recovered from Covid 19. Pie chart shows the number of deaths per district. West Tripura was the most affected followed by Sepahijala in terms of the number of deaths due to Covid-19.

Figure 3L: COVID Cases of Tripura
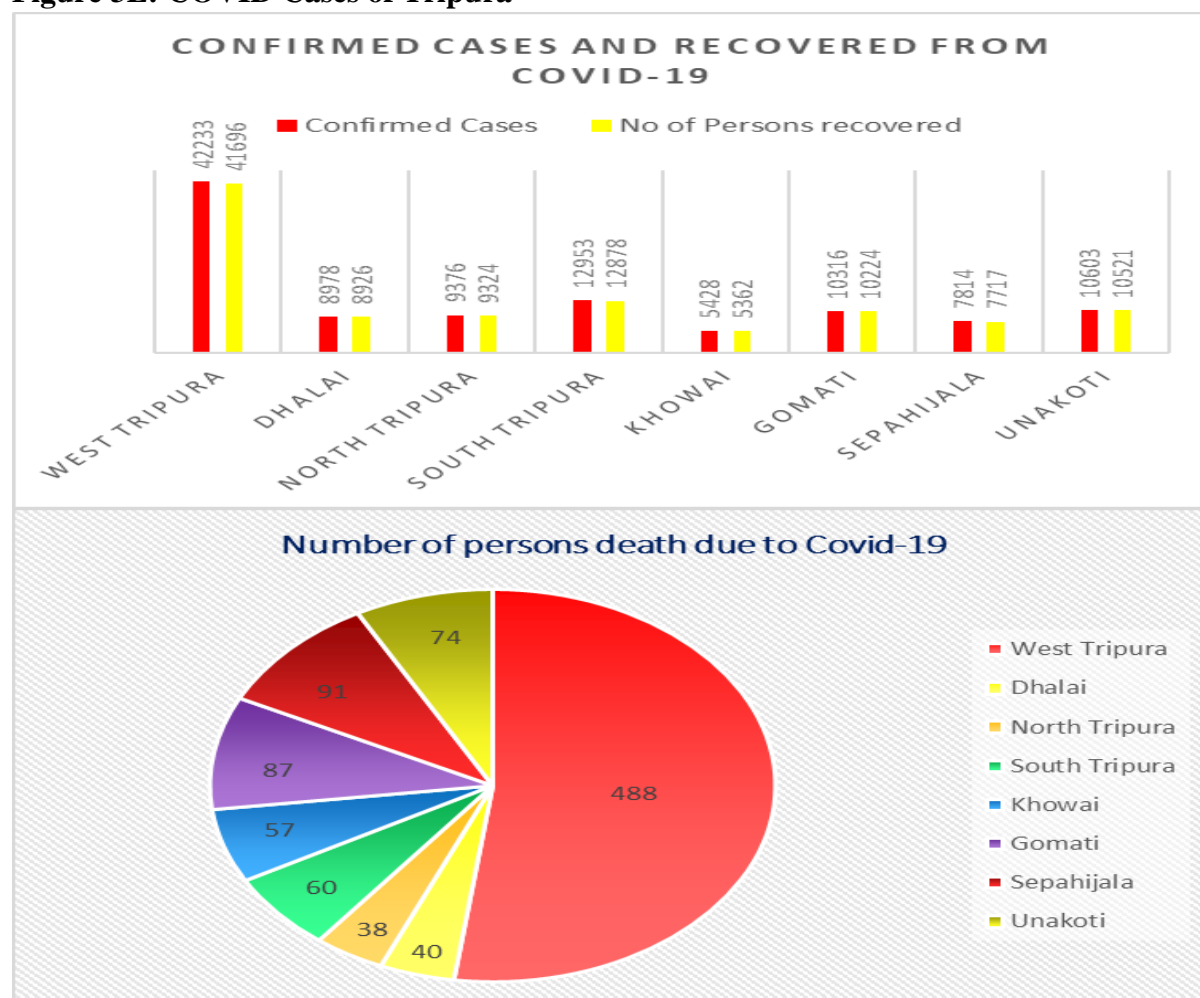
Source: SEOC, Agartala

COVID-19 pandemic has brought into focus the emergence of public health hazard and the related emergencies. A robust institutional arrangement has to be put in place to combat any such public health emergencies in future.

3.4.9 Gender Discrimination: Even though women constitute nearly half of the population of the state, they are more vulnerable to disasters because of socio-cultural barriers to various forms of livelihood opportunities. Gender minority communities are also extremely vulnerable to disasters.

3.5 Climate Change Vulnerability

Climate change is a relatively new factor that is going to act as an additional stress on the existing vulnerabilities of people and environment in Tripura. In last 50 years the max range of temperature month wise and min temperature month wise with the mean temperature have been given in **Annexure 8.**

As a result of global warming, climate related hazards like floods, droughts, heat waves, and storms are expected to become more frequent and/or possibly also more intense (e.g. tropical cyclones may have more rainfall and stronger winds, cover more territory). This will result in increasing vulnerability as climate trends are likely to impact livelihoods, increase poverty and damage food security. In addition, some climate-related hazards such as tropical cyclones, storms, floods, droughts, heat and cold waves are likely to affect people and places that have not experienced them before.

Vulnerability of the state of Tripura to climate change is intimately related to its location and indigenous population. Its location on the international border of Bangladesh which is recognised as a climate sensitive region of the world is expected to experience significant increase in frequency and intensity of cyclones, heat waves, droughts, stronger winds and more rainfall, storms, sea-level rise and increased flooding with climate change. Since its population is mainly dependent on agriculture, horticulture, forests and other natural resources for their livelihood which means the state and its people are going to be directly impacted by these hydro-meteorological hazards in a changing climate. The impact of climate change has already been manifested through land degradation, deforestation, proliferation of invasive species, loss of biodiversity, landslides, invasive species, low productive agriculture, migration, etc.

Under the future climate change scenarios, impacts of climate change are projected to exacerbate, thereby, increasing the vulnerability of biophysical and socio-economic systems including water availability, agriculture, environment and eco-systems.

As per the State Action Plans on Climate Change (SAPCC), vulnerabilities arising out of climate change in Tripura are multidimensional in nature. One sector can compound the vulnerability in the other (e.g. Jhum cultivation can affect forestry). Therefore, in order to understand vulnerability in its totality, there is a need to understand both sectoral and cross-sectoral parameters. The vulnerability and adaptive capacities are diverse and also vary from state to state. Sectoral parameters include key sectors of the state's economy and cross sectoral factors comprise:
(a) Poverty
(b) Inequality and social discrimination over proprietary rights
(c) Access to resources
(d) Social attrition/migration, and
(d) Unequal and unsustainable competition for scarce natural resources.

The sector wise vulnerabilities and associated impacts are as follows:

Table 3C: Climate Change Vulnerability and Impacts

S. N.	Sectors	Vulnerability	Impacts
1	Agriculture and Food Security	• Erratic rainfall • Shift in temperature pattern • Flood or drought conditions. • Overutilization of Ground water	• Crop productivity and crop water demand is likely to be affected.

				Soil nutrient loss, soil erosion/top /fertile soil loss.
				• Decline in availability of food and increased incidence of malnutrition
2	Forestry & Bio– Diversity	• Decline in open and moderately dense forest. • Habitat degradation and loss. • Invasive species. • Effect on regeneration.		• Impact on ecosystems services. • Impact on livelihood of people dependent on forest resources. • Extinction of species. • Change in vegetation composition.
3	Health	• High temperature and high humidity. • Vector borne diseases. • Water logging and occurrence of Water borne diseases. • Availability of fresh water • Food and nutrition. • Sanitation facilities		• Increased rate of mortality • Decline in ambient air and water quality leading to health hazards. • Increased demand of health care infrastructure. • Decline in ambient air and water quality leading to health hazards
4	Water Resources	• Reduced quality of available water resources • Decrease in groundwater recharge • Reduction in wetlands • Flood and drought Conditions • Erratic rainfall and uneven stream flow		• Decrease in water table • Groundwater dependence and overexploitation. • Increased demand for water. • Uneven distribution of water • Reduced availability of water for industrial purposes.

CHAPTER 4: DISASTER MANAGEMENT ARRANGEMENT

4.1 Introduction

India's proneness to multiple disasters caused by natural and human induced factors, aggravated by climate change impacts, pose many threats and challenges for communities and agencies involved in management of disasters. The existing institutional infrastructure and arrangement for disaster management was put in place following the enactment of Disaster Management Act 2005, which was further reinforced by the adoption of National Policy on Disaster Management 2009. However, it may be mentioned that a set of institutional mechanisms was already in place before the national DM Act was enacted, which is still in place. Thus, the DM Act supplements and does not supplant the institutional mechanisms in place before the enactment of DM Act.

The Disaster Management Act, 2005 therefore puts in place new institutional arrangements at national, state, district and local level, in addition to the arrangements that were already in place. This is apparently done in view of the felt need post tsunami disaster in December, 2004, that while the response of the Governments and other relevant agencies had been adequate, it could have been considerably improved, if appropriate preparedness and capacity building measures had been already in place together with an effective coordination mechanism, and the necessary legislative mandate at national, state and district levels.

The Disaster Management Act, 2005 was enacted on 23rd December 2005 in the above-mentioned context. The legislation was made under Entry 23 (Social Security and Social Insurance). This provides the flexibility to the States to have their own legislation on disaster management since it is not feasible for a national Act to take care of all micro level considerations which need to have legislative back up. Besides, it is desirable that States need to have their own legislation on disaster management since, in the federal set up of India, the basic responsibility for undertaking rescue, relief and rehabilitation measures in the event of natural disasters is that of the State Government concerned and the role of the Central Government is supportive, in terms of physical and financial resources and complementary measures in sectors such as transport, warning and inter-state movement of food grains and other relief materials/ resources and other logistic support measures.

The Disaster Management Act, 2005 therefore puts in place an institutional mechanism in the country by establishment of-

- A National Disaster Management Authority (NDMA) at central level;
- National Executive Committee at central level;
- State Disaster Management Authorities at state level;
- State Executive Committees at state level;
- District Disaster management Authorities at district level;
- National Disaster Response Force; and
- National Institute of Disaster Management

In the year 2015, GOI was a signatory to the following three landmark international agreements having significant bearing on disaster management policy and practice in India in general and the States therein in particular:

(i)   Sendai Framework for Disaster Risk Reduction (SFDRR) in March 2015;

(ii)   Sustainable Development Goals [SDGs 2015-30] in September 2015.

(iii)   Paris Agreement on Climate Change at the 21st Conference of Parties (COP 21), under the United Nations Framework Convention on Climate Change in December 2015.

These international agreements underline that sustainable development needs to be disaster resilient and be adaptive to climate change impacts on the wellbeing of the people and the planet. In view of this, the National Disaster Management Plan (NDMP) 2019 has underlined the need for establishing coherence between the three international agreements with special emphasis on the Ten Point Agenda on DRR, enunciated by Prime Minister during Asian Ministerial Conference on DRR (AMCDRR) in November 2016 in New Delhi.

The institutional framework which has now come into force after the enactment of DM Act, 2005 is briefly outlined below:

Figure 4A: Legal & Institutional Framework for Disaster Management in India
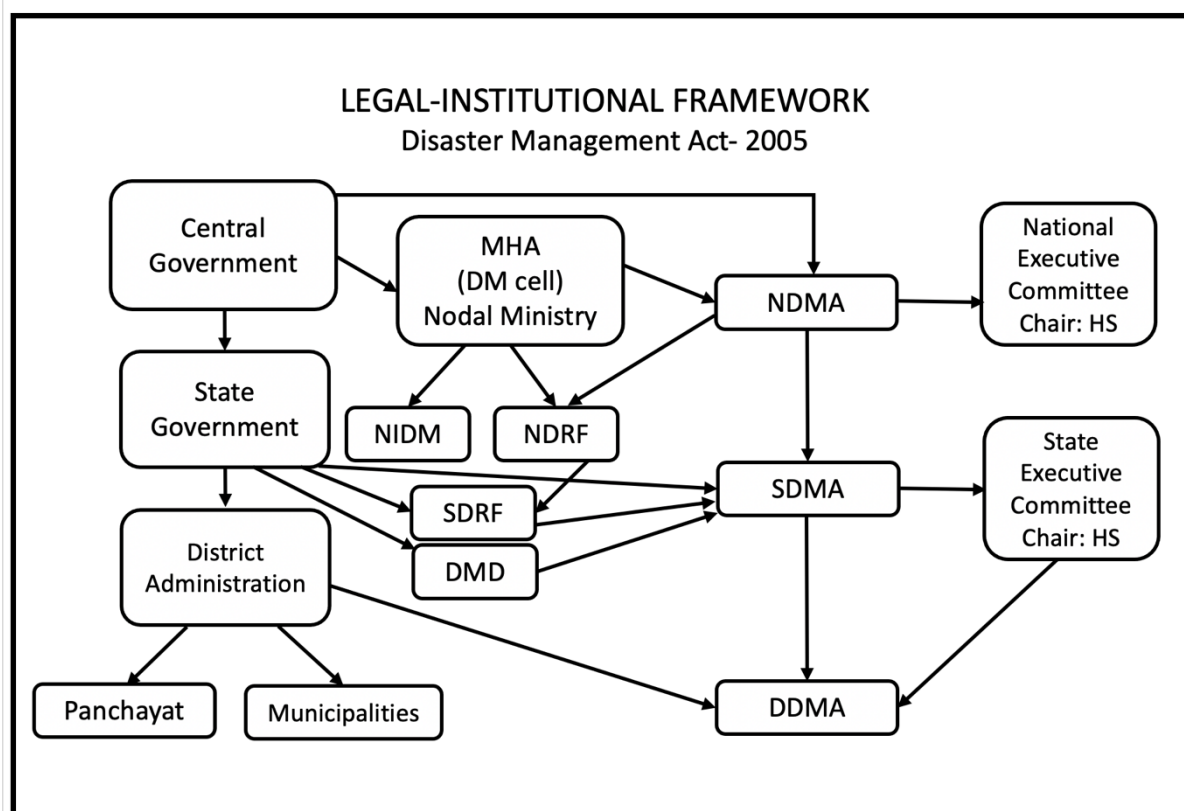
Source: Developed in-house

At State level, the Disaster Management Act 2005 provides for setting up of **State Disaster Management Authorities [SDMA]** under the Chairpersonship of the Chief Minister. State Authority is to be assisted by a State Executive Committee under the Chairpersonship of the Chief Secretary of the State.

4.1.1 Tripura Disaster Management Authority (TDMA)

The State Government constituted the Tripura Disaster Management Authority (TDMA) vide notification no. F.2 (3)/COM/REV/2004 dated 14 December, 2004, even before the enactment of the Disaster Management Act, 2005. It was re-constituted TDMA vide notification no.F.12 (5)-REV/DMR/2008 on 30th October, 2008 as per the provision of section 14(1) of The Disaster Management Act, 2005: The constitution of the TDMA was further modified through notification dated the 18th of June 2018.

The Disaster Management Act-2005 provides the requisite institutional mechanisms for drawing up and monitoring the implementation of the disaster management plans, ensuring measures by various wings of the Government for prevention and mitigation of effects of disasters and for undertaking a holistic, coordinated and prompt response to any disaster situation at national and states' level including Tripura. The Revenue Department is the nodal department for Disaster Management in Tripura. At district level, all matters relating to Disaster Management are being implemented through the District Magistrates& Collectors and their field functionaries and coordinated by the Relief, Rehabilitation & Disaster Management Directorate as the nodal Department.

Various Acts and Rules enacted/ made by the Government of Tripura such as the Tripura Panchayats Act 1993, Tripura Municipal Act 1994, Urban Planning & Development Act, 2018, Tripura Building (Second Amendment) Rules, 2022, Fire and Emergency Services Act, 2022 Tripura Building Rules, 2022, Tripura Factories Rules 1984 etc. also provide the necessary statutory powers to various departments/ agencies to plan, implement and enforce various measures relating to the prevention, response and recovery in case of emergent situations or for prevention/ mitigation of such situations in the State.

The State Executive Committee is *inter alia* responsible for preparing the state plan which would include assessment of vulnerability of different parts of the state to different forms of disasters; measures to be adopted for prevention and mitigation of disasters; the manner in which the mitigation measures shall be integrated with the development plans and projects; capacity building and preparedness measures to be taken; and role and responsibility of different departments of State Government for responding to any threatening disaster situation or disaster. Along with the planning function, SEC is also involved in taking up and supervising relief and rescue operations at the time of disaster and in disseminating information about any impending disaster.

Figure 4B: Disaster Management Structure in Tripura
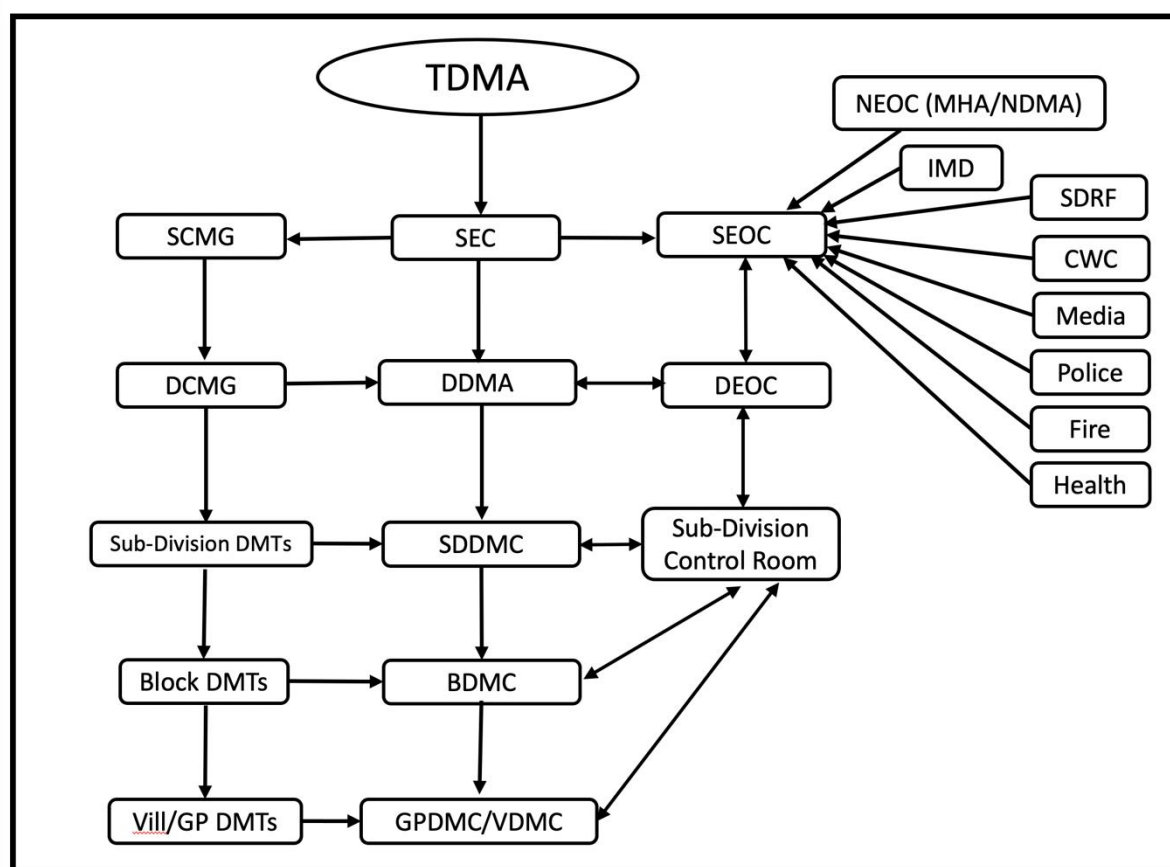
Source: Developed in-house

Table 4A: The current constitution of the TDMA

Designation	Role
Hon'ble Chief Minister, Tripura,	Chairperson
Hon'ble Minister, Revenue	Vice Chairperson
Regional Director, Indian Meteorological Department [IMD], Guwahati	Member
Chief Engineer, Central Water Commission [CWC], Brahmaputra and Barak Basins, Shillong	Member
Director, National Institute of Technology [NIT], Agartala.	Member
Chief Secretary, Tripura	Chief Executive Officer [ex-officio]
Prof. Chandan Ghosh, Head, Geo-hazard, National Institute of Disaster Management [NIDM], Ministry of Home Affairs, Government of India	Member

Source: https://tdma.tripura.gov.in/sites/default/files/Notification_TDMA%20formation.pdf

Roles and Responsibilities of TDMA

As per Section 18. Powers and functions of State Authority (DM Act 2005), TDMA will have the following powers (roles) and functions (responsibilities):

1. TDMA will lay down policies and plans for disaster management in the State.
2. Without prejudice to the generality of provisions contained in sub-section(1), the TDMA may-
a. lay down the State disaster management policy.
b. approve the State Plan in accordance with the guidelines laid down by the National Authority.
c. approve the disaster management plans prepared by the departments of the Government of the State.
d. lay down guidelines to be followed by the 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.
e. coordinate the implementation of the State Plan.
f. recommend provision of funds for mitigation and preparedness measures.
g. review the development plans of the different departments of the State and ensure that prevention and mitigation measures are integrated therein.
h. 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.
3. The Chairperson of the TDMA, 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".

4.1.2 State Executive Committee (SEC)

As per the provision under section 14(1) of The Disaster Management Act, 2005 the State Executive Committee has been formed vide notification no. F.23 (1)-REV/2002 (P) dated 30th October, 2008. The constitution of the SEC was further modified through notification dated the 8th of January 2018 by co-opting new members.

Table 4B: The current constitution of the Tripura SEC

S. N.	Designation	Role
1	Chief Secretary, Tripura	Chairperson
2	Secretary, Revenue	Member
3	Secretary, PWD	Member
4	Secretary, Health	Member
5	Secretary, Finance	Member
	Co-opted Members	
6	Director General of Police	Member
7	Principal Chief Conservator of Forests	Member
8	Secretary, Planning & Coordination	Member
9	Secretary, Social Welfare and Social Education	Member
10	Secretary, Agriculture	Member
11	Secretary, Fisheries	Member
12	Secretary, Power	Member
13	Secretary, Urban Development	Member
14	Commandant, Central Training Institute [HG & CD]	Member
15	Director, Fire Service	Member

16	Director, IMD- Agartala	Member
17	Additional Secretary, Revenue	Member
18	State level Officer of NCC	Member
19	State level Officer of NSS	Member
20	State level Officer of Civil Defense	Member

Source: https://tdma.tripura.gov.in/sites/default/files/Notification_SEC%20formation.pdf

The SEC is to assist the TDMA in execution of the decisions taken by the TDMA. The SEC shall have the responsibility to:

a) Implement the State Policy, the State Plan and act as the coordinating and monitoring body for management of disaster in the state,

b) Coordinate and monitor the implementation of the National Policy, National Plan and the State Plan;

c) Examine the vulnerability of different parts of the State to different forms of disasters and specify measures to be taken for their prevention or mitigation,

d) Lay down guidelines for preparation of disaster management plans by the departments of the state government and District Authorities;

e) Monitor the implementation of guidelines for integration of measures for prevention of disasters and mitigation by the departments in their development plans and projects;

f) Evaluate preparedness at all governmental or non-governmental levels and give directions where necessary for enhancing such preparedness;

g) Coordinate response and give directions to any department of the state government or any other authority or body in the state regarding actions to be taken in response in the event of any threatening disaster situation or disaster

h) Monitor the implementation of disaster management plans prepared by the line departments, State and District Authorities,

i) Promote general education, awareness and community training in regard to the forms of disasters to which different parts of the state are vulnerable and the measures that may be taken by such community to prevent, mitigate and respond to such disasters;

j) Provide necessary technical assistance or give advice to the district and local authorities for carrying out their functions effectively,

k) Advise the State Government regarding all financial matters in relation to Disaster Management,

l) Examine the construction in any local area and, if it is of the opinion that the standards laid down for such construction is not being or have not been followed, may direct the district authority or local authority to take such action as may be necessary to secure compliance of such standards;

m) Provide information to the National Authority relating to different aspects of disaster management;

n) Lay down, review and implement the State level Response Plan and guidelines and ensure that district level plans are prepared, reviewed and updated;

o) Ensure that the communication systems are in order and disaster management drills are carried out periodically.

4.1.3 District Disaster Management Committee (DDMC) and District Disaster Management Authority (DDMA)

In Tripura, all the districts have both District Disaster Management Committee (DDMC) and District Disaster Management Authority (DDMA). DDMC is a wider body including non-state actors as well. DDMA works under the overall supervision and guidance of DDMC.

As per the provision of Section 25 (1) of the Disaster Management Act 2005, **District Disaster Management Authority** (DDMA) has been constituted in all 8 districts. With reference to Government of Tripura's Revenue Department notification no.F-23(5)-REV/2002/P-1, dated the 27th of December 2006.

Table 4C: The composition of the DDMA is given below:

S.N.	Designation	Role
1	District Magistrate & Collector	Chairperson
2	Zilla Sabhadipati	Co-Chairperson
3	ADM & Collector	Chief Executive Officer
4	Superintendent of Police	Member
5	Chief Medical Officer	Member
6	Sr Engineer, PWD(R&B)	Member
7	Divisional Fire Service Officer	Member

Source: Revenue Department

The DDMA is responsible for planning, coordinating and implementing functions for disaster management at the district level and for taking all necessary measures for the purposes of disaster management in accordance with the guidelines laid down by the National Authority and the TDMA. It will, inter alia prepare the District DM plan for the district and monitor the implementation of the National Policy, State Policy, National Plan, State Plan and the District Plan at the district level. DDMA will also ensure the compliance of the guidelines for prevention, mitigation, preparedness and response measures laid down by the NDMA and TDMA and SEC. DDMA will ensure and monitor the implementation of Disaster Management Plans of the Departments of the Government and the local authorities in the district.

The powers and functions of the District Authority have been given in detail in Section 30 of the Disaster Management Act, 2005. Besides, powers of Chairperson of the District Authority are covered in section 26 of the Act.

4.1.4   Local Authorities

For the purpose of the disaster management, local authorities shall include Panchayati Raj Institutions (PRI), Nagar Panchayats, Agartala Municipal Council, and Autonomous District Councils (ADCs). These bodies will ensure capacity building of their personnel for managing disasters, carrying out relief, rehabilitation and reconstruction activities in the affected areas and preparing DM Plans in consonance with guidelines of the NDMA, SDMA and DDMAs.

4.1.5 Sub-Division Disaster Management Committee

The Committee will be headed by the Sub-Divisional Magistrate and will co-ordinate all response and recovery measures in the event of emergency. It will prepare and review the Sub-Divisional-Disaster Management Plan and ensure that it is updated on an annual basis. The Committee will be composed of representatives of all line Departments engaged in Disaster Management, public representatives and NGOs/CBOs. The Committee will be assisted by the Officer in charge of Disaster Management.

4.1.6 Block Disaster Management Committee

The Committee will be headed by the Block Development Officer and will co-ordinate all response and recovery measures in the event of emergency. It will prepare and review the Block Disaster Management Plan and ensure that it is updated on an annual basis. The Committee will be composed of representatives of all the line departments, public representatives, and NGOs/CBOs engaged in Disaster Management.

4.1.7 Gram Panchayat/ Village Disaster Management Committee

The Committee will be headed by the Pradhan/traditional authority/local influential person. It will prepare and review the Village Disaster Management Plan/Community Contingency Plan. The functions of the Committee would be to coordinate with government agencies in all disaster management works and to arrange volunteers for various teams/task force performing disaster response and preparedness tasks.

4.1.8 Incident Response System [IRS]

The Incident Response System [IRS] is a robust mechanism for ensuring coordinated and effective response to disaster induced emergencies. The IRS organisation functions through Incident Response Teams (IRTs) in the field. The IRS is discussed at length in Chapter 5 related to disaster response.

4.2.1 Disaster Management Teams/ Task Forces

In 2006 National Disaster Response Force (NDRF) was constituted with 8 Battalions. In the beginning, the personnel of NDRF were deployed for routine law and order duties also. In a meeting of the NDMA with the Prime Minister on October 25, 2007, the need of NDRF being made a dedicated force was highlighted and accepted. This led to the notification of NDRF Rules on February 14th, 2008, making NDRF a dedicated force for disaster response related duties, under the unified command of DG NDRF.

As per Section 3.4.5 of National Policy on Disaster Management 2009, the State Governments are required to raise their own **State Disaster Response Force [SDRF]** for quickly responding to disasters.

The SDRF can be used for Community Capacity Building and Awareness Generation programmes within the State. During these programmes, SDRF can familiarize themselves with terrain, critical buildings and other existing infrastructure for prompt responses at the time

of disasters and simultaneously work with the community, including school children, village volunteers and other stakeholders on what to do during disasters.

State Disaster Response Force (SDRF) is constituted with 4 Companies of TSR, one company each from 2nd Battalion, 7th Battalion, 8th Battalion and 13th battalion of TSR. The strength of an SDRF Company consists of 145 TSR personnel comprising of AC-01, SO-04 & Ors-140.

The Command and control of these Companies will remain with the respective Commandant under the overall supervision of the Director General of Police, Tripura. Disaster related training of these Companies shall be coordinated by the Commandant, Central Training Institute.

Deployment of SDRF Company's: (Source: Revenue Department, Agartala)

1. One SDRF coy deployed in 2nd Bn TSR

	Asstt. Comdt.	Sub	Nb/sub	Hav	NK	Rfn	E/F	Total
One coy Strength	1	1	3	15	20	93	12	145

2. One SDRF coy deployed in 7th Bn TSR

	Asstt. Comdt.	Sub	Nb/sub	Hav	NK	Rfn	E/F	Total
One coy Strength	1	1	3	15	20	93	12	145

3. One SDRF coy deployed in 8th Bn TSR

	Asstt. Comdt.	Sub	Nb/sub	Hav	NK	Rfn	E/F	Total
One coy Strength	1	1	3	15	20	93	12	145

4. One SDRF coy deployed in 13th Bn TSR

	Asstt. Comdt.	Sub	Nb/sub	Hav	NK	Rfn	E/F	Total
One coy Strength	1	1	3	15	20	93	12	145

The NDMA has been implementing a scheme to train community volunteers in Disaster Response [Aapda Mitra] with a focus on creating 1,00,000 trained "Aapda Mitra" volunteers across the country. Each trained volunteer will receive Emergency Responder Kit [ERK] containing minimum essential equipment.

Under 1st Phase, Tripura trained 200 "Aapda Mitra" volunteers for Sephijala district and under 2nd Phase upscaling and training of 800 Aapda Mitra volunteers were achieved. The total number of "Aapda Mitra" volunteers trained till date in the state is 1001 equipped with Disaster Management kits and HAM radios. (Source: CTI, Agartala.) A pool of trained volunteers like Aapda Mitra at the village, GP and district level will be of immense help in providing efficient and effective response on the ground.

Civil Defence Corps were started with Agaratala Municipal Corporation in 2021. They will be expanded to all the districts and will be controlled by the District Magistrate. By July 2023, about 3000 Civil Defence volunteers have been trained in the following manner:-

a) **First Aid Team/Task Force:**
- Medical team at the block level- under the M/O in-charge of the local Community Health Centre /Primary Health Centre.
- First Aid team at every village, GP and blocks – may consist of Auxiliary Nurse and Mid-Wife/Male Nurse (where available) / Accredited Social Health Activist (ASHA) and volunteers trained to provide first aid. Village Disaster Management Committees (VDMC) are to select the volunteers.
- Mobile First Aid Team- at least one per block.

b) **Search and Rescue Team/Task Force-**
- Normal search and rescue should be carried out by a Village Level Team/Task Force. The volunteers for the team could be selected by the VDMC and trained by the Civil Defence.
- For medium search and rescue work – a Team/Task Force may be created at the Police station (or Block level, if there is no police station in the block).
- For heavy search and rescue the assistance of the team from state Govt or armed forces may be requested.

c) **Shelter Management Team/Task Force**
- A Team/Task Force at the level of the Block under the Child Development Project Officer with members from available officials of PWD (R&B), Housing, DWS and Teachers to be constituted. The function of the committee would be to organize shelter, feeding, clothing, water supply and care of children.
- A Welfare Service Team/Task Force at every village to be organized by the VDMC with Anganwadi Workers, Tehsildars as members in addition to volunteers from the village.

d) **Supply Service Team/Task Force**
A Team/Task Force under the Executive Officer (Agriculture) to be set up in every Block with supply staff (Inspector/Sub-Inspector), as available, with the aim of arranging and transporting required commodities to the affected areas. The committee may also keep stock position of essential commodities available in various places in the block.

e) **Depot Service Team/Task Force**
- The team will take charge of all stocks of various equipment, etc. relating to disaster relief at every block under the Block accountant assisted by clerks to keep records.
- A Sub-depot at every GP level under the Gram Pradhan. At the village level, the VDMC will constitute a team to keep equipment relating to Disaster Relief at designated place.

f) **Transport service team/Task Force**
- The block level team would keep record of all vehicles available in the Block and marshal them in emergency.
g) **Corpse Disposal Service Team/ Task Force**

- One team at each block to be constituted under the EO (Vet) with members from Police and Health and Civil defence and local NGOs. Their function will be to arrange the disposal of dead bodies as per procedure and disposal of animals, etc.
- At the village level, a team of volunteers will be nominated by the VDMC and trained by the Civil defence about the procedure.

h) Fire- fighting Service Team/Task Force

- Auxiliary fire service team will be set up in every Police Station: in blocks not having police stations, the same may be created in the Block Headquarters with suitable training to the officials/volunteers.
- At the village level, the VDMC may identify volunteers who may be trained to handle minor fires with local materials.

i) Disaster Management Team/Task Forces at District Level

The District Disaster Management Authority may also constitute QRTs, Disaster Management Teams, Core Teams as per the DM Plan to manage, co-ordinate and review the tasks relating to Disaster Relief in respect of the district.

4.2.2 Supporting Institutional Arrangements

Disaster management planning, implementation and monitoring at the State, district, block, and village levels will be strengthened and augmented, through:

1. Preparation of appropriate GIS database and Digital Maps
2. Drawing of blue print of action at the Village, Block, District and State levels showing identified agencies, resources and funds for carrying out the necessary exercise;
3. Use of the existing maps in 1: 50,000 and 1:25,000 scale and preparation of detailed large-scale maps of 1: 10,000 scale, where necessary;
4. Preparation of topographic maps of hazardous areas on a priority basis;
5. Seismic Micro-zonation of Agartala and other major towns, industrial centre(s), other vital installations like dams and water reservoirs with detailed risk assessment of all buildings and infrastructure
6. Integration of conventional forecasting with the state of art technologies, namely, remote sensing, Data Collection Platforms and GIS;
7. Up-gradation and adequate rain gauge network, especially in known vulnerable districts and locations;
8. All proposed developmental activities using maximum possible information from remote sensing and incorporating hazard risk assessment for monitoring, evaluation and setting up of minimum standards for all infrastructural works, especially in hazard prone areas;
9. Creating and updating a sound information base at village/ block/ and district levels giving land use, demographic, socio-economic, infrastructure, resource inventories of government agencies, NGOs, Public and Private Sector Undertakings to be made and networked, to compile the information from various sources and bring it under one platform to support disaster management activities;
10. Link District, Block and village Disaster Management Plans with the plans at the upper and lower levels;

11. Human Resource Development to increase the capacity of various role players in disaster management;

12. Regular updating, rehearsals, mock drills and simulations;

13. Training in disaster management and modernisation of equipment of Police and Para Military Forces, Fire Services, Civil Defence and Home Guards, and SAR Team;

14. Incorporation of Disaster Management as one of the main activities of youth organizations such as NCC, Boys Scouts, Girls Guides, National Service Schemes and interested clubs/NGOs and their involvement;

15. Improvement of communication links, forecasting, and control rooms /EOCs by modernising the existing facilities.

16. Construction of emergency shelters/identification of buildings that could act as shelters and strengthening existing one, strengthening of public infrastructures, which are useful during emergencies;

17. Development of standard operational procedures, formats, checklists and field manuals;

18. Deployment of senior and experienced officials in limited geographic areas for overall control during disasters of rare severity;

19. Setting up and regular training of Search and Rescue Teams and Medical Assistance Teams at State and district levels. Further strengthening and reorientation of the Fire Services and Civil Defence Structures;

20. Strengthening of all State and District level control rooms using the state of the art technology;

21. Development of minimum quality standards for relief and recovery operations;

22. Establishment of Help Lines during emergencies with modern communication facilities and tracing mechanism;

23. Protection of Human Rights especially during distribution of relief to victims;

24. Establishment of a Disaster Knowledge Network within the State and a Global Information Network;

25. Creating awareness among the Community through disaster education, training and information dissemination to empower them to effectively cope with hazards;

26. Incorporation of disaster management aspects in educational curricula from primary school level upwards.

27. Taking necessary measures to increase public participation and awareness and enrolment of trained volunteers for different response and recovery tasks;

28. Ensuring increasing involvement of NGOs, CBOs, traditional authorities and Corporate Sector;

29. Promoting consciousness and adoption of Insurance and a culture of safety, to follow building codes, norms guidelines, quality materials in construction etc.,

30. Encourage research and studies on disaster management issues, techniques and equipment.

31. Conducting regular mock exercises and up-dation of DM Plans accordingly.

4.2.3: Early Warning Mechanism

The Institutional arrangement for the early warning in the state is as follows:

The State Emergency Operation Centre (SEOC) will issue warning for various hazards / disasters in the state on the basis of information received from various national and state level agencies. Different agencies responsible for sharing early warning information on different hazards are as follows:

1. Primary agency for Hydrological hazards is IMD which gives forecasting / warning for Rainfall, Thunder, Lightning, Heatwave, Cold wave and Hailstorm etc.
2. Floods warnings by CWC and Water resource.

PWD (WR) and Central Water Commission have their gauge stations in all major rivers (i.e. in Haora, Katakhal, Gomti, Khowai, Manu, Dhalai, Muhuri, Feni, Juri, Kakri and Deo rivers) which provides hourly basis rainfall data and related warning. They provide flood forecasting and also give the compiled report to State authorities during monsoon. North East Space Application Centre (NESAC) has also developed Flood Early Warning System for Dhalai, Gomti, Manu, Haora and Khowai to provide flood early warnings during monsoon.

3. No warning is available for Earthquake only post-earthquake report is shared from seismological.
4. Epidemic warning is given by Health department.
5. Any Early warning from GoI/ MHA is sent to State government.
6. Early warning is disseminated from state level to district level / sub-district level.

4.2.4: State Emergency Operations Centre (EOC)

The state has 24x7 State and District level Emergency Operations Centre (EOC) functioning round the clock in the Secretariat and DM & Collectors offices respectively. State EOC receives daily weather information/warnings from IMD and CWC and shares with the District EOCs. Daily situation report is being issued at 5 pm. Toll free telephones are working in State EOC (1070) and District EOCs (1077). Doppler Radar at IMD-Agartala station is being linked with State EOC for sharing now casting i.e. warning of severe thunderstorm, cyclones before one hour of the incident. Ham Radio Stations have been installed in State and District EOCs. Emergency Response Support System (ERSS)-112 has been extended to State EOC.

State EOC plays an important role in effectively and efficiently coordinating multi-agency, intergovernmental responses to disaster events. The EOC not only assembles resources for an incident scene, but also command responsibilities associated with decisions taken towards threat abatement and deploying agencies and personnel. During large scale emergencies and disasters, the EOCs become the centre of co-ordination, planning, resource mobilization and deployment, communication, information management and dissemination. Yet another significant feature of the EOC is that it acts as the platform where key decision makers and administrators interface with technical experts in the provisioning of legitimate emergency authority and expertise.

I. Objectives of EOC

• To be the central platform of planning and coordinating disaster management activities during situations of large-scale emergencies and disasters in the State of Tripura.

• To manage disaster events that require resources of many agencies that may be local or may come to the jurisdiction from elsewhere in the country.

• To coordinate the forecast and monitoring of hazards, issue accurate and reliable warnings to populations at risk.

• To design and facilitate safe evacuations and coordinate emergency response activities.

• To plan, coordinate and control relief and rescue operations.

• To effectively manage the gathering and dissemination of crucial information to the public and the media.

• To maintain and control law and order situations during emergencies.

II.   Functions of the EOC

The six primary functions of EOC are: (i) Coordination, (ii) Policy Making, (iii) Operations, (iv) Information Gathering, (v) Public Information and (v) Visitor Hosting.

These primary functions can be elaborated as in Table 4D, specifically with respect to the task force at the activated EOC phase.

Table 4D: Functions of Emergency Operations Task Force

Emergency Operation Taskforce	Functions
Coordination and Planning	Coordinate early warning, response and recovery operations.
Administration and Protocol	Support disaster operations by efficiently completing the paper work and other administrative tasks needed to ensure effective and timely relief assistance.
Warning	Collection and dissemination of warnings of potential disasters.
Law and Order	Assure the execution of all laws and maintenance of order in the area affected by the incident.
Search and Rescue (including Evacuation)	Provide human and material resources needed to support local evacuation, search and rescue efforts.
Public Works	Provide the personnel and resources needed to support local efforts to reestablish normally operating infrastructure.
Water	Assure the provision of sufficient potable water for human and animal consumption (priority), and water for industrial and agricultural uses as appropriate.
Food and Relief Supplies	Assure the provision of basic food and other relief needs in the affected communities.
Power	Provide the resources to reestablish normal power supplies and systems in affected communities.
Public Health and sanitation (including First aid and all medical care)	Provide personnel and resources to address pressing public health problems and re-establish normal health care systems.
Animal Health and Welfare	Provision of health and other care to animals affected by a

	disaster.
Shelter	Provide materials and supplies to ensure temporary shelter for disaster-affected populations
Logistics	Provide Air, water and Land transport for evacuation and for the storage and delivery of relief supplies in coordination with other taskforces and competent authorities.
Survey (Damage Assessment)	Collect and analyze data on the impact of disaster, develop estimates of resource needs and relief plans, and compile reports on the disaster as required for District and State authorities and other parties as appropriate.
Telecommunications	Coordinate and assure operation of all communication systems (e.g; Radio, TV, Telephones, Wireless) required to support early warning or post disaster operations.
Media (Public Information)	Provide liaison with and assistance to print and electronic media on early warning and post-disaster reporting concerning the disaster.

III.   EOC Structure and Operation

The EOC is a place that brings together communication capability, logistical and personnel support that represent all of the resources of the jurisdiction, including the authority to make decisions in crisis. The EOC commander will be the Chief Secretary or Secretary (Revenue). There will be an advisory body to the EOC commander. The Advisory body will be headed by a Chief Administrative Officer and includes the secretaries or directors of key departments in the state such as police, fire, public health and public works. The disaster response policy will be devised by the EOC commander in consultation with the advisory group. In the context of Tripura, it is also relevant if a Weapon of Mass Destruction (WMD) specialist is part of the advisory group. The WMD specialist could provide interpretation and specialized chemical, biological and radiological agent information to the EOC command.

The EOC has to be operated for 24 hours a day and worked in three shifts. The team for each shift comprised a senior clerk, an office assistant and an attendant. Some of the vertical functional units of the EOC are the District Emergency Control Room and Sub-Division Level Control Room. The District EOCs/Control Rooms are to be set up within the campus of district Collectorate. The district collector is the Incident Commander of the District level EOCs. During emergency situations, he/she takes over the charge of the Control Room and commands all emergency operations. All the task force leaders shall take position in the District Control Room along with Incident Commander to enable one- point coordination for decision-making process. The Sub-Division Level Control Room shall be located at the Office of Sub-Divisional Officer. The Liaison Officers of the respective Blocks shall take charge of the Control Room. The respective Liaison Officers shall coordinate between the task group members working at disaster sites and the district level Task Force Control Room (TFCR) for the mobilization of resources and dissemination of instructions received from TFCR/DCR.

IV.   EOC Operations

The EOC along with its core regular staff will remain operational throughout the year. This operation of the EOC will be at L0 level of maintenance pursuing the following activities:

Regular Functions of EOC during Normal Times

1. Updating and Maintenance duties of the EOC
2. Managing Inventories and reviewing existing logistic facilities
3. Keeping updated with other hazard, weather and terror events across the world.
4. Tracking and documenting new forms of disaster response measures and technology used around the world. Innovating these in the context of the state of Tripura.
5. Capacity Building including dry exercises and other preparedness and training exercises.
6. To always ensure the continuous operation of the regular Public Safety facilities.

The EOC is normally staffed twenty-four hours a day during seasons of extreme weather events and therefore it can quickly be activated for any emergency. When a major emergency occurs, or is imminent, it will be the responsibility of the Emergency Coordinator to set up and staff an appropriate Emergency Operations Centre (EOC). The EOC is usually activated at the orders by Chief Secretary at the State level or the collector in the district level respectively. The activation of EOC should normally occur when the Government proclaims a State of Emergency affecting the area due to weather, hazardous materials, terrorism, etc. It also depends upon the severity and nature of the hazard event. It should be noted that the activation of EOC should be followed by the issuance of warning by nodal technical agencies. When the situation returns to normal, automatically the response operations cease and the EOC staff strength also reduced automatically. The deactivation of EOC takes place upon the receipt of Chief Secretary's order.

In case of extreme disasters such as chemical disasters, bomb blasts and terrorist attacks, national security and control takes precedence. The Ministry of Home has to establish special measures to ensure the security of the nation by sealing and evacuating strategic government and national institutions well within 3-4 hours of the occurrence. National borders, air and sea space also have to be protected and if need be, sealed off. The designated officers of the Home Guards at the EOC will provide security to the EOC entrance points. In addition to EOC staff, the authorized individuals are allowed by the Home Guards to enter the EOC.

V.   EOC Levels of Operation

The EOC activation at various levels depends on the level of disaster. The National/ State/district EOCs are activated in the L3, L2 and L1 levels of disasters respectively.

EOC Levels of Operation

Level   Nature of EOC Operation

Level 1 (L1) Normal: Situation is monitored by EOC in charge

Level 2 (L2) Watch: When an event / disaster may occur, notification is made to agencies and support staff who would need to take action as part of their responsibilities.

Level 3 (L3) Partial Activation: Limited activation of EOC when an event / disaster is very probable or following an event which doesn't require full activation. All primary or lead staff will be notified and will staff the EOC.

Level 4 (L4) Full Scale Activation: All primary and support agencies are notified. All EOC Support personnel will staff the EOC.

VI. Immediate Tasks on EOC Activation

The Chief Secretary will initiate the activation of the emergency services of the EOC as established. It spells out the immediate tasks as the EOC is activated.

Immediate Tasks upon EOC activation

1. The Chief Secretary will determine what staff he/she deems necessary to effectively operate the EOC apart from the prescribed staff. The Personnel from various departments and agencies are called to work in the EOC.
2. Orders are sent from the crisis management committee to related ministries and departments for additional resources.
3. The emergency operation task forces are asked to send report on the situation and their immediate resource requirements to the EOC within 4-8 hours of activation.
4. The EOC produces a situation report summarizing these reports.
5. Records will be maintained in the emergency control room.

VII. EOC Communication

The Telecommunication Task Force Leader of the EOC shall ensure immediate restoration of disrupted communication facility or infrastructure to ensure uninterrupted communication for effective disaster management operations. The task force will also ensure that the communication shall be brief and simple, and no chaotic situations arise. Telephones or Hot Lines shall be used wherever possible to avoid congestion of radio communication. All task force members shall communicate only through their allotted frequency channel to avoid congestion in the particular channel. The personnel who use radios should be acquainted with the operation of the equipment, various channels, code words, length of speech, etc. The EOC has an important role in issuing early warning.

VIII. EOC Information Centre Management

The principal role of information centre in the EOC constitutes collection of data, analysis and dissemination of information to relevant organization. Upon the activation of EOC, this centre coordinates the flow of information with respect to activities associated with relief operations. During normal times, it maintains a systematic database of the resources available, important phone numbers, name and addresses of important government officials, EOC emergency staff members, trained officials and first responders, international aid agencies and NGOs. The EOC-information centre does damage assessment of the affected areas, collect all related information of government schemes for smooth management, monitors different disaster mitigation programmes, coordinate with different organizations, also conducts evaluation of the programmes

Information Flow in EOC

and immediately takes up. The information flow chart from EOC-information centre is given in Figure 4C.
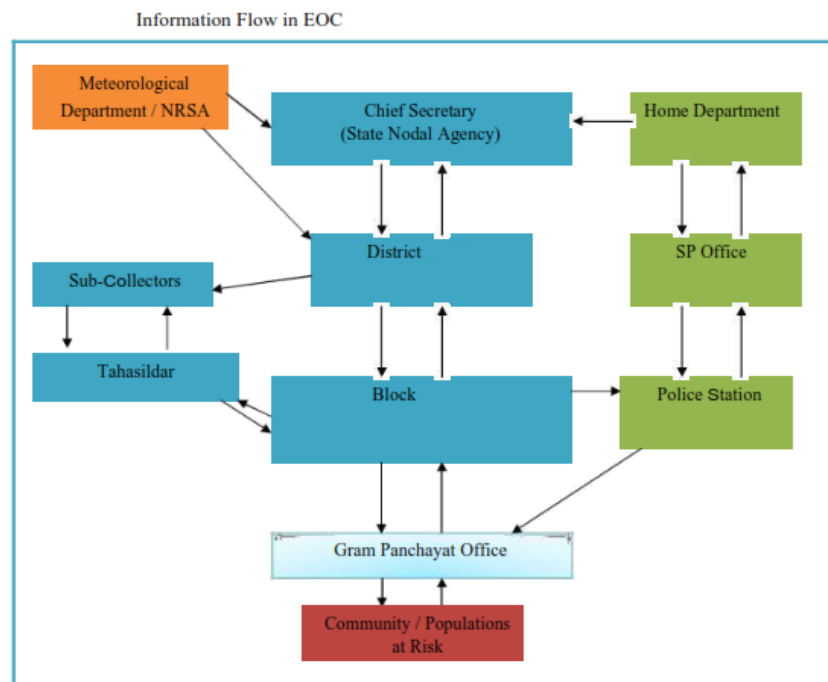
IX. Geo-Informatics: Disaster Response and Emergency Operation

Geo-informatics constituting Remote Sensing, GIS and GPS are very effective tools for forecasting, monitoring and assessment of pre, during and post disasters in a particular region by utilizing prior information and developing commensurate strategies. For example use of spatial information to make decisions regarding targeting the affected population, demarcating the affected area, relief material distribution and holistic management. The role of geo-informatics in disaster response and emergency rescue operations are follows:

- Pre-assessment of the incident area
- Identifying the area for early warning
- To display the EOC, ICP, command units and their duties in the warning area
- To draw rescue routes and make a emergency operation plan
- To analyze the relief material distribution
- Monitoring the incident situation
- Disaster information display and real-time dissemination
- Disaster assessment and reconstruction (assess the disaster losses such as population, damages - building, road, infrastructure, agricultural, socio-eco loses, livelihood. Assess the relief, rehabilitation and reconstruction cost in accordance with post disaster needs.

The geo-informatics data base must be consists of the following significant information to hand the incident in better manner:

- ICP's
- Resource management (including human and other resources)
- Demographic details (including children, aged and gender)
- Livelihood and habitation etc.
- Positioning of line department
- Infrastructure and basic amenities
- Public health hospitals, health post, health centre
- Logistics and distribution system, and transport network
- Land use and land cover (built-up, agricultural, forest, water, waste and others)
- Academic institutes (schools, colleges, institutes and universities)
- Research institutes
- Industries and mining area

X.   GIS in EOC system

GIS in EOC or mobile GIS is new technology and widely used in many countries during incident situations. It will support multiple mobile terminals (PDA, Cell phone and laptops), real-time services (navigation devices supported (GPS)), and support multiple types data acquisitions (locations, transport networks and regions by PDA, images, audios, videos and positioning services).

Mobile GIS is integrated with GIS, GPS, remote sensing, and mobile communication systems (GSM/GPRS/CDMA).It is utilized for the following:

Spatial data management and spatial analysis with GIS

•Positioning and tracking with GPS
•Data acquisition with PDA
•Transmission of information as images, text and audio with mobile communication technologies.

XI.   Preliminary Steps to Set Up an Emergency Operations Center

While setting up of an EOC, the following aspects should be given due consideration:

a) Number of people involved: The number of people at an EOC should be limited to the people directly involved in the EOC operations.

b) Presence of decision makers and operations staff: All key individuals involved in decision making and executing them needs to be present at the EOC, as and when policy decisions are being taken.

c) Communications and other equipment: The EOC should have sufficient physical space and support equipment to enable staff to operate effectively. An EOC requires the best available communications and other equipment to operate efficiently. However, the lack of equipment

should not be used as an excuse for not setting-up an EOC. Runners can work in the place of radios, paper and pens in the place of computers and printers, and chalk boards in the place of white boards.

d) Information Resources: The EOC should contain maps and documentation on other relevant resources needed to respond to a disaster.

e) Alternate sites: There should always be an alternate site for the EOC in case it has to be abandoned.

f) Knowledge of the EOC location: Only those who need to know where the EOC is located should be told its exact location.

XII.   EOC Basic Requirements

Site or Location of the EOC: The Emergency operation center (EOC) should be established near the office of key government functionaries and is ideal to be positioned away from the disaster scene. As per the recommendations of the HPC, a network of EOCs is to be set up in national, state capitals and headquarters of disaster prone or vulnerable districts.

While designing EOCs, specific attention should also be given to aspects related to the electrical/data circuit layout, security considerations, lighting considerations, projection displays, visual aids, equipment, communication considerations, UPS/backup power considerations, and functional considerations with a view toward avoiding potential pitfalls in design, construction, and equipment functionality.

XIII.   EOC Equipment
- Radio communication supported with capabilities on all public safety frequencies
- Amateur radios(multiple bands)
- Secure satellite telephone
- Doppler weather radar and infrared satellite imagery
- Quick-call and community siren warning system
- Emergency Alert System encoder/decoder
- Primary telephones, back up phone system and dedicated circuits
- Group paging terminals
- Fax machines
- Internet (both network and dial-up as a redundancy)

XIV.   Back up Control Room
In case of rare incidents or disasters, the EOC building may be severely damaged and cease to function. In that case a backup EOC or a temporary set up can be used for coordination and control of emergency operation. The HPC has emphasized on setting up of Back up EOCs at all levels right from National level to district levels. In the context of Tripura, it is advisable to have two EOCs at the State level, one positioned at Srinagar while the second state level EOC is set up at Jammu. This will also be in tune with the state's administrative structure and will

help coordinate the activities when the administration moves from Srinagar to Jammu or vice versa.

4.2.5: Coordination with Armed Forces, Airport Authority of India (AAI) and Indian Railways

The Armed Forces, AAI, and Indian Railways shall be called upon to assist the civil administration only when the situation is beyond the coping capability of the State Government. Since, Tripura being an international border state has the presence of large Army spread throughout the State, assistance and support of highly trained dedicated and well equipped human resources will be utilised in the crisis situation by the State Disaster Management Authority.

4.2.6: Training Organization

State Institute of Public Administration and Rural Development (SIPARD) is the apex training institute for public administration and rural development in Tripura. Set up in 1993, SIPARD has been organising training programmes for State government officials, representatives of PRIs, members of NGOs etc. in the relevant areas of their activity, comprising public administration, accounts and finance, office procedure, legal & judicial matters, RTI Act along with training on computer and other educational and research activities, including evolution studies. SIPARD also carries out publication of newsletter, books, compendium etc on various subjects.

SIPARD needs to design and conduct training programmes on various aspects of disaster management for different groups of government officials working at various levels. Disaster management modules and capsules will be included as an integral part of the most of the training programmes being conducted by SIPARDs

Central Training Institute (CTI)
Central Training Institute (CTI) conducts different types of training for Tripura Police and Civilians. CTI provides training on Disaster Management, it is conducted for both civilians and Tripura Police Personnel including Tripura State Rifles (TSR).It conducts various types of training viz. Basic training, Refresher training, Special Arms training for Home Guards and Rescue Operation training, Fire-fighting and First aid training for CD (Civil Defense) Volunteers. As per decision of the Govt. of Tripura, Revenue Deptt. vide No. 12(5)REV/DRM/2004 dt. 30.4.2005 the Central Training Institute has been declared as 'State Nodal Institution for imparting Practical Training on Disaster Management for both the official and non-officials in the State.

National Institute of Technology (NIT) Tripura
NIT, Tripura aims at producing techno-managerial human resource in line with global need offering state-of-the-art facility, research and training in engineering and allied disciplines. The research programmes are oriented towards developing technical systems that are most suitable for North-Eastern Zone. The Bachelor of Technology (B.Tech) courses being offered by NIT have disaster management as a subject.

4.2.7: Regional Institutions: NESAC, North-East Police Academy

NE Remote Sensing Application Centre (NESAC): The North Eastern Space Applications Centre (NESAC) is an agency under Department of Space, Govt. of India providing space technology support such as remote sensing applications, satellite communications and space science research. The Agency implements the Disaster Management Support Programme using space technology for the entire NE Region. It has facilities for monitoring disaster affected areas, mapping of disaster-prone areas, and providing satellite-based emergency communication systems. NESAC is also installing a Telemedicine network and the Transportable VSAT Systems which will work as a backup communication network for post disaster rescue/relief operations.

NESAC has the potential of providing critical knowledge management support to Revenue Department by providing inputs like creation of GIS based Road Network Map, Disaster vulnerability map, emergency communication etc., in critical disaster management operations.

North-East Police Academy
The Academy organizes various short term / specialized courses for officers of police, judiciary, prosecution, CAPFs and other departments on various subjects like Prison Reforms, Cyber crime, Cyber Forensics, Scientific Investigation, Soft Skills, Law, Disaster Management, etc. NEPA designs and offer several different types of in-service training programmes for Police personnel of all states of India. This helps in bringing Police Officers in close contact with Officers of other Departments like Judiciary, Armed Forces, CAPF, Prison Department, Customs and Excise, etc.

4.2.8: Government of India Institutions: AAI, CWC, GSI

Airport Authority of India (AAI) and Indian Railways
AAI, and Indian Railways shall be called upon to assist the civil administration, for mobilization of people, equipment, search and rescue of the affected communities / individuals. They could provide assistance and support with well-equipped human resources that can be utilised in the crisis situation.

Central Water Commission (CWC)
Central Water Commission (CWC) is a premier Technical Organization of India in the field of Water Resources and is presently functioning within the Ministry of Jal Shakti, Department of Water Resources, River Development and Ganga Rejuvenation, Government of India. The Commission closely works in consultation with the State Government concerned, schemes for control, conservation and utilization of water resources, for purpose of Flood Control, Irrigation, Navigation, Drinking Water Supply and Water Power Development. It could undertake the investigations, construction and execution of any such schemes as required.

Geological Survey of India
Geological Survey of India is entrusted with the task of studying various geological aspects of the earth across the country. The Organisation has initiated geological studies pertaining to the

areas susceptible to hazards from earthquake and landslides and to bring out thematic maps on various scales to be utilized by different agencies. At present the GSI is carrying out the following activities:

(1) Landslide Hazard Zonation- regional and along the National Highways. Thematic maps on macro, meso and micro level are prepared based on the objective of the investigation. The mapping helps in categorizing the hazards in the area of the study into low, moderate, high zones. Presently, the emphasis is on National Highways. The Organization has been declared as Nodal agency for Landslide studies in the country.

2) Site specific studies of the chronic landslides. Such studies are useful in working out the remedial measures to control and stabilize the slide.

3) Seismic microzonation studies of the principal cities to delineate hazard zones to enable planners to recommend suitable designs. First and Second level thematic maps are prepared in such cases.

4) Active fault mapping to study the seismic status of various discontinuities (faults, shears) and to establish probable seismogenic nature of the discontinuity and its capability of generating earthquake. The Organization has its office at Agartala.

CHAPTER 5: STATE DISASTER RESPONSE PLAN

5.1 Background

Response measures are those which are taken immediately on receiving early warning from the concerned authority or in anticipation of an impending disaster, or immediately after the occurrence of a sudden event without any warning. The primary goal of response to a disaster is saving lives, protecting property, environment, and meeting basic needs of human and livestock after the disaster.

The United Nations International Strategy for Disaster Reduction (2016) defines response as: "Actions taken directly before, during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected."

The overarching concern of disaster response is immediate and short-term needs, including immediate disaster relief. Effective, efficient, and prompt response relies on informed disaster risk, preparedness measures, including the development of the response capacities of individuals, communities, organizations, countries and the international community. The institutional elements of response often include the provision of emergency services and assistance by public and private sectors and community sectors, as well as community and volunteer participation. "Emergency services" are a critical set of specialized agencies that have specific responsibilities in serving and protecting people and property in emergency and disaster situations. They include civil protection authorities, and police and fire services, among many others. The division between the response stage and the subsequent recovery stage is not very distinct. Some response actions, such as the supply of temporary housing and water supplies, may extend well into the recovery stage. The Response Plan has to be seen in this background.

5.2 Approach of the State Government

The Tripura Government's approach to response and relief is to ensure that those departments/ agencies which are responsible for providing a particular emergency response service will adopt a planned, systematic and coordinated approach to make them most effective, while utilizing the resources most optimally.

A key element of the response plan will be preparedness (discussed at length in Chapter 7), which will include coordination meetings at the state, district and sub-divisional levels in March, prior to the seasonal hazards such as thunderstorms, squalls [kalbaisakhi], monsoons. Preparedness will also include pre-positioning of response teams at strategic locations with appropriate equipment and materials. The state will also ensure early disposal of claims and assistance to all departments and agencies and that once the response activities have been completed, demobilisation of resources and withdrawal of disaster response shall be notified.

5.2.1 Resource Support

A five-tiered framework (village/GP, Block, Sub-Division, District/Autonomous Councils and State) exists for implementing response to emergencies. The responsibility for response in the first instance rests with the Village/Panchayat & Sub-division. At the block level, resources

owned or under the control of the 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.

5.2.2 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 sub-division. The highest level of operational co-ordination and support will take place at the State level. It is at this level that resource support from other States, Central Government and/or other agencies will be assessed and requested, as required.

5.2.3 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 Sub-Divisional Magistrate (SDM).
- If the request cannot be satisfied at the local level, then via the SDM to the DM & Collector.
- If the request cannot be satisfied at District level, then request will be made to the State Govt. [CS / RC]
- If a request cannot be satisfied from resources within the State, the CS / RC will seek Central assistance or external assistance, through the Central Government.

5.3 Response Activities
5.3.1 Warning

Most of the disasters except earthquake, fires and accidents 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 etc. are some of the disasters for which adequate warning can be given.

While it has generally been believed that the earthquakes cannot be predicted, there are certain global agencies such as Slovenia based Quan tectum, which have been predicting earthquakes with certain amount of accuracy for some years now. A Task Force could be formed, possibly by the Central Government, to explore the possibility of predicting earthquakes by identifying and engaging the right agencies for the purpose.

The following mechanism is devised to deal with two situations that may arise in a disaster event:

A) When warning signals are available:

I. Based on the forecast issued by nodal NEOC/NDMA/MHA, issue watch, alert and warning to SEOC/SDMA/SEC/DEOC/DDMA.

II. On receiving watch, alert warning to the SEOC/SEC is given to enable them to activate the state and district response mechanism to deal with the situation effectively.

III. DDMA through its mechanism shall inform the community of the impending threat through warning system and undertake evacuation (if necessary).

IV. Warnings shall be issued at state and district level through department of public relations and through authorised person(s) only.

V. Depending on the situation, warning dissemination shall be carried out through alarms, sirens, radio, television, loud speakers, hoisting of flags etc.

VI. Subsequent to the warning, people shall be kept informed about the status and shall be issued the warning at appropriate time.

VII. Warning messages shall be composed with caution and care so as not to create undesirable alarm/impact and understood easily by the recipients.

VIII. DDMA shall issue comprehensive standing order elaborating all necessary pre-emptive measures based on warning.

B) When warning is not available

Disasters, for which warning is either not readily available or not possible, include earthquakes, landslide, dam bursts, fire, chemical and industrial disasters, and all accident-related disasters. The principles and mechanisms of instant information sharing with the stakeholders and their expected response are given as below:

- When disaster takes place all of sudden without a warning, the guiding principle shall be to mount immediate rescue and relief operations
- The village response team or any other functionary at ground zero i.e. village level shall inform the SDM/BDO/DEOC about the incidence
- SDM/BDO/DEOC shall apprise the DDMA and immediately mount the rescue & relief efforts with whatever resources available at their command.
- DDMA shall assess the situation and declare the level of disaster i.e., L0, L1, L2, L3 at the district level.
- IRS will be activated according to the level of Disaster i.e., L0, L1, L2, L3 and the required teams will be deployed accordingly.
- DDMA shall identify the support requirement and seek assistance, if required.
- SEC is activated and NEOC/NDMA/MHA informed.
- SEC shall assess the situation and mobilise external resources, if required.
- DDMA shall constantly assess and review the situation and activate coordination, command and control at district level. Similarly SEC/SDMA will take necessary action to coordinate, command and control at state level.
- DDMA shall deploy teams for rapid assessment of damage.
- Line department teams shall begin work for restoration of power, water supply telecommunication, and road connectivity.

Table 5A: Level of Disaster and its Definition

Level of Disaster	Definition
L0	L0 denotes normal times which are expected to be utilised for close monitoring, documentation, prevention, mitigation and preparatory activities. This is the planning stage where plans at all levels from community to the State shall be put in place. Training on search and rescue, rehearsals, evaluation and inventory updation for response activities will be carried out during this time.
L1	L1 specifies disasters that can be managed at the district level; however, the state and centre will remain in readiness to provide assistance if needed.
L2	L2 specifies disaster situations that may require assistance and active participation of the state, and the mobilization of resources at the state level.
L3	L3 disaster situations arise from largescale disasters where districts and the state may not have the capacity to respond adequately and require assistance from the central government for reinstating the state and district machinery.

Source: NIDM guidelines SDMP

5.3.2 Departments/ Agencies responsible for issuing warning

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

Table 5B: Departments/ Agencies responsible for issuing warning

Type of Emergency	Primary Agency	Secondary Agency (ies)
Earthquakes	IMD (only post-Earthquake information)	PWD/ Revenue Department
Floods	IMD	CWC / Water Resources / Revenue Department
Cyclones/Storms	IMD	Revenue Department
Thunderstorm	IMD	Revenue Department
Lightning	IMD	Revenue Department
Landslides	GSI	IMD / Revenue Department
Epidemics	Health Department	Revenue Department
Biological Disaster	Health Department	Revenue Department
Drought/ dry spells	Agriculture Department	Revenue Department
Industrial	Industries and Commerce department / Factories and Boilers Organization	Revenue Department
Dam failure/ water release from release	Water Resources	TSECL
Human Induced Disaster	Home Department	Revenue Department
Pest Attacks	Agricultural Department	Revenue Department

5.3.3 Warning Protocols

a) Advanced technology like, remote sensing, GIS, Doppler Radar 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 Government and District Magistrate & Collectors of the

districts affected by floods will maintain regular contact with districts upstream in Tripura for advance warning.

b) The warning given will be clear and unambiguous and would be delivered 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, evacuate or prepare for evacuation.

c) Emphasis to be given on regular use of communication system during normal time so as to ensure that they are always functional and to publicise and update all the emergency telephone numbers. Warning to people through the Government field functionaries will be disseminated. This system of alert may range from alarms (fires), sirens (industrial disaster), to public announcement systems like radio, television, mass sms, cable T.V., loud speakers and traditional systems i.e., beating of drums etc. (Cyclones, Floods). On receipt of warning, the district/sub-division level machinery and the concerned departments at the State level will be systematically activated for response measures at the earliest:

5.3.4 De-Warning

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

- Dissemination of de-warnings by respective districts and blocks
- EOC will revert to normal functioning.
- The specialised teams (defence/search and rescue/medical), QRTs shall also stand down.
- Material resources will be returned/stored back

5.3.5 Evacuation

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

b) Legal and Operational Considerations
The decision to order evacuation rests with the DM on the basis of advice from SDM, police and other experts, unless time constraints prevent this consultation. Once the decision is made, the SDM and the local Police will be responsible for carrying out the evacuation process.

c) 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.

SDMs 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 must remain away from home for an extended period, temporary accommodation may be necessary. This will be managed under the recovery arrangements.

d) Operating Procedures for evacuation

1. Shelter sites will be identified closer to the affected community.
2. Alternate routes will be planned well in advance.
3. 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.
4. 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:
     • Seriously injured and sick
     • Children, women and differently-abled
     • Old
     • Others

e) 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,

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

F) Dos & Don'ts' for Public
People will be advised to:
1. Shut off electrical switches, gas appliances,
2. Secure their homes. Close and lock their doors and windows
3. Leave early enough to avoid being trapped
4. Follow recommended evacuation routes
5. Stay away from broken / fallen power lines
6. 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:
1. Adequate supply of safe drinking water in closed unbreakable containers
2. Adequate supply of non-perishable, dry ration
3. Extra clothes and rain gear
4. Blankets, plates and glasses
5. Toiletries
6. A battery powered radio, torch, lantern, and matches
7. Cash, jewellery, medicines, important documents
8. Food and prescribed medicine, if any, for infants and people needing special care.

9. Make transport arrangements, if feasible, for people who are not in a position to carry the supplies on their own.

5.4 Relief Activities

This section covers the provision of emergency relief mobilization and distribution as per the state relief guidelines.

i. The Staging area will be established at the nearest Airport, Rail head and Bus Terminal as an Information & Arrival Centre, which will be staffed by suitable personnel. 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 Centres. At these centres there will be provision for:-

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

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

c) 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 of Tripura Bhawan will be utilised in indicating to outside agencies about the type of relief material/personnel required and the place of collection of the relief material/personnel.

iii. 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 administration related issues/complications.

iv. The State Govt. have specified minimum standards of relief notification dated 30th April 2016. Legal provisions are made to ensure that all departments / agencies adhere to the specified standards. There are guidelines for special care and provisions for children, pregnant women, lactating mothers, differently-abled, elders and sick persons. Guidelines for minimum standards of Relief have been shared as **Annexure 15.**

v. The SDMA 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 Sub-division Disaster Management Plan. In case of an event that exceeds the capacity of the specified committee to perform this function, the SDM through the District Magistrate & Collectors will arrange for the State or District Authorities to assume coordination functions.

vi. Once the magnitude of disaster is massive and assistance from outside the State is required urgently, efficient and effective co-ordination of relief operations assumes critical significance. The flow of materials and manpower from outside will be co-ordinated by the SRC who will organise and manage the Arrival point for flow of such assistance.

5.5 Operation of Emergency Operation Centre [EOC]

The State and District EOCs shall function round the clock with adequate manpower and required resources. Additional manpower may be called from the line departments to support the disaster response through Emergency Support Function (ESF).

- The EOC shall have dedicated and redundancy communication system and regular communication flows.
- Alternate communication should be kept as standby
- The EOC shall have media briefing from time to time through the Media Focal person as per the SOP.
- The EOC shall take up the preliminary damage assessment through the line departments and district authorities.

5.6 Emergency Functions and the responsibilities of the State/Centre.

The Revenue Department, i.e., the state's nodal department for DM and SDMA are lead agencies at the state level for coordination of response. The DDMA is the lead agency for coordination of response at District level. All the concerned line departments of the state government must prepare their own hazard specific response plans as per the guidelines of the NDMA and in line with the NDMP, SDMP and the guidelines provided therein. They must always ensure preparedness for response and must carry out regular mock drills and conduct tests of readiness periodically, and the ministries/ departments must report the status to the NDMA.

Agencies responsible for disaster response should develop their individual scenario-based plans and SOPs considering multiple hazards and envisaging different scenarios ranging from least to the worst cases. The scenario-based planning exercises should be part of the preparedness of response agencies at all levels. While there are disaster-specific aspects to the post-disaster response, the emergency functions are broadly common to all disasters and there are specific ministries, departments, or agencies that can provide that emergency response. Besides, very often, there are multiple hazards and secondary disasters that follow a major disaster. Hence, response intrinsically follows a multi-hazard approach.

All agencies responsible for response should follow the SDMA's IRS guidelines, which will help in ensuring proper accountability and division of responsibilities. Different ministries and departments must provide specialized emergency support to the response effort. Certain agencies of Central Government will play a lead role, while others will be in a supporting role.

5.7 Incident Response System [IRS] at State and District levels.

The Incident Response System [IRS] is an effective mechanism for ensuring timely and effective response, while reducing the scope for ad-hoc measures in response. It incorporates all the tasks that may be performed during any disaster irrespective of their level of complexity. It envisages a composite team with various sections to attend to all the possible response requirements. The main purpose of the IRS is to lay down the roles and responsibilities of different functionaries and stakeholders, at the State and the District levels and to coordinate

with the multi-tiered institutional mechanism of the state. It also emphasises the need for documentation of various activities for better planning, accountability and analysis.

The IRS organisation 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 Incident Response Teams [IRT]. 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, if required.

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 5A.

Figure 5A: IRS Organization

Source:
https://ndma.gov.in/sites/default/files/PDF/Guidelines/incidentresponsesystemjuly.pdf
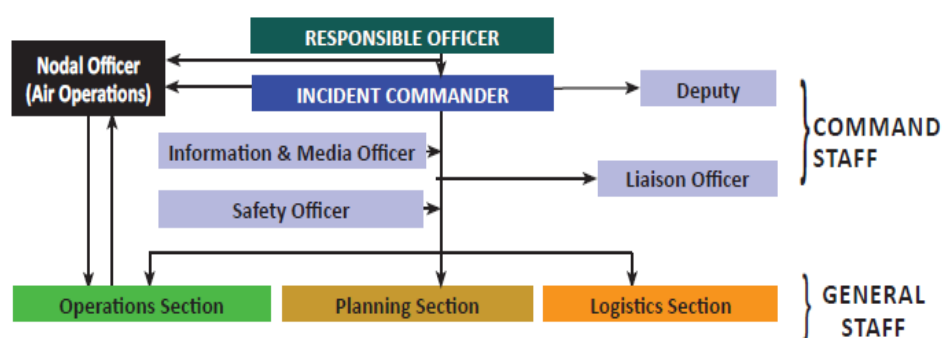
5.7.1: Command Staff: The Command Staff consists of the Incident Commander [IC], Information & Media Officer [IMO], Safety Officer [SO] and Liaison Officer [LO], The main function of the Command Staff is to assist the IC in the discharge of her/his functions.

5.7.2 General Staff:
The General Staff has three components, namely:

Operations Section [OS]- The OS is responsible for directing the required tactical actions to meet incident objectives.

Planning Section [PS]- the PS is responsible for the collection, evaluation and display of incident information, maintaining and tracking resources, preparing the Incident Action Plan [IAP] and other incident related documentation. The PS will also assess the requirement of

additional resources and propose where it can be mobilised from and keep the IC informed. This section also prepares the "Demobilisation Plan".

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 the development and implementation of the IAP, activities and supervises branches and units of his section. The Finance branch is included in the LS.

The IRT is a team comprising of all positions of the IRS Structure headed by the IC. IRTs will function at the State, District, Sub-Division and Block/Tehsil levels. These teams will respond to both natural and man -made disasters.

In line with the federal structure of India, response to any disaster will be carried out by the concerned state and district/districts. The GoI will play a supporting role by way of assistance in the form of resources, manpower, NDRF, armed and para military forces, equipment and funds. At the GoI level, the NCMC / NEC will coordinate and provide the required resources. NDMA will also help in monitoring the coordination of response.

Figure 5B: IRT Framework

Source:https://ndma.gov.in/sites/default/files/PDF/Guidelines/incidentresponsesystemjuly.pdf
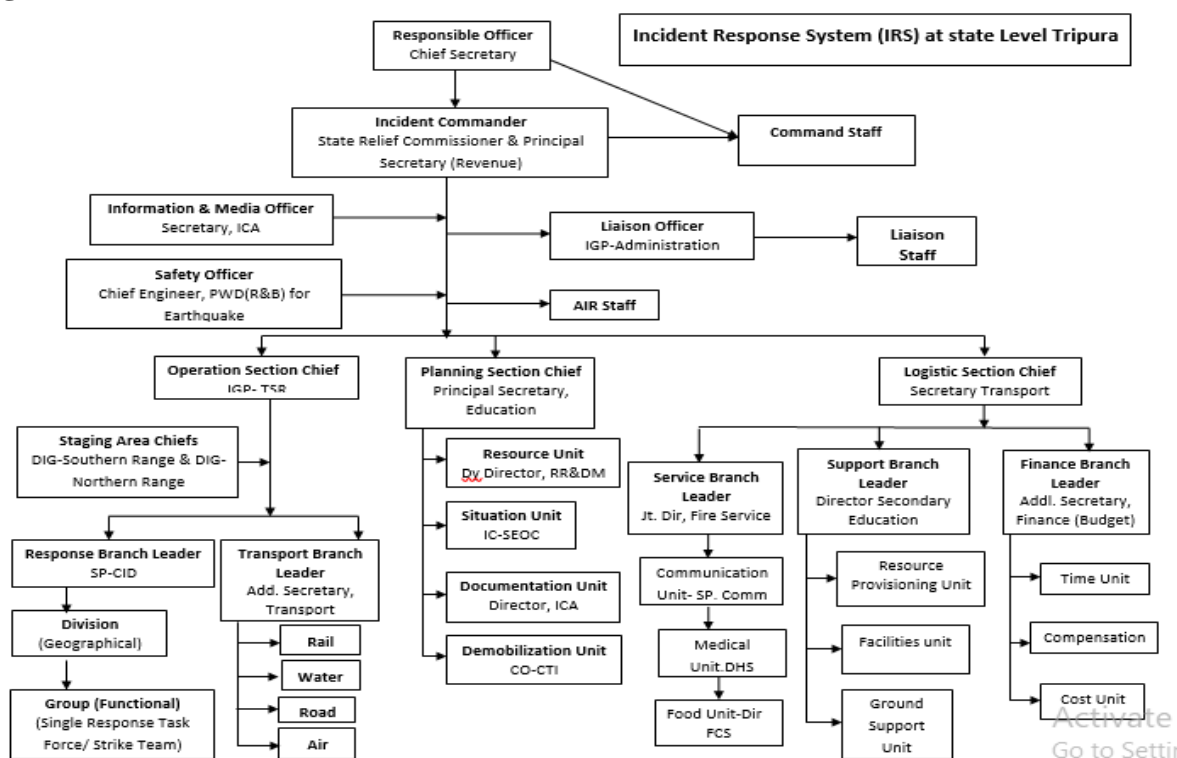
The District Magistrate / DC is the head of the District Administrative set up and Chairperson of the DDMA according to the DM Act 2005. The DM/DC is the designated RO in the District.

The DM/DC/RO will issue a Standing Order for formation of IRT at district / sub-division/Block levels. He will ensure that appropriate and experienced officers are selected for IRTs.

The complete IRS organizational structure at the district level is depicted in Figure 5C below.

Figure 5C: IRS structure at the District level

https://ndma.gov.in/sites/default/files/PDF/Guidelines/incidentresponsesystemjuly.pdf
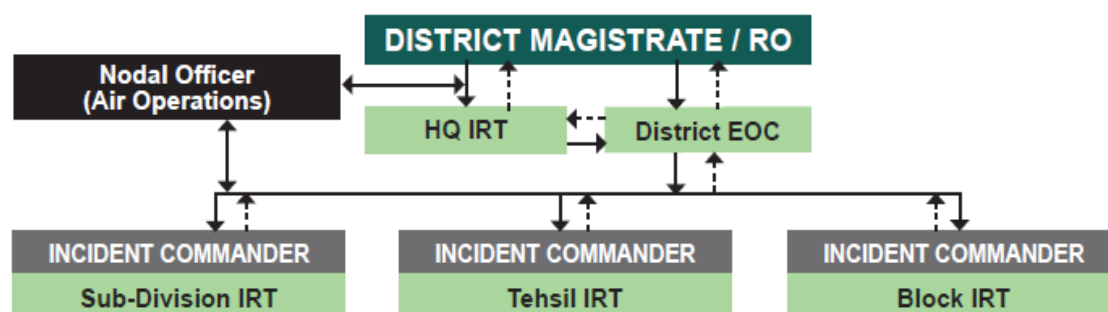
5.8 Roles and Responsibilities of Nodal Departments/Agencies

Table 5C: Roles and responsibilities of Nodal Departments/ agencies are:

Tripura Disaster Management Authority (TDMA)	Lay down policies and plans for disaster management in the State. Declare emergency situation in case of State level disaster and the end of it. Provide policy directions and integration of Disaster Management programmes in the state development framework.
State Executive Committee for Disaster Management (SEC)	Implementation of the State Plan and the monitoring body for management of disasters in the State.
Department of Revenue	Member Secretary of SDMA. Member of SEC, Overall coordination, implementation of the EOC activities and documentation and reporting to the SEC,
Department of Public Works (PWD) –R&B	Primary agency for maintenance of public infrastructure, identifying safe places, assessing physical damage, identifying safer routes, and providing necessary reconstruction and rehabilitation support. Ensure hazard resistant features as per all building by-laws and maintain all National & State roads. In case of disruption of traffic due to a natural disaster, it will be necessary to clear the debris on roads, plug the breaches on roads and replace the collapsed bridges with temporary bridging equipment.
Department of Fire & Emergency Services [FES].	Main agency for responding to fire incidents. Besides firefighting, F&ES to respond to other emergencies such as building collapse, road traffic accidents, human and animal rescue, and other emergency calls. F&ES also to take part in medical emergencies.
Agartala Municipal Corporation	Responsible for coordinating the restoration of essential services and ensuring construction activities in the capital city comply with the Building Rules.

Department of Urban Development	Main agency to ensure repair and maintenance in the urban areas.
Tripura Housing and Construction Board	One of the executing agencies for constructions under implementation of recovery and rehabilitation plans. Responsible for ensuring the mitigation measures while construction or reconstruction of its projects in the state.
Department of Town and country Planning	Primary agency responsible for evolving policy and ensuring land use, hazard wise zonation and implementation of building by laws.
Department of Education (School)	The department will prepare curriculum related to disaster management and conduct training programme for teachers and students. The department will coordinate with the local authority and arrange for mock drills, search and rescue drills. Awareness campaigns, Volunteer Teams. Ensuring maintenance and retrofitting of school buildings/school safety.
Department of Police	Be the primary agency responsible for "Fire", Nuclear disasters, Serial Bomb blasts and Festival related disasters and also for Security, evacuation, emergency assistance, search and rescue, first aid, law and order, communication, shifting of people to relief camps, traffic management. Cremation / Burial work of dead bodies, Fire management, traffic management. Provide uninterrupted and steady wireless communication in the state.
Department of Forest	Be the primary agency responsible for "Forest Fire" and "Wild Animal Attacks". During response and recovery support SEOC with resources. Identification of prone areas, mitigation activities, research and assessment.
Department of Science, Technology and Environment	The primary agency responsible for Environmental & Climate Change Hazards. GIS mapping for effective disaster management. Primary agency of research and development on Climate Change impact and adaptation activities for the State. Provide inputs to the State Disaster Mitigation Committees for new technologies and also for awareness programs.
Department of Power	Primary agency responsible for Dam failures / bursts and electrical disasters and fires. It will ensure power supply for public facilities such as Hospital, police stations, telecommunication building and meteorological stations. Coordination with Hydro Power Projects.
Department of Information Technology	Overall responsible for the fail proof communication. Maintenance of IT infrastructures, communication and satellite links.
Department of Water Resources [PWD]	Primary agency responsible for Floods, Droughts and River bank erosion. Issue flood warnings, identification of safer places, construct & repair embankments, arrangement of boats and pump sets, swimmers and divers and communication. Responsible also for identifying locations vulnerable to bank erosion and plan and execute mitigation measures. Primary agency responsible for Drinking Water supply and providing immediate restoration of water supply and alternate arrangement of drinking water provision.

Department of Health& Family Welfare	Be the primary agency responsible for "Biological Disasters and Epidemics". First aid, health and medical care, ambulance arrangements, preventive steps for other diseases, establishment of health camps. Providing Trauma Centres and all other health related support.
Department of Information and Cultural Affairs	Media handling and communicate warnings to the public, relay announcements issued by SEC, telecast special programmes for information and actions, education and awareness messages for preparedness actions and coordinated response. Promote disaster related policies, provide emergency communication systems, enable critical communication links with disaster sites and coordinate with media.
Department of Rural Development	Primary agency to implement vulnerability reduction projects to alleviate poverty and improve people's livelihoods. Ensure Rural development schemes implemented in the State incorporating disaster management measures. Assists in rehabilitation of the victims.
Department of Agriculture	Primary agency for droughts and pest attacks. To provide seeds and necessary planting material and other inputs to assist in early recovery. Early warning and alerts on disasters such as Hail Storms, droughts and floods.
Department of Finance	Review proposals for required allocation of funds by various departments and arrange necessary funds as deemed necessary, ensure equitable distribution, and manage accounts.
Department of Planning& Coordination	Appropriate proposals for required allocation of funds on priority basis for disaster mitigation and rehabilitation projects
Department of Road Transport	Primary agency for Road accidents. Arrange for sending personnel and relief material to the disaster affected area, relocate the affected people, keep access routes operational and inform about alternate routes. Keep an inventory of resources available with Govt. & private operators.
Department of Labour	Be the primary agency responsible to conduct certificate training programmes for construction workers. To create a pool of qualified masons to ensure safe construction practices in construction work.
Department of Food, Civil Supplies and Consumers Affairs	Plan for food storage locations keeping in view the necessity. Primary agency responsible for identifying the basic needs of food in the aftermath of a disaster or emergency, to obtain appropriate supplies and transporting such supplies to the disaster area.
Department of Social Welfare and Social Education	Primary agency for building capacities and increasing awareness of disabled persons and women. Organizing special camps for the disabled, widows, children and other vulnerable groups. It will also provide necessary help and assistance for socio-economic rehabilitation.
Department of Industries	Primary agency for chemical and industrial disaster response. Support to the industries for their safe functioning and ensure execution of onsite and off-site disaster management planning. Ensuring early recovery and business continuity.
Department of Horticulture	The primary agency for hailstorm and Pest Attack for horticulture sector. Support in crop damage assessment due to disasters.

Department of Animal Resources and Diary Development	Primary agency for Animal epidemics. Responsible for fodder assessments, livestock shelter and shelter management, supply and management during disasters and disposal of dead animals
Department of Factories and Boilers	Primary agency for responding to incidents involving factories and boilers. Also responsible for ensuring safety during commissioning, maintenance and use of Boilers and Pressure Vessels for prevention of dangerous accidents in factories & industry.
Department of Panchayati Raj	Ensure training of Panchayati Raj Institutions on disaster management and also ensure that all the development schemes of the department have the component of disaster mitigation as an integral part. Preparation and implementation of Community Based Disaster Management Plans.
District Administration	The District Disaster Management Authority (DDMA) will act as the district planning; coordinating and implementing body for disaster management and take all measures for the purpose of disaster management in the district in accordance with the guidelines laid down by the State Authority.
Department of Tourism	Coordinate in providing temporary shelters, food packages for air dropping. Ensuring tourism sites are capable and equipped to respond to disasters.
International Agencies / NGOs	Provide relief, coordinate with Government, and conduct awareness and capacity building programmes, preparedness activities at community level, assist in reconstruction and rehabilitation.
State Institute of Public Administration and Rural Development (SIPARD)	Primary agency responsible for conducting and coordinating training to all government officials involved in the planning and implementation of preparedness, mitigation response and relief work. Such trainings should invariably be organised well before the onset of a disaster, in normal time.
Central Training Institute (CTI)	Primary agency responsible for conducting and coordinating practical training to uniformed personnel, SDRF, DMTs and officials involved in disaster management in general and response in particular, well in advance.
ARMY- GoI	Undertake search, rescue and relief operations to save life and property. Use medium of land, air and sea during relief operations. Utilise assets of three services for disasters. Armed forces be requisitioned when absolutely necessary.
CPMF- GoI	Primary role is to assist the civil administration in evacuation and shifting of people to the safer places, rescue of stranded people, setting up of relief camps, distribution of essential commodities and providing other logistical support during relief and response activities.
Airport Authority of India- GoI	Support the relief & response activities in coordination with the SDMA/NDMA. Mobilization of aircrafts and air transport. Ensure operations including evacuation to safer locations, receipt of relief materials, inventory management and transport of men and materials to affected locations.
Northeast Frontier Railway	Support the relief & response activities in coordination with the SDMA/NDMA. Ensure operations including evacuation to safer

	locations, receipt of relief materials, inventory management and transport of men and materials to affected locations.
BSNL	Support the relief & response activities in coordination with the SDMA/NDMA. Set up and sustain the communication network and ensure restoration of the damaged communication network. Ensure operations including restoration of services.
GSI	Responsible for Landslide Mitigation & Management. Develop and continually enhance GSI's core competence in survey and mapping through continued accretion, management, co-ordination and utilization of spatial databases (including those acquired through remote sensing) and function as a 'Repository' or 'clearing house' for the purpose and use of new and emerging computer-based technologies for dissemination of geoscientific information and spatial data, through cooperation and collaboration with other stakeholders in the Geo-informatics sector.
CWC	CWC is charged with the general responsibility of initiating, coordinating and furthering in consultation with the State Governments concerned, schemes for the control, conservation and utilization of water resources in the respective state for the purpose of flood management, irrigation, navigation, drinking water supply and water power generation.
India POSTs	Ensure resumption / continuity of services including remittances and other services in the event of a disaster incident.
IMD	To provide warning against severe weather phenomena like tropical cyclones, dust storms, heavy rains, heat waves, etc., which cause destruction of life and property. To conduct and promote research in meteorology and allied disciplines.
NDRF	The National Disaster Response Force is responsible for providing immediate relief and assistance during a disaster or emergency. It is also responsible for coordination with other agencies, rescue operations, and evacuation of people.
ONGC	To coordinate with the SDMA/DDMA in relief and rescue operations. Ensuring that facilities under their control are operational and risk management is prioritised. Ensuring continued services to institutions.
NEEPCO **GAIL** **Tripura Natural Gas Company Ltd.** **OIL**	To coordinate with the SDMA/DDMA in relief and rescue operations. Ensuring that facilities under their control are operational and risk management is prioritised. Ensuring continued services to institutions.
Tripura University **Maharaja Bir Bikram University** **National Forensic Sciences University** **National Institute of Technology** **Tripura Institute of Technology**	Include Disaster Management in course curriculum, conduct research and publish scientific documents relating to Disaster Management in the State. Training of personnel in Disaster Management and supporting the SDMA/DDMA in documentation of Disaster Management activities.

Indian Red Cross Society	Support the SDMA/DDMA during rescue and relief operations by organising medical camps and providing trained volunteers to support QRT's in the field. Conducting refresher training of trained volunteers and organising mock drills at various levels	
CIVIL DEFENSE	Support the SDMA/DDMA during rescue and relief operations by providing trained volunteers to support QRT's in the field. Conducting refresher training of trained volunteers and organising mock drills at various levels.	
Nehru Yuva Kendra Sangathan		
National Cadet Corps		
NSS		
SCOUTS &GUIDES		
RAJYA SAINIK BOARD		

5.9 Emergency Support Functions in Managing Response to Disasters

The ESFs, comprising of various supporting agencies/ departments 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, mobilise and deploy resources to the affected areas and assist the districts 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 5D.1. The details of the primary and support agencies for each type of ESF are given below in Table 5D.2.

Table 5D.1: ESF of major activities

1	Early warning	• 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 through media • Ensure functioning of warning system & communication systems • Create awareness with the target groups
2	Evacuation	• Warn people about the impending danger & to leave for safer places. • Mobilize people to go to identified/safer shelter • Organize trained task force members.

		• Co-ordinate with civil defence-NGOs/NYKS/ Secy. Rajya Sainik Board/ TSR/ NDRF/Police for support. • Make arrangement of boats/vehicles etc. for evacuation. Deployment of Boats for evacuation • Evacuate people of marooned areas and administer emergent relief. Special care to the sick and differently abled people. • Ensure deployment of police for maintaining law & order and peace keeping during evacuation
3	Search and Rescue	• Ensure deployment of Police/Fire Brigade for search and rescue. • Ensure co-ordination with the NCC/NSS/Civil Defence/NYKS/ TSR/ NDRF 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
4	Medical aid	• Ensure deployment of Medical staff • Ensure stock piling of Life saving drugs/ORS packets/Halogen tablets. • Follow the protocol on medical aid • Ensure treatment of the injured persons and Transportation of the injured to hospitals. • Provide special and psychosocial care to the sick, differently abled persons and vulnerable people • Create and disseminate awareness messages to stop the outbreak of epidemics • Carry out disease surveillance and transmission of reports to the higher authorities on a daily basis • Carry out vaccination drives • Constitute mobile teams and visit the worst affected areas. • Ensure disinfections of drinking water sources. • Carry out an identification of site operation camps. • Obtain/transmit information on calamities to District Control Room. • Carry out advance inoculation programme in the flood/Cyclone prone areas. • Ensure arrangement of fodder/medicines for the animals • Take care of vaccination, site operation camps, carcasses disposal
5	Shelter Management	• Ensure identification of Shelter/Temporary shelter at appropriate places and arrangement of tents etc. • Make arrangement of Food/Drinking water/Medicine in the shelter places. • Carry out monitoring of inflow and outflow of people. • Ensure arrangement of transportation of food, drinking water, affected people, resource materials etc.

		• Ensure arrangement for safe shelter for animals
		• Provide the lighting facilities for shelter places
		• Ensure deployment of Police Personnel
		• Ensure sanitation and supply of safe drinking water
		• Ensure that the Shelter is not affected, ensuring it is repaired back quickly as required.
		• Make special arrangements for the less abled persons and who need special help.
		• Provide minimum standards of relief.
6	Emergent Relief/ Free Kitchen Operation	• Ensure deployment of vehicle • Ensure procurement and transportation of Relief materials to affected pockets/areas • Make provision of kitchen in the shelter camps & affected areas. • Ensure assigning of free kitchen in the shelter camps & affected areas. • Ensure assigning responsibilities to officials for distribution of emergent relief/running of free kitchen. • Coordinate with the NGOs/Other voluntary organization & PSUs / UN Agencies/ IRCS/ RKM etc for continuing Relief Operation • Ensure monitoring
7	Relief Assistance to those affected.	• Ensure formation of multidisciplinary team to assess immediate relief assistance to those affected by the incident. • Ensure formation of appropriate teams to cater to the needs of affected people. • Provide relief according to established guidelines. • Ensure that the special needs of those affected, such as pregnant and lactating women, infants, chronically ill and those requiring special medical attention, people with disabilities, old and infirm etc. are addressed. • Ensure adequate documentation.
8	Water Supply and Sanitation	• Ensure supply of safe drinking water • Ensure disinfectants for purification of water • Ensure arrangement of mobile team and assigning specific operational area for supply of water • Ensure involvement of volunteers/village level workers in inaccessible pockets and organise health and hygiene awareness camps. • Ensure "safe sanitation" at relief sites and ensure safe disposal of sanitary wastes. • Ensure monitoring
9	Infrastructure Restoration	• Ensure formation of task force with specific equipment • Assign responsibilities for specific areas. • Ensure 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.
		• Ensure towing of vehicles, availability of earth moving equipment, cranes etc for constructing temporary roads as required
		• Keep national & other highways clear from disaster debris.
		• Undertake damage assessment and monitoring
10	Rapid Damage Assessment	• Ensure formation of multi-disciplinary teams to assess damage to lives, livestock, livelihoods and property in the affected areas, using standard checklists, preferably within 24 hours of the incident. • Carry out quick prioritisation of needs, focussing on immediate and short / medium term. • Report to appropriate authority/ies. • Ensure monitoring of damages to property, livestock and crops.
11	Detailed Damage Assessment	• Ensure formation of sectoral teams to assess damages to lives, livestock, livelihoods and property in detail, using standard guidelines and checklists, preferably within a week of the incident. • Report to appropriate authority/ies. • Carry out consolidation of sectoral reports at the sub-divisional /district levels. • Ensure monitoring of damages to properties, outbreaks of diseases, weakened infrastructure etc.
12	Post Disaster Needs Assessment [PDNA]	• Establish the PDNA Assessment Team. • Conduct training / orientation on PDNA • Conduct data collection and validation of data, develop draft sectoral reports. • Carry out consolidation and analysis of sector effects, impacts and needs • Ensure formulation of the recovery strategy • Ensure resource mobilisation and implementation mechanisms. • Ensure that the process is preferably completed within 6-7 weeks of the incident.
13	Preparation and Submission of Relief Memorandum to GoI	• Ensure collection of damage information in terms of sector / Sub-sector as outlined in the SDRF /NDRF norms. • Ensure collection and collation by officials as per the formats prescribed in SDRF/NDRF or their Ministries. • Prepare and submit Relief Memorandum for seeking Central Assistance. To be done by SEC

Table 5D.2: Primary and support agencies' responsibilities on ESF

S. N.	Service Function	Primary Agency	Support Agencies
1	Communication	Police	• S.P Communication • Doordarshan • All India Radio • BSNL • Private Mobile Operators • Army
2	Public Health	Department of Health and Family Welfare	• Health NGOs • Department of Transport
3	Transport	Transport Department	• Home Department • Tripura Road Transport Corporation • Association of Transport
4	Power	Department of Power	• TSECL • ONGC • Renewable energy department
5	Search and Rescue; Evacuation	TSR/ NDRF	• Police • Fire & Emergency Service • DMTs • Aapda Mitra • Civil Defence • Army • NGOs
6	Restoration of Infrastructure	Public Works Dept. AMC (In Agartala city only)	• PWD(R&B, WR, DWS) • RD • Power • Panchayat
7	Relief Supplies and Food	Revenue Department/District Administration.	• Food & Civil Supplies Department • Department of Transport • NGOs • Panchayat
8	Water Supply and Sanitation/	PWD [DWS]	• Army • NGOs • Panchayat
9	Animal Health	ARDD	• NGOs
10	Shelter	Revenue Dept.	• DM & Collectors • Urban Affairs Department • RD • Panchayat • NGOs
11	Media	ICA	• Revenue Dept.
12	Psychosocial care	SW & SE	• Health • Labour • NGOs

Checklist for each ESF desk:

- ✓ Do's and don'ts to be followed during disaster times in EOC
- ✓ Schedule for regular staff
- ✓ Schedule for staff on call
- ✓ Schedule for staff on disaster duty
- ✓ Databank of maps and plans
- ✓ Hardware
- ✓ GIS software
- ✓ State of the art communication equipment
- ✓ Inventories related to relief materials.

5.10   SEOC/DEOC's

The State Emergency Operations Centre (SEOC), Tripura at Agartala is an essential part of disaster management planning and institutional mechanism set up in the State to handle disaster management. The SEOC system and its operative procedures are designed in such a way that the information is first assessed and verified and then relayed to all the concerned parties. Rapid dissemination of such information contributes to quick and immediate response and effective decision-making during the emergency. As the master coordination and control point for undertaking all counter-disaster efforts, the SEOC is the place of decision-making under a unified command where leading decision makers are involved for immediate response. It has taken the operative principles of National Emergency Operation Centre into account to synergise the institutional set up at district, state and national level.

State level public safety agencies recognize the need for inter-agency communication, coordination, and cooperation. Police, Fire & Emergency Services, Emergency Medical Services of Tripura have already established capabilities and mutual aid agreements are already in place.

To further improve communication among disciplines, Government of Tripura public safety agencies (Fire & Emergency Service, Police, Civil Defence, Army and Paramilitary forces), as well as the public service agencies, (Health & Family Welfare, PWD, DWS, Power, Transport, Environment, Agriculture, ARDD) have worked cooperatively to develop an intra-jurisdictional interoperability mechanism. This aims to establish dedicated communication channels with procedures that are accessible on communication equipment used by key public service officials, public safety officials, and public/private service executives.

The Standard Operating Procedure (SOP) for SEOCs and DEOCs is already in place. The purpose of a SOP is to assist the personnel deployed in the State Emergency Operation Centre (SEOC)and Tripura Disaster Management Authority (TDMA) for effective analysis and emergency management of disaster management information. The detailed SOPs, are available as **Annexure 5**.

Other SOPs are available on TDMA website (https://tdma.tripura.gov.in) should be read as part of this Plan.

For EOC SOP - https://tdma.tripura.gov.in/sites/default/files/SOP-EOC.PDF

For Search and Rescue SOP -
https://tdma.tripura.gov.in/sites/default/files/SOP_for_Search___rescue.PDF

For Flood Water Rescue amid Covid-19 Pandemic SOP –
https://tdma.tripura.gov.in/sites/default/files/SOP%20on%20FWR%20amid%20Covid-19.pdf

For Cases of Missing Children SOP-
https://tripurapolice.gov.in/files/uploaded-file/SOP%20circular.pdf

Revised SOP and Inventory of the National Disaster Response Reserve (NDRR) -
https://tdma.tripura.gov.in/sites/default/files/SOP%20and%20Inventory%20of%20NDRR%20%20%281%29.pdf

For Care, Maintenance and Repairing of Disaster Management Equipment SOP-
https://tdma.tripura.gov.in/sites/default/files/SOP-CTI%20WS.pdf

5.10.1 Institutional Arrangement

At the top level, the Chief Secretary will act as the Responsible Officer and will be supported by the Relief Commissioner through the Branch arrangements at the Emergency Operations Centre (EOC). The District Emergency Operation Centre (DEOC) under DM & Collector is immediately below the SEOC. In case of disasters affecting larger community, the role of the Sub-Divisional Magistrate, comes into prominence under the guidance of District Magistrate and Collectors.

The existing institutional arrangement and the sequence of flow of information are outlined in Figure 5D.

Figure 5D: Institutional arrangement at the state level

⟶ (red)	**Technical Assistance**
⟶ (blue)	**Resource Mobilization**
⟷ (blue)	**Information update**
⟷ (black)	**Control & Monitoring**
⟵ (grey)	**Coordination**
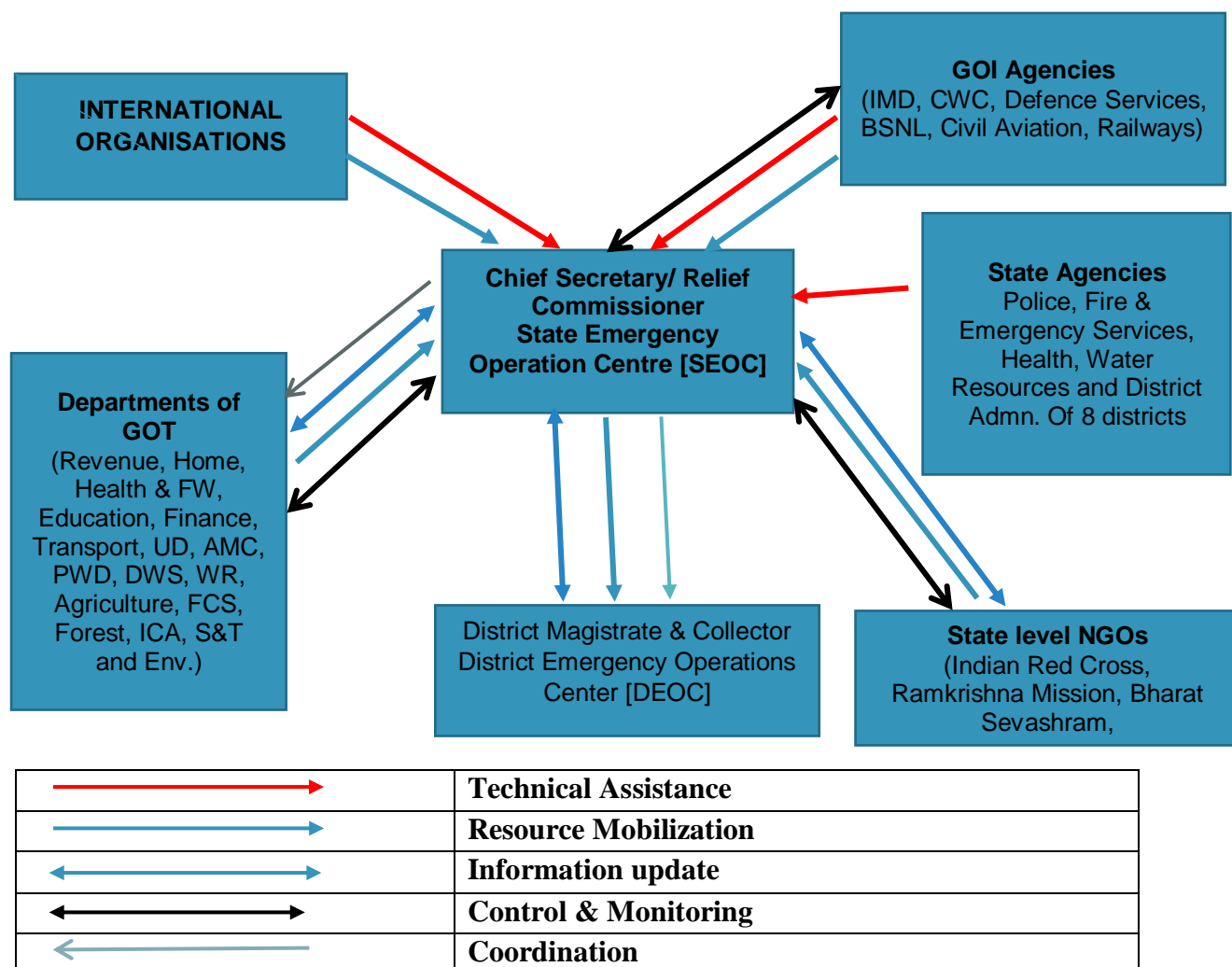
Function of SEOC: The primary functions of SEOC are

- Coordination
- Analytical decision making
- Policy-making
- Operations management
- Information gathering and record keeping.
- Public information – receipt and dissemination
- Resource management

5.10.2 Normal Time activities of SEOC

Function of SEOC: The primary functions of SEOC are

- State and District Disaster Management Plans are operationalised.

- Standard Operating Procedures for various departments are in place.
- Relief Fund is setup at the disposal of the State Relief Commissioner.
- Ensure that all DDMPs continue to update on a regular basis by all the districts.
- Encourage districts to prepare area-specific plans prone to specific disasters; receive reports on preparedness from the district control room/DEOC. Based on these, the SEOC will submit a summary report to the Chief Secretary.
- Setup study groups and task force for specific vulnerability studies and submit the reports to Chief Secretary.
- Identify and interact with the research institutions such as NESAC, TSAC, NIT, NEIST, The North Eastern Regional Institute of Water and Land Management (NERIWALM), North Eastern Regional Institute of Science and Technology (NERIST), IIT-G, NEPA within and outside of the State for ongoing collaborations to evolve mitigation strategies.
- Serve as a data bank in partnership with TSAC to all line departments and the planning department with respect to risks and vulnerabilities and ensure that due consideration is given to mitigation strategies in the planning process.
- Receive appropriate proposals on preparedness, risk reduction and mitigation measures from various State departments / agencies, and place the same for consideration of the Chief Secretary.
- Convey policy guidelines and changes if any in the legal and official procedures, eligibility criteria with respect to relief and compensation.
- Upgrade and update SDMP, Tripura according to changing scenarios in the State.
- Dissemination of state SDMP, Tripura to other departments of the GOT and State level agencies
- Updation of data base.
- Identification of agencies and institutions for locating inventory items for specialised services.
- Ensure the updation of IDRN portal of all districts. EOC will also ensure the availability of the inventory items as and when required.
- Monitor preparedness measures undertaken at the district levels including simulation exercises undertaken by various departments.
- Monitor the training imparted to state level officials, private sector and NGOs by SIPARD.
- Organise post-disaster debriefing evaluation and update SDMP, Tripura accordingly. Prepare an action-taken report for Chief Secretary.
- Receive reports and documents on district level disaster events and submit the same to the Government.
- Ensure the warning and communication systems and instruments are in working condition.
- Regular coordination with IMD-Agartala, CWC, SOC-Shillong, Agartala and GSI-Agartala for dissemination of information related to weather and earthquakes.

- Inform district control room / DEOC about the changes if any in legal and official procedures with respect to loss of life, injuries, livestock, crop, houses, to be adopted (death certificates, identification procedures, etc.) in partnership with Revenue Department.

5.10.3 Activities on Warning or Occurrence of Disaster

The warning received from any of the competent agencies will be communicated to the Chief Secretary and the Home Secretary by the Relief Commissioner (Convenor of SCMG). (Immediately receiving the warning, the Duty Officer/ OIC, SEOC shall inform to the Relief Commissioner)

On the receipt of warning from any such agency which is competent to issue such a warning, or on the basis of reports from District Magistrate through SDMs of the occurrence of a disaster, all institutional response measures including counter-disaster measures will be put into operation. The Chief Secretary/ Relief Commissioner will assume the role of the Responsible Officer/ Incident Commander for Disaster Management.

The occurrence of the disaster event will be communicated to the following as per gravity and suitability to:
• Governor
• Chief Minister
• Home Minister
• Revenue Minister
• MPs and MLAs from affected areas append
• PMO
• Cabinet Secretary
• Secretary, Home
• Secretary, Agriculture
• Joint Secretary, NDM, Ministry of Home Affairs, GOI
• All DEOCs
• Army HQ, Agartala

The occurrence of disaster would essentially mean the following activities have to be undertaken:
- Expand the Emergency Operation Centre to include Branch arrangements for the line departments with responsibilities for specific tasks depending on the nature of disaster and extent of its impact.
- Arrangement of alternate makeshift EOC and field EOC at the site of affected area, if needed.
- Establish an on-going VSAT, wireless communication and hotline contact with the District Magistrate/s of the affected district/s.
- The SEOC in its expanded form will continue to operate as long as the need for emergency relief and operations continue and the long-term plans for rehabilitation are finalised.

- The issue of SEOC-DEOC has been dealt with at length in the previous chapter.

5.10.4 Protocol for mobilisation of NDRF/Army/Air-force/International and National Agencies/NGOs

The procedure for requisition of NDRF team(s) is given below:

    i. The State Govt. is required to make a telephonic request to HQ NDRF for sending SAR Team(s) for rescue operation followed by a written requisition through Fax/Email/Dak on the prescribed proforma duly filled up in all respects to the HQ NDRF.

    ii. State authority can also make a requisition to NDRF unit directly in case of emergency.

    iii. Under exigencies, on getting the direct request from the State Authority, Commandant of the local BN, after due appreciation of the situation, will mobilize his SAR Team(s) without wastage of time and simultaneously seek formal approval from the HQ NDRF.

    iv. Following authorities of the State/UT can place requisition for the Team(s) of the NDRF during disaster:

a. The Chief Secretary/ Principal Secretary, Disaster Management/ Relief Commissioner of the State/UT.

b. DC/DM of the concerned district may request for the NDRF team which falls in the Area of Responsibility of NDRF Battalion.

A similar protocol will be followed for requests to the Indian Army/Airforce or for other National and International agencies including NGOs. The request will have to be made by the Chief Secretary/ Principal Secretary/ District Collector/ District magistrate.

CHAPTER 6: DISASTER RECOVERY PLAN TO BUILD BACK BETTER

6.1 Introduction

According to the UNISDR-2016, recovery is defined as "the restoring or improvement of livelihoods and health, as well as economic, physical, social, cultural and environmental assets, systems and activities of a disaster affected community or society, aligning with the principles of sustainable development and "build back better" to avoid or reduce future disaster risks".

The recovery task of rehabilitation and reconstruction begins soon after the emergency phase ends. Recovery processes are aimed at restoring the capacity of Governments and communities to recover from the disaster, strengthen the capabilities to cope with disasters and reduce future risks. Building Back Better [BBB] envisages seizing the opportunity to rebuild to reduce development deficits of the affected areas going beyond restoration to the pre-disaster "normal". Recovery programmes, coupled with the heightened public awareness and engagement after a disaster, afford a valuable opportunity to develop and implement disaster risk reduction measures and to apply the "Build Back Better" principle.

Globally the approach towards post disaster rehabilitation and reconstruction has shifted to one of building back better. While disasters result in considerable disruption of normal life, enormous suffering, loss of lives and property, global efforts consider the recovery, rehabilitation and reconstruction phase as an opportunity to BBB integrating disaster risk reduction into development measures and making communities resilient to disasters.

The SENDAI framework underlines the need of multi-stakeholder preparedness for BBB. Existing mechanisms may require strengthening to provide effective support and achieve better implementation. Disaster recovery is challenging and long-drawn out and depends on the type of disaster, location-disaster conditions and the opportunities that emerge at the point of time. Recovery involves the coordinated working of multiple agencies – government and non-government and to evolve a comprehensive recovery plan it is essential that all response activities are closely monitored and data collected regarding the severity and intensity of the event, the affected geographical area and the potential unmet critical needs of the affected population.

Recovery focuses on timely restoration of basic services for the community including health care, shelter, renewal of infrastructure, service functions, securing livelihoods, maintain/strengthen social fabric of communities, restoration of environmental services, support social and physical well-being of communities, restoration of economy, preserving the historical and cultural identity of the affected region. Linkages in recovery spread across the communities, local administration, district administration and the state administration. Though distinct, response and recovery activities could run concurrently. Recovery activities should begin as early as possible without waiting for the response activities to cease.

6.2 Approach

6.2.1 The approach to reconstruction and recovery is guided by the National Policy on Disaster Management [NPDM] 2009

Para 9.1.1 of the NPDM states that - the approach to the reconstruction process must be comprehensive to convert adversity into opportunity. Incorporating disaster resilient features to 'build back better' will be the guiding principle. The appropriate choice of technology and project impact assessment needs to be carried out to establish that the projects contemplated do not create any side effects on the physical, socio-cultural or economic environment of the communities in the affected areas. Systems for providing psycho-social support and trauma counselling need to be developed for implementation during reconstruction and recovery phase.

Para 9.2.1 of NPDM states that - Reconstruction plans and designing of houses need to be a participatory process involving the government, affected community, NGOs and the corporate sector.

Para 9.3.1 of NPDM states that essential services, social infrastructure and intermediate shelters/camps will be established in the shortest possible time. For permanent reconstruction, ideally, the work including the construction of houses must be completed within two to three years. The State Government and relevant departments should create detailed project teams to implement the reconstruction process.

Para 9.5.1 of NPDM suggest that state governments should give emphasis to restoration of permanent livelihood of those affected by disasters and to pay special attention to the needs of women-headed households, artisans, farmers and people belonging to marginalised and vulnerable sections.

The overall lead role in recovery is played by the administration. It requires a united effort from all the concerned departments of the State. It also entails an inclusive planning approach by involving the communities, sector/subject expertise and inputs to aid common recovery objectives across the affected region. Each disaster should be considered as an opportunity to reinforce the resilience of the communities and the resistance of the infrastructure, so that adversity of the future disasters could be minimised.

The stakeholders in disaster management are: (a) the Community, (b) the Government, (c) the Voluntary organizations and (d) the funding agencies. All these stakeholders play specific roles at different stages of disasters, viz., (a) before a disaster, (b) during the disaster, (c) immediately after the disaster and (d) thereafter. While all the stakeholders do have some role or the other to play in all the four stages, the role of the community is most pronounced in all the stages. Particularly, the communities have to meet the challenges on their own during and immediately after a disaster. The community during a disaster has a shared responsibility of providing physical and psychological support to each individual, particularly to the vulnerable sections. The State Disaster Recovery Plan places the affected community as the focus of recovery

management and provides a structure for the management of all the inputs into the recovery process in a way that is appropriate to the needs of the community.

6.2.2 Recovery Process

Effective post -disaster recovery usually has the following three broad aspects:

1.) Physical aspects of recovery, i.e., restoration and reconstruction of damaged community infrastructure, critical infrastructure, private houses and cultural heritage buildings.
2.) Economic aspects of recovery, i.e., livelihoods, productive activities and market services.
3.) Social recovery, i.e., social and psychological aspects of personal, family and community functioning and wellbeing.

The key interventions under recovery programs can be broadly classified into four areas.
- Physical
- Economic
- Social
- Cross Cutting sectors

Disaster recovery process is rarely a set of isolated actions. It consists of several related activities such as the following:

Damage and needs assessments (PDNA, DALA, HRNA)
Developing a recovery framework including institutional arrangements and financing plan.
Measures to ensure socially inclusive recovery
Focus on sustainable development and climate change adaptation.
Demolition of damaged structures, debris clearance, removal and its environmentally safe disposal
Restoration and even upgrading utilities including communication networks
Re-establishment of major transport linkages
Temporary housing and detailed building inspections
Redevelopment planning
Environmental assessments
Reconstruction
Integrating DRR into various development initiatives
Financial Management
Economic impact analysis

After a disaster, a Post-Disaster Needs Assessment (**PDNA**) must be undertaken, which will be a government-led exercise. Depending on the disaster, this may be undertaken by the state government and through joint efforts of the central and state governments. The PDNA will also provide a platform for the international community to assist in recovery and reconstruction, where such assistance is required.

A systematic PDNA will provide a credible basis for recovery and reconstruction planning that incorporates risk reduction measures. Typically, the PDNA comprises of a 'Damage and Loss Assessment' (**DALA**), a 'Human Recovery Needs Assessment' (**HRNA**) and a 'Recovery Framework.

The DALA is quantitative in nature that can be used to value damages arising from a hazardous event, and the subsequent economic losses caused by the event. The DALA highlights the possible consequences on the growth of the economy, the external sector and the fiscal balances, as well as the impact due to decline of income and livelihoods of households or individuals.

The HRNA focuses on the social impact of disasters, analysing how disasters affect local patterns of life, social structures and institutions. A HRNA includes analysis of primary data from household or other units of analysis and provides insight into the recovery and reconstruction from the viewpoint of the affected community.

The Recovery Framework summarizes the recovery recommendations from the sectoral assessments within the PDNA. It outlines the short, medium and long-term priorities for the recovery including plans for financing the BBB.

6.2.3 Recovery Process: Major Steps

The major steps of the recovery and the processes involved are summarized in Table 6A.

Table 6A: Major Steps of the Recovery Process and the Key Processes Involved

S.N.	Major steps	Process
1	Post-Disaster Needs Assessment and Credible Damage Assessment	• i) Constitution of team, ii) appropriate training of teams, iii) guidelines, / SOP for teams for assessment. • Preliminary assessment reports within 72 hours. • Compilation and transmittal of damage and loss data. • Disaster damage assessments led by government and assisted by humanitarian response agencies, and the initial damage surveys leading to a comprehensive assessment. • Quantitative and qualitative baseline for damage, loss, and needs across sectors, blocks and districts. • Results monitoring and evaluation plan for recovery program. • Select the most appropriate and achievable processes and Methodology for conducting early and credible damage needs assessments.
2	Developing a vision for Build-Back	A comprehensive vision for BBB is developed on the basis of wider consultations with experts, civil society, and key stakeholders. BBB should be adhered to in the

	Better (BBB)	implementation of development schemes, programs and projects by the concerned line departments. Need to build consensus among the range of stakeholders within and outside government.
3	Ensure coherence of BBB with the development programs and goals	Implementation and monitoring of programs for better BBB. Discussions at the State & District level [SDMA, SEC, Line Departments etc.] to align the recovery vision with the government's broader, longer term development goals and growth and poverty reduction strategies.
4	Incorporating resilience and BBB in recovery vision	Consultations and background studies on: • Disaster resistant physical recovery • Options for fast economic recovery • Gender and equity concerns • Vulnerability reduction • Natural resource conservation and environmental protection • Social recovery
5	Balancing recovery across sectors	▪ SEC and DDMA will monitor BBB programs. ▪ Concerned departments will have BBB activities in time bound manner. ▪ Balance public and private sectors BBB programs ▪ Promote norms for non-discriminatory and equitable asset disbursement among individuals and communities. ▪ Prioritize infrastructure reconstruction for providing better lives and livelihoods to people. ▪ Address the recovery of the lives and livelihoods of disaster- affected communities. ▪ Show sensitivity to the needs of the affected population with regard to public expectations from recovery.
6	Prioritizing sectors for recovery	Determine relative importance of various sectors such as housing, water and sanitation, governance, transport, power, communications infrastructure, environment, livelihoods, tourism, social protection, health, and education.

6.2.4 Early, Mid-Term and Long-Term Recovery

The disaster recovery programmes usually proceed in three distinct stages to facilitate a sequenced, prioritized, and flexible muti-sectoral approach. These are:

a) Early, b) Mid -Term, and c) Long-Term

Table 6B: Recovery Stages

Recovery Stage	Duration	Brief Description
Early	3 – 18 Months	Rural employment schemes, resumption of markets, commerce and trade, restoration of social services, transitional and temporary shelters, intermediate shelters, where necessary, critical infrastructure.
Mid-Term	Up to 5 Years (concurrent with early recovery)	Recovery plans for assets and livelihoods, reconstruction plans for housing including owner-driven permanent shelters, infrastructure, public buildings and cultural heritage buildings
Long-Term	Within 10 Years	Implemented along with developmental plans: infrastructure strengthening, environmental, urban and regional planning

The salient provisions of the recovery framework include the following:

1. **Institutional arrangements:** Ensuring institutional mechanisms at state, district, and local (urban and rural) levels that clearly define roles and responsibilities in recovery.
2. **Coordination:** Ensuring interdependence between stakeholders – community, government, international agencies, private sector, civil society organizations – in realizing the objectives of recovery and ensuring effective inter-agency coordination.
3. **Public-Private Partnerships (PPP):** Participation of the private sector would be leveraged.
4. **Information and Communication Technology (ICT)**: Effective use of ICT in recovery programme, disseminating messages among all stakeholders, and providing information on all aspects of recovery programme
5. **Decision Support System** (DSS): Setting up an adequate DSS that includes Management Information System (MIS), databases, deployment of spatial data management technologies
6. **Pool of Expertise**: Pooling of professional skills and expertise in diverse areas
7. **Community Participation**: Ensuring the pro-active involvement of communities, proper community outreach, empowerment, and gender equity in programme formulation and implementation.
8. **Monitoring and Evaluation** (M&E): M&E is an important component required for promoting transparency in the recovery processes and it should include technical and social audits.

6.2.5 Institutional Mechanism for Recovery

In the aftermath of a major disaster (affecting one or several districts) the State Government will establish an efficient and transparent relief administration mechanism to handle long term recovery and reconstruction. If required, the SEC would decide to put up a mechanism such as establishment of a Recovery Committee with Secretaries of select Departments as Members. In order to provide a strong leadership and coordination, SEC may also appoint a Relief

Coordinator. Table 6C below indicates the name of the State Department with the capability to take the role of primary responsibility in dealing with specific components of the recovery framework.

Table 6C: Primary Responsibility of Departments in Recovery

Recovery component lead role	Department
Social Recovery	• Social Welfare and Social Education Department • Panchayat Department • Agriculture Department • Tribal Welfare Department. • SC Welfare Department. • TTAADC
Economic Recovery	• Planning & Development Department • Panchayat Department • Agriculture Department • Tribal Welfare Department. • SC Welfare Department. • TTAADC • Public Works Department • Rural Development Department • Transport Department • I & C Department
Infrastructure Recovery	• Public Works Department • Transport Department
Environment Recovery *a*. Natural environment b. Natural and cultural heritage properties	• Environment and Forest Department • Department of Cultural Affairs • Tourism Department

6.2.6 Local Coordination Mechanism for Recovery

In the event of an emergency affecting one or several local areas within the District, DDMA will convene a meeting to discuss recovery implications with support from line departments and ESF's already identified in the DDMP. The CEO of DDMA/DM will be responsible for providing the leadership and coordination and laying out the recovery time line, execution plan, monitoring progress and further reporting to SDMA. Recovery at a city level will be managed by the Local City Government. In rural areas the District Authority will continue to coordinate heavily with the local authority on recovery efforts.

For restoration of public infrastructure, the primary responsibility will vest with the concerned Govt. departments. For livelihood restoration and social security, the Block will be the nodal agency. Social Capital Restoration programmes will be executed through NGOs and CBOs. SRC will be over all in charge of identifying, formulating, monitoring and co-ordinating the recovery activities. The DM & Collectors will be responsible for facilitating and monitoring of the works at the district level.

6.2.7 Recovery Management and the Community

The recovery process is usually most effective if the affected community is able to participate in the management of programmes and resources made available to it. The Village Disaster Management Committee and the Sub-Division Disaster Management Committee, which consist of representatives of the people/affected community, will be closely associated with the recovery programme, particularly relating to livelihood recovery. Tasks of the VDMC/SDDMC, in so far as recovery activities are concerned, will include:

- Monitor the progress of recovery in the affected community;
- Identify community needs and resource requirements and make recommendations to appropriate authorities – DM/SRC
- Liaise, consult and negotiate, on behalf of affected communities with DM & Collector and Government Departments.
- Liaise with district administration.
- Undertake specific recovery activities as determined by the circumstances and the committee.

6.2.8 Recovery Management at District level Role of DM & Collector

The DM & Collector will be the co-ordinator of all recovery activities in the district. The role of the DM & Collector will be to:

- Oversee the management of the recovery process;
- Assist departments, sub-divisions, blocks and village Committee in providing services effectively, minimising overlap and duplication;
- Ensure that an assessment of needs is conducted; and, where possible, ensure appropriate services are provided.

6.3 Reconstruction

Long term recovery efforts must focus on redeveloping and restoring the socio-economic viability of the disaster area(s). The reconstruction phase requires a substantial commitment of time and resources by the Governments (State and Central) and other agencies. It is important to note that much of this commitment would be beyond the scope of traditional emergency management programmes. The reconstruction challenge involved would most often be the result of a catastrophic event that has caused substantial damage over a very large area and/or affected a very large population. These reconstruction efforts include:

- Reconstruction of public infrastructures and social services damaged by the disaster, which can be completed over the long-term
- Re-establishment of adequate housing to replace that which has been destroyed
- Restoration of jobs/ livelihood that was lost
- Restoration of the economic base of the disaster areas

The key activities of post disaster reconstruction phase are detailed damage assessment, restore/ relocate houses accordingly, finalize reconstruction and rehabilitation after generating substantial funds from appropriate & reliable sources. The activities in the post disaster phase will be primarily carried out by the local bodies (such as Gram Panchayats in Tripura, Block, District, Sub Division, Municipal Corporations, and Municipalities etc.), various Government departments and Boards, under supervision and periodic guidance of Tripura State Disaster Management Authority/ SEC. These Post Disaster Reconstruction (PDR) activities shall be carried out, in conjunction with the concerned implementing authorities.

Reconstruction efforts mainly include:

- Re-establishment of adequate housing through ODR etc. to replace the structures, which have been destroyed
- Reconstruction of public infrastructures, buildings and social services damaged by disaster.

6.3.1 Housing through Owner Driven Reconstruction (ODR)

Unlike donor driven and contractor driven construction, Owner Driven Reconstruction (ODR) is one of the simplest, most challenging and at the same time democratic and decentralized approach to the mass scale reconstruction; and yet it demands a controlled, strong and centralized policy framework in the effective post-disaster governance. The key to a successful Owner Driven Reconstruction lies in providing an enabling environment, by regulating the price and subsidizing key construction materials, ensuring special support to most vulnerable people, access to good quality construction materials, technical support and training.

When a disaster affects public infrastructure, housing, buildings, social services etc., there are important choices to be made in the rebuilding effort, related to design and construction technology and whether to repair/retrofit the building or demolish it. These choices will take into account the environmental cost, social, institutional, and technical factors. The size and scale of ODR as well as the geographic concentration of the affected area also play a significant role in taking decision on appropriate technologies at the time of reconstruction of buildings, houses, infrastructure etc.

The following guidelines will be followed for a sound housing, building design and construction technology:

- The reconstructed design of the damaged building/ infrastructure etc. will be compatible with local traditions or with the local population's willingness to change.

- Ensure reconstructed design is consistent with infrastructure plan so all necessary services are provided (either in the community or in the individual house) and are not redundant.

- Ensure intense community participation in the design and decision-making process (house size, morphology, spatial organization, functions, form, and position on the plot).

- Design the house or building and landscape to take advantage of the climate and reduce the demand for operating energy: sun/shadow exposure, solar shading, thermal insulation, passive solar energy, solar hot water, photovoltaic electricity, rain water collection, wind ventilation system, etc.

- Incorporate flexibility, modular design, and expandability in the building/ housing design and concept will make those operations easier and cheaper to carry out when necessary.

- Design a house/ building that facilitates future expansion (or reduction); it will reduce modification costs. Limit the needs of operating energy through the design; heating and cooling costs may force inhabitants to forego comfort.

- Use traditional technologies and vernacular tradition and provide most appropriate solutions by integrating costs, climate, culture, and technical capacity. Improve and adapt traditional solutions by integrating modern technologies.

- Use indigenous materials, unless the scale of the disaster, its origin, and transportation availability hinders access to local materials.

- Mitigate risks by merging modern technology components with traditional construction practices and improving existing traditional practices.

6.3.2 Co-ordination of Reconstruction

Recovery efforts require the coordination at several levels of government and the stakeholder institutions having specific responsibilities for central, state, private sector, voluntary organizations and international aid agencies.

6.3.2.1 Central Government

The role of the central government will include among others the following:
- Coordinate with various stakeholders
- Facilitate solicitation and management of donated resources and volunteers
- Coordinate with various stakeholders to promptly resolve recovery issues
- Provide resources on "need basis" and which are within the capabilities of Central Government, as per norms

6.3.2.2 State Government

The damage assessment and all the phases of recovery and reconstruction (early to long-term) is the responsibility of the State government. Some of the key tasks are:

- Lead in and support need and damage assessment operations
- Provide relevant data regarding the severity of the disaster and assessment of individual needs
- Participate in and support public information and education programmes regarding recovery efforts and available Central/ State Government assistance
- Coordinate with the Central Government and other stakeholders for reconstruction management.

6.3.2.3 Private Sector

There is a need for facilitating the involvement of private sector in disaster management and for businesses to integrate disaster risk into their management practices. There is a need to involve the private sector in the areas of:
- Technical support
- Reconstruction effort
- Risk management including covering risks to their own assets
- Financial support to reconstruction efforts
- Risk-informed investments in recovery efforts

6.3.2.4 Voluntary Organizations

They may participate in the following activities:
- Joint damage and needs assessment
- Support government effort in reconstruction process especially in so far as the mandate requires them
- Provide technical support to reconstruction and recovery efforts
- Assist the government in disseminating public information regarding reconstruction and rehabilitation plan
- Training and capacity development of local communities.

6.4 Rehabilitation

Rehabilitation, an integral part of disaster recovery, can be defined as an overall dynamic and intermediate strategy of institutional reform and reinforcement, reconstruction and improvement of infrastructure and services; aimed towards support to the initiatives and actions of the affected populations in the political, economic and social domains, as well as reiteration of sustainable development. Generally, rehabilitation package includes total reconstruction of damaged physical infrastructure, as well as economic, social and psychological rehabilitation of the people in the affected region. The different aspects of rehabilitation are classified as follows:

6.4.1 Physical Rehabilitation

Physical rehabilitation includes:

- Reconstruction or restoration of physical infrastructure such as houses, buildings, railways, roads, communication network, water supply, electricity, and so on.

- Short-term and long-term strategies towards watershed management, canal irrigation, social forestry, crop stabilization, alternative cropping techniques, job creation, employment generation and environmental protection.

- Rehabilitation of agriculture, artisan work and animal husbandry.

- Adequate provision for subsidies, farm implements, acquisition of land for relocation sites, adherence to land-use planning, flood plain zoning, retrofitting or strengthening of undamaged houses, and construction of model houses.

6.4.2 Relocation

Relocation is a very sensitive part of the physical rehabilitation process and it will be ensured that need based considerations (not the peripheral factors) drive the relocation policy. The local authorities, in consultation with the affected population and under the guidance of the State Government of Tripura, shall determine relocation needs employing criteria relevant to the nature of the calamity and the extent of damage. Relocation efforts should invariably include activities such as the following:

- Avoid secondary displacement as far as possible.
- Ensure that relocation when it is unavoidable is undertaken in a socially inclusive manner taking marginalized communities belonging to SC and ST into confidence.
- Make the processes as gender-sensitive as possible and giving due consideration to the needs of gender minorities.
- Gain consent of the affected communities.
- Clearly define land acquisition and allocation process ensuring transparency and providing adequate grievance redressal as well as negotiation mechanisms.
- Take into consideration urban/rural land use planning before moving ahead.
- Provide customized relocation packages.
- Decentralize powers for undertaking the relocation process.
- As far as possible, ensure relocation site is near to their agricultural lands and/or sources of livelihood, as applicable.
- Ensure necessary infrastructure such as primary and secondary schools, primary health centre are in proximity.
- Ensure provision of livelihood rehabilitation measures for relocated communities, wherever necessary, to the extent possible.

6.4.3 Social Rehabilitation

Social rehabilitation constitutes an integral part of disaster rehabilitation. The vulnerable groups such as the artisans, elderly, orphans, single women and young children would need

special social support to survive the impact of disasters. The rehabilitation plan will have components that do not lose sight of the fact that the victims must undergo the entire process of re-socialization and adjustments in a completely unfamiliar social milieu.

6.4.4 Revival of Educational Activities

Educational facilities may suffer greatly in a major disaster, such as COVID 19, placing considerable stress on children's education. Therefore, the following steps will be helpful in supporting children to recover and cope with the situation:

- Give regular counselling to teachers and children.
- Encourage children to attend the schools regularly, when these become operational.
- Provide writing material, and work books to children.
- Make children participate in all activities pertaining to resurrection of normalcy in the school.
- Try to inculcate conducive attitudes to enable the students to play a positive role in self-development
- Establish village level education committees.
- Identify local groups that could conduct smooth functioning of education activities.

6.4.5 Rehabilitation of the elderly, women, children and differently abled

The elderly, women, and children are more vulnerable after a major disaster. Hence the following measures will help in their rehabilitation:

- Identify familiar environs to rehabilitate elderly, women and children.
- Make efforts to attach destitute, widows and orphans with their extended family; if that is not possible then identify foster families.
- Organize regular counselling to strengthen the mental health of women and children.
- Initiate various training including skill development programs to make the women economically self-sufficient.
- Give due attention to health, nutrition and hygiene in the long-term rehabilitation package for women and children.
- Activate/reactivate the Anganwadis (day-care centres) within the shortest possible time.
- Make efforts to build residential female children homes at the block level, with NGOs involved in running them
- Set up vocational training camps to improve the skills of children including orphan children.
- Promote self-help groups.
- Initiate various rehabilitation and other related inclusive disaster management activities for differently abled people.

6.4.6 Economic Rehabilitation

The major components of economic rehabilitation are livelihood restoration and ensuring the continuity of businesses, trade, and commerce. Restoring employment and income generating opportunities to disaster affected communities is a vital component of post-disaster rehabilitation and recovery. Livelihood opportunities are severely disrupted by the destruction

or loss of essential assets; with the result that people are unable to engage in normal income generating activities; become demoralized and dependent on humanitarian aid.

Therefore, economic recovery will be based on:
- Analysis of existing livelihood strategies and sustainability of businesses.
- A comprehensive analysis of existing and future risks.
- The vulnerabilities of the affected families.
- The accessibility of linkages to external influences and institutions including skills and knowledge.
- Access to functioning markets.

The state government will give due importance to the restoration of permanent livelihood of those affected by disasters and special attention to the needs of women- headed households, artisans, farmers and people belonging to marginalized and vulnerable sections.

6.4.7 Psychological Rehabilitation

Another crucial dimension of disaster rehabilitation is psychological rehabilitation. Dealing with victim's psychology is a very sensitive issue and must be dealt with caution and concern. The psychological trauma of losing relatives and friends, and the scars of the shock of disaster event can take much longer to heal than the stakeholders in disaster management often realize. Thus, counselling for stress management will form a continuous part of a disaster rehabilitation plan.

Spiritual and religious practices including meditation and satsang can strengthen and empower affected people and enhance their collective community capacity to respond effectively. In organizing such events and practices, the religious faith of the communities involved must be considered and their consent obtained in advance. It is also advisable to identify natural leaders from among the affected communities and organize such events through them. These are an important resource that can contribute to enhance community resilience, reduce post-traumatic mental health impacts and promote healing, through improved social support and enhanced self-efficacy.

Efforts will be made to focus more on the following:
- Psycho-therapeutic health programs.
- Mentoring and counselling.
- Occupational therapy.
- Debriefing and trauma care.
- Tradition, values, norms, beliefs, and practices of disaster-affected people.

Since Government facilities and special human resource availability for psychological rehabilitation are limited, support of voluntary organizations, DDRC and Social Welfare Department may be sought to help implement these measures. Besides, voluntary organizations and DDRC active in the affected districts might be able to sensitize and train elderly in the village, Aanganwadi workers, Self-help groups and educated young women volunteers to extend a helping hand in organizing such efforts.

6.4.8 Restoration of Damaged Cultural Heritage Sites, their Precincts, and Museums

Post disaster repairs and reconstruction of damaged sites/precincts should always be undertaken based on sound documentation and assessment practices. Poor reconstruction practices cause further physical damage to heritage structures, may worsen its structural vulnerability and carries the risk of erasing the heritage features. Reconstruction and rehabilitation approaches need to consider the legislative frameworks already in place for different typologies of heritage sites and precincts.

In general, the following principles should be followed:
- An approach of minimal intervention should be undertaken for sites of historic and archaeological importance and any intervention should be based on sound documentation and research. Aspects of authenticity and visual integrity should form the basis of any reconstruction, repair, and retrofitting attempt.

- As far as possible, traditional skills and technologies where they still exist should be employed in the repair and restoration of damaged structures. This helps ensure continuity of building and crafts traditions.

- Many cultural heritage sites and precincts hold strong cultural/ socio-economic associations with the local population and restoring them instils a sense of normalcy after a disaster.

- These considerations should facilitate the conservation/ reconstruction of heritage within the overall recovery plan.

- The notion of 'build back better' applied to cultural heritage must not undermine the archaeological and/ or cultural aspects, which means that retrofitting measures for improving the structural stability of cultural heritage sites, should be undertaken cautiously paying due attention to restoration of the original.

- All restoration and retrofitting of the cultural heritage must be undertaken only after carrying out due consultation among stakeholders to preserve the cultural, archaeological and heritage aspects.

- The impact of retrofitting on integrity and cultural value of heritage structures must be discussed and properly evaluated with due weightage for restoration to pre-disaster status as closely as possible.

- Restoration or reconstruction of heritage after disasters should go beyond buildings and it should look at heritage livelihood, traditional trades/ crafts etc.

6.5 Fund Mobilization

Reconstruction and rehabilitation projects after a major disaster are usually resource intensive. Such projects are typically financed through the State exchequer. In the recent time, funds have been raised mostly through government sources by way of re-appropriation from other budget heads and additional taxation and supplemented through funds raised from multilateral/ bilateral funding agencies in close coordination with the Government. The State Government, through the relevant ministry of the Central Government shall finalize the fund mobilization strategy, incorporating appropriate conditions governing flow of funds, its disbursement, and usage as per norms decided by the Central Government.

From the state (on budget) and additional fund-raising options (off budget), Central grants and other options – on and off the budget funds can be mobilized for post-disaster recovery, rehabilitation and reconstruction. Donors, community contribution, multi-lateral agency, bi-lateral agency, private sector CSR, PPP are the other sources.

6.5.1 Recovery of Reconstruction Costs

The State Government, in consultation with the Central Government, can finalize and implement select cost recovery measures such as:
- Imposing special tax/surcharge
- Imposing local taxes
- Issuing tax free Government bonds

6.6 Monitoring Recovery, Rehabilitation and Reconstruction Activities

Monitoring will be carried out at different stages of recovery, rehabilitation and reconstruction processes. The transparency in operations and accountability in the process shall be ensured through periodic process and social auditing.

Further the feedback will be taken from the target groups as well. The Tripura State Disaster Management Authority (TDMA) will lead and monitor the activities during this phase. The authority will define the role for each government departments, private, public, non-government organizations, and individual volunteers.

At the State, the TDMA will be contacted first by any other agency during the phase and at district the DDMA will be approached. They will guide and lead the other agencies to avoid the duplicity of work. Also, on requirement basis, the TDMA would contact any other agency, State or Central Governments.

The learning of entire rehabilitation and reconstruction activities shall be documented and shared. The lessons learnt would assist Government of Tripura in improving recovery, rehabilitation and reconstruction interventions in the future.

CHAPTER 7: DISASTER PREPAREDNESS, PREVENTION AND MITIGATION

7.1 Introduction

Preparedness is the key to effective response. A well-prepared society/community can encounter any emergency situation better with minimum damage and loss. Hence, greater emphasis and priority has been given by the government on preventive and mitigation measures rather than relief and post disaster works. The public and private sector, NGOs and the community will actively co-operate with the relevant agencies and will participate in training and other activities, conducted to augment disaster management capabilities.

In this context, TDMA will act as the nodal agency for mitigation, preparedness and capacity development. TDMA will develop linkages with other stakeholders such as lending agencies, Government departments, local authorities, NGOs, public/private sector and community groups, national and international agencies to expand knowledge and augment capacity on a holistic basis disaster preparedness for effective response and resilience building.

The Disaster Management Act, 2005 defines 'Preparedness' as the state of readiness to deal with a threatening disaster situation or disaster and the effects thereof. UNISDR has further elaborated it. Preparedness, as defined by UNISDR (2016), consist of the knowledge and capacities developed by governments, response and recovery organizations, communities and individuals to effectively anticipate, respond to and recover from the impacts of likely, imminent or current disasters.

Preparedness action is carried out within the context of disaster risk management and aims to build the capacities needed to efficiently manage all types of emergencies and achieve orderly transitions from response to sustained recovery. Preparedness is based on a sound analysis of disaster risks and good linkages with early warning systems, and includes such activities as contingency planning, the stockpiling of equipment and supplies, the development of arrangements for coordination, evacuation, and public information, and associated training and field exercises. These must be supported by formal institutional, legal, and budgetary capacities, the related term "readiness" describes the ability to respond quickly and appropriately when required. Local level preparedness of people for disasters can help in mitigating the impacts of disasters and also better response. Involvement of community at local level through PRIs can go a long way in getting people prepared for countering disasters. In case of disasters, PRIs can play a crucial role in mobilizing people and local resources.

The DM Act, 2005 defines 'mitigation' as measures aimed at reducing the risk, impact or effects of a disaster or threatening disaster situation. A successful strategy for mitigation would include the entire cycle of disaster management as it is generally believed that response also is a part of mitigation because the purpose of response is to mitigate the impact of a disaster in the immediate aftermath by relief and recovery, reconstruction with "Build Back Better", restoration of means of livelihood and in general bring back the community to the same economic and social level where it was before the disaster. Similarly, preparedness also aims

at actions which mitigate the possible impact of an impending disaster. Therefore, it would be advisable to look at the mitigation and preparedness strategy as an integrated plan.

7.2 Preparedness at Institutional Level
7.2.1 Key Preparedness Measures in Pre-Disaster Phase

The following disaster management activities may be taken into consideration under preparedness measures.

i. **Plan development:** There is a close relationship in the way disasters and development affect each other. A long-term disaster management approach requires that planning activities for development should include robust mitigation practices. Government of Tripura will ensure that the planning activities of the state administration and local authorities take into account disaster risks and provide for suitable preventive and mitigation measures.

ii. **Development of policies and guidelines:** Effective disaster management requires the formulation of clear guidelines and subsequent compliance by all Government authorities, private sector entities and the public at large. To address disaster management needs, Government of Tripura will develop appropriate guidelines that will include:
   * Analysis of Hazard Vulnerability and Risk Analysis of the state and adaptation of appropriate development strategy.
   * Appropriate Civil/ architectural/ structural/ land use planning specifications;
   * Other guidelines specific to disaster type, like quarantine (epidemic), cropping patterns (flood), evacuation (flood/ cyclone) etc.;
   * Development of laws/ bye laws that assist the implementation of a framework for disaster management.
   * Development of Standard Operating Procedures for concerned agencies

iii. **A proper chain of command:** It is imperative that a clear chain of command is established for effectively managing activities that immediately follow a disaster. The Government of Tripura will establish a clear chain of command with TDMA as the nodal agency for all disaster management activities and will set up appropriate coordination mechanisms across all entities. In view of Tripura's administrative mechanism and disaster management practices, there shall be three tiers of the Incident Command System at State, District and Sub-division levels. Identified Incident Commanders and their roles and responsibilities are as follows:

IRS ROLES AND RESPONSIBILITIES

As per the NDMA Guidelines on the Incident Response System (IRS) May 2013, the roles and responsibilities of Chief Secretary (CS) as Responsible Officer (RO) of the State are as follows:

i. The CS who is the head of the State administration and also chairperson of SEC, will perform responsibilities laid down under clause 22 (2) and 24 of the DM Act, 2005;

ii. The Section 22 (h) of the Act provides that the Chairperson of SEC will give directions to any department of the Government of the State or any other authority or body in the

State regarding actions to be taken in response to any threatening disaster situation or disaster. Thus, He will ensure active participation of all departments at State level;

iii. Ensure that IRTs at State, District, Sub-Division, Tehsil/Block are formed and IRS is integrated in the State and District DM Plan. This may be achieved by issuing a Standing order to all District Magistrates/District Collectors, line departments to identify suitable officers for different positions in the IRTs;

iv. Issue a Standing Order in advance to different departments and agencies, so that in any emergency, mobilization of both equipment and personnel happens smoothly;

v. Ensure funds of 15th Finance Commission (FC) for capacity building of administrative machinery in DM is spent appropriately;

vi. In case of necessity, apart from the recommended funds of the 15th FC, funds as mentioned in letter No. 33-03/2020-NDM-1 GoI, MHA (Disaster Management Division) may also be used;

(Source: https://ndmindia.mha.gov.in/images/Revised%20Items%20&%20norms%20%2011-7-2023.pdf)

vii. Ensure effective communication and Web based / online Decision Support System (DSS) is in place in the EOC and is connected with District, Sub-Division, Tehsil/Block level IRTs for support;

viii. Set overall objectives and incident related priorities;

ix. Identify, mobilize and allocate critical resources according to established priorities;

x. Ensure that local Armed Forces Commanders are involved in the planning process and their resources are appropriately dovetailed, if required;

xi. Ensure if the involvement of NDRF, Armed Forces are required or not in support for disaster response.

xii. Coordinate with the Central Government for mobilization of Armed Forces, Air support etc. as and when required;

xiii. Ensure that incident management objectives do not conflict with each other;

xiv. Establish Unified Command (UC) if required and get the approval of Chief Minister (CM);

xv. Keep the chairperson of SDMA informed of the progress of incident response;

xvi. Conduct post response review on performance of IRTs and take appropriate steps to improve performance; and

xvii. Take such other necessary action as the situation demands.

Roles and Responsibilities of Incident Commander (IC)

The IC will:

i. Obtain information on:

    a. Situation status like number of people and the area affected etc;
    b. Availability and procurement of resources;
    c. requirement of facilities like ICP, Staging Area, Incident Base, Camp, Relief Camp, etc.;
    d. Availability and requirements of Communication system;
    e. Future weather behaviour from IMD; and

<blockquote>

f.   Any other information required for response from all available sources and analyse the situation.

</blockquote>

ii.   Determine incident objectives and strategies based on the available information and resources;

iii.   Establish immediate priorities, including search & rescue and relief distribution strategies;

iv.   Assess requirements for maintenance of law and order, traffic etc. If any at the incident site, and make arrangements with help of the local police;

v.   Brief higher authorities about the situation as per incident briefing and request for additional resources, if required;

vi.   Extend support for implementation of AC and UC if considered necessary by the RO;

vii.   Establish appropriate IRS organization with Sections, Branches, Divisions and/or Units based on the span of control and scale of the incident;

viii.   Establish ICP at a suitable place. There will be one ICP even if the incident is multijurisdictional. Even a mobile van with complete communication equipment and appropriate personnel may be used as ICP. In case of total destruction of buildings, tents, or temporary shelters may be used. If appropriate or enough space is not available, other Sections can function from a different convenient location. But there should be proper and fail safe contact with the ICP in order to provide quick assistance;

ix.   Ensure that the IAP is prepared;

x.   Ensure that team members are briefed on performance of various activities as per IAP;

xi.   Approve and authorise the implementation of an IAP and Ensure that IAP is regularly developed and updated as per debriefing of IRT members. It will be reviewed every 24 hours and circulated to all concerned;

xii.   Ensure that planning meetings are held at regular intervals. The meetings will draw out an implementation strategy and IAP for effective incident response. The decision to hold this meeting is solely the responsibility of the IC. Apart from other members, Ensure that PSC attend all briefing and debriefing meetings;

xiii.   Ensure that all Sections or Units are working as per IAP;

xiv.   Ensure that adequate safety measures for responders and affected communities are in place;

xv.   Ensure proper coordination between all Sections of the IRT, agencies working in the response activities and make sure that all conflicts are resolved;

xvi.   Ensure that computerized and web based IT solutions are used for planning, resource mobilization and deployment of trained IRT members;

xvii.   Consider requirement of resources, equipment which are not available in the functional jurisdiction, discuss with PSC and LSC and inform RO regarding their procurement;

xviii. Approve and ensure that the required additional resources are procured and issued to the concerned Sections, Branches and Units etc. And are properly utilized. On completion of assigned work, the resources will be returned immediately for utilization elsewhere or to the department concerned;

xix.   If required, establish contact with PRIs, ULBs, CBOs, NGOs etc. And seek their cooperation in achieving the objectives of IAP and enlist their support to act as local guides in assisting the external rescue and relief teams;

xx.   Approve the deployment of volunteers and such other personnel and Ensure that they follow the chain of command;

xxi.   Authorize release of information to the media;

xxii.   Ensure that the record of resources mobilized from outside is maintained so that prompt payment can be made for hired resources;

xxiii. Ensure that Incident Status Summary (ISS) is completed and forwarded to the RO;

xxiv.   Recommend demobilization of the IRT, when appropriate;

xxv.   Review public complaints and recommend suitable grievance redressal measures to the RO;

xxvi.   Ensure that the NGOs and other social organizations deployed in the affected sites are working properly and in an equitable manner;

xxvii. Ensure preparation of After Action Report (AAR) prior to the demobilization of the IRT on completion of the incident response.

xxviii. Perform any other duties that may be required for the management of the incident;

xxix.   Ensure that the record of various activities performed by members of Branches, Divisions, Units/Groups are collected and maintained in the Unit Log.

xxx.   Perform such other duties as assigned by RO.

Roles and Responsibilities of Information and Media Officer (IMO)
The IMO will:
i.   Prepare and release information about the incident to the media agencies and others with the approval of IC;
ii.   Jot down decisions taken and directions issued in case of sudden disasters when the IRT has not been fully activated and hand it over to the PS on its activation for incorporation in the IAP;
iii. Ask for additional personnel support depending on the scale of incident and workload;
iv.   Monitor and review various media reports regarding the incident that may be useful for incident planning;

v. Organize IAP meetings as directed by the IC or when required;

vi. Coordinate with IMD to collect weather information and disseminate it to all concerned;

vii. Maintain record of various activities performed; and

viii. Perform such other duties as assigned by IC

Roles and Responsibilities of Liaison Officer (LO)

The LO is the focal point of contact for various line departments, representatives of NGOs, PRIs and ULBs etc. Participating in the response. The LO is the point of contact to assist the first responders, cooperating agencies and line departments. LO may be designated depending on the number of agencies involved and the spread of affected area.

The LO will:

i. Maintain a list of concerned line departments, agencies (CBOs, NGOs, etc.) And their representatives at various locations;

ii. Carry out liaison with all concerned agencies including NDRF and Armed Forces and line departments of Government;

iii. Monitor Operations to identify current or potential inter-agency problems;

iv. Participate in planning meetings and provide information on response by participating agencies;

v. Ask for personnel support if required;

vi. Keep the IC informed about arrivals of all the Government and Non-Government agencies and their resources;

vii. Help in organising briefing sessions of all Governmental and Non-Governmental agencies with the IC;

viii. Maintain record of various activities performed

ix. Perform such other duties as assigned by IC

Roles and Responsibilities of Safety Officer (SO)

The SO's function is to develop and recommend measures for ensuring safety of personnel, and to assess and/or anticipate hazardous and unsafe situations. The SO is authorised to stop or prevent unsafe acts. SO may also give general advice on safety of affected communities.

The SO will:

i. Recommend measures for assuring safety of responders and to assess or anticipate hazardous and unsafe situations and review it regularly;

ii. Ask for assistants and assign responsibilities as required;

iii. Participate in planning meetings for preparation of IAP;

iv. Review the IAP for safety implications;

v. Obtain details of accidents that have occurred within the incident area if required or as directed by IC and inform the appropriate authorities;

vi. Review and approve the Site Safety Plan, as and when required;

vii. Maintain record of various activities performed such other duties as assigned by IC.

Figure 7A: IRS Structure of Tripura is as follows:
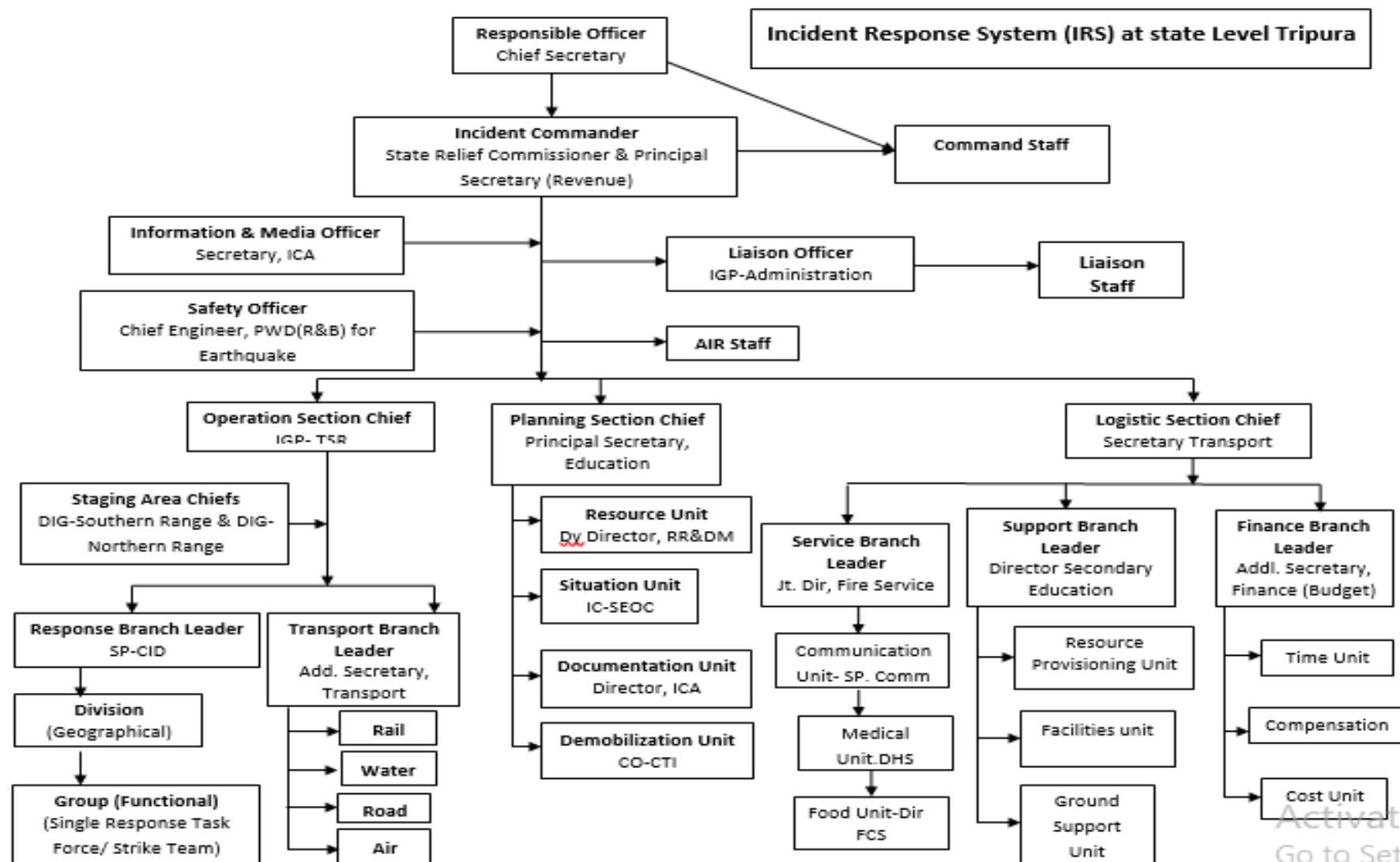
Source: Revenue Department

IV. **A standard guidelines and notification** will be circulated to all the key officials, departments and agencies with focus on the following.

- **Risk assessment:** Before commencing preventive and preparedness activities, it is important to identify and assess different types of risks for the state. Relevant departments would co-ordinate with TDMA for a thorough assessment of:
- **Hazards:** Classification of the region into zones based on hazard potential; and
- **Vulnerability:** Assessment of degree of vulnerability of any given structure/ people / area/region to the impact of the hazard.

The assessment will be used for developing detailed contingency plans and mitigation measures at the state as well as the department/unit level.

V. **Develop disaster management plans:** Detailed disaster management plans that are tailored to local needs would enable the relevant authorities and the community to respond systematically and effectively to disasters. The guidelines for preparation of such plans will be prepared by TDMA. The relevant authorities/departments/ agencies/units will prepare plans using these guidelines and ensure that these are constantly reviewed and updated. Existing manuals viz. Relief Manual, Flood Management, Emergency Health Management etc. would be reviewed and updated by the relevant Government department. A State Disaster Management Plan would be prepared and the District Disaster Management Plans, other Plans of Departments and plans of corporate and private sectors would be updated. It is recommended that the State Disaster Management Plan will be updated every three [3] years, while District Disaster management Plans and Departmental Disaster Management Plans will be updated annually. The DDMA's will monitor the preparation and updating of Disaster Management Plans at Sub-division, Blocks, Panchayats, Villages and Ward levels.

VI. **Develop repositories of information:** It is critical that the relevant authorities should be in a position to quickly establish contact with people and resources in the aftermath of a disaster. TDMA and the relevant Government departments will ensure that a comprehensive repository of information such as names, contact details, etc. is created, maintained and made easily accessible to the relevant authorities. The Contact details will be regularly updated and verified, preferably once every year during pre-monsoon coordination meetings

VII. **Establish communication and technology networks:** A robust state-wide information network is critical not only for managing disasters but also for effective decision support-system of the state government. Hence, the Government of Tripura will ensure that a comprehensive information network is established after incorporating all the available options. This network must enable timely collection of hazard-related information and rapid dissemination of relevant information and warnings. TDMA, will work to ensure that appropriate levels of redundancies are built into the network from a disaster perspective.

VIII. Developing early warning mechanisms: Early warning mechanisms help the relevant authorities in taking timely preventive measures and thereby, reduce the damage caused by disasters. The relevant authorities, in conjunction with Government departments, shall set up early warning mechanisms to give advance warning for hazards like cyclones, floods, health emergencies etc. The linkages with all the stakeholders like CWC, IMD and other national level bodies will be clearly laid down.

IX. Strengthening of Emergency Operation Centre: The Emergency Operations Centre is the core place of activity in a disaster situation. The 24x7x365 EOC at the State, District, Sub-division and key line departments and agencies should be functional round the clock throughout the year. The establishment of State and District EOCs and equipping them with the contemporary technologies and communication facilities and their periodic upgradation, will be accorded priority. The EOC, its system, and the procedures will be designed in such a way that information can be promptly assessed and transmitted to concerned agencies. Rapid dissemination contributes to quick response and effective decision-making during emergency.

X. Early Warning Mechanism: If the State EOC receives any warning from IMD, Govt. of India or any authentic source, the same would be disseminated to the DEOCs and DM & Collectors and identified key personnel with the permission of the Chief Secretary/ SRC. The warning would be disseminated through fastest communication media via Mass SMS, Fax, Telephone, Email, Wireless Message etc. If the entire communication system is disrupted, the message runner system shall be adopted.

- After sending the warning, the State EOC will keep the track of the situation and share the same to the DEOCs, DM & Collectors and identified key personnel.
- Activate the Joint Control Room, Control Rooms of other line departments for sharing of information and mobilizing resources.
- Similarly, State EOC will capture the activities undertaken by the District Authorities and local authorities and share with the Chief Secretary/ SRC and other key authorities of the State.
- Updating of warning and action taken would continue till the withdrawn of warning.

XI. Establish flexible procedures: Emergency situations may warrant simplifying of procedures for decisions relating to evacuation, procurement of essentials, deployment of resources and such other activities and for this standard SOPs for response will be established by the concerned agencies.

XII. Building capabilities & expertise: It is necessary to build strong capabilities and expertise for handling various aspects of disasters. TDMA shall network with a number of entities such as national, regional, state disaster management agencies, research institutions, disaster management specialists, NGOs, community groups, line departments, local Government authorities and other stakeholders to augment the capabilities of all relevant entities.

The Disaster Management Department will develop an annual action plan and it will be approved by SEC for capacity building of all personnel at the different levels based on the perspective plan. Similarly, training institutions such as SIPARD, CTI etc will be required to develop their annual training calendars, implement the plan and report to SEC. The other action points would include the following:

- Training strategies will include targeting 1% of staff of key departments and include both in campus and off campus trainings.
- Conducting post training needs assessment for trained personnel from departments and QRT's and providing them with specialised off campus training by NDRF and other training institutions.
- Conducting post training needs assessments and providing refresher trainings to trained volunteers.
- Annually update list of all trained personnel in the state. Check whether trained volunteers are currently available to render services or have moved out to other locations/jobs both within and outside the state
- Arrangements for exposure visits for trained volunteers and members of QRTs to sites both within and outside the state.
- Develop training resources and physical and e- libraries with resources on Disaster Management

In addition, Government of Tripura will support for strengthening of disaster management trainings and procedures of SIPARD, CTI, SIRD, Fire training schools etc.

The Disaster Management Department will prepare the Human Resource Plan for disaster management personnel in partnership with NIDM and Government of India. In addition, Panchayati Raj Training Institute, NIT, Tripura University, Tripura Space Application Centre, State Council of Educational Research & Training, District Institute for Education and Training, Police Training College, CTI, Fire Training College, Medical Colleges, Paramedical Institutions etc shall include disaster management subjects in their training curriculum, organise specialized trainings in their respective training institutions and provide advanced trainings by inviting expert resource persons from outside the state. The State authority should declare few training institutions as centre of excellence in the field of disaster management.

XIII. **Sustainable Development Practices and Climate Change:** Disasters have also negative impacts on environment as they affect natural resources. Therefore, considering society, economy and environment as three main components of sustainable development, disasters have negative impacts on them and hence negative impact and delay on sustainable development. Sustainable development and use of new technologies will be a must in the implementation of this plan. Priority would be given for promoting understanding of climate change adaptation strategies, energy efficiency and natural conservation.

7.3 Disaster Preparedness at Community level

The plan recognises the fact that in the event of a disaster, communities are the first responders and hence there is no better alternative to community and local level capacities for disaster response. In order to enhance communities' capacity to take action to help themselves in the absence of necessary outside response to begin with, the plan envisages creating necessary awareness about hazards, risks and response. Areas which would be specifically addressed for community preparedness are-

  i) Medical first aid.

  ii) Search and rescue extrication from damaged buildings

  iii) Road clearance

  iv) Fire-fighting

  v) Emergency communications using the network of HAM radios.

  vi) Conducting rapid damage assessments and

  vii) Providing assistance to the affected.

The Plan envisages equipping community at Panchayat level by ensuring the provision of medical supply, communication such as radio, TVs, extrication equipment. The Panchayat's primary role will be in terms of integration of disaster management into Gram Panchayat Development Plans (GPDP) and provision of North Eastern Council funds to ADC villages. Panchayat will be encouraged to establish local early warning systems in higher vulnerable areas and for holding community level disaster response drills. Development of response capacity at Panchayat level for the first response would help in avoiding desperate emergency situations at the local level. Creation of sub-division level stock pile for relief and warehouses would be ensured.

The following measures will be undertaken to build the coping capacity and resilience of the community against disasters:

- Continuous awareness of the risks associated with disasters;
- Developing and updating local level Disaster Management Plans.
- Constituting QRT's and training.
- Equipping QRT's with skills and equipment
- Conducting mock drills / exercises for locally prevalent hazards including monthly mock drills in schools, bi-annual mock exercises during May/June and in Oct/Nov.
- Promoting joint mock exercises with the neighbouring states of Assam and Mizoram.
- Promoting Joint Mock exercises with Bangladesh in border areas.
- Promoting the construction of disaster resilient infrastructure including residences. Ensuring compliance of the Tripura Building Rules 2022.
- Promoting risk insurance for crops, livestock and assets.
- Demonstration of structural mitigation measures to reduce disaster risks in public utility structures.
- Understanding of appropriate responses to disasters through repeated training and mock drills;

- Building and upgrading the capacity to respond (training, research, availability of resources, skilled cadres);
- Provision of specialized trainings to the focused groups by the concerned line departments and agencies i.e. PWD, Revenue Department and Panchayats to take ensure training of masons, helpers and Junior Engineers, Education Dept. to ensure the training of teachers and students, Health Dept. to ensure the training of doctors, paramedics and medical students etc.
- Setting up emergency response mechanisms that mobilise and deploy these trained resources in a quick, efficient and systematic manner. Hence, the relevant authorities shall ensure that the required awareness, resources and training are provided to the community.
- Building culture of safety by urging community to develop self- reliance by promoting and encouraging the spirit of self-help and mutual assistance. TDMA shall support these initiatives by providing necessary resources and expertise from time to time.
- Basic concepts related to disaster management and the role of the community therein shall be included in the curriculum of schools. This shall serve to sensitise people to the participative approach needed for effective disaster management.
- TDMA and the relevant Government departments shall ensure that personnel in specialised areas (medical care, rescue etc.) are adequately trained and available for deployment in emergency situations. Disaster management capacity building will have special thrust on empowering women towards long-term disaster mitigation.
- Extensive IEC including wall paintings, posters, leaflets, social media posts etc. to create heightened awareness of risks and risk preparedness.

7.4 Hospital Preparedness

Health and medical care is one of the most critical and immediate response components in any disaster response situation. The capacity for providing medical assistance in disaster situation including the emergency response will be upgraded through training of personnel and strengthening of existing infrastructure. At the community level, the ASHA workers will be strengthened on involving them into first aid trainings in their induction and refresher training programmes. The local authority should organize health camps before, during and after disaster especially in flood seasons and possible health related hazard situations. All medicals, PHCs, CHCs and dispensaries should have quick response teams to mobilize both man and material immediately to the disaster situations. Prepositioning of medicines, doctors and paramedics should be ensured before monsoon or any seasonality hazards. Health department and local authorities should develop proper and regular coordination with the army, paramilitary forces and NGOs for mobilization and supplementing health and medical care facilities at the time of requirements. There should be audit of hospital, provision of improvement and also provision of alternate space. They should have plans to support regular medical reports.

7.5 Capacity Building Priorities and Interventions

The capacity development is applicable to all aspects of disaster management. State agencies will take actions for capacity development of different stakeholders. Following are the broad

capacity building priorities and key interventions for enhancing preparedness, mitigation and building resilience of institutions and communities against disasters and climate change in Tripura. The list of priorities and key interventions for capacity building is presented below in Table 7A.

Table 7A: Capacity Development for DRR (State and District) -Check List

S.N.	Priorities	Key Interventions
1	Understanding Risk	• Observation Networks, Information Systems • Research, Forecasting, Zoning/Mapping, Monitoring • Hazard Risk Vulnerability and Capacity Assessment (HRVCA)
2	Deploying advanced technology & equipment	• Adopting the state-of-the-art technology • Identifying technology needs based on hazard risk, vulnerability and experiences. • Procurement of best and most appropriate equipment.
3	Disaster Information System	• Maintaining the resource network and database (IDRN). • Regular updating of the resource data (IDRN) • Developing fail-safe communication with advance technology, improve data flows across State Department and authorized users. • Integration of HRVA data with disaster information systems, • Ensuring reliable and credible database on disaster losses (direct and indirect) and post-disaster reconstruction
4	Disaster Risk Governance	• Mainstream and integrate DRR in development • Strengthen institutional mechanisms for DRM • Promote participatory approaches, partnerships and networks • Promote quality standards, certifications, and incentives
5	Disaster Risk Management	• Promote, encourage and facilitate appropriate risk transfer instruments by collaborating with insurance companies and financial Institutions. • Design and implement social safety-net mechanisms, including community-based systems • Disaster resilience of health care systems by integrating disaster risk management into primary, secondary and tertiary healthcare • Business resilience, and protection of livelihoods and productive assets throughout the supply chains, ensure continuity of services and integrate disaster risk management into business models and practices
6	DM and DRR capacities at local levels	• Trainings in DRM at different levels of local governance • Improve awareness and preparedness of stakeholders at all levels, • Preparing and updating DM plans, and conducting mock drills at regular interval.
7	DRM in education, research and	• Incorporate subjects of relevance to DRM in school & college curriculum, • Introduce specialized programs, degrees, courses and diplomas.

	professional disciplines	• Promote relevant research projects, programs within institutes and through research grants, Technical and professional programs relevant to various specialized aspects of DRM, Develop ToTs, Research in diverse areas of DRM. • National school safety program is available.
8	Early Warning	• Deploy the state of art methods and technologies • Up-grade technical infrastructure and systems • Improve EW dissemination and ensure the last mile connectivity, Improve the alerts system to make it more relevant and effective at all levels
9	Emergency Operation Centres-Strengthening	• Set up State and District level EOCs with adequately trained manpower • Enhance emergency response capabilities. • Strengthen EOCs, improve infrastructure, upgrade equipment with latest technology. • Improve capabilities based on experience after each disaster event, Deploy best of ICT Tools. • Conduct capacity audits of EOCs. • Regular reviews and improvement of SOPs, protocols, etc. Develop Mobile control rooms
10	Global Anthropogenic Climate Change Risks	• Recognize and address climate change risks in DRR • Strengthen adaptations to Global Agreement on Climate Change (GACC)
11	Mainstreaming DRM	• Incorporating DRM into development plans and programs • Incorporating PM's Ten Point Agenda for DRR into development plans • Making DRR as an inherent part of all ministry, department, state development plans • Extending convergence to the domain of DRR
13	Non-Structural Measures for DRR	• Institutional arrangements, policies, legal support, and regulatory framework • Revision of building codes and standards for rehabilitation reconstruction practices both for urban and rural areas • Norms and incentives for retrofitting • Reinforce systems to implement, monitor, and enforce regulations for DRR to promote disaster-resistant built environment
14	Preparedness and Response	• Institutional reforms, modernization, and changes in legal framework • Strengthening of the Fire and Emergency Service through revamping, institutional reforms, and modernization • Adoption and adaptation of emerging global good practices, rigorous training and HRD of first responders

		• Table-top exercises, simulations, and mock drills to improve operational readiness of the plans • Rescue equipment at all levels • Systems to provide basic services in emergencies, preparedness and response plans at all levels, community-based DRR and DM.
15	Recovery and Build Back Better	• Post-Disaster Needs Assessment (PDNA) systems and expertise, credible damage assessment mechanisms and expertise. • Planning capabilities to ensuring coherence of BBB with overall development efforts and goals, Studies and research for incorporating resilience into BBB models. • Studies on past disasters and recovery to draw useful lessons.
16	Skill Development for Disaster Resilience	• Training and skill development for masons and other artisans • Promoting community-based DM considering specific needs, regional diversities and multi-hazard vulnerabilities • Training on CBDR & preparedness at local levels • Address gender issues, and special needs of children, disabled, aged, etc. holistically in the DM context • Promote private sector and civil society involvement, Promote PPPs
17	Social Inclusion in DRM	• Gender-based vulnerabilities, Scheduled Castes and Scheduled Tribes, Elderly, Children, Persons with Disabilities and Transgenders

Insurance: Insurance can cover the property, house, etc and life insurance can provide support to the family of the deceased. This should be included and implemented at the grass root level to cover most of the upcoming threats. Insurance is an instrument for emergency risk preparedness that can be used in view of a likely loss, which implies that financial incentives or regulations are needed to encourage people to take insurance measures. It increases the likelihood of rebuilding, minimizes financial load post-disaster, and speeds up time to recovery.

Preparedness, Prevention and Mitigation points: Communities to take a strong role in leading various initiatives like after the 2011 Great East Japan Earthquake, tsunami, and nuclear accident at Fukushima, initiatives by Japan ranged from practical exercises such as starting a programme of beach clearing work, and to more creative activities like forming knitting circles.

The role of organisations must be central, particularly in their engagement work with young community members after the disaster. They could provide creative activities such as those involving music, art, theatre, and comedy; and also provide spaces – such as playgrounds, cafés, and community clubs – to give adults and children places to relax, talk, play, contribute to rebuilding plans, and to support others. The benefits of these initiatives, activities, and programmes include improvements to community cohesion, positive impact on mental wellbeing, and pride and satisfaction among community members.

There should be various support activities in line with the local needs and conditions in affected areas, including donations for emergency support and equipment, delivered scholarships for students and grants for groups/individuals working in disaster relief and recovery like after 2011 Japan Earthquake, Mitsubishi Corporation established a 10-billion yen "Mitsubishi Corporation East Japan Earthquake Recovery Fund" with the purpose of making concerted efforts for supporting restoration and recovery for the afflicted areas during the first four years following the Great East Japan Earthquake.

Gender aspect – Respective roles of women and men are of critical importance. Women play an important role during and post disaster, as they are the primary caregivers within the family, often within the wider community. They have strong local knowledge of surroundings, and valuable links with others in the area. In some conditions women can only share their problem with other women, their need of items like sanitary napkins/pads can be taken care of and could be provided by others in the group. Appropriate support by men and other groups would help women, along with others, in taking care of old, children and other needy persons in the shelter or at the time of evacuating the area.

Coordination among university – Coordination among universities in Tripura could be of help in acquiring knowledge and skills, and also in helping students to be prepared for disasters. It is vital for universities to educate their students about how disasters can impact them and to equip them with the required knowledge and skills to mitigate those impacts. Students can be valuable assets for the local community during disaster recovery if they are trained and given the necessary tools. The rescue techniques taught to the students and faculties are a vital aspect of disaster education and should be taught by competent professionals that can be used at the time of emergency. Nursing and/or medical schools have an advantage, as they have the instruments and professionals to develop and implement effective disaster training and courses.

Community based disaster risk management – The communities should be given the chance to participate in the process of decision making and implementation of activities. Their approach provides opportunities for the local community to evaluate their situations based on their own experiences and promotes participation and partnership. People are at the heart of decision making and implementation of disaster risk management. The involvement of the most vulnerable is paramount and the support of the least vulnerable is necessary. The local people are the prime movers in reducing disaster risks in their community.

7.6 Mitigation Funds – NDMF/SDMF

The system of financing for disaster management in the country mainly revolved around the Calamity Relief Funds (presently known as SDRF) maintained at the state level and the National Calamity Contingency Fund at the central level (earlier 'NCCF' presently known as NDRF). But both these funds targeted immediate relief measures and excluded measures for prevention and mitigation.

The Disaster Management Act provided for the establishment of certain financial mechanisms such as creation of funds for mitigation at the national and state level. The Act states that the State Government shall, immediately after notification of constituting the State Authority, establish for the purposes of this Act a fund to be called the "State Disaster Mitigation Fund".

Considering the necessity to constitute State Disaster Mitigation Fund by the State, the State of Tripura has made a budgetary provision such as "State Disaster Mitigation fund' which will be refurbished with annual budgetary allocations This fund shall be spent only on such mitigation activities that are not covered under any of the existing plan schemes. This also ensures that the state is not relief centric as a certain percentage of the total funds spent on response and relief is earmarked for mitigation.

The DM Act 2005, defines mitigation as "measures aimed to reduce the risks, impact & effects of a disaster or threatening disaster situation".

The State Disaster Mitigation Fund [SDMF] is constituted under Section 48 (1) (c) of the DM Act 2005. This fund is exclusively for the purpose of mitigation projects in respect of disasters covered under the State Disaster Response Fund [SDRF], National Disaster Response Fund [NDRF] guidelines and the State specific local disasters notified by the State Governments. The Mitigation Fund shall be used for those local level and community-based interventions, which reduce the risks and promote environment friendly settlements and livelihood practices. Large scale mitigation interventions such as construction of embankments, support for drought resilience etc. shall be pursued through the regular development schemes and not from the mitigation fund.

Mitigation measures can be structural and non-structural.

a. Structural Measures: Structural mitigation measures include any physical construction to reduce or avoid possible impacts of hazards, or the application of engineering techniques or technology to achieve hazard resistance and resilience in structures or systems these measures attempt to strengthen buildings to better endure future disasters like earthquakes and cyclones.

b. Non-Structural Measures. It does not involve any physical construction but use knowledge, practices, policies, laws /regulations, public awareness raising, training and education etc. e.g., Building codes and laws, location specific planning / strategies, forest management, awareness campaigns etc.

Guidelines on the Constitution and Administration of the SDMF have been issued by the MHA and will be operative from the financial year 2021-22 to 2025-26.

At the State level, the Disaster management Authorities will conduct the risk assessment, which presents an assessment of hazards, exposure and vulnerability and their likely impacts. Based on risk assessment, the Disaster Management Authorities will prepare long-term mitigation strategies for their jurisdictions.

7.6.1 Salient features of the State Disaster Mitigation Fund [SDMF]

- SDMF will be constituted with the nomenclature of "State Disaster Mitigation Fund" in the Public Account under the Reserve Fund bearing interest in the Major Head-8121- General and other Reserve Funds-130- State Disaster Mitigation Fund" in the accounts of the Government of Tripura.

- The closing balance as on 31-03-21 in the SDMF shall become the opening balance for 2021-22. Unless otherwise provided, closing balance of each financial year would be the opening balance for the next financial year till 2025-26.

- The Government of Tripura shall invest in SDMF as per the provisions of the guidelines. The State shall pay interest into the SDMF at the rate applicable to overdrafts under the Overdrafts Regulation Guidelines of the RBI for the amount not invested from SDMF. The interest will be credited on a half-yearly basis.

- The SDMF will be operated by the State Executive Committee [SEC] in consultation with the TDMA with an objective to release Grants-in-aid for mitigation projects.

- The 15th Finance Commission has recommended 20 % of the State Disaster Risk Management Fund [SDRMF] for SDMF. The central Government will contribute 90 % funds for the SDMF and the State's contribution will be 10 %. The budget allocation for Tripura 2021-26, Total allocation is 84 Crores in Rupees.

- The Government of Tripura can mobilize and pool funds in SDMF from various sources viz. reconstruction bonds, contingent credit / standby facilities with international financial institutions, counterpart funding from implementing partners, crowd funding platforms and Corporate Social Responsibility [CSR] Windows.

- The state government will allocate resources to districts for preparedness and mitigation on an annual basis following a methodology the state can develop.

7.6.2 Scope of the SDMF

SDMF will fund mitigation projects at the State level. It will support and fund the following types of projects.

1. All projects relating to mitigation measures for the notified disasters by the Government of India namely cyclone, earthquake, drought, fire, flood, hailstorm, landslide, pest attack etc. and the "disasters" notified by the Government of Tripura, which are to be complted within the geographical jurisdiction of the States.
2. The Government of Tripura can use upto 10 % fund of the annual allocation of the SDMF for the purpose of mitigation projects in respect of disasters that they "state specific disasters" as notified under SDRF guidelines.
3. Projects which are of state level significance, protecting assets, eco-sytems and settlements within the state.
4. Projects which promote practices to reduce disaster risks and its impacts.
5. Projects which build community resilience through information and knowledge.
6. Projects which focus on creating safe conditions of living for people from weaker socio-economic categories, people with disabilities and women.
7. Regional projects which are initiated from the National Disaster Mitigation Fund [NDMF]
8. Research and studies related to disaster mitigation through the small grants window.

9. In case of flood mitigation projects, Tripura can undertake the following non-structural measures :

- Adopting integrated Flood Management approach by considering river basin as a hydrological unit.
- Real time Hydro-meteorological Data Acquisition Network coupled with Decision Support System for integarted or standalone operation of reservoir/s.
- Delineation and demarcation of flood plain zones on certain notified stretch/es of river/s within the state and regulation of variuos activities permissible therein.

7.6.3 Limitation for utilization of SDMF

At least 10 % of the SDMF each year shall be earmarked for non-structural measures.

In a year, not more than 50 % of SDMF may be utilised for measures/projects to mitigate risks from a single hazard. However, this stipulation may be relaxed by MHA on the recommendations of Sub-Committee of National Executive Committee [SC-NEC].

In a year up to 5 % of the SDMF funds can be earmarked for small grants window to support small proposals related to innovation, technology, community leadership, research, studies and learning.

SDMF funds cannot be used for general environmental improvement or landscape beautification or for funding existing Government programme and schemes.

SDMF funds cannot generally be used for maintenance and upkeep of any structure or engineering measure aimed at mitigation. The fund can be used for developing and implementing new projects. The mitigation measures that have been implemented should be maintained though other sources of funding.

SDMF funds cannot be used towards the establishment expenditure such as salaries, office expenditures etc. except for payment of remuneration to technical staff included in the project costs.

7.6.4 Administrative Mechanism to be followed for processing of proposals under SDMF

The SDMA will constitute an Appraisal Committee to be headed by a Member of the SDMA with members from Line departments of the Government of Tripura and other state entities for appraisal of the proposals/ projects under SDMF.

The Department / Agencies of the State Government / DDMA, who wish to take up projects from SDMF will submit the project proposals to the Department of Relief, Rehabilitation and Disaster Management, which in turn will refer the proposal to the Committee headed by the member SDMA for appraisal.

The recommendations of the Appraisal Committee of SDMA shall be placed before the SEC for consideration / sanction.

7.6.5 Outcome Framework

Projects taken up from SDMF shall have verifiable and measurable outcomes.

7.6.6 Execution of Projects.

The SDMA shall suprevise and monitor the approved projects during implementation and will be resposnible for submitting completion certificates as well as all required reports, including maintaining updated database containing information about all projects implemented with the assistance of SDMF/NDMF.

The integrated strategy for preparedness and mitigation therefore deals with all aspects to reduce the impact of an impending disaster and for recovery, reconstruction, restoration/ development of means of livelihood in the post-disaster phase. It is well known that the community is invariable the first responder, therefore the strategy may focus on awareness generation, training and capacity building of community with the active involvement and support of the non-government organizations/ community based organizations.

7.6.7 Priority Areas

These priority areas for follow up actions that will be undertaken by various agencies/ departments of the Government of Tripura to operationalize this Plan are as follows:

1. The TDMA has to prepare and ensure implementation of annual action plan for preparation and capacity building of the concerned line departments and get it approved by the SEC.

2. The Plan should be prepared on the basis of inputs provided by the line departments, stakeholders, and districts.

3. Provision of insurance as safety nets for the vulnerable communities should be explored and ensured at the District, Sub-division, Block and Village/GP level.

4. Preparation and updating of District, Sub-division, Block and Village disaster management plans on annual basis.

5. Preparation and effective implementation of Standard Operation Procedures (SOPs) and Emergency Support Functions (ESFs) of all departments.

6. Preparation of handbooks and checklists for Prevention, Preparedness, Response, Rehabilitation and Mitigation activities.

7. Cross cutting issues like gender, roles and responsibilities, climate change, improved technologies, artificial intelligence are addressed.

8. Technology for industrial disaster risk protection, chemical hazard risk, communication, acquisition, and maintenance of equipment.

9. Training and re-training of community volunteers, task force members.

10. Key departments such as health, public works, water resource, transport, forest, education and power etc. should have their departmental disaster plans prepared and updated annually in the light of new emerging data and challenges.

11. Early warning system should be strengthened and synchronized at all levels.

12. Provision of funds by the concerned departments.

13. Provision of flexi funds.

14. Modernization of existing control rooms and strengthening of infrastructure in disaster prone areas keeping in mind the vulnerability to different hazards.

15. Prepare technical and quality control aspects of all civil constructions and non-civil installations based on review of past disasters.

16. Preparation and updating of GIS based Hazard, Vulnerability and Risk Assessment Atlas for State, District and Sub-divisions.

17. Preparation of State/ District/ Sub-division/ Block level GIS maps giving location of all items/information required for response and recovery measures (Resource Mapping)

18. Review existing developmental schemes/ projects and incorporate disaster management principle in all schemes.

19. Conducting awareness generation programs at sub-division levels every month.

20. Conducting mock drills half yearly by State, District, Sub-division, and Block administrations; monthly by School authorities and by SDMs and TSR where equipment is kept.

21. Ensuring sensitivity and incorporation of environment, gender, ethnicity, vulnerability of socio-economically disadvantaged groups (elders, Children, pregnant women and the differently-abled), food and income security, disaster proofing measure in all development initiatives, response and recovery plans.

22. Updating of existing Laws, Rules and Codes for better administration of relief and recovery measures including revision of Tripura Relief manual.

23. Enforcement of relevant Laws and Rules pertaining to disaster management: provisions of few acts like Tripura Building Rules, 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.

7.7 Calendar for Follow-up Actions

Calendar for Follow-Up Action						
S. N.	Issue	Action	Primary Responsibility	Secondary Responsibility	Result	Timeline
1.	Understanding of Disaster Risks (Hazard, Risk, Vulnerabilities and Capacities)					
1.1	HRVCA	Ensuring hazard wise recurrent risk mapping and analysis	TDMA	IMD/ NESAC/ TSAC	Hazard wise disaster risks clearly identified and mapped out	On-going
1.2	Knowledge base	Designing and Undertaking studies and surveys on multi-hazard disaster risks	TDMA/ Line Departments / Districts/ PRIs/ Autonomous Councils	All the line departments	An informed understanding of the disaster risks at all levels	On-going

1.3	High quality data for decision making	Having a robust data generation and analysis system	TDMA	IT Department	TDMA and all the line departments have access to good quality data in real time	2023-25
2.	**Disaster Risk Governance**					
2.1	Disaster audit	Re-defining functional goals of all the line departments and carrying out disaster audit of all the development programs and projects from a risk governance perspective	TDMA / SEC	All the line departments	No program or project is implemented without disaster audit	On-going
2.2	SDMP implementation	Organizing orientation workshops on SDMP for the line department	TDMA	CTI	All the line departments oriented on SDMP	2023-24
2.3	Plan up-dation and implementation	Periodic updating of disaster management plans at the state, department, district, sub-division, PRIs and other local authorities such as autonomous regions, and communities	TDMA/ Line Departments/ Districts/ PRIs/ Autonomous Councils	Revenue department	All DM Plans updated as stipulated	On-going
2.4	State level decision making	Convening of SEC meeting	TDMA/ Line Departments/ Districts/ PRIs/ Autonomous	Revenue department	Top level decision making in real time	On-going

			Councils			
2.5	State level decision making	Convening of TDMA meeting	TDMA/ Line Departments/ Districts/ PRIs/ Autonomous Councils	Revenue department	Top level decision making in real time	On-going
2.6	Daily Situation Report from State and District	Issuance of daily Situation Report from State and District EOCs	TDMA/ Line Departments/ Districts/ PRIs/ Autonomous Councils	Revenue department	Availability of disaster information in real time	On-going
2.7	Follow up at the district level	Review meeting of disaster management with District Authorities	TDMA/ Line Departments/ Districts/ PRIs/ Autonomous Councils	Revenue department	Distribution of district level roles and responsibilities in real time	On-going
2.8	Follow up at the level of line departments	Review meeting of disaster management with the line department	TDMA/ Line Departments/ Districts/ PRIs/ Autonomous Councils	Revenue department	Distribution of departmental roles and responsibilities in real time	On-going
2.9	Operational readiness	Disaster Management meeting / awareness / workshop in the Dept. Once a year	TDMA/ Line Departments/ Districts/ PRIs/ Autonomous Councils	Revenue department	Prepared line departments	On-going
2.10	Operational readiness	State level coordination meeting for south west monsoon and Kalbaishaki	TDMA/ Line Departments/ Districts/ PRIs/ Autonomous Councils	Revenue department	Preparedness at the state level	On-going
2.11	Operational readiness	State and district NGO coordination meeting	TDMA/ Line Departments/ Districts/ PRIs/ Autonomous Councils	Revenue department	Prepared NGOs	On-going
2.12	Training for capacity building	Training of community volunteers on first aid, search and	TDMA/ Line Departments/ Districts/ PRIs/ Autonomous	Revenue department	Trained volunteers at the community level	On-going

		rescue, DM planning and mock drill	Councils			
2.12.1	Training for capacity building	Refresher training to the community volunteers (once in a year)	TDMA/ Line Departments/ Districts/ PRIs/ Autonomous Councils	Revenue department	Trained volunteers at the community level	On-going
2.13	Public and community awareness	Designing and conducting awareness programme	TDMA/ Line Departments/ Districts/ PRIs/ Autonomous Councils	Revenue department	Aware and responsive communities	On-going
3.	**DRR for Resilience**					
3.1	Mainstreaming DRR in development.	Having a robust state level DRR strategy and roadmap	TDMA	Revenue department	DRR Roadmap	2024-25
3.2	Awareness for DRR	Development of IEC and training tools and aids	TDMA/ Line Departments / Districts/ PRIs/ Autonomous Councils	Revenue department	Developed IEC and training tools and aids	On-going
4.	**Enhance Disaster Preparedness for Effective Response**					
4.1	Operational readiness	Organizing mock drills at State, District, Sub-division, Dept. and block levels	TDMA/ Line Departments/ Districts/ PRIs/ Autonomous Councils	Revenue department	Prepared communities ready to combat the disaster induced emergencies	On-going
4.2	School safety	Conducting mock drills in schools	TDMA/ Line Departments/ Districts/ PRIs/ Autonomous Councils	Revenue department	Non-structural safety in schools	On-going
4.3	Verification	Verification of equipment functioning	TDMA/ Line Departments/ Districts/ PRIs/ Autonomous Councils	Revenue department	Equipment in functioning order	On-going
4.4	SOPs and ESF	Up-dation of SOP and ESF	TDMA/ Line Departments/	Revenue department	Updated SOPs and	On-going

			Districts/ PRIs/ Autonomous Councils		ESF.	
4.5	Digital outreach	Up-dation of State and District websites	TDMA/ Line Departments/ Districts/ PRIs/ Autonomous Councils	Revenue department	Updated websites	On-going
4.6	Digital resources base	Up-dation of IDRN portal of the districts	TDMA/ Line Departments/ Districts/ PRIs/ Autonomous Councils	Revenue department	Updated IDRN portal	On-going
4.7	Safe Shelters	Identification and management of safe shelters.	TDMA/ Line Departments/ Districts/ PRIs/ Autonomous Councils	Revenue department	Availability of well managed safe shelters	On-going
4.8	Positioning of teams	Pre-positioning of DMTs, equipment and essential commodities in flood prone areas	TDMA/ Line Departments/ Districts/ PRIs/ Autonomous Councils	Revenue department	DMTs well positioned to respond to disasters	On-going
5.	Promote "Build Back Better" in Recovery, Rehabilitation and Reconstruction					
5.1	Recovery	Strengthening community capacity for post-disaster recovery	TDMA/ Line Departments/ Districts/ PRIs/ Autonomous Councils	Revenue department	Empowered communities	On-going
5.2	Rehabilitati on	Carrying out the safety audit of all the life line buildings (hospitals, schools, public utilities etc) and critical infrastructure and ensuring	TDMA/ PWD	Revenue department	Disaster proof lifeline buildings and critical infrastructure	On-going

		their retrofitting				
5.3	Reconstruction	Owner Driver Reconstruction (ODR) of damaged houses and buildings	TDMA/ Line Departments/ Districts/ PRIs/ Autonomous Councils	Revenue department	Resilient reconstruction	Post disaster

CHAPTER 8: SOCIAL INCLUSION IN DISASTER RISK REDUCTION

8.1 Introduction

In the prevailing disaster management practices in general, there is a tendency to view the affected people of a disaster as a homogenous group particularly in the relief and recovery processes. This leads to an inherent inability to address the existing disparities and inequalities across gender, caste or class in the course of disaster management. While hazards do not discriminate, people do. Disaster management could become unfair by being blind to prevailing inequalities. Existing socio-economic conditions mean that disasters can lead to dissimilar outcomes even for what may seem demographically similar communities. Inevitably, the most vulnerable groups suffer more than others because of their place within the social system.

Addressing the enormous challenge of social marginalization, social exclusion and other inequalities is beyond the scope of DRR. However, DRR must take cognizance of social realities to ensure that every possible effort is made to make DRR socially inclusive.

Chapter 11, Section 61 of the Disaster Management Act 2005, prohibits all forms of discrimination be it based on sex, caste, community, descent or religion in any activities related to disaster risk reduction, disaster relief or humanitarian assistance. The preamble of the National Policy of Disaster Management 2009 notes that the economically weaker and socially marginalised sections, women, scheduled castes and scheduled tribes tend to suffer more during disasters. A community's vulnerability to disasters depends on the social, cultural, economic and political environment. A cycle of deprivation not only increases their vulnerability but also slowly alienates them from the decision-making process denying accessibility to their basic entitlements.

The World Summit for Social Development, 1995 defined an inclusive society as a society for all, in which every individual, each with rights and responsibilities has an active role. An inclusive society is based on the fundamental values of equity, equality, social justice, human dignity, human rights and freedom as well as on the principles of embracing diversity. According to the UNDESA, 2008, social inclusion reflects on the one hand, an individual's experience of and possibilities for self-actualisation and on the other hand, societal capacities to eliminate causes of social exclusion and ensure equal opportunities for all.

The term social exclusion signifies all experiences of discrimination, deprivation and denial be it based on any attribute, be it caste, gender, differences in abilities, ethnicity, creed, religion, sexual orientation or any other attribute. Social exclusion is understood as the condition (barriers and processes) that impede social inclusion.

Exclusion is often most acute when people suffer multiple layers of discrimination and they are embedded in unequal relations of power. The socially excluded often remain "invisible" in disaster reduction or emergency response programs, even in cases where they constitute a significant proportion of the population. The socially excluded groups have context specific and differentiated needs before, during and after a disaster which are often not considered in disaster management plans. Inclusive Disaster Risk Management is about equality of rights and opportunities, dignity of the individual, acknowledging diversity and contributing to resilience for everyone, not leaving aside any member of the community.

In the context of Tripura, the added emphasis on social inclusion in the SDMP, Tripura for DRR will be the following:

1. Gender-based Vulnerabilities.
2. Scheduled Castes and Scheduled Tribes (SC&ST)
3. Elderly
4. Children
5. Persons with Disabilities (PwD) and
6. People in confined areas including prisons, hospitals etc.

8.2 Gender Perspective and DRR

8.2.1 Gender Based Vulnerabilities

Gender concerns arise from a complex mix of dynamic factors that include differentiated roles and responsibilities, skills and capabilities, vulnerabilities, power relations, institutional structures and long-standing traditions and attitudes. While the specificities of gender relations may vary depending on the socio- cultural values of a society the fundamental gender-based divisions of roles, responsibilities and identities are prevalent across all societies, resulting in women being prevented from enjoying equal rights and equal partner status in DRR as policy makers, contributors to and beneficiaries of development and DRR processes.

Gender refers to the social attributes and opportunities associated with being male and female and the relationships between men, women, boys and girls as well as the relations between women and men. These attributes, opportunities and relationships are socially constructed, learned and changeable over time.

Gender inequality is a fundamental challenge for development in general and disaster risk management in particular. Gender roles directly influence who has access to and control over which resources and opportunities, and who makes decisions. This may render women more vulnerable than men to the impacts of disasters. Understanding how gender relations including power based on sex shape the lives of women and men, vulnerabilities, capacities and what threats they are exposed to, is therefore critical for inclusive DRM.

A gender perspective to DRR helps focussing attention on the distinct gender specific capacities and vulnerabilities to prevent, prepare, confront and recover from disasters. Post disaster reconstruction programs can render women more vulnerable when compared to the pre-disaster situation, defeating the objective of building back better. Apart from increase in violence against women including sexual abuse, trafficking and early marriages women headed households, single women and widows find it very difficult to access information and necessary financial help for recovery and reconstruction.

During post disaster planning, relief and recovery needs of women and girls tend to be overlooked as disaster management is mostly a male dominated activity. Women and girls are often ignored during compensation proceedings and their losses usually remain undervalued and uncompensated. It is therefore necessary to understand how the disaster risks tend to be amplified by the pre-existing vulnerabilities and socio-economic stress. Due to social conditioning, women often tend to demand less in the reconstruction process and inhibit their participation in the decision making and rebuilding processes. Yet, disasters do provide the opportunities for improving women's status by altering the gender relations and by facilitating

social and behavioural changes. Post disaster recovery presents opportunities to empower women and girls giving them the opportunity to assume leadership roles and better influence the direction of development actions.

Government of Tripura under the GoI-UNDP Disaster Risk Management programme, sought to build the capacities of volunteers to act as trainers to impart disaster preparedness skills in the community. The volunteers drawn from the community with the help of civil society organizations underwent a Training of Trainers course at the block level. It was felt that women master trainers would provide an enabling environment for other women to learn. In addition, these trainers would act as facilitators in the process of developing a contingency plan at the village level and assist in the formation of Disaster Management Teams (DMTs).

In the situation of a disaster, women need to be centrally involved in planning and implementation process with the key principle of active contributions in building resilience. The Sendai framework emphasizes the need not only to address the needs of women in post-disaster reconstruction but also envisages a lead role for women in post-disaster reconstruction.

To promote gender equity, reconstructed houses preferably need to be registered in the name of the woman of the house or jointly registered. Widows and single women who do not have land titles should not be left out from receiving shelters. Owner Driven Reconstruction can be followed where women can take leadership role in monitoring implementation of safe housing technology. Programs shall be designed and aimed at empowering women through access to social security measures and income generation activities. Women Self Help Groups can be formed for livelihood opportunities. It needs to go beyond traditional income generating activities and aim at enhancing skills as masons, carpenters, trading of local products, developing local shops for housing, sanitation and other materials, etc.

8.2.2 Sexual and Gender Minorities

To be gender sensitive, it is necessary that the concerns of persons of various sexual orientations including transgender persons are addressed. Transgender people are in particular at a disadvantage in accessing resources, services and opportunities. In addition to social and economic vulnerabilities, the stigma and discrimination that they are subjected to, deprives them of the benefits of disaster response and recovery programs, hampering their ability to overcome the negative aspects of a disaster. Conventional disaster risk management has tended to overlook the needs and place of sexual minorities and the institutional and legal frameworks do not address the specificities of this minority group. Sexual and gender minority groups are often severely affected by disasters because they face barriers or lack of access to the means of protection available to others. The highly marginalised conditions of sexual and gender minorities in everyday life places them at higher risk during disasters. DRR policies and practices should therefore specifically account for the concerns of these marginalised groups.

8.3 Scheduled Castes and Scheduled Tribes

Certain caste and tribes – the scheduled castes and tribes are recognised in the Indian Constitution as historically disadvantaged and listed in two Schedules [1st Schedule lists 1,108 castes across India and the 2nd Schedule lists 744 tribes of the Constitution for affirmative policies and actions]. In acknowledgement of the marginalities of these communities, the Government of India has constituted several Committees and Commissions to examine the

problems faced and Acts such as the 1989 Act, Prevention of Atrocities and the related rules notified in 1995 have been amended to make them more effective.

The fact that most of the scheduled caste and scheduled tribe communities, besides being socially marginalized, are also economically poor and disadvantaged, warrants the need for special protection for them. The total population of Tripura according to 2011 Census is 36.73 lakhs. Of them, 33 percent of them are Scheduled Tribes (STs) and 18 percent belong to are Scheduled Castes population (SCs) population. With over 50 % of the total population belonging to this category, it is imperative that DRR policies, strategies and activities are focussed to prevent discrimination.

Most of the SC and ST communities tend to be poor living on marginal lands that are also highly hazard prone, such as floodplains, unsafe coastal tracts and unstable hillsides. The dwellings of scheduled caste and tribal communities are usually on the margins - be it in urban or rural areas. These settlements tend to be in the less served areas with poor availability of accurate information, lack of access to basic amenities and inadequate disaster resilient infrastructure. The housing is usually unsafe and of poor quality. In the urban areas they are usually on unsecure land tenure – often unauthorized slums.

Combined with hazardous living conditions, chronic poverty and lack of amenities they are most likely to suffer the outbreak of diseases in times of disaster. It must therefore be ensured that in post disaster situations and in disaster mitigation planning and implementation of activities full attention should be provided to ensure social inclusion practices in early warning, evacuation, relief support, rehabilitation and any other process so that the inherent systemic prejudices do not increase their vulnerability.

The Constitution of India has created Schedule V and VI to protect the identity, traditions and customs of the tribal communities without neglecting their development. This has been further articulated in the Panchayats Extension in Schedule Areas (PESA), 1996. Tribal communities tend to remain marginalized due their geographical location as well as due to social exclusion. Tribal communities are simple societies endowed with socio-cultural cohesion, traditional knowledge, social relations around the forest and natural ecosystem and community governance based on their tradition. Tribal communities have very close interdependent relation with their natural resources and environment. Some of the tribal groups have never moved out of the natural habitat in the forest areas.

Special efforts should be made to ensure that there are no instances of discriminatory practices in evacuation, distribution of relief material, damage assessment, allocation of housing plots etc.

In Tripura the TTADC has the responsibility to ensure that the basic thrust of mitigating the impact of natural disaster is making the tribal people self-reliant by restoring the natural resource base and providing timely relief and rehabilitation packages. Each line department has to prepare its departmental disaster management policy and plan. Intervention packages shall be developed incorporating the views and suggestions of the tribal women, men and children.

8.4 Children
The United Nations Convention on the Rights of the Child adopted in 1989, became the first legally binding international convention to affirm human rights for all children. It stipulates that children have the right to adequate food, water, shelter and education. In disaster situations

they ought to be free from abuse, neglect, sexual exploitation or trafficking, and should be able to grow upon a safe and supportive environment.

Children are vulnerable due to their age and immature psycho-social understanding of the surrounding. The chaos and erosion of support for care and protection during a disaster can affect their physical and psychological health causing children to be traumatized. Given their vulnerability, children require special support and attention during crisis situations to provide basic needs and ensure that their rights are not violated. The UN Convention on the Rights of the Child and the Juvenile Justice (care and protection of children) Act 2000 (Juvenile Justice Act) states that children have the right to protection from abuse, neglect and exploitation.

In situations of emergency children face isolation, anxiety, and trauma and some get separated from their families, lose their parent(s), face gender violence and trafficking. Some face the risk of getting recruited as child labourers. During disaster, children's bodily integrity is at risk when wide spread and/or systematic violence occur. The children often face apathy leading to severe interruption of education and recreation, poor access to food and nutrition. In the post disaster situations, the *Anganwadi* and schools must open as soon as possible. In case of damage to the structures, temporary/ emergency provision must be created allowing children to access the services. The state government may increase the food supplies so that the nutrition support can be doubled in the *Anganwadis* and primary schools for a few days/weeks.

The Juvenile Justice Act, 2000 provisions for care, protection and rehabilitation of children ensuring setting up of Child Protection Units. Such units must be set up at village and block level so that children have access to nutrition, child friendly spaces for recreation, protection against violence and trafficking, restoration of children to their biological families, promote community -based rehabilitation of the orphan and children of single parent not in a position to provide care and protection making use of State specific foster parent support services/ schemes. The Tripura State Child Protection Society, under the Protection of Child Rights Act, 2005 may develop support mechanisms and periodically oversee the status of care and protection of children in all major disasters and recommend timely action.

Integrated Child Protection Scheme (ICPS) may be used as a very important tool in protecting children. TDMA and the Government of Tripura through Social Welfare and Social Education Department, Home Department and other concerned departments may establish similar units at village and block level for protection of children in the State and ensure identification of relief camps with provisions for Child Friendly Spaces (CFS) adhering to the comprehensive and multi-hazard safety standards. Child Friendly Spaces (CFS) are the designated places within the relief camps, where children are provided a safe environment and integrated programs including play, re-creation, education, health and psycho-social support may be delivered by the related line department/agencies.

8.5 Elderly People

The elderly in the state are particularly vulnerable to disasters. The greater vulnerability of the elderly compared to others during disasters needs to get more attention in all phases of disaster risk management.

The UN Charter 14 (UNISDR 2014) for older people in DRR focuses on three key principles of an inclusive approach to DRR. The three principles are:

1. In need: older people have specific requirements which must be understood and responded to within all DRR activities.

2. Invisible: Older people's vulnerabilities and capacities are often overlooked; the collection of data on people's age and sex is essential to ensure older people and other people at risk are visible and supported in DRR.

3. Invaluable: Older people have years of knowledge, skills and wisdom which are invaluable assets in DRR and must be acknowledged, valued and engaged by supporting older people to participate in DRR.

It is therefore necessary that TDMA and the Department of Social Welfare and Social Education take pro-active action to ensure well-being of elderly. It is preferable to have community-based senior-citizen support mechanisms so that the senior citizens are not uprooted from their immediate surroundings. This should include efforts to educate local communities about how they can help senior citizens and raise their awareness about supporting the elderly. The elderly people may be included in the decision-making process while drafting the agenda for DRR. The Village Disaster Management Plan may include a list of senior citizens living without any family support and who may need special care and attention in a disaster situation including medical care.

8.6 Persons with Disabilities (PwD)

Disability is a contextual and evolving concept. The UN Convention on the Rights of Persons with Disabilities (UNCRPD) states in its first article: "Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others". The Convention, in its articles 11 and 32, requires that persons with disabilities benefit from and participate in disaster relief, emergency response and disaster risk reduction strategies. The Adoption of the Dhaka Declaration on Disability and Disaster Risk Management, in December 2015, acknowledges: "the importance of linking disability inclusive Disaster Risk Management (DRM) with the Sustainable Development Goals (SDGs) on the understanding that inclusion builds the resilience of the whole of society, safeguards development gains and minimizes disaster losses".

According to Census, 2011, there are **64,346** Persons with Disabilities (PwD) in Tripura. DRR efforts must specifically address the vulnerabilities of PwD among the affected population, rather than clubbing them with others. Special attention must be paid to ensure that no PwD is abandoned after a disaster.

Local community-based efforts and support system including promoting a buddy (Aapda Mitra) system whereby each PwD have one or more persons in the neighbourhood who are responsible to act as a buddy (Aapda Mitra) to assist. The neighbours must be made aware of how they can help the PwD and provided training. The PwD must also make pro-active efforts to identify people in the neighbourhood whom they can rely upon for assistance in emergencies. District DM Plan (DDMP) and Gram Panchayat DM Plan (GPDMP) must include lists of PwD in need of special care. In the post disaster situation, the agencies responsible for disaster management may set up temporary facilities that are barrier-free and friendly to PwD.

8.7 Social Inclusion in Shelter Management and Dissemination of Early Warning

- Shelter should be gender (male, women, trans) specific or/and friendly so that they could have easy and safe access to the shelter. This will help them interact with each other without fear and voice their concerns and needs frankly without hesitation and without any discrimination. They should also be community specific and different relief camps could be organized and managed community wise so as to keep the internal harmony and maintain unity.

- The community shelter should be divided into different areas depending on the dedicated use of each area with its own set of rules to be followed in order to ensure their proper use as intended. The shelter can be divided into the following broad areas:
  - **Service area** – that includes reception, health facility, distribution of water, food and non-food items etc.
  - **Living and Sleeping area** - for stay, rest, and relaxation; other activities not to be allowed in this area.
  - **Open space area -** for cooking, washing utensils, children, meetings, yoga, meditation, religion specific prayers, Satsang etc.

- Shelters to be provided with safe and clean drinking water, should have rehabilitation of water and sanitation facilities.

- Proper toilets to be provided with safe distance about 50m from the community and with the supervisor to check and clean the toilets to avoid any diseases to be spread among the community in shelter.

- Shelters to be provided with easy and safe accessibility for the disabled persons as well. It should have ramp, stairs and be accessible to sun light.

- Shelters to have a variety of food to cater to the specific needs of the old, children, male, female and vulnerable groups. Baby food and milk should also be provided in the shelter.

- Doctors' visit, visit by spiritual leaders, teachers etc to be organized as per the felt and identified needs of the people in shelters in order to provide health care and socio-psychological support as required.

- After the closure of community shelters, an evaluation has to be carried out to track the inflow and outflow of people in the shelter and to check if the shelter has been cleaned up post its use. It has to be ensured that the environment has been restored and rehabilitated and to ensure that the provided furniture been cleaned and taken care of.

- We need to check that while converting school into a shelter only a part of the school is used as a shelter and other parts to remain open for the school students.

- Baby food has to be made available as per the prescribed minimum standards of relief

- There should be proper safety of homes when a community or the area is evacuated, in some areas people won't leave their homes because of the security threat. So mobilization of police personnel can help them to gain the trust. Mizo tribal people especially don't leave home so a group of police personnel to be provided in their location so that they could be taken to safe places and shelters in time.

- Along with the protection of livelihoods, protection and safety of animals should also be taken care of, as some people are unwilling to leave their homes leaving their animals behind, as their livelihoods could be dependent on the animals. While evacuating and taking people to safe places, their pets have to be taken care of. They should also be kept in safe shelters with the availability of basic necessities such as food, water and veterinary doctor/s.

- Shelter area and it's surroundings have to be checked and the monitoring to be done to ensure that there is no sex exploitation, drug use, and black marketing in the premises.

- Relief distribution has to be judicious ensuring that it reaches every person according to the prescribed minimum standards of relief and without discrimination.

- Social inclusion in early warning has to be ensured while disseminating the warning messages at the grass root level to ensure that it reaches each person in the area. Warnings to be provided in local language for local community, in Hindi and English for the travellers coming in Tripura. Warning messages to be sent at the mobile of people, it should be sent in multiple languages and could be disseminated through mic, pamphlets (including braille for blind).

- Community radio has to be used for EW: Information and announcements regarding vulnerable areas which require immediate evacuation can be broadcasted and the community members can be guided to safety shelters, their locations and where they can access aid and rescue facilities. Locals can call in and provide first hand information regarding the on-going activities in the affected areas.

8.7 Responsibility Framework

Social inclusion is a cross-cutting issue relevant to all types of hazards and disasters both at the state and district levels. Therefore, the responsibilities for social inclusion rest with every agency. However, for clarity the lead agencies relevant to each Priority for Action have been mentioned in the Responsibility Framework Table 8A given below.

Table 8A: Responsibility Framework

S.N.	State Agencies, District Administration and their Responsibilities				
	Area for Action	State Departments / Agencies	Responsibility - State	Districts Departments/ Agencies	Responsibility- District
1	Gender equity/ women	Directorate of Social Welfare and Social Education SDMA; TTADC All Agencies Associated with DRM directly or indirectly	• Promote gender inclusive DRM ensuring active participation of women. • No discriminatory practices that marginalize women, girls. • Review and make changes in existing regulations, norms and directives to make them gender sensitive. • Recognize additional vulnerabilities of women with the assistance of the State Women's Commission. • Use of Information and Data Management to support gender sensitive approach. • Convergence of concerned departments to ensure gender sensitive DRR. • Shelters/ Relief Camps –provision for specific needs for women & transgender people • Inclusion of gender concerns of DRR in curriculum development. • Guidance on preventing, and investigating discriminatory practices, violence and abuse. • Inter-agency support to prevent	Department of Social Welfare and Social Education DDMA; TTADC All Agencies associated with DRM directly or indirectly	• Extension and implementation of state level responsibilities at district level • HRVA to take care of women. • Training, Awareness, Mock drills, Vocational Training/Skill development • Promoting insurance • Gender audit of DRM measures • Ensure ownership preferably in the name of the woman of the household or in the joint name of husband & wife of houses reconstructed and assets provided.

| 2 | Scheduled Castes (SC) & Tribes (ST) | Directorate of Social Welfare and Social Education

TDMA;

TTADC;

Department for Welfare of SCs, OBCs and Minorities;

Directorate of Tribal Welfare;

Department of Planning

All Agencies associated with | • trafficking
• Gender-sensitive psycho-social support, post-disaster rehabilitation (economic, social)

• Guidance and support
• Promote studies and research on DRM challenges for SC communities
• Promote studies and research on disaster response and mitigation strategies appropriate and acceptable to the tribal communities,
• Review and amendment of existing regulations, norms and directives to make them consistent with needs of DRM
• Promote insurance/ risk transfer, Guidelines IEC in pictorial, audio and local language, mass media campaigns, ASHA worker in communities
• Capacity development guidelines,
• Inclusion of the concerns of SC/ST about DRR in curriculum development and amendment of existing regulations
• Review norms and directives to address requirements of implementing DRR in SC/ST settlements | Department of Social Welfare and Social Education,

DDMA,

TTADC

All Agencies associated with DRM directly or indirectly at district level | • Extension and implementation of state level responsibilities at district level, HRVA Assessment to specifically include SC/ST vulnerabilities
• Protecting the tribal identity, traditions and customs in post-disaster situations in different phases of DRM
• Ensure steps taken for DRM do not cause irreversible damage to the community's culture, tradition, habitat and ecosystem
• Use of Information and Data Management to support relevant issues by DDMA and District level departments
• Convergence between concerned departments in schemes meant for SC/ST for DRR
• Shelters/ Temp Shelters/ Relief Camps–non-discriminatory, Ensuring enabling environment for participation,
• Training, Awareness, Mock drills, Vocational Training/ Skill Development, and Empowerment Initiatives, especially leadership in DRR
• Curriculum development with focus |

		DRM directly or indirectly.			on issues of SC/ST communities. • Promoting insurance products/ campaigns, • Include non-discriminatory implementation of DRM in Social Audit.
3	Children, particularly Disaster/ COVID 19 Orphans	Directorate of Social Welfare and Social Education; SDMA; TTADC All Agencies associated with DRM directly or indirectly	• Guidance and support for various DRM initiatives for children • Review regulatory and institutional needs for the protection and safety of children • Supervision and monitoring of DRM initiatives for children: pre-school, school-going and children not in school. • Support for implementing measures for proper protection and care of disaster affected children • Mobilizing support to disaster-affected children from national and international agencies working for children's welfare. • Support from International agencies may be taken through the Central Government	Department of Social Welfare and Social Education; DDMA TTADC All Agencies associated with DRM.	• Extension and implementation of state level responsibilities at district level • Make special arrangements for disaster preparedness and safety of various children's institutions, • Regulatory measures for ensuring school safety and disaster preparedness in schools, Regular mock drills and other preparedness measures in all schools and children's institutions. • Pay special attention to children's institutions after early warning and post-disaster. • Ensure that in post disaster situations children do not face isolation, anxiety, trauma, due to being separated from their families or parent(s). Take adequate measures to prevent and stop child abuse and maintain strict vigil against child trafficking. • Take measures to prevent and stop child labor in post disaster situation. • Sensitize all agencies and key personnel.

| 4 | Elderly | Directorate of Social Welfare and Social Education; SDMA; TTADC; Health & Family Welfare Department; Department for Welfare of SCs, OBCs and Minorities; Directorate of Tribal Welfare; | • Guidance and support to address DRM needs of the elderly
• Promoting awareness of the challenges faced by the elderly in disasters,
• Promoting agencies and organizations working for the welfare of the elderly to develop expertise for supporting DRM efforts for the elderly.
• Mobilizing support to the elderly in disaster-affected areas from national and international agencies working for the well-being of the elderly. | Department of Social Welfare and Social Education; DDMA; TTADC Department for Welfare of SCs, OBCs and Minorities; Directorate of Tribal Welfare; Health & Family Welfare Department | • Extension and implementation of state level responsibilities at district level
• Sensitizing local communities about additional vulnerabilities of the elderly persons in the communities and neighborhood groups or responsible individuals to assist the elderly.
• Make special arrangements for disaster preparedness and safety of various institutions for the elderly such as old age homes, retirement homes and shelter homes for the elderly.
• Linking organizations working for the welfare of elderly with community initiatives for DRM.
• In case of imminent risk or after early warnings, take measures to ensure that the elderly people are informed and prepared.
• Involve elderly people in disaster preparedness and planning to the extent they can contribute.
• Assess medical and health support needs of the elderly in each area and maintain stocks of crucial items.
• Special attention to the protection of property and assets of the elderly after evacuation or post disaster situations. |
| | Persons with Disabilities | Directorate of Social Welfare and | • Guidance and support to address DRM needs of PWDs as per global best practices | Department of Social Welfare | • Extension and implementation of state level responsibilities at district level |

| (PWD) | Social Education;

SDMA;
TTADC

Health And Family Welfare Dept. | • Promoting awareness of the DRM challenges for PWDs

• Promoting agencies and organizations working for the welfare of PWDs to develop expertise in DRM

• Mobilizing support to the PWDs during disasters | and Social Education;

DDMA;

TTADC

Health And Family Welfare Department | • Sensitizing local communities about the PWD living in the community and their special needs, particularly during disasters.
• Promote neighborhood groups to assist PWD or ensure a Personal Support Network consisting of at least three persons who are trusted for each PWD.
• Make special arrangements for disaster preparedness and safety of various institutions for the PWDs such as school for the blind, hostels for PWD and any facilities dedicated to PWD
• Linking organizations working for the welfare of PWDs with community initiatives for DRM
• Preparing lists of all PWDs, periodically reviewing their situation and check the status of social network (neighbours, relatives, and friends) and other arrangements for their support. In anticipation of a hazard or after early warnings, take measures to ensure that all PWDs are properly informed and prepared.
• Involve PWDs in disaster preparedness and planning as equal participants.
• Special attention to the protection of property and assets of the PWDs after |

					evacuation or post disaster situations.
6	Transgender people	Directorate of Social Welfare and Social Education; SDMA; All Agencies Associated with DRM directly or indirectly	• Promote gender inclusive DRM ensuring active participation of transgender people. • No discriminatory practices that marginalize transgender. • Review and make changes in existing regulations, norms and directives to make them gender sensitive • Recognize additional vulnerabilities of transgender people with the assistance of the State Social Welfare and Social Education Department. • Use of Information and Data Management to support gender sensitive approach. • Convergence of concerned departments to ensure gender sensitive DRR. • Shelters / Relief Camps –provision for specific needs for transgender people. • Inclusion of gender concerns of DRR in curriculum development. • Guidance on preventing, and investigating discriminatory practices, violence and abuse. • Inter-agency support to prevent trafficking. • Gender-sensitive psycho-social support, post-disaster rehabilitation (economic, social)	Department of Social Welfare and Social Education; DDMA; All Agencies associated with DRM directly or indirectly	• Extension and implementation of state level responsibilities at district level • HRVA to take care of transgender people. • Training, Awareness, Mock Drills, Vocational Training/Skill Development • Promoting insurance • Gender audit of DRM measures • Ensure joint ownership in the houses reconstructed and assets provided.

CHAPTER 9: MAINSTREAMING DRR AND CCA IN DEVELOPMENT

9.1 Introduction

In recent years, there has been a growing recognition of the fact that sustainable development, disaster risk reduction (DRR), and climate change adaptation (CCA) are intimately linked. Sustainable Development Goals (SDGs), Sendai Framework for DRR and Paris Climate Agreement together embody this policy recognition at the global level.

The Prime Minister, Shri Narendra Modi, enunciated a Ten-Point Agenda in his inaugural speech at the Asian Ministerial Conference on Disaster Risk Reduction 2016, held in New Delhi during November 2016 (AMCDRR), which has also been incorporated in the NDMP. The ten key elements consist of the following:

1. All development sectors must imbibe the principles of disaster risk management
2. Risk coverage must include all, starting from poor households to SMEs to multi-national corporations to nation states
3. Women's leadership and greater involvement should be central to disaster risk management
4. Invest in risk mapping globally to improve global understanding of Nature and disaster risks
5. Leverage technology to enhance the efficiency of disaster risk management efforts
6. Develop a network of universities to work on disaster-related issues
7. Utilise the opportunities provided by social media and mobile technologies for disaster risk reduction
8. Build on local capacity and initiative to enhance disaster risk reduction
9. Make use of every opportunity to learn from disasters and, to achieve that, there must be studies on the lessons after every disaster

PM's Ten Point Agenda embodies the key concerns, principles and goals of Sendai Framework for Disaster Risk Reduction (SFDRR), Sustainable Development Goals (SDGs) and Paris Climate Agreement and offers tangible pathways to move towards these goals.

A greater cohesion in international response to Mainstreaming DRR and CCA in development is an instrument for disaster and climate proofing of development initiatives and outcomes from a long-term perspective. A disaster can destroy decades or more of accumulated developmental gains in a matter of few hours and days. The impact of disasters can be minimised or reduced significantly if DRR elements are built into the design and implementation of development programmes from the very outset. Investment in DRR is required for protecting assets, properties, development opportunities and outcomes against disasters. The process of development and the related development choices could enhance or reduce disaster risks.

As per the provisions of the DM Act, all ministries, states, UTs, departments and agencies must have their own DM Plan. Unlike other components of a DMP, mainstreaming DRR must be incorporated into the overall plans, policies and programs rather than as a subcomponent of the DMP. DRR must become an integral part of every development plan and the DMP must provide indications how that will be accomplished in the DMP.

Mainstreaming, by its very concept, is not a sub-component of a disaster-specific plan but an approach that must be woven into all developmental plans to reduce risks from disasters. Development without adequate incorporation of DRR could worsen existing risks and has the

likelihood of introducing new risks, increasing the negative impact of potential disasters. Extensive and sound integration of DRR into development can enhance disaster resilience, reduce losses and hasten the progress towards development goals. Thus, it is desirable that the development initiatives and DRR are dealt with concurrently in a seamless manner into all the relevant policies, planning and implementation.

The climate change impacts act as risk multipliers worsening uncertainties associated with almost every hydro-meteorological hazard. Therefore, all development initiatives must factor the likelihood of greater risks and increase in climate change induced vulnerabilities. This requires incorporation of risk management and climate adaptation as an intrinsic feature of all developmental efforts, especially in the areas where hazards are known to be high. Such an approach, which internalises DRR within development in a closely integrated manner is called mainstreaming DRR. It means radically expanding and enhancing DRR so that it becomes a normal practice, fully institutionalised within each department's / agency's regular planning and programmes in addition to the preparedness for disaster response.

The Disaster Management Act, 2005 uniformly mandates mainstreaming of disaster risk management into development process at all levels. Under Section 38 (2) (e) of the Act, the State Government is to ensure that the integration of measures for prevention of disaster or mitigation have been incorporated by the departments of the Government of the State in their development plans and projects. The State Government is further to ensure integration of measures to reduce or mitigate the vulnerability of different parts of the State to different disasters in the state development plan {38 (2) (f}. The Act also prescribes for preparation of District Plan and for incorporation of measures suggesting as to how mitigation shall be integrated into development plans and projects. The Act states that the DMPs shall prescribe "the manner in which the mitigation measures shall be integrated with the development plans and projects". The DMPs of departments at State and district level shall also have provisions for prevention of disaster and mitigation of its effects or both in the development plans and programmes as provided for in the State DMP and as is assigned to the department or agency concerned.

Besides, the National Policy on Disaster Management also stresses the need for disaster management to be built into Development Plans. It states "NDMA will ensure mainstreaming of DRR in the developmental agenda of all new and existing development programs and projects which shall incorporate disaster resilient specifications in design and construction". Further "The Planning Commission (now Niti Ayog) will give due weightage to these factors while allocating resources".

9.2 Mainstreaming—Sub Thematic Areas for DRR

The strategic objective of mainstreaming is to ensure that DRR within the ongoing development initiatives lead to integration of DRR into poverty reduction efforts and sustainable socio-economic development by covering all aspects – institutional, legislative, judicial and policy related.

The key sub-thematic areas for mainstreaming DRR and creating the enabling environment for it are:

- Improving awareness and understanding of disaster risk.
- Enhanced legal support and better disaster governance.
- Effective disaster risk transfer and risk management.
- Ensuring social inclusiveness in disaster risk management.
- Enabling coherence and mutual reinforcement of initiatives under the major global frameworks for enhancing disaster resilience.
- Institutional arrangements and capacity development (institutional, human, community, technology, etc.) for DRR
- Intra-government horizontal and vertical integration.
- Budget allocations for integrating DRR concerns into development programs
- Changes in project appraisal, scrutiny of development plans, better land-use regulations, insistence on multiple hazard resilient infrastructure.
- Setting targets, timeframes, indicators and monitoring mechanisms

These broad themes need to be incorporated into the policies, plans and programs of government agencies at all levels as an integral part of their general plans, while their DM Plans will provide an outline or broad indication of how it will be done. Ideas and concepts need to be operationalised by all departments/agencies of the Government of Tripura.

9.3 Improving the Awareness and Understanding of Risk

Increasing the awareness of disaster risk and an informed understanding of the ways to reduce it as well as manage it is an important element of mainstreaming DRR. The Sendai Framework emphasises the role of improving the understanding and awareness of risk. The DRR policies and practices must be based on improved understanding of disaster risk in all its dimensions and communities must be made aware of various aspects of disaster risk so that they are able to proactively take preventive measures at the local level.

Such awareness is most essential on the part of all key line department / agencies, local authorities and communities in high-risk areas. Disaster risk has a cascading nature with decisions in one sector potentially changing disaster risk in another. Therefore, decision - makers across diverse sectors and levels of government as well as the private sector and civil society also must recognise the importance of considering disaster risk as an intrinsic part of all projects, programmes and initiatives.

9.4 Legal Support and Disaster Governance

Adequate and appropriate legislative arrangements for disaster risk management, including the mainstreaming of DRR into development, form a key component of an enabling environment. Revision of land-use regulations and building codes and introduction of judicial and other measures will be required to ensure enforcement. As a continuous effort, it is necessary to improve and strengthen various laws having a bearing on DRR. DRR responsibilities must be explicitly incorporated in the duties of all branches of the state government. There is need to strengthen the vertical and horizontal integration of DRR plans between different levels of government, various line departments/ agencies and local bodies. What this implies is the integration of DRR into all the norms, regulations, approval and monitoring relating to development through periodic reviews and amendments in addition to those specific to disaster.

9.5 Disaster Risk Transfer

A comprehensive disaster risk management strategy, actively involving stakeholders at all levels of government as well as the private sector, local communities and civil society, is required to implement the legislative framework and to provide coordination and monitoring mechanisms and arrangements. Individual disaster risk reduction actions and programs need to be located within this strategy, rather than treated as discrete, individual measures. Moreover, the strategy needs to indicate specific entry points and mechanisms for mainstreaming disaster risk reduction concerns into both the broader development agenda and the design and implementation of individual development initiatives.

The emphasis now for the Government of Tripura will be on managing risks going beyond disaster and emergency management, which tends to be concerned mainly with management of disaster events rather than risk. The risk management processes will be continuous and embedded within the broader development framework.

There are various options for financing disaster risk management, i.e., Disaster Risk Financing Instruments (DFRI). DFRI are commonly classified as ex post (e.g., budget reallocation, loan conversations, borrowing) or ex ante (accumulated reserves, precautionary savings, contingent credit, risk transfer/insurance).

However, none of these are standalone or universal solutions for DRR. For example, insurance is not a sufficient instrument for achieving effective disaster risk management and disaster risk reduction at a societal level. It must be noted that not all perils can be insured against and various risk financing instruments must be integrated within an overall DRR strategy, enabling policies and supporting legal framework.

The processes to facilitate and promote risk transfer involve identifying aspects such as, a) various layers of disaster risk, b) who bears each level of risk and c) possible risk transfer instruments available to each layer. As part of risk layering, financing instruments must be selected based on the frequency and severity of disasters. Risks with high frequency and low severity (e.g., floods) can be self-financed by the insured party (government or affected populace). Disaster reserve funds or budgetary allocation would be appropriate instruments in this case. On the other hand, risks with low frequency and high severity are likely to cause extensive damage and should be transferred to better-equipped third parties. Integrating risk transfer mechanisms into disaster risk informed development is challenging for policy-making and planning.

9.6 Ensuring Social Inclusiveness in Disaster Risk Management

Importance of social inclusion for DRR has been discussed in detail in Chapter 8. Inclusive DRR is about equality of rights, equal opportunities and the dignity of the individual irrespective of social background, community, age, gender or disability. Social inclusion is also a cross cutting theme that needs to be an integral part of the mainstreaming efforts. A detailed list of Sub-Thematic Areas for DRR and responsibility framework has been provided in the chapter on social inclusion.

9.7 Enabling Coherence and Mutual Reinforcement of Initiatives under the Major Global Frameworks for Enhancing Disaster Resilience

The process of defining the 2030 global agenda inevitably showed there is much to be gained from aligning plans, targets, actions and indicators across separate but interlocking agreements. There is significant potential for designing financing mechanisms, policies and programmes that can deliver on more than one set of targets or frameworks. The very idea of coherence and mutual reinforcement implies concerted and mutually supporting efforts cutting across several ministries/departments and sectors.

Coherence and mutual reinforcement, however, have to go beyond the usual formal inter - agency coordination to achieve common targets. Instead, it will require a new approach in which measures taken under one framework strengthens goals in all the three frameworks. It is evident from the very nature of coherence and mutual reinforcement that it can be implemented only by making it integral to the mainstreaming. To realise it, however, there is need to go beyond the conventional coordination and planning mechanisms. From the perspective of DRR, some indicative areas where a beginning can be made are:

- Improving the understanding of disaster risk – both natural and those introduced or increased by developmental actions – in all its dimensions is an effort that must be integral to all development initiatives by understanding risks in a broader sense, i.e., risks from hazards and those newly created
- Understand the cascading nature of risk, of how decisions in one sector alters disaster risk in another in a cascading manner
- Understand not only vulnerabilities from cascading risks, but also better assess the capabilities to resist, absorb, and accommodate risks
- Recognise disaster risk as an intrinsic part of all projects, programmes and initiatives (by all decision-makers and at all levels – Govt., private sector and civil society)
- Aligning the risk management approaches
- Improving horizontal and vertical integration for DRR within government by making use of decision-making tools and information technology
- Setting targets, timeframes, indicators and monitoring mechanisms to facilitate consolidation of efforts across sectors to enhance disaster resilience.

9.8 Institutional Arrangements and Capacity Development for Disaster Risk Management

DRR is a crosscutting responsibility that needs to be 'owned' by all government agencies rather than by a single nodal department or agency designated for it. This requires the institutions to explicitly recognise the DRR requirements and pay attention to implementing adequate institutional arrangements required for addressing relevant accountability and responsibility concerns. The Revenue Department must provide leadership, determine broad disaster risk management policies, oversee implementation and advocate for the inclusion of disaster risk reduction concerns in broader development. The capacity development shall cover all aspects such as Institutional, human, community and technology applications.

9.9 Intra-Government Coordination and Integration

Disaster Risk Reduction is a multi-sector activity, cutting across different departments of the State. Coordination is an essential aspect of mainstreaming disaster risk reduction into the development process. Since there are several line agencies, sectors, levels of administration,

Civil Society Organisations and local private sectors involved in the development actions at the state and district level, mechanism of inter-department/agency coordination and integration must be strengthened to ensure that locally identified needs are reflected in the planning process and strategies. Both horizontal and vertical coordination are equally important, given the cross-cutting nature of disaster risk reduction.

9.10 Budget Allocations

Integration of disaster risk concerns into government budgets should be tackled from two angles, ensuring that levels of public expenditure on risk reduction are sufficient and that there are adequate financial arrangements to manage the residual risk. The presence of residual risk implies a continuing need to develop and support effective capacities for emergency services, preparedness, response and recovery, together with socioeconomic policies such as safety nets and risk transfer mechanisms, as part of a holistic approach. While there are certain budgetary allocations to partially address requirements of relief (e.g., National Disaster Response Fund, State Disaster Response Fund), the mainstreaming of DRR requires each department to make adequate provision for DRR as an integral part of the main budget by ensuring that all the major activities have incorporated DRR.

9.11 Changes in Project Appraisal

DRR consideration must become part of the appraisal processes of various development projects to ensure that development gains are sustainable and to ensure that DRR components and development components of projects are mutually reinforcing. Some examples of development projects without underestimating the risks and avoiding the creation of new risks can include: adequately factoring in seismicity; properly estimating flooding probabilities; ensuring restrictions against urban sprawl into industrial hazard-prone areas; strengthening land-use regulations by incorporating hazard risk adequately etc.

The project evaluations at different stages from concept stage to detailed project report for implementation need to be as much informed by hazard likelihoods as possible. The project appraisals and EIA should include DRR and climate change concerns a lot more systematically than is usually done currently. Changes must be incorporated in the budget approval and financial sanctioning procedures to make DRR evaluation mandatory.

9.12 Setting Targets, Timeframes and Indicators

The essential elements of an enabling environment for mainstreaming include the following: capacity to monitor and evaluate disaster risk reduction initiatives; generation of hard evidence on related inputs, outputs, results and impacts; and learning lessons for the future. Although mainstreaming is essentially continuous and pervasive, it is necessary to set targets to achieve DRR outcomes along with appropriate timeframes, responsibility frameworks and measurable indicators.

The Government of Tripura will do well to proceed in a phased manner with the initial phase focussing on how to incorporate it into the overall plans, followed by the setting of medium and long-term goals. Basically, the phasing should be consistent with the priorities set in the NDMP in terms of short, medium and long-term goals. What needs to be done by the centre,

state and UTs are described in a broad manner in the chapter on the responsibility framework for building disaster resilience.

9.13 Implementation

Mainstreaming is the internalisation of risk awareness and incorporation of risk reduction measures into the main or the overall policies and programmes within and outside government. The Government of Tripura will have to review current programmes of all departments and agencies to include DRR to the extent possible cost effectively within their main budget and ensure comprehensive appraisal of all new initiatives [policies, plans, programmes, projects etc.] in line with the NDMP framework and perspective.

9.14 Mainstreaming DRR and CCA in Development Plans, Projects and Schemes

Mainstreaming DRR & CCA in State development plans, projects and schemes means risk reduction becomes a practice of all partners involved in development work by institutionalizing the process in planning and implementation and in policies.

Table 9A: Mainstreaming DRR into ongoing Flagship Programmes

S.N.	Name of the Programme/ Scheme	Department/ Sector	Proposed Strategies for DRR Integration Into the Flagship Programs
1.	Pradhan Manti Awas Yojana (Rural)	Rural Development	▪ Inclusion of Hazard resistant design in construction of PMAY houses. ▪ Appropriate siting of PMAY housing in guideline of PMAY. ▪ Development of model design for PMAY houses which could be easily referred to by DRDAs at district level and used for community awareness depending on the geographical location. ▪ Capacity Building of Rural masons on hazard resistant construction. ▪ Capacity Building of PRIs. ▪ Community Awareness. ▪ Capacity Building Programmes for DRDA officials on Disaster Risk Reduction issues.
2.	Mahatma Gandhi National Rural Employment Guarantee Scheme	Rural Development	▪ Utilisation of MGNREGS funds to reduce the vulnerability of Panchayat vis-a-vis natural hazards such as landslide, drought, forest fire, cyclone, flash floods, earthquake etc. ▪ Giving priority to those works which reduce the vulnerability of area over the works which enhances the vulnerability of the area to natural hazards. ▪ Identified works are available which take into account the hazard profile and offer continuous employment opportunities in the event of disasters to ensure livelihood security in the event of disasters.

			- Works which reduce disaster risk are given priority in plans-such as local mitigation works etc. - Any other implement able suggestion within the ambit of the scheme.
3.	Pradhan Mantri Gram Sadak Yojana	PWD	- The Master Plan for rural roads, the district rural road plan and identification of core network under the planning process of this scheme should, which the overall guidelines of its preparation, explicitly address the disaster risk reduction concerns and accord priority to connect the vulnerable habitations. - The technical guidelines should explicitly provide for suitable protection and inclusion of disaster risk concerns explicitly - while provision of cross drainage, slope stabilization, protection works are already included, in multi- hazard and especially flood and landslide prone areas fair weather roads need to be upgraded on a priority basis. - The maintenance guidelines are modified to ensure that in case of disasters these roads get provision for restoration to ensure all weather connectivity.
4.	Samagra Shiksha Abhiyaan (SSA)	School Education	- Development of a Policy paper of school safety. - Introducing school safety as a part of the guidelines of SSA which is currently focusing on inclusive development. - Developing model structurally safe designs for schools. - Introducing School Safety in the Teacher's Training Curriculum. - Training of Rural Engineers appointed under SSA Scheme as well as the Social Security Scheme State Coordinators. - Training of masons in rural areas. - Construction of Technology Demonstration Units. - Community Awareness.
5.	Atal Mission for Rejuvenation and Urban Transformation (AMRUT) Program	Urban Development	- Consider city-level Hazard Risk Assessment such as earthquake, floods, fire, etc. may be considered while developing proposals under AMRUT. - Take into account local hazard risks and incorporate appropriate design parameters to protect the asset against such hazards while creating or revamping sewage and septage infrastructure. - Incorporate appropriate design parameters to protect the asset such as overhead tanks, pipelines, bore wells against hazards such as earthquake, floods and cyclone. - Construct and improve the carrying capacity of the storm-water drains as per the hydrological model of flooding.

6.	Smart City Mission	Urban Development	▪ Map and list the ownership and condition of water bodies in each city. Subsequently, develop a monitoring framework anchored with the Urban Local Body (ULB) ▪ Provide adequate capacity in existing lakes and ponds for holding the floodwaters - a bathymetric survey of the lakes and ponds should be conducted in order to assess the water holding capacity of the reservoir; ▪ Restore interconnection between lakes and water bodies which have been disrupted due to urbanization in many cities; ▪ Build flood wall for all natural drains/ water bodies to prevent encroachments and overflow of floodwaters. ▪ Consider and address the needs of women, children and communities which are socio-economically marginalized. For example, the needs of slums and shanties will have to be addressed as a priority. ▪ The housing component using Pradhan Mantri Awas Yojna to be sensitive to the risks identified in the HRVA.

- ▪ Establish a system for regular maintenance of the storm-water drains in the city.
- ▪ Foot over-bridges may be designed to withstand multi-hazard risks and be able to cater to the needs of peak time rush to prevent stampedes.
- ▪ Parking facility should be seismic resistant and should be designed in such a way that there will not be any water logging during heavy rains and a flood-like situation.
- ▪ Include Disaster Risk and Climate Change aspects in training curriculum of city managers.

The list given in the above table is an indicative one and many more line departments can be added to it. DRR planning needs to be done at Municipal and Panchayat levels with the involvement of local community representatives; and simultaneously the resource and responsibility to manage would be in the domain of the local authorities. Decentralized planning can enhance local participation along with improved efficiency and equitable benefits.

9.15 Entry Point Activities for Sample Schemes / Programs

Pradhan Mantri Awas Yojana (PMAY)

- Design and popularize low-cost multi-hazard resistant housing design.
- Construct demonstration low-cost multi-hazard resistant houses in all district and block headquarters to promote awareness
- Coordinate the PMAY construction with Swatch Bharat Mission and Jal Jeevan Mission programmes to ensure necessary amenities
- Train masons and engineers on hazard resistant construction practices.
- Expand and strengthen drought proofing activities – plantation, water shed, water harvesting, check dam etc

- Implement effective flood proofing action including – homesteads, connecting roads and water drainages
- Establish a trigger mechanism to enhance the number of working days in case of disasters – construction of check dams, strengthening embankments

Pradhan Mantri Gramya Sadak Yojana
- Identify habitations that tend to get cut off during heavy rains and build all weather roads for enhanced connectivity.
- Phase 1 and Phase 2 have been completed. Under the on-going Phase 3 of PMGSY, upgradation and consolidation of the existing rural road networks are being undertaken that connect the habitations to:
  - Gramin Agricultural Markets (GrAMs)
  - Higher Secondary Schools
  - Hospitals.

Jal Jeevan Mission
- Incorporate disaster resilient designs for drinking water sources including storage and distribution systems.

Swachh Bharat Mission.
- Construct disaster resilient community sanitation complexes.
- Shelter to be cleaned before, during and after the disaster.
- Poster or flex to promote cleanliness and plantation.
- Regular visits by multipurpose health workers, ASHA workers.
- Use of bleaching powder to avoid spreading vector borne diseases during disasters.
- Money can also be used as contingency fund during disasters.

National Health Mission
- Community level health workers should be trained in DRR & CCA
- Hazard resistant structures should be adopted in construction of new hospital building

Rastriya Krishi Vikash Yojana
- Undertake projects of flood and salinity-resistant seeds
- Farmers should be trained to track changes in weather pattern to anticipate their impacts on agriculture so that the necessary adaptive practices may be adopted

Samagra Shiksha Abhiyaan
- Train habitation planning committee on DRR and CCA
- Demonstrate multi hazard construction / retrofitting of vulnerable school and other education infrastructure.
- Prepare a list of activities that can be undertaken to strengthen DRR and CCA, using 25% of flexi funds.
- CRC training, training of teachers, school safety programs
- Incorporation of DM subjects in school DM plans.
- Adequate quality of mid-day meal in schools and also when they are used as shelters.
- Maintenance and monitoring of assets during and after the shelter.
- Drinking water and sanitation facilities.
- Monitoring and evaluation of shelter and school.
- Conducting different types of projects by senior students.

- Adopting 1 nearby village to create awareness and orient people.
- Ensure functional toilets for boys, girls and teachers.
- Providing toilets in school and overseeing the cleaning and maintenance of the same.
- Ensure proper electricity.

Pradhan Mantri Fasal Bima Yojana
- Government sponsored crop insurance schemes that integrate multiple stakeholders on a single platform and provide support to farmers by providing insurance and settling the related claims.

9.16   Challenges and Opportunities

In Tripura, DRR and CCA mainstreaming, like other mainstreaming processes, encounters both foreseeable and unforeseeable barriers and challenges along the way. They include, among others, bureaucratic organizational processes, lack of capacity and knowledge, high staff turnover, ineffective procedures for retaining organizational memory and a culture of working in 'silos'.

At a practical level, there are also disparate issues such as lack of clarity about roles and responsibilities and time constraints when it comes to DRR and CCA mainstreaming. The lack of funding for cross-cutting initiatives is another hurdle. It is also very challenging to demonstrate the results of mainstreaming to donors – something that is being increasingly called for in the current financial environment.

Sometimes Government's priorities do not necessarily support initiatives of mainstreaming and tend instead to focus on "hard" solutions, whereas many DRR and CCA approaches produce "soft" results over longer-term periods. It is also challenging to overcome mainstreaming fatigue. This is often encountered, as programme staff is so busy executing the core mandate of their programmes that anything that is viewed as an addition to current workload is often perceived as negative.

However, these challenges and barriers can be overcome by TDMA and the line departments as they are well aware of the added value of DRR and CCA mainstreaming and if they pursue continuous efforts to create an enabling environment for it.

9.17   Review of Progress

In conclusion, TDMA will monitor periodically, at least before the updating of the State Disaster Management Plan, Tripura every year, the progress of mainstreaming primarily on the following parameters:

- Level of desired awareness and orientation has been created from state to local level within existing institutional arrangements and departmental structures therein.
- Based on re-defined functional goals, re-designing of the related processes and mechanisms in order to make sure that DRR & CCA concerns and elements are mainstreamed in program/project planning and implementation on the ground, including two areas of critical importance namely institutional strengthening and project/program planning, implementation and monitoring.
- Mainstreaming risk reduction by ensuring that risks from natural hazards are factored into development policies and plans and are considered as a matter of course in the design of all development projects, particularly in hazard prone areas.

- Efforts made by each state department in developing and implementing the projects in a manner to ensure that these projects and plans do not add to existing vulnerabilities or create new vulnerabilities, if these do not contribute to reducing the existing vulnerabilities.
- Each department of the state has ensured that authority, responsibility, accountability and capacity development in different sectors balance each other through an integrated and cohesive approach.
- There is an intense, prompt and comprehensive coordination among various stakeholders including different departments of the State Government of Tripura for mainstreaming DRR & CCA in the development process.
- Intensive training programmes are organized from State to Local level on mainstreaming DRR & CCA into the development process for State and District Departments, project implementing and supervisory agencies and other stakeholders.

It is envisaged that a carefully implemented review process will go a long way in ensuring effective mainstreaming of DRR in development in the state of Tripura.

CHAPTER 10: DISASTER RISK GOVERNANCE

10.1 Introduction

Risk governance is essentially an approach to disaster management, which is based on the premise that disaster management is as much a governance issue, as it is one of sustainable and resilience development. Risk governance is now universally agreed approach to managing disaster risks globally. The National Disaster Management Policy (NDMP) 2019 also embodies this approach and emphasizes the importance of governance at different levels for an efficient and effective management of disaster risks and for building resilience to disasters at various levels including at-risk communities.

Poor governance is seen as a driver of disaster risk, and is linked to many other risk drivers such as poverty and inequality and poorly planned development both in urban and rural areas. Risk governance enables individuals and institutions – public and private – in dealing with risks surrounded by uncertainty, complexity and/or ambiguity.

In Tripura, noticeable progress has been achieved in introducing legislation and policies for DRM, as also for establishing early warning systems, and increasing the level of disaster preparedness. However, these are just first steps taken in the long journey to a disaster- resilient society, which needs to be further strengthened by taking appropriate institutional and capacity building measures.

Consultations and interactions with the line departments and other stakeholders have revealed that inter-departmental and inter-sectoral coordination and active participation of line departments still remain a challenge for RR & DM and TDMA, which is primarily a governance issue. Strengthening disaster risk governance is the solution which would require clear vision, plans, competence, guidance, and coordination within and across sectors, as well as participation of relevant stakeholders to foster collaboration and partnerships for the implementation of disaster risk reduction and sustainable development at the state and local level.

10.2 Strengthening Risk Governance

The State Disaster Management Plan, Tripura 2023-24 will strengthen disaster risk governance in the state of Tripura through the following measures:

- Mainstream and integrate DRR within and across all sectors and promote the coherence and development of relevant laws, regulations, and public policies. It will guide both the public and private sectors through the legal framework that clearly spells out the roles and responsibilities to address disaster risk in publicly owned, managed, or regulated services and infrastructures. It must encourage actions by persons, households, communities, and businesses. It must enhance relevant mechanisms and initiatives for disaster risk transparency. It must put in place coordination and organizational structures.
- Adopt and implement DRR strategies and plans, across different levels (state, district to community) and time scales, aimed at preventing the creation of risk, the reduction of existing risk and the strengthening resilience – economic, social, health and environmental.
- Decentralize and ensure devolution of functions both horizontally (line departments) and vertically (Districts/blocks/PRIs/ULBs/GPs/Tribal Autonomous Council).

- Promote engagement and participation of community in planning, implementation and monitoring of DRR initiatives to foster community ownership.
- Carry out assessment of the technical, financial and administrative disaster risk management capacity to deal with the identified risks at different levels.
- Promote necessary mechanisms and incentives to ensure high levels of compliance with the safety-enhancing provisions of laws and regulations, including those addressing land use, urban planning, building codes, environment, resource management, health and safety standards, and update them, where needed, for better disaster risk management.

The Department of Relief, Rehabilitation and Disaster Management and TDMA have already developed the Disaster Management SOPs which clearly delineates the departmental responsibility chart for managing different phases of disaster management covering preparedness, recovery and rehabilitation and mitigation.

CHAPTER 11: CAPACITY DEVELOPMENT

11.1   Background

Capacity development is the key to a robust disaster risk governance regime ensuring effective disaster risk reduction (DRR). All stages of disaster management cycle comprising preparedness, response, relief, rehabilitation and mitigation call for appropriate and timely capacity building efforts at various levels from state to district to sub-district (sub-divisions and blocks) to PRIs and communities. Hence, capacity building lies at the very core of mainstreaming DRR initiatives in development and building a climate smart disaster risk resilience eco-system.

Capacity development covers strengthening of institutions, mechanisms, and capacities at all levels of all stakeholders. The United Nations International Strategy for Disaster Reduction (UNISDR) defines 'Capacity Development' for DRR as follows:

"Capacity development is the process by which people, organizations and society systematically stimulate and develop their capacities over time to achieve social and economic goals. It is a concept that extends the term of capacity-building to encompass all aspects of creating and sustaining capacity growth over time. It involves learning and various types of training, but also continuous efforts to develop institutions, political awareness, financial resources, technology systems and the wider enabling environment." [UNISDR, 2016]

While 'capacity development' is the preferred term globally, most of the policy documents in India use the term 'capacity building' Hence both "capacity development" and "capacity building" are used across this document almost inter-changeably, depending on the specific context.

The Sendai Framework for Disaster Risk Reduction (SFDRR) advocates an 'all-of-society approach' that is people-centric and inclusive. This framework challenges all the stakeholders to focus on establishing and increasing capacity to manage their country's disaster risk. It is an important component of investing in disaster risk reduction. The framework emphasizes the need for enhancing the technical, financial, and administrative capabilities of institutions, governments and communities to deal with identified risks at different levels. The framework calls for reinforcing the capacity to implement and enforce risk reduction measures. The framework underlines the need for capacity development of women in disaster management and building their ability to participate effectively in managing disaster risks.

Investing in capacity development for DRR is a continuing process of enhancing the capability of individuals, agencies, and communities to improve the performance of their DM functions. The process of capacity building will include elements of human resource development i.e., individual training, organizational development such as improving the functioning of groups, and the strengthening of organizations, regulations and institutions. The sustainability of capacity development initiatives increases in direct relation to the level of participation and ownership of the stakeholders. Mainstreaming of DRR is incomplete without mainstreaming of capacity building on DRR by all Departments/ Agencies of the State. Capacity building should also include creating enabling environment by making relevant provisions in existing laws, rules and regulations.

Capacity development entails activities on various levels, i.e., legal and institutional frameworks, systems of organisations, and organisational, human and material resources, it is

necessary to address challenges on all of them by implementing a mix of activities across all time frames – recurring, short, medium and long term. The focus of capacity development efforts for DRR must go beyond human resource development paying enough attention to organisational and institutional issues. Partnerships and collaborations are integral to institutional capacity building. In institutional capacity development, emphasis should also be on use of state-of the- art technologies to upgrade the existing systems. Public and private investment in disaster risk prevention and reduction through structural and non-structural measures are essential to enhance the disaster resilience. Investing in capacity development is the cost-effective way to save lives, prevent or reduce losses and ensure effective recovery and rehabilitation.

The Disaster management Act, 2005 [Section 2 (b)] states that capacity-building includes

- Identification of existing resources and resources to be acquired or created;
- Acquiring or creating resources identified under sub-clause (i)
- Organization and training of personnel and coordination of such training for effective management of disasters.

As per the DM Act, the focus of capacity building is on identification and acquisition of required resources; training of personnel; and coordination. The National Policy on Disaster Management, 2009 underlines the need for a strategic approach to capacity development. This basically implies ensuring informed and active participation of various stakeholders in disaster management activities at various levels through appropriate and timely capacity building initiatives and interventions. The national policy notes that capacity development must address the challenge of "putting in place appropriate institutional framework, management systems and allocation of resources for efficient prevention and handling of disasters."

The NPDM 2009 envisages a pivotal role for the State Disaster Management Institutes and Administrative Training Institutes in capacity development. The NPDM envisages capacity development in the domain of DM at all levels of government including line departments and across various autonomous institutions. It also stresses the importance of capacity development efforts to promote community -based DM efforts.

The policy notes that to sustain DRR, it is necessary to undertake capacity development across the education sector covering schools to professional institutions. It recognizes that skill development in all sectors to incorporate multi-hazard resistant features along with strengthening of relevant licensing, certification and standards.

Risk (R) is explained as the product of hazard, vulnerability and exposure divided by capacity built, as shown in the following equation: $R = [H \times V \times E] / C$

From the equation it is clearly understood, capacity is the only element that reduces the risk and hence is crucial for disaster risk reduction.

11.2 Disaster Risk Reduction Framework and Disaster Risk Reduction Road Map.

In order to mainstream DRR in Disaster Management and achieve the vision of a Disaster Resilient Tripura, it is recommended that the state will develop the Tripura Disaster Risk Reduction Framework [TDRRF] 2023-2030, with the suggested commitments.

1. Disaster Risk Reduction will be institutionalised by launching a state-wide campaign in 2023 through collaborative partnerships by involving all stakeholders.
2. Disaster prone communities and regions will be guaranteed inalienable right to the state's resources for safety, prompt relief and protection.
3. Disaster Risk Reduction will be mainstreamed across Government of Tripura's planning processes addressing the requirements for strengthening preparedness, emergency response, rehabilitation, reconstruction and recovery.
4. All development planning initiatives will factor in risk avoidance, risk transfer, risk sharing and residual risk management.
5. Panchayati Raj Institutions (PRIs) and Urban Local Bodies (ULBs) will be empowered with financial and regulatory roles for Disaster Risk Reduction.
6. Community skills, knowledge and capacities will inform decision making about Disaster Risk Reduction at all levels through inclusive and participatory processes, with special emphasis on context-specific differential needs of social groups.
7. Resilience of critical infrastructure and delivery of essential services will be ensured, including restoration of functionality and continuity, in case of disruptions.
8. Mechanisms for gathering, analysing and disseminating targeted early warning information to key stakeholders will be established in line with the national framework
9. Lives, livestock and livelihoods will be protected from disruption due to natural and human induced disasters and extreme events.
10. Requisite financial and human resources will be committed for fulfilling the vision of Disaster Resilient Tripura through the creation of a corpus fund.

The **Tripura Disaster Risk Reduction Framework** will be operationalized by the Government of Tripura by formulating a **DRR Roadmap.** The framework will be the guiding principle for the DRR Roadmap, which will be implemented by the state's administrative machinery, upholding multi-stake holder engagements (including media, civil society, private sector, and academia), partnerships, accountability, transparency and establishment of a robust monitoring system. This process will be strengthened with adequate investments in capacity building, knowledge management and public awareness.

The TDMP aims at capacity development at all levels of government across all the line departments and other autonomous institutions. It also stresses the importance of capacity development efforts to promote community-based DM efforts, across the education sector covering schools to professional institutions.

The TDMA has the mandate to develop disaster preparedness plans for the State to meet any eventuality arising out of all kinds of disasters including floods, drought, chemical explosion, etc. TDMA in consultation with training and technical institutions is responsible for doing the following;

• Design and develop training programme for the Government functionaries, decision makers, elected representatives and the Civil Society groups.
• Arrange state and district-wise training to enhance the preparedness levels
• Establish and maintain a failsafe communication network interconnecting the State, district, block and GP Headquarters for dissemination and collection of information relating to disaster management.

- Institutional capacity building in terms of modern equipment, technology, capacity building in all forms required at the state and district levels
- Capacity building of the communities and Community Based Organisations to handle emergencies.
- Coordination of NGO efforts.

The role of TDMA is critical in preparedness, mitigation and capacity building initiatives in the State through designing, developing and implementing effective public policies to reduce risks and vulnerabilities associated with various disasters. A multi-disciplinary group in TDMA will be set up to strengthen the Disaster Management Unit. The group will include technical experts with experience in managing various disasters, rehabilitation experts, IT and GIS personnel, social scientist, geologist, communication specialist.

TDMA will use the following strategies to develop and implement the capacity development initiatives.

- Plans based on exhaustive Training needs assessment and directions from GoI / State

- Planning and implementation based on "actual needs" and draw upon global best practices.

- Strengthening the capacity development perspective plan and develop, implement and monitor annual action plans.

To monitor the effectiveness of capacity development, an Appraisal Committee may be constituted at the state level with experts drawn from various departments/sectors. The DDMA's may similarly create advisory groups to plan and implement capacity development initiatives in the districts. The state can undertake other activities such as "awareness audits" at various levels and institute the practice of "performance-based grants" to make capacity development more effective and accountable.

Funding for Capacity building is available under the XV FC for SDRMF [10 % of the allocated funds for preparedness and capacity development].

Capacity development funds can also be made available from the Department fund/ budget, external funds from donors, self- financing and CSR funding.

11.3   Opportunity for Capacity Building in Disaster Management

A strong institutional framework supporting overall capacity building for disaster management has been initiated in India by enacting and enforcing Disaster Management Act in 2005. This Act has clearly assigned the roles and responsibilities to local, district, state and national authorities for enabling disaster resilient and safe communities. The creation of NDMA and NIDM at national level, SDMA, DDMA, CDM and Disaster Response Forces at State level, funding mechanism at various levels, etc., have given a greater thrust to capacity building at every level. The Department of Revenue (Disaster Management), GoT, TDMA, SEC, and DDMAs in all the districts have been established and are functioning. Central Training Institute (HG and CD) is the nodal institute for DM related training in Tripura.

11.3.1 Capacity Development of Local Bodies- Rural and Urban

The capacities of Panchayats and ULBs will be developed in the sphere of disaster management. Without adequate capacity development, the local bodies cannot contribute effectively to disaster management or in ensuring the proper implementation of DM perspective plan or annual action plan. Capacity development is also necessary for true empowerment of the bodies of local self-governance.

Special emphasis will be made to build the capacity of members, staff and personnel of the TTAADC on Disaster Management. The state is currently pursuing a strategy to increase the capacity of the TTAADC at the state, zone, sub-zone and Village levels by providing dedicated staff at the Zonal levels to anchor Disaster Management across the TTAADC.

The elected leaders and officials of Panchayats and ULBs will be trained to competently handle different types of crises, contribute to disaster preparedness, make proper use of available warnings, organize operations such as search, rescue, relief, medical assistance, and carry out damage assessment. They will also have sound understanding of the needs of proper post-disaster rehabilitation. The local leadership can play a big role in disaster management across all the stages from planning to execution.

Capacity development will aim at increasing the competence of local bodies in all aspects of disaster management with focus on mainstreaming DRR into development programs and projects, as also on promoting a culture of disaster prevention and preparedness. The capabilities of the local bodies will be developed in financial, technical, and managerial spheres. The Central Training Institute (HG and CD) will develop need-based training programs for the capacity development of rural and urban local bodies.

11.3.2 Training of Communities

Enhancing the capacity of communities, as they are the first responders to disasters, is a critical part of the capacity development process. The need to build the knowledge of civil society, communities, and volunteers on disaster risk reduction is well recognized and established and duly underlined in the Sendai Framework as well. Capacity building must include awareness, sensitization, orientation, and development of skills of communities and community leaders.

Assistance from NDRF, SDRF, Civil Defense, Civil Society Organizations (CSOs), NGOs, local Community-Based Organizations (CBOs), and Self-Help Groups (SHGs) will be sought and mobilized. The overall responsibility to give impetus to leadership and motivation for effective DRR and disaster response will rest with local authorities, PRIs and ULBs under the overall guidance of State & District authorities. Community training programs will be made socially inclusive, with special emphasis on building the capacities of women, children, elderly, SC/ST and PWDs.

11.4   Disaster Resource Network

Government of India has encouraged each state to establish its own State Disaster Resource Network (SDRN) portal on the pattern of India Disaster Resource Network (IDRN). IDRN covers national level, state-level and district level agencies involved in disaster risk management. Tripura has already established the State Disaster Resource Network (SDRN)

portal providing state-wide inventory of DM-related resources covering almost all the basic needs. It is a web-based platform, for managing the inventory of equipment, skilled human resources and critical supplies for emergency response. Primary focus of IDRN portal is to enable the decision makers to find answers on availability of equipment and human resources required to combat any emergency.

11.5   Integrating Science, Technology, and Innovation

11.5.1 Enhancing Disaster Management Capacity

According to NPDM, capacity development shall cover all aspects such as institutional, human, community and technology application. The NPDM underlines that, capacity development being a continuous process, must address challenges of staff turnover, task of educating new recruits, keeping pace with technical changes and incorporating the rapid advances in science and technology. In view of the Prime Ministers' 10 Point Agenda, National DM Plan 2019 calls for better access and support for innovation and technology as well as increased investment in DRR to develop new innovations that are both cost-effective and beneficial when applied in all disaster management phases: response, recovery, mitigation, and preparedness.

In Tripura, significant DRR efforts have been ongoing for many years; however, further improvements and new methods of DRR beyond the conventional and traditional initiatives are urgently required. But this Plan puts added emphasis on addressing underlying causes such as climate change, poverty, urbanization, population density, and environmental degradation through fostering collaboration between various stakeholders such as government, academia, NGOs, and the private sector. Appropriate application of technology and innovations in disaster management will be crucial in this endeavor.

11.5.2 Actions for Science and Technology and Innovation -based DRR

To enhance the interfaces among science, technology, and policy making and the development and implementation of DRR innovations, the following measures may further improve current strategies and capacities for DRR in Tripura.

Priority I – Understanding Disaster Risk

- Enhance disaster loss and damage accounting, state and local disaster risk assessment and communication of disaster risk, with a specific focus on urban risks. Data standardization; appropriate and robust methodologies and tools; building the capacities of both the scientific community for dynamic research and innovation to cope with fast changing context of hazards and vulnerabilities, and DRR practitioners to apply such methods; and promoting the role of mass media, civil society and people working with communities to translate scientific information into understandable and accessible risk information. A multi-hazard, multi-scale, multi-stakeholder, and multi-faceted approach based on participatory processes will be the key to this process.

- Use space and disaster risk mapping technologies and strengthen the capacity for using these technologies for improved understanding of disaster risks at global, national and local level.

- Strengthen regional exchange on disaster risk information and science in order to better understand complex disaster risks including risks of trans-boundary, cascading and compound disasters.

Priority II – Disaster Risk Governance
- Strengthen science-policy-practice nexus at all levels (national, local, trans-boundary and regional) through: increased dialogue and networking among scientists, policy makers and practitioners; better evidence to inform decision making and proactive involvement of the science and technology community in regional, national and local platforms for DRR. Support these platforms to be multi-stakeholder partnerships, particularly including the private sector, media, civil society, and communities at-risk to deliver science-based solutions and technological user-friendly tools and methods to reduce disaster risk and strengthen resilience.
- Enhance collaboration between local governments, academia and other partners to promote local communities' knowledge and traditions and to sustain and replicate many good practices that exist locally for science-based decision making.

Priority III – Invest in DRR for Resilience
- Make DRR an area of focus within education including networking between universities. Jointly develop research and higher education programs that contribute to the building of resilient communities and societies. Promote knowledge broker education and training programs to help close the gap between disaster risk science and people including through community networks such as faith-based organizations
- Ensure risk-sensitive investments. Enhance the role of the science and technology community in building public private partnerships (PPP) for the purpose of reducing vulnerabilities of communities and ecosystems-at-risk, preventing risks and building resilience of critical infrastructure, essential services as well as emerging industries.
- Develop young professionals in the field of multi-disciplinary disaster risk reduction. More women and girls should be engaged in DRR research and a gender marker should be a key element of many aspects of such enquiry.

Priority IV – Enhance disaster preparedness for effective response and to Build Back Better
- Promote the role of inter-disciplinary science and technology in effective pre-disaster planning, preparedness, response, rehabilitation, recovery and reconstruction to build back better. Promote the combination of traditional knowledge and modern science. Enhance regional cooperation, particularly for preparedness, response and build back better in trans-boundary disasters.
- Develop an efficient and effective cooperation among the science community and business sector by utilizing the advancements of the fast-developing information and communication technology (ICT) including big data.
- Sensitization and training of PRIs to involve them to identify early warning signs of disaster and initiate appropriate action with the concerned department.
- Research into innovative solutions to promote the whole-of-society engagement; innovative financial mechanisms to maximize social capital for DRR (such as a disaster resilience fund to provide urgently needed resources to disaster affected communities

for quick recovery), and to help the business sector shift towards sustainable and resilient development alternatives.

- In the following sub-section 11.6, specific actions on different capacity –building themes and sub-themes including integration of science, technology, and innovation have been highlighted.

11.6   Capacity Development Themes

The capacity development is applicable to all aspects of disaster management. State agencies will take actions for capacity development of different stakeholders. It must be noted that the division of responsibilities between state and district are described in detail in the responsibility framework given in separate chapters. The capacity development themes for DRM and related responsibilities are summarized in Table 11A.

Table 11A: Capacity Development for DRR Themes–State and District

S.N.	Thematic Area	Sub-Thematic Areas
1	Deploying advanced technology & equipment	• Adopting the state-of-the-art technology • Identifying technology needs based on hazard risk, vulnerability and experiences. • Procurement of best and most appropriate equipment.
2	Disaster Information system	• Maintaining the resource network and database. • Regular updating of the resource data. • Developing fail-safe communication with advance technology, improve data flows across State Dept. and authorized users, Integration of HRVA data with disaster information systems, Ensuring reliable and credible database on disaster losses (direct and indirect) and post-disaster reconstruction
3	Disaster Risk Governance	Mainstream and integrate DRR and strengthen institutional mechanisms for DRM, promote participatory approaches, partnerships and networks, Promote quality standards, certifications, and incentives
4	Disaster Risk Management	• Promote, encourage and facilitate appropriate risk transfer instruments by collaborating with insurance companies and financial Institutions • Design and implement social safety-net mechanisms, including community-based systems • Disaster resilience of health care systems by integrating disaster risk management into primary, secondary and tertiary healthcare • Business resilience, and protection of livelihoods and productive assets throughout the supply chains, ensure continuity of services and integrate disaster risk management into business models and practices

5	DM and DRR capacities at local levels	• Trainings in DRM at different levels of local governance • Improve awareness and preparedness of stakeholders at all levels, Preparing DM plans, regular updating, and mock drills
6	DRM in education, research and professional disciplines	Incorporate subjects of relevance to DRM in school & college curriculum, Introduce specialized programs, degrees, courses and diplomas. Promote relevant research projects, programs within institutes and through research grants, Technical and professional programs relevant to various specialized aspects of DRM, Develop ToTs, Research in diverse areas of DRM
7	Early Warning	• Deploy the state of art methods and technologies • Up-grade technical infrastructure and systems • Improve EW dissemination and ensure the last mile connectivity, Improve the alerts system to make it more relevant and effective at all levels
8	Emergency Operation Centers- Strengthening	• Set up State and District level EOCs with adequately trained manpower, Enhance emergency response capabilities • Strengthen EOCs, improve infrastructure, upgrade equipment with latest technology, • Improve capabilities based on experience after each disaster event, Deploy best of ICT Tools • Conduct capacity audits of EOCs • Regular reviews and improvement of SOPs, protocols, etc. Develop Mobile control rooms
9	Global Anthropogenic Climate Change Risks	• Recognize and address climate change risks in DRR • Strengthen adaptations to Global Agreement on Climate Change (GACC)
10	Mainstreaming DRM	• Incorporating DRM into development plans and programs • Incorporating PM's Ten Point Agenda for DRR into development plans • Making DRR as an inherent part of all ministry, department, state development plans • Extending convergence to the domain of DRR
11	Non-Structural Measures for DRR	• Institutional arrangements, policies, legal support, and regulatory framework • Revision of building codes and standards for rehabilitation reconstruction practices both for urban and rural areas • Norms and incentives for retrofitting • Reinforce systems to implement, monitor, and enforce regulations for DRR to promote disaster-resistant built environment

12	Post-2015 Global Frameworks Coherence and mutual reinforcement across DRR themes	- Understanding post-2015 global frameworks and their implementation for DRR - Understanding Sendai Framework and its integration into the implementation of DMP at different levels - Understanding DRR aspects of SDG and its implementation for DRR - Understanding COP21 (Paris Agreement on Climate Change) and the integration of climate-related concerns into various DMPs
13	Preparedness and Response	- Institutional reforms, modernization, and changes in legal framework, Strengthening of Fire and Emergency Services - Strengthening of the Fire and Emergency Service through revamping, institutional reforms, and modernization - Comprehensive revamping of Fire and Emergency Services with institutional reforms and modernization - Adoption and adaptation of emerging global good practices, Rigorous training and HRD of first responders - Table-top exercises, simulations, and mock drills to improve operational readiness of the plans - Rescue equipment at all levels, Systems to provide basic services in emergencies, Preparedness and response plans at all levels, Community-based DRR and DM
14	Recovery and Build Back Better	- Post-Disaster Needs Assessment (PDNA) systems and expertise, Credible damage assessment mechanisms and expertise, planning capabilities to ensuring coherence of BBB with overall development efforts and goals, Studies and research for incorporating resilience into BBB models. - Studies on past disasters and recovery to draw useful lessons.
15	Skill Development for Disaster Resilience	- Training and skill development for masons and other artisans, promoting community-based DM considering specific needs, regional diversities and multi-hazard vulnerabilities, - Training on CBDR& preparedness at local levels, Address gender issues, and special needs of children, disabled, aged, etc. holistically in the DM context, promote private sector and civil society involvement, Promote PPPs
16	Social Inclusion in DRM	Gender-based vulnerabilities, Scheduled Castes and Scheduled Tribes, Elderly, Children, Persons with Disabilities and Transgenders
17	Understanding Risk	Observation Networks, Information Systems, Research, Forecasting, Zoning / Mapping, Monitoring, Hazard Risk Vulnerability and Capacity Assessment (HRVCA)

CHAPTER 12: FINANCIAL ARRANGEMENT

12.1 Financial Arrangements

The financing of disaster management activities has to be an integral part of the state fiscal policy. According to the National Policy of Disaster Management (NPDM) 2009, the primary responsibility of disaster management lies with the State Government for undertaking rescue, relief, and rehabilitation measures during a disaster. However, the Union Government further supplements the efforts of the State Government through the logistic, technical and financial support.

The Disaster Management Act, 2005 provides the legal framework for disaster management and all related matters, including the financial aspects. As per the DM Act, financial assistance in the wake of disasters is provided through State Disaster Response Fund (SDRF) and National Disaster Response Fund (NDRF). These funds have been created under the legal framework of Section 46 and 48 (1) (a) of the Disaster Management Act, 2005. The allocations to SDRF and NDRF are made by the Ministry of Finance as per Finance Commission recommendations. The Act also provides for District Disaster Response Fund. Besides, the Act also provides for constitution of Mitigation Funds at National, State and District level. The allocations to SDRF and NDRF are made by the Ministry of Finance as per Finance Commission recommendations.

The immediate relief is provided in accordance with the guidelines on constitution and administration of State Disaster Response Fund and National Disaster Response Fund issued by the Ministry of Home Affairs, Disaster Management Division vide OM No 33-5/2015-NDM dated the 30th July 2015. The quantum of relief to be paid from State Disaster Response Fund/ National Disaster Response Fund must be in accordance with the items and norms of assistance approved by the Ministry of Home Affairs, Government of India.

12.2 15th Finance Commission

The first report, consisting of recommendations of the 15th Finance Commission for the financial year 2020-21, was tabled in Parliament on February, 2020. The final report with recommendations for the 2021-26 period was submitted in October, 2020.

Successive Finance Commissions had followed an expenditure-based approach to determine the allocation of funds for disaster management to State Governments. The 15th Finance Commission has, however, made a departure from this practice in its Report for the Year 2020-21, recommending a new methodology, which is a combination of capacity (as reflected through past expenditure), risk exposure (area and population) and hazard and vulnerability (disaster risk index) for determining State-wise allocation for disaster management.

This methodology has been continued for the five-year award period from 2021-22 to 2025-26 also. Similarly, the 15th FC has recommended continuation of mitigation funds at both the Union and State levels – National Disaster Mitigation Fund (NDMF) and State Disaster Mitigation Funds – to aid the implementation of mitigation measures in States for the award period, as provided in the Disaster Management Act, 2005. Earlier, although the Mitigation Funds at National, State and District level had been statutorily created under the D.M. Act,

2005, this provision was not implemented on the plea that creation of such funds would amount to bypassing the prior approval of the Parliament/ Legislative Assemblies, despite the fact that it can be planned and approval obtained well in advance since the urgency is not as crucial as in the case of Response Funds. This concept changed with the report of 15th Finance Commission.

Disaster management, as a subject and as a facet of Union-State relations, has evolved over the years. Initially, the focus was largely on disaster relief. Earlier Finance Commissions too used the term 'disaster relief' while drafting their recommendations. However, the Disaster Management Act expanded the area of concern and action of both the Union and State Governments to a wide range of disaster management functions, which included relief and response, preparedness and mitigation, as well as recovery and reconstruction.

12.2.1 The Evolving Context of Finance Commission's Recommendations

The evolving context behind the recommendations are--

i. Terms of Reference which lay stress on mitigation and preparedness too, besides relief and response and recovery and reconstruction;

ii. Impact of climate change;

iii. Expansion of the scope of disaster management after establishment of NDMA and SDMAs;

iv. Disaster management has become a more specialized area internationally, with a rich body of literature devoted to risk assessment, risk transfer and risk reduction. Its professional needs have also increased at the national and state levels, as States have undertaken diverse initiatives in different areas of disaster management; and

v. The involvement of non-government organisations (NGOs) and the private sector has also helped in expanding participation in disaster management activities, as evidenced recently in some disasters of rare severity.

vi. The insurance industry has witnessed significant growth in the last decade, especially after the increase in the limit on foreign direct investment in the sector to 49 per cent in 2015-16. Leading global insurance companies have set up operations in India in collaboration with domestic players. Therefore, with increased household income, the insurance sector can be leveraged to substantially reduce the financial burden of disaster management by households, particularly well-to-do ones.

vii. Finally, India is a signatory to three large global frameworks, which were created in 2015: Sustainable Development Goals (SDGs), Paris Agreement on Climate Change and Sendai Framework on Disaster Risk Reduction (SFDRR).1 These frameworks call for a set of inter-related actions on the part of governments and other stakeholders, which improve mitigation and adaptation, strengthen regulations, reduce risks and vulnerabilities and build greater resilience at the level of the state and civil society. India's commitment to these frameworks call for enabling actions so that we achieve the key indicators of these development frameworks.

12.3 States' Priorities

The State Governments, in their memoranda to 15th Finance Commission had listed their priorities. The main priorities are given below.

i. SDRF allocation for States needs to be augmented. Most States recommended that the existing criteria for allocation, which is based on past expenditures, needs to be reviewed and the considerations of risk and vulnerability need to be taken into account. However, a few States were of the opinion that allocations should continue to be based on past expenditures.

ii. Some States were of the view that the SDRF should be financed entirely by the Union Government, as they find it difficult to provide their matching contribution.

iii. States and SDMAs should have greater flexibility in disbursing relief. The norms of assistance for the SDRF and NDRF are nationally determined, and do not always have flexibility for the unique needs of certain areas, especially remote and hilly terrains

iv. The process of assessment for the determination of Union assistance through the NDRF as well as its release should be made faster and more efficient and transparent.

v. The existing norms of assistance should include more resources for recovery and reconstruction. At present, the allocations are not enough for the reconstruction of housing and infrastructure.

vi. Separate allocations need to be made for the resettlement of people in floodplains, coastal areas and hills who have been displaced as a result of the impact of climate change.

vii. Mitigation, which has emerged as an important component of disaster management, should be funded through Union allocation. States are currently funding risk reduction measures on their own, but these funds are insufficient for the task.

viii. States should receive allocation for preparedness measures, which improves their ability to act upon early warnings. These measures would include setting up State Disaster Response Forces, which reduces dependence upon the armed forces, and the National Disaster Response Force.

ix. States should be provided greater technical assistance through national agencies for supporting their disaster management functions.

x. The amount earmarked for State-specific disasters should be increased up to 25 per cent from the current 10 per cent of SDRF allocation, in view of the large number of local calamities not covered under the national list.

12.4 Legal Mandate for funding expenditure on disaster management by the State Governments

The provisions relating to funding of prevention, mitigation and preparedness, as per DM Act 2005 are listed below:

i. Section 18 (2) (f) provides that SDMAs may recommend provision of funds for mitigation and preparedness measures;

ii. Section 38 (2) (d) provides that the State Government may allocate funds for measures for prevention of disaster, mitigation, capacity -building and preparedness by the

departments of the Government of the State in accordance with the provisions of the State Plan and the District Plans;

iii. Section 39 (c) provides that the departments of the state government shall allocate funds for prevention of disaster, mitigation, capacity- building and preparedness.

iv. Section 48 of the Act provides for establishment of Response and Mitigation Funds by the State Governments at State and District level. In case of all North Eastern States including Tripura, 90 contributions in these funds are made by the Central Government whereas State Governments are required to contribute only 10%.

v. Section 49 of DM Act 2005 provides for Allocation of funds by Ministries and Departments. It states that every Ministry or Department of the Government of India shall make provisions, in its annual budget, for funds for the purposes of carrying out the activities and programmes set out in its disaster management plan. The provisions of sub-section (1) shall, mutatis mutandis, apply to departments of the Government of the State.

12.5 Proposed Measures and utilization of resources for Disaster Risk Management

So far, the Government of Tripura has been making several interventions for the effective utilization of resources for Disaster Risk Management and mitigation available under different sources of funding arrangements: Besides, some possible interventions for disaster risk reduction may be as follows:

- Allocate 5-10% of the normal developmental budget for disaster management and mitigation activities.
- Incorporate risk reduction measures in normal developmental plans.
- Undertake a budgetary exercise at the State Level to raise additional resources necessary for improvement and modernisations of existing arrangements, training and important disaster management related activities which cannot be covered under normal budget.
- Draw up project proposals and mobilise additional resources from national and international agencies including the Central Government.
- As per the SDRF norm, 5% of SDRF shall be used for procurement of critical equipment for disaster response.
- State Govt. may make a comprehensive proposal for allocation of sufficient budget for disaster management.
- State Government may make a provision of putting at least 5% of annual budget for disaster management purposes and integration of disaster risk reduction issues in development planning.
- Special emphasis may be given towards implementation of projects through NDMA, DONER, UN and multi-lateral donor agencies.
- State budget should have a component for disaster risk reduction purposes.
- As per the Govt. of India communication to the State (Ministry of Finance vide their letter no. 55(5)PF. II/2011, dated 6th Jan, 2014), States may ensure the use of 10% flexi-fund within the CSS for disaster mitigation and for medium/ long term restoration purposes, the guidelines have been circulated to all the departments for compliance.

- Allocation of an appropriate percentage of funds for disaster management under national and state flagship programmes.

12.6 Creation of Disaster Risk Management Funds

The 15th Finance Commission has made a departure from response to include mitigation aspects also and recommended setting up of National and State Disaster Risk Management Fund (SDRMF). The Disaster Risk Management Fund has been recommended as a comprehensive fund, both for response and mitigation activities. The break-down of the Fund is Response and Relief (40%), Recovery and Reconstruction (30%), Capacity Building (10%) and Mitigation (20%). While the funding windows of SDRF and SDMF are not inter-changeable, there could be flexibility for re-allocation within the three sub-windows of SDRF. The Commission has recommended that mitigation funds should be set up at both state and national levels in line with the Disaster Management Act provisions. The fund will be used for local level and community-based interventions that help reduce risks and promote environment-friendly settlements and livelihood practices.

Table 12A: Tripura State wise details of grant-in-aid for 2021-26 (in Crores)

Revenue Deficit Grants	Health Grants	Rural Local Bodies	Urban Local Bodies	Disaster Manage ment	Health	PMGSY	Statistics	Judiciary	Higher Education	Agriculture	State Specific Grants
19880	453	746	381	378	265	502	17	85	55	228	875

Source: 15th Finance Commission Report

12.7 Allocation for Disaster Risk management Fund for Tripura

12.7.1 The 15th Finance Commission has made a departure from response to include mitigation aspects also and recommended setting up of National and State Disaster Risk Management Fund. The share of Central and State Government in North Eastern States including Tripura and the two Himalayan States of Himachal Pradesh and Uttarakhand is 90:10, whereas for all other States it is 75:25.

12.7.2 The total allocation for Disaster Risk Management Fund for Tripura for 2021-22 to 2025-26 is Rs 420 Crore. The Disaster Risk Management Fund has been recommended as a comprehensive fund, both for response and mitigation activities. The break-down of the Fund is Response and Relief (40%), Recovery and Reconstruction (30%), Capacity Building (10%) and Mitigation (20%). The funding windows of SDRF and SDMF are not inter-changeable These expenditures are, at present, met through the SDRF. When States exhaust their SDRF resources, they can request financial assistance through the NDRF by submitting memorandums to the Union Government. The NDRF, which is set up at the Union level, replenishes and reinforces the State funds following a set of guidelines. This has been the central feature of disaster risk financing in India, and it has met the requirements of States for disaster assistance on a predictable basis. The broader impact of these allocations is reflected in improved early warning and preparedness nationally and, consequently, reduced human mortality over the years. However, as disaster risk has increased – both in terms of incidence as well as economic impact – the existing disaster risk financing arrangements appear less than

adequate in terms of both source and application. there could be flexibility for re-allocation within the three sub-windows of SDRF[1].

12.7.3 The Commission has recommended that mitigation funds should be set up at both state and national levels in line with the Disaster Management Act provisions. The fund will be used for local level and community-based interventions that help reduce risks and promote environment-friendly settlements and livelihood practices. The indicative list of mitigation activities that may be undertaken from State Disaster Mitigation Fund is at **Annexure 8.2** of the XV Finance Commission report[2].

12.7.4 State Disaster Response Fund

The State Disaster Response Fund in Tripura shall be used only for meeting the expenditure for providing immediate relief to the victims of flood, drought, earthquake, fire, cyclone, hailstorm, landslide, cloudburst, heat wave etc. While the state can draw from State Disaster Response Fund for the emergency response and relief, there are provisions to adjust a portion of the expenditure from funds released from National Disaster Response Fund between the fiscal year in which National Disaster Response Fund is released and the expenses incurred by state in the previous fiscal year under State Disaster Response Fund.

In case the State faces another severe disaster during the same year, no reduction will be made while releasing assistance from the National Disaster Response Fund. The state-specific disasters within the local context in the State, which are not included in the notified list of disasters eligible for assistance from State Disaster Response Fund and National Disaster Response Fund, can be met from State Disaster Response Fund within the limit of 10 percent of the annual funds allocation of the State Disaster Response Fund.

The allocations for each State including Tripura for Disaster Risk Management Fund are worked out by giving appropriate weightage to the three components based on Area (15%), Population (15%) and average expenditure incurred by the State Government (70%)

12.7.5 Annual Allocations for Tripura

The year-wise allocation of Disaster Risk Management Fund for Tripura is as follows:

Table 12B: Year wise allocation of Disaster Risk Management Fund in Tripura

Year	Allocation (Rs. In crore)	Centre's share	State's share
2021-22	76	68	8
2022-23	79	71	8
2023-24	84	76	8
2024-25	88	79	9
2025-26	93	84	9
Total	**420**	**378**	**42**

12.7.6 The two response funds at national and state level have provisions for the following:

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[1]XV Finance Commission Report 2021-26 (Paragraph 8.54 at page 237 of Vol. I)
[2]XV Finance Commission Report 2021-26 Annexure 8.2 of volume II (Page 306-309)

- Gratuitous Relief
- Search and Rescue operations, as per actual cost incurred
- Relief measures
- Air dropping of essential supplies
- Emergency supply of drinking water
- Clearance of affected area, including management of debris
- Agriculture, Animal husbandry, fishery, handicraft, artisans
- Repair/ Restoration (of immediate nature) of damaged Infrastructure
- Capacity development

12.7.7 In respect of item No. 1(e) (except drought), item 3(a), (c), 6(ii), 9, the provision is revised that 'expenditure on this account, in no case, should exceed 30% of SDRF allocation under this window (Response & Relief) for the year'. In the case of drought, [i.e. item No. 1(e)], the provision is revised that 'expenditure on this account, in no case, should exceed 50% of SDRF allocation under this window (Response & Relief) for the year'.

(Revised items and norms of assistance from the SDRF and NDRF for the period 2022-23 to 2025-26 can be checked from the Source: https://ndmindia.mha.gov.in/images/Revised%20Items%20&%20norms%20%2011-7-2023.pdf)

12.8 State Disaster Mitigation Fund

Of the total State Disaster Risk Management Fund, 80% is to be utilized for response, relief, recovery and reconstruction. However, 10% of the Response Fund may be utilized for capacity development. Risk Management Fund may be considered as State Disaster Mitigation Fund to the extent of 20% of the State Disaster Risk Management Fund. It shall be considered as State Disaster Mitigation Fund in terms of section 48(1) (c) of the Disaster Management Act, 2005.

The recommendations of the 15th Finance Commission for the Mitigation Funds are as follows:
- Mitigation funds shall be set up at both national and state levels in the form of a National Disaster Mitigation Fund (NDMF) and State Disaster Mitigation Funds (SDMF), in accordance with the Disaster Management Act.
- These mitigation funds shall be used for those local level and community-based interventions which reduce the risks and promote environment-friendly settlements and livelihood practices. However, large-scale mitigation interventions such as construction of coastal walls, flood embankments, support for drought resilience etc. should be pursued through regular development schemes and not from the mitigation fund.

- The detailed guidelines for the constitution and utilization of these funds have been issued by the Ministry of Home Affairs, in consultation with the National Disaster Management Authority (NDMA). Guidelines on constitution and administration of National Disaster Mitigation Fund (NDMF) have been sent to respective states by MHA on 28th February 2022 Guidelines on constitution and administration of State Disaster Mitigation Fund (SDMF) have been sent to respective states by MHA on 14th January 2022. These funds

should be supervised by the NDMA at the national level and State Disaster Management Authorities (SDMAs) at the state level as per the Act.

- An indicative list of items of work on which the Mitigation Funds may be utilized is given at **Annexure 8.2** of the Report of the 15th Finance Commission, subject to the conditions mentioned in the preceding paragraph.

12.9 Alternate Sources of Funding

While NDRMF and SDRMF primarily are the main sources to meet the expenditure on response, relief, recovery and reconstruction and a key source to meet expenditure on mitigation at local and community level, it has to be conceded that it cannot meet the entire requirement of funds during various phases of disaster management and additional funds have to be provided to meet the requirement, These options are discussed below.

12.9.1 Public Funded Schemes

The primary mechanism for funding Disaster Risk Reduction (DRR) related schemes and projects in India are through Public Funded Schemes at Central and State level. Various nodal Ministries play a key role in disaster management as far as specific disasters are concerned. These nodal Ministries as well as other Ministries and Departments have dedicated schemes, aimed at disaster prevention, mitigation, capacity building, etc. within their particular domain. Existing examples include the scheme of Ministry of Home Affairs for Strengthening of Fire and Emergency Services, Financial assistance to Administrative Training Institutes and other Training institutions for disaster management, Integrated Coastal Zone Management programme of Ministry of Environment, Forest and Climate Change (MOEFCC), and flood management and flood forecasting programmes of Ministry of Jal Shakti. The DOS has a Disaster Management Support Programme. National Disaster Management Authority is implementing an important World Bank funded project for cyclone risk mitigation.

Apart from this, many of the schemes, which are implemented by various ministries/ departments, have embedded DRR components, as for example, those implemented by the MOEFCC. There are many other programmes that improve societal resilience, which is a critical component of DRR, such as the National Rural Health Mission, Mahatma Gandhi Employment Guarantee Scheme, and the Urban Development's Urban Renewal Mission. Outlay for reconstruction activities is normally embedded in the schemes of the Union Government to ensure that "Building Back Better" is in consonance with the approved programs. Post disaster reconstruction work is funded by the Union Government through increased outlay for the on-going infrastructure projects in the region and providing more untied grant to the affected State.

12.9.2 Flexi Funds as Centrally Sponsored Schemes

As per Department of Expenditure, Ministry of Finance, the NITI Aayog has issued instructions for rationalization of Centrally Sponsored Schemes (CSS), vide OM No. O — 11013/02/2015-CSS & CMC dated August 17, 2016. As per para 6 of the said OM, flexi-funds

available in each CSS has been revised to 25% for States, and 30% for UTs, of the overall annual allocation of each scheme. The flexi fund component within the CSS would be used to achieve the following objectives:

- To provide flexibility to States to meet local needs and requirements within the overall objective of any given Scheme at the sub-head level.
- To pilot innovation to improve efficiency within the overall objective of any given Scheme at the sub-head level.
- To undertake mitigation/restoration activities in case of natural calamities, or to satisfy local requirements in areas affected by internal security disturbances.

12.9.3 Externally Aided Projects

Besides the funds which are available through public funded schemes, efforts have also been made by the centre to mobilize the resources from external funding agencies for vulnerabilities assessment, capacity development, institutional strengthening of response mechanism and mitigation measures etc. The Central Government would continue to support states for reconstruction and rehabilitation in the aftermath of major disasters through aid from World Bank and other such external funding agencies.

12.9.4 Reconstruction Bonds

As brought out by 15th Finance Commission, in a post-disaster situation, State Governments can issue reconstruction bonds, with a maturity of three to five years, with the approval of the Union Government. People would like to contribute to recovery and reconstruction efforts, and they would prefer to invest in bonds, for reasons other than just financial returns. So, the State Governments could issue these bonds with a lower yield. However, the resources raised by these bonds should largely be spent on the construction of productive and social assets.

12.9.5 CSR Funding

Opportunities of CSR investments may also be explored for restoration of infrastructure / livelihoods for increasing State level resilience. As these days the corporate sector is adopting the States/ Districts for the specific interventions, the CSR investments may be covered under the umbrella of the Companies Act, 2013.

12.9.6 Crowd Funding Platform

Crowd funding has emerged as a key funding platform to mobilize resources for disaster relief and recovery. Both the Union and State Governments need to recognize the role of crowd funding and use it when disasters occur. While several crowd funding platforms come up following a disaster event, a platform set up by the government with specified objectives and an assurance of transparency can attract public contributions on a more significant scale. Setting up a crowd funding platform would require skills and expertise, which the State Government could consider outsourcing. Identifying the right time for crowd funding, setting up secure payment gateways and ensuring accountability and transparency are the most important considerations for the success of such an initiative. It is an area where both the Union and State Governments together should prepare operational guidelines.

CHAPTER 13: VOLUNTARY, BILATERAL AND MULTILATERAL COOPERATION

13.1 Accepting Foreign Assistance

As a matter of policy, the Government of India does not seek foreign assistance in the wake of a disaster. However, if the national government of another country voluntarily helps as a goodwill gesture in solidarity with the disaster victims, the decision on acceptance of such offers is taken solely by the Central Government. The primary responsibility for reviewing such foreign offers of assistance rests with the Ministry of External Affairs, which consults and coordinates with the Ministry of Home Affairs, Government of India.

All offers of assistance from foreign governments are routed through the Ministry of External Affairs. Offers of assistance in-kind, including technical assistance, emergency rescue teams, reconstruction assistance, etc. are evaluated on a case-by-case basis, in consultation with the Ministry of Home Affairs, which assesses the requirements based on inputs from the concerned State government.

In the case of contributions from NRIs, PIOs and foreign non-governmental bodies, donations may be accepted through the Prime Minister's and Chief Minister's relief funds including the recently established PM CARES Fund in the wake of the COVID-19 pandemic in the country. All other donations from foreign non-governmental entities to Indian non-governmental entities must be compliant with extant regulations, including the Foreign Contribution Regulation) Act, 2010.

13.2 Accepting Multilateral assistance

In the case of an offer of assistance from UN Agencies, the Government of India will evaluate and consider all such offers on its merits. If accepted, GOI will issue directions to the respective Ministry or State Government to coordinate with the concerned UN agency. India will permit UN agencies and International NGOs already operating in the country at the time of the disaster event to continue to render their humanitarian assistance to people in the affected area in coordination with the relevant Central Ministries/Departments and the State Government in accordance with applicable norms and protocols.

Multi-lateral / Bilateral / International agencies play a major role in disaster management and work through government as well as NGOs and other partner agencies. They provide resources for preparedness, research, networking and institution development, relief, reconstruction and rehabilitation. They can assist in making suggestions for possible changes in policies by sharing of disaster management applications in other parts of the world. In addition, they can provide technical expertise and give support by mobilizing advanced rescue and evacuation teams from other countries during time of extreme emergencies.

13.3 National and Local Agencies

The RR & DM department, TDMA/DDMAs will take all appropriate measures for transparency in the relief operations. Affected people shall be apprised of the nature and quantum of relief admissible to them. Proper formats will be developed to acknowledge the receipt of relief materials and their further distribution. GoI has issued norms for relief compensation for different damages and losses vide *(Period 2015-20, MHA Letter No. 32-7/2014-NDM- I Dated 8th April 2015)*

Following are the other key agencies that play a vital role in the disaster management at the local/regional level-

National NGOs

National NGOs already operating in the country at the time of the disaster event can continue to render their humanitarian assistance to people in the affected area in coordination with the relevant State Government / Department in accordance with applicable norms and protocols.

Requests form National NGOs to participate in humanitarian assistance following a disaster event will have to formally approved by the Nodal Department/ Government of Tripura in accordance with applicable norms and protocols.

Local NGOs and CBOs

Local NGOs and CBOs, due to their proximity to the community, can act as a vital link between government and the community particularly during emergencies. They are invariably in a better position to appreciate the area and specific problems of the people and their flexibility in approach makes them more acceptable in the community.

There are some active NGOs in Tripura like Indian Red Cross Society, Ram Krishna Mission, Bharat Sevasram etc. Table of NGOs involved in Disaster Management in Tripura have been shared in **Annexure 16** who have considerable experience and expertise in emergency management. Some govt. bodies like Nehru Yuba Kendra, NSS, have very good network with the local NGOs and CBOs who can be utilized for disaster management process by the administration along with community-based Self-Help Groups. Local NGOs and CBOs often operate through networks and can play an important role in information dissemination.

Apart from local and international NGOs and CBOs, there are several NGOs/ Trusts, which are religion based and have a very committed work force. These religious groups generally own institutes / places of worship that are "Pucca" buildings which can be used as shelters during emergency. These groups also often have necessary infrastructure and resources for mass feeding.

Some international and national religious institutions have a mandate on active social action and disaster management irrespective of religion, caste, creed and language. These missions provide services like social counseling and promote communal harmony. During disaster they, not only, come for relief operations, but also, because they have a large number of followers in the society and have an established identity. They also undertake reconstruction and restoration activities. Some of these organizations have technical professionals associated with them and have good training and other infrastructure. The services, technical professional expertise and training infrastructure could be effectively used for all disaster management activities.

The Role of CBOs and NGOs in disaster management can be considered in the following stages.

Preparedness activities
- Public education, awareness raising
- Community based preparedness activities: vulnerability and risk assessment; forming and training DMTs (Disaster Management Teams); contingency planning.
- Introducing alternative technologies and livelihood practices, including alternative methodologies and planning strategies which will make such interventions sustainable
- Assisting and participating in preparation of contingency plans at block, district, state, and village levels;

- Policy and Issue-based consultations at State, district and sub-division level
- Reviewing and upgrading DM Plans/Community Contingency Plans.
- Conducting capacity building programs and periodic mock drills.
- Documentation

Emergency Response activities.
- Dissemination of warning
- Damage assessment and need analysis
- Evacuation; Search and Rescue
- Relief distribution
- Medical aid
- Emergency shelter
- Immediate restoration
- Women and Child care
- Trauma Counseling
- Coordination of Volunteers
- Community mobilization
- Documentation, etc.

Recovery Activities.
- Restoration of damaged community structures (schools, etc.)
- Restoration of livelihood
- Rehabilitation of vulnerable groups
- Restoration of environment
- Managing emergent group activities
- Recovery planning, coordination, evaluation
- Documentation, etc.

The District, Block & Village Disaster Management Committees shall be encouraged to utilize the service of CBOs/NGOs & religious organizations in the Govt. programs according to applicable norms and Protocols.

13.4 Inter-Agency Group

With many NGOs, CBOs and other agencies it is important that all disaster management activities are effectively coordinated. Un-coordinated interventions can create a lot of unnecessary problems for the DM authorities creating confusion amongst stakeholders and beneficiaries alike. In order to intervene in a coordinated manner, the Government of Tripura through the RR & DM Department can ask all the concerned organizations to come under a single umbrella called the **"Inter Agency Group [IAG]"** as practiced in most states of the Country.

Under Section 22 (2) (f), Section 24 (j), Section 30 (xiii) and Section 30 (xxvii) of the Disaster Management Act, 2005, involvement of Non-Governmental Organizations in Disaster Management is an essential requirement. States have thus formed Inter Agency Groups (IAG) as a collaboration platform for non-governmental agencies functioning in the State. All Districts have notified Inter Agency Groups in the Districts and ensure close engagement with Non-Governmental Agencies and Civil Society Organizations.

The purpose of the IAG:
- To provide a forum for coordination among members and with INGOs for effective disaster management in the districts.

- To promote the Sphere values and other international humanitarian standards among all the civil society organizations working for disaster management
- To develop and disseminate technical information relative to effective planning and implementation of disaster management program in the district
- To build up capacities of subscribing members (and their implementing partners) to undertake joint quantitative and qualitative damage assessment during emergency that could enable member organizations to respond quickly and effectively to emergencies and avoid duplication of efforts.
- To set up a two-tier IAG mechanism consisting of IAGs & INGOs/ NGOs at the state level and the implementing NGOs as the District Coordination Committee Members.

Specific Objectives of the IAG:

- To institutionalize inter agency coordination led by district and state Government with ownership and participation of local civil society organizations, Academia, CSR initiatives, media and other stakeholders.
- Mapping of sectoral NGOs and other stakeholders' capacities
- To coordinate emergency response initiatives, activation and deactivation of unified response, sharing information and assessments at the time of an emergency, to ensure effective and efficient delivery of emergency relief
- To provide a forum for knowledge management and exchange of information among members and other stakeholders to improve standards and efficiency in disaster response and risk reduction.
- To promote Sphere and other national standards in collaboration with other state and non-state actors through advocacy and collaboration.
- To identify information/data gaps and undertake risk and vulnerability assessments, for more efficient and effective disaster preparedness and management;

13.5 Role of government agencies and NGOs/CBOs

Table 13A presents the roles and responsibilities of government agencies and NGOs/CBOs in disaster management in terms of specific action points across different issues/themes.

Table 13A: Roles and Responsibilities of government agencies and NGOs/CBOs in disaster management

S.N.	Issues / Themes	Action Points
1	Geographic coverage of NGOs	Develop and update the database of NGOs at all levels working on disaster management focusing on geographic outreach and thematic capacities of the organizations. (Action: TDMA and DDMAs with the help of other Departments and NGOs)
2	Volume of support provided by NGOs	Compile statistics on quantum of support provided by NGOs at all levels, both international and national. (Action: TDMA and DDMAs with the assistance of NGOs)
3	Coordination	Establishing inter-agency mechanisms for coordination and networking activities (information and knowledge management, training and capacity building, collaborative advocacy, quality and accountability) at all levels. (Action: DDMAs, NGOs)

4	Accessibility	Establish protocols for cooperation and ensure access to the affected areas with support from government agencies at respective levels like NDRF and SDRF, as they have good logistics base to reach inaccessible areas. (Action: TDMA, DDMA, NGOs, CBOs)
5	Hazard and vulnerability-based planning	Conduct community centric hazard and vulnerability analysis at all levels, and develop disaster management plans accordingly. (Action: DDMA, NGOs)
6	Community participation	Ensure community participation in assessment, planning, implementation and monitoring of activities at all levels. (Action: DDMA, NGOs, CBOs)
7	Mainstreaming of Disability Issues in DM	Support the most vulnerable groups through mitigation activities as well as disaster preparedness and response, with a particular focus on the special needs of the Persons with Disabilities (PWDs). (Action: DDMA, NGOs)
8	Gender Mainstreaming	Make women's as well as men's concerns and experiences an integral dimension in the design, implementation, monitoring and evaluation of policies and programs such that inequalities between men and women are not perpetuated through routine operations of DM. (Action: DDMA, NGOs)
9	Focus on most vulnerable rather than only on Epicenter	State level: Coordinate amongst the actors to identify the gap areas at District and Local level: Ensure targeting with equity and outreach to all excluded areas. (Action: IAG, District NGO Task Forces in DDMA)
10	Rural- urban diversity	Develop the capacities of CBOs, NGOs or specialized civil society agencies at all levels to manage urban as well as rural disasters and accordingly make investments. (Action: DDMAs, NGOs)
11	Adherence to standards	State level: Develop minimum standards for the State, District and Local level: Develop capacities for adherence to minimum standards through collective and coordinated efforts of all stakeholders (Action: TDMA, DDMAs, NGOs, CBOs)
12	Transparency and accountability	Develop an agreed framework of accountability for all levels and mechanisms to bring in transparency. (Action: SDMA, DDMAs and NGOs)
13	Do No Harm	Advocacy at all levels on "Do No Harm" through disaster response and development interventions. (Action: State IAG, District NGO Task Forces in DM)
14	Exit strategy	Ensure that the NGO programs have an exit strategy to link with long term recovery/rehab/development programs of other NGOs or the government. (Action: District NGO Task Forces in DM)

13.6 Corporate Bodies

Tripura has a very small corporate sector. Yet the existing corporate sector will be encouraged to -
- Play an active role in preparedness and planning through raising community awareness in their project's areas on various aspects of disaster preparedness.

- Ensuring on-site preparedness and response capacity.
- Provision of technical know-how to manage disasters (especially industrial accidents, fire etc.)
- Providing specialized equipment (earthmoving equipment, boats, etc.) for disaster response.
- The corporate sector will be encouraged to develop a fund at the state and district levels for preparedness and post-disaster activities.
- Use of CSR fund for disaster management purposes for capacity building, disaster mitigation and prevention purposes such as structural and non-structural measures as per the need.

The TDMA will also encourage the coordination amongst Public Sector Utilities and academic institutions in achieving the vision of a Disaster Resilient Tripura.

CHAPTER 14: MONITORING, MAINTENANCE AND UPDATING OF PLAN

14.1 Introduction

Regular monitoring, periodic maintenance and updating of the State Disaster Management Plan (SDMP, Tripura) at regular intervals is crucial, as this would ensure that the Plan always remains relevant and responsive. The Plan is intended to be a live and dynamic document that needs to evolve and adapt in response to emerging issues and challenges, such as the unprecedented outbreak of COVID-19 pandemic in India during 2020-21 in general and in the State of Tripura in particular. As per the section 23 (5) of the DM Act 2005, the State Disaster Management Plan (SDMP, Tripura) is required to be reviewed and updated annually.

Regular maintenance as required is critical to ensuring the relevance and effectiveness of the DM plans. Plan maintenance is a dynamic process. The plan must be periodically updated to make it consistent with the changes in Government policies, initiatives, and priorities in view of emerging technological changes and global experiences. Evaluating the effectiveness of plans would involve periodic reviews and targeted studies on the real-world incidents of disaster to determine whether the goals, objectives, decisions, actions, and timing outlined in the plan are being achieved in practice. In this context, the emergency preparedness drills and exercises become an integral part of the planning process.

The DM planners must be aware of the lessons and practices from various parts of India as well as lessons from across the world. The trainings, mock drills and exercises are crucial to evaluating the operational aspects of the plan, rectifying gaps, and improving the efficiency of the plan. The likelihood of emergencies and actual occurrences are also occasions for evaluating the plan, making innovations, and for updating the plan related SOPs and guidelines. At times, operations experience setbacks due to outdated information, ineffective procedures, incorrect role assignments, and vague norms. Further, the priorities for a jurisdiction may change over time as the makeup of the included communities change, as resources expand or contract, and as capabilities evolve.

The evaluation of the effectiveness of DM plan will be carried out in the light of local experiences from the ground. Real-world experience of disaster induced emergencies and state and community response to them will determine whether the goals, objectives, decisions, actions, and timing outlined in the plan led to a mitigation of the impact of a disaster both in terms of prompt and effective response on the one hand, and efficacy of the achieved outcomes on the other.

14.2 Orientation Meetings

The State Executive Committee (SEC), the nodal agency tasked with developing the State DM plan, with the help of TDMA, will design and organize orientation training programmes at the state level for wider dissemination of TDMP 2023 and the strategy of its implementation to all other departments of the state government and other concerned agencies associated with the

plan execution. These key stakeholder agencies in turn will train their personnel, so that they have the knowledge, skills and abilities needed to perform the tasks identified in the TDMP.

Each department/agency will assign a nodal officer for DM and prepare an adequate training schedule. It is recommended that a second person be also nominated and trained as the Nodal person in case the person nominated is unavailable for whatever reasons during an emergency. The objective is to enhance the capacity of officers and employees of the concerned state departments and other stakeholders to enable them to undertake implementation of the Plan promptly and effectively.

14.3 Training, Workshops and Drills

Each nodal agency will hold the DM workshops, training programs with mock exercises/ simulation drills, at least twice a year. Such programs are crucial to ensure full preparedness and to maintain operational readiness of the disaster response teams, institutional mechanisms, and the equipment required in case of emergency. It also helps to test their readiness to deploy required resources within the shortest possible time following the DMP activation. They shall be conducted in a manner like the drills carried out by the firefighting department or the army units.

These workshops and drills will be held at the pre-designated locations under the guidance of designated incident commanders and associated departmental heads. These trainings go beyond the concepts and guidelines into inculcating in the individuals the critical importance of working as a coherent team for the emergency response, with a clear chain of command. The workshops and drills will also provide an opportunity to practice and update plan and SOPs.

14.4 Testing of Effectiveness of Plan

Test of the effectiveness of a plan involves a combination of factors including planned exercises in response to real-time incidents to determine whether the goals, objectives, decisions, actions and timings outlined in the plan led to a successful response. The purpose of exercises and drills is to promote preparedness by testing the plan with equal participation of all relevant stakeholders.

The process of evaluation and remedial actions will identify, illuminate, and correct problems with the SDMP, Tripura. This process will capture information from exercises, post-disaster critiques, self-assessments, audits, administrative reviews, or lessons-learned. Members of the planning team will reconvene to discuss the problem and to consider and assign responsibility for generating remedies across all mission areas. Remedial actions would involve revising planning assumptions and operational concepts, changing organizational tasks, or modifying organizational instructions (i.e., the SOPs/ Guidelines) for implementation. Remedial actions would also involve reassessment of capabilities, revisiting the assumptions made in the DMP, and finding solutions to overcome the deficiencies.

The final component of remedial action process is the mechanism for tracking and following upon the assigned actions. As appropriate, significant issues and problems identified through periodical review will provide the necessary information to revise the plan accordingly.

14.5 Revise and Update the Plan

This step completes the DM planning process. It focuses on adding the relevant information and the lessons learnt while executing the existing plan and starting the planning cycle all over again. All the relevant stakeholders will establish a process for reviewing and revising the plan. Reviews will be a recurring activity.

The State DM plan will be reviewed at least once in a year. The following factors and events in time will inform the review, revision and updating of the plan:

- Any major incident leading to the review and the required revisions in the DM plan.
- Addressing significant changes in the operational resources (e.g., policy, personnel, organizational structures, management processes, facilities, equipment).
- Subsequent to any notification or formal update of planning guidance or standards.
- After every case of plan activation in anticipation of an emergency.
- After the completion of major exercises
- A change in the state/ district's demographics or hazard or threat profile.
- Enactment of new or amended laws or ordinances.

In exceptional circumstances, where the magnitude of the incidence or if the situation so demands, the appropriate authority will make necessary amendments. All the concerned State government departments will cooperate and actively participate in the process of the Tripura State DM plan (TDMP) review and updating, which will be done annually.

ANNEXURES

Annexure 1: Nodal Departments at State Level

S.N.	Types of Hazards	Primary Agency/ Department	Supporting Agencies/ Departments
		Water and Climate Related Disasters	
1	Floods	PWD (Water Resources) (Contact person: M. Das, Chief Engineer, Mob.: 8416098244)	IMD, CWC, Agriculture, Revenue, ST & E, Health, TTAADC
2	Hailstorm	Department of Agriculture (Contact person: Dipak Kr. Das, Director, Agriculture Contact No: 0381-2323882/9436139788)	IMD, Insurance, Revenue
3	Cloud Burst	PWD (Water Resources) (Contact person: M. Das, Chief Engineer, Mob.: 8416098244)	IMD, CWC, Revenue, ST & E, TTAADC
4	Heat Wave and Cold Wave	Department of Revenue (Contact person: P. Acharjee, Additional Secretary Contact No: 0381-2415385	IMD, ADMN, Forest, Health, TTAADC
5	Drought / Dry Spells	Department of Agriculture (Contact person: Dipak Kr. Das, Director, Agriculture Contact No: 0381-2323882/9436139788) PWD (Water Resources) (Contact person: M. Das, Chief Engineer, Mob.: 8416098244)	IMD, Revenue, RD, Health, PWD(DWS)
6	Thunder and Lightning	Department of Revenue (Contact person: P. Acharjee, Additional Secretary Contact No: 0381-2415385	IMD, ST & E, Health
		Geologically Related Disasters	
7	Landslides and Mudflows	PWD(R&B) (Contact person: Dipak Das, Director, Contact: 0381-2413313 / 7005679147 Department of RD (Contact Person: Sona Ranjan Debbarma, Contact No: 9436123440 Department of UD (Contact Person: Tamal Majumder, Director, Contact No: 0381-2314522/9436129055 Department of Forest (Contact Person: Pradip Barta Debbarma, DFO/DD, Contact No: 0381-2397052/9402140046	GSI, Ministry of Earth Science, TSAC, PWS(WR), Revenue, TTAADC
8	Earthquakes	Department of Science, Technology and Environment (Contact Person: Animesh Das, Director, Contact No: 0381-232307751/9436120401)	MID, Ministry of Earth Science/GSI, PWD, Revenue, RD, UD, Industries, Health, TTAADC
9	Dam Failures/ Dam Bursts	Department of Power (Contact Person: Executive Engineer, Contact No: 0381-2410145)	TSECL, PWD(WR)
		Chemical, Industrial and Nuclear	

10	Chemical and Industrial Disasters	Department of Industries (Contact Person: Subash Ch. Das, Additional Director, Contact No:0381-2411023/9436124741) Department of Labour and Employment (Contact Person: Dr. Naresh Babu N, Labour Commissioner, Contact No: 0381-2383261/9436189781)	Home, Admin, Factories and Boilers, Health and NDRF
11	Nuclear Disasters	Department of Home (Contact Person: A.K. Bhattacharya, Special Secretary, Contact No: 0381-2413823/9436189781)	ST & E Admin, Health, Central Ministry of Atomic Energy & Defence
12	Gas pipeline burst	Department of Home (Contact Person: A.K. Bhattacharya, Special Secretary, Contact No: 0381-2413823/9436189781)	Fire, Revenue, ONGC, Industries, Forest, TTAADC
	Accident-Related Disasters		
13	Forest Fires	Forest Department (Contact Person: Pradip Barta Debbarma, DFO/DD, Contact No: 0381-2397052/9402140046	Fire Department, ST & E, Home, Health, TTAADC and Admin
14	Urban Fires	Department of Home (Contact Person: A.K. Bhattacharya, Special Secretary, Contact No: 0381-2413823/9436189781)	Fire, Health, UD, Admin and Home
15	Major Building Collapse	PWD(R&B) (Contact Person: Dipak Das, Director, Mob.: 0381-2413313/7005679147 Department of UD (Contact Person: Tamal Majumder, Director, Contact No: 0381-2314522/ 9436129055	Health, Home, Admin
16	Serial Bomb Blasts	Department of Home (Contact Person: A.K. Bhattacharya, Special Secretary, Contact No: 0381-2413823/ 9436189781)	Admin Health, Welfare, Transport
17	Festival related disasters	Department of Home (Contact Person: A.K. Bhattacharya, Special Secretary, Contact No: 0381-2413823/9436189781)	Admin Health, ICA, Power
18	Electrical Disasters and fires	Department of Power (Contact Person: Executive Engineer, Contact No: 0381-2410145) TSECL 0381-2307814	Home, Fire, Health and Revenue
19	Air, Road and Rail Accidents	Department of Transport, (Contact Person: Additional Secretary, Contact No: 0381-2414502) Indian Railway (Nodal Officer) Civil Aviation	Home, Health, Admin, Revenue
20	Village Fire	Department of Home (Contact Person: A.K. Bhattacharya, Special Secretary, Contact No: 0381-2413823/9436189781)	Home, Revenue, Health
	Biologically Related Disasters		
21	Biological Disasters and Epidemics	Department of Health (Contact Person: Dr. Siddharth Shiv Jaiswal, Mission Director, Contact No: 0381-2324081)	Home, Revenue and NDRF

22	Pest Attacks	Department of Agriculture (Contact Person: Dipak Kr. Das, Director, Agriculture Contact No: 0381-2323882/9436139788)	Home, Revenue and NDRF
23	Cattle Epidemics and Bird Flu	Department of ARDD (Contact Person: Dr. Kamal Krishna Majumder, Jt. Director, Contact No: 0381-2323611/9436591990)	Home, Revenue and NDRF
24	Food Poisoning	Department of Health (Contact Person: Dr. Siddharth Shiv Jaiswal, Mission Director, Contact No: 0381-2324081)	Home, Revenue and NDRF

Source: SEOC, Tripura

<u>**Annexure 2**</u>**: Updated list of DM's & SDM's on May (2023), Tripura**

DISTRICT	DM & COLLEC TOR	CONTACT NO	SDM's	CONTACT NO
Sepahijala	IAS	0381-286-7373(O) 0381-286-7372(Fax) 9402137307 dmspj-tr@nic.in dmspj2012@gmail.com dmspjcon@gmail.com	Bishalgarh TCS	0381-236-1294 blg.sdm@gmail.com 9485009908(wp)
			Jampuijala TCS	0381-286-6201 sdmjmp@gmail.com 9436988266(wp)
			Sonamura TCS	0381-275-0222 sdmofficesonamura@gmail.com 7005753795(wp)
South Tripura	IAS	03823-222-012 03823-222-234 9436123939 dmsouthbln@gmai.com	Belonia TCS Gr-I	03823-222-231 sdmbln@gmail.com 9436992405(wp)
			Santirbazar TCS Gr-I	03823-272-668 sdm.stb@gmail.com 9436473162(wp)
			Sabroom TCS Gr-II	03823-270-225 sbmsdm@gmail.com 7005583008(wp)
Khowai	TCS, SSG	03825-222-006(O) 03825-222-023(FAX) 03825-222-505(R) 9402136677 dmkhowai@gmail.com	Khowai TCS	03825-222-236 sdm.khw@gmail.com 9402147007 9436450590(wp)
			Teliamura TCS Gr-I	03825-263-622 9774016655(O) 8415961275(Personal) sdmtlm@yahoo.co.in 9485020502(wp) 9362885549
North Tripura	IAS	03822-234-222 03822-234-221 7085865056 9485190611 dmnorth-tr@nic.in dmnorthtripura@gmail.com	Dharmanagar IAS	03822-220-202 03822-232-500(R) 9436465873 sdmdmn-tr@nic.in 7005898076(wp)
			Kanchanpur IAS	03824-265-211 03824-265-202(R) 8837099804

				sdmkcp-tr@nic.in 9233063325(wp)
			TCS	03822-271-077 03822-271-010 8476089506 sdmpns-tr@nic.in 9436765229(wp)
Unakoti	IAS	03824-222-277(O) 03824-222-386(R) 03824-222-491(FAX) 9402146886(Personal) 9953697581 dmunakoti-tr.@nic.in	Kailasahar TCS	03824-222-218 7085514128 sdm.kls.trp@gmail.com 9436992710(wp)
			Kumarghat TCS Gr-I	03824-261-200 9436562779(O) 9436122289(Personal) 9436938975(wp)
Gomati	IAS	03821-222-202 03821-223-579(FAX) 9436131142 dmgomati@gmail.com	Amarpur IAS	03821-263-226 03821-263-260 9436450590 7085865959 sdmamp369@gmail.com 9717768907(wp)
			Udaipur TCS	03821-223-573 03821-222-2 sdmudp.nic@gmail.com 9402109553(wp) 9436504219/8415905210
			Karbook TCS	sdmkarbook@gmail.com 03821-269-300/03821-269-400, 8974719740/ 8787597855(PA) 7005480388(wp)
Dhalai	IAS	03826-267-214 03826-267-215 9436136006 dmdhalai@gmail.com dmdhalai-tr@nic.in	Ambassa TCS	03826-222-220/03826-222-381 sdmabs@rediffmail.com 8019152801/7085840403 8730044552(wp)
			Kamalpur TCS	03826-262-222/03826-262-221 9485020502 sdmkmp2016@gmail.com 9436904704(wp)
			Longtharai Valley TCS	03824-264-206/03826-264-212 8787464217 sdmltv@gmail.com 8837244199(wp)
			Gandacherra TCS	03826-265-242 sdmgandacherra@gmail.com, 9436541904(wp)

West Tripura	IAS	0381-232-6334(F) 0381-232-3742 0381-232-5713 9436120070 dmwest.trp@gmail.com dmwest-tr@nic.in	Jirania TCS	0381-234-6042 9436503236 sdmjirania@gmail.com 7085514128(wp)
			Mohanpur TCS	0381-234-3088 sdmmohanpur2012@gmail.com, 9436122289(wp)
			Sadar TCS	0381-232-5937 9366141534 sdmsadar2016@gmail.com

Source: SEOC, Tripura

Annexure 3: List of Departmental Nodal Officers Disaster Management

S.N.	Department	Name	Designation	Contacts
1	Agriculture	Mr. Manoj Kanti Debbarma	Joint Director	9436581301 0381-232-3883 krishibhawantripura@gmail.com
2	Animal Resources Development	Dr. Parimal Das	Joint Director	7005336617 0381-232-3611 ardd.tripura@gmail.com
3	AMC	Mr. Joydeb Chakraborty (Now In-Charge)	Executive Engineer	9436122536 joydebckd@gmail.com
4	Economic & Statistics	Mr. Ramendu Choudhury	Statistical Officer	8257919922 0381-232-6371 choudhury.ramendu@gmail.com
5	Education (Higher)	Mr. Rajesh Bhattacharjee	Joint Director	9436450731 0381-232-6787/3776/4689 dir.hed-tr@gov.in
6	Education (Elementary)	Mr. Pinto Paul	OSD	9436342071 0381-232-3835 pintopaul999@gmail.com
7	Education (Secondary)	Mr. Pinto Paul	OSD	9436342071 0381-232-3835 pintopaul999@gmail.com
8	Education (SW & SE)	Mr. Kaushik Choudhury	Dy. Director (TCS Gr-II)	7005243505 0381-232-6033 pokaushik123@gmail.com
9	Education (Youth Affairs & Sports)	Mr. Biplab Kr. Dutta	Dy. Director	9402599511 0381-230-0082 biplabduttaathletics@gmail.com
10	Employment services, Manpower & planning	Mr. Shyamal Bhattacharjee	Joint Director	9862208422 0381-232-6782 seotripura@gmail.com
11	Factory & Boilers	Mr. Nitai Sen	Inspector of Factories	8837208565 0381-232-3915 nitaisen@gmail.com

12	Fire & Emergency Services	Ms Debjani Deb	Joint Director	6033219605 0381-231-3442 tripurafireservice@gmail.com
13	Fishery Dept.	Mr. Abhijit Biswas	Assistant Engineer	9436592933 0381-232-6294 abhijitar0@gmail.com
14	Food & Civil Supplies	Smt. Mithu Debbarma	Joint Director	7005389652 0381-232-3780 bscstripura@gmail.com
15	Forest Dept	Smt. Paushali Roy	Dy. C.C.F Training Unit	8413959922 0381-232-3779 paushali84@gmail.com
16	Directorate Health Services	Dr. Saryauti Reang	Branch Officer(Disaster Management)	7218274985 0381-232-6602 saryauti@yahoo.co.in
17	Horticulture & Soil Conservation	Mr. Jiban Debbarma	Dy. Director	8415817304 0381-232-4739 dhctripura@yahoo.co.in
18	Industries and Commerce	Mr. Subhash Ch. Das	Addl. Director	9436124741 0381-241-1023/1020 subhashagartala@rediffmail.com
19	Information & Culture Affairs	Mr. Debashis Nath	Dy. Director	9436453828/9436574259 debashisnath6s@gmail.com
20	Information & Technology	Mr. Naresh Babu N	Director IT	7085988231 0381-235-5751/0500 dir.itdept-tr@gov.in
21	Labour	Mr. Manishep Noatia	Labour Inspector	7005922976/ 0381-230-0049 mnoatia2022@gmail.com
22	OBC Welfare	Mr. Subrata Reang	Joint. Director	7005715193 232-9034 sreang66@gmail.com
23	Panchayat	Mr. Rajib Gope	Panchayat Officer	8837490571 0381-232-4191 gope0383rajib@gmail.com
24	Power (TSECL)	Smt. Nita Saha	AGM Cr-I	9774343477/231-8001 tseclec1@rediffmail.com agm.ec1agartala@tsecl.in
25	Prisons	Mr. Apurba Krishna Chkaraborty	TCS Gr-I	8731974979 0381-232-8496 prisonstripura@gmail.com
26	PWD (DWS)	Mr. Sashilal Noatia	E. E	9436123270 234-4625 erslnoatia36@gmail.com
27	PWD (R&B)	Mr. Rajib Paul	Deputy Sec.	7005609147/9436475646 0381-241-5067/3677 paulrajib@gov.in
28	PWD (WR)	Mr. Khokan Das	Supdt. Engineer	7005768891 0381-235-5664 sewragt@gmail.com
29	Police	Mr. Abhijit Choudhuri	Comdt. CTI	9436544792 0381-231-0177 comdt.ctig@tripurapolice.nic.in
30	RR & DM	Mr. Pradip Acharjee	Addl. Secretary	9612301555/9436503330 0381-241-6043

			pradip.a@gov.in
31	Revenue	Mr. Pradip Acharjee	Addl. Secretary & OC(SEOC)	9612301555/9436503330 0381-241-6043 pradip.a@gov.in
32	Rural Development	Mr. Khudiram Tripura	Supdt. Engineer	9436131217 0381-230-0125 scrdcagt@gmail.com
33	SC welfare	Mr. Pradip Reang	Dy. Director	8974641330 0381-232-3363
34	ST Welfare	Mr. Sujit Patwari	Executive Engineer	9436470924 0381-232-3565 patwarisujit@gmail.com
35	Science & Technology, Environment and Biotechnology	Smt. Tanima Bhattacharjee (CO.NOD)	Scientific Officer, DSTE	9436502789(CO.NOD)/ 9436450761(N.O)O/C 0381-230-7751 tanimabh@gmail.com
		Mr. Malindu Debbarma (N.O)	Scientific Officer West District	
36	State Forensic Science Lab	Mr. Suman Kr. Chakraborty	Dy. Director	9436139719/9485426586(WA) 0381-234-1266 clicksuman@rediffmail.com
37	Town And Country Planning	Mr. Priyabrata Bhattacharjee	Town & Country Planner	8132962551 0381-232-3544/9301 pbhatta_agt@yahoo.in
38	Urban Development	Mr. Dhananjoy Debbrama	Executive Engineer	7005296991 0381-232-9301 directorurbantripura@gmail.com
39	Audit Directorate	Mr. Nikhil Ch. Debnath	Director Of Audit	
40	Co-Operatives	Mr. Nikhil Ranjan Chakraborty	Joint. Registrar of Co-Operatives society	7005835509/0381-232-3765 nikhilranjanchakraborty@gmail.com
41	Transport Department			9436138383 0381-232-4601 gtcagt_tr@gov.in
42	Tribal Research and Cultural Institute	Mr. Naba kr. Debbarma	Assistant Director (DDO) Head of the office	7005342816 0381-232-4389 nabakumard@gmail.com
43	Tourism Department	Mr. Mrinal Kanti Das	Assistant Director	9436470533/ 0381-231-7878 tripuratourism09@rediffmail.com
44	PWD (Building)	Mr. Rajib Paul of R&B	Under Secretary	7005649147/9436475646 0381-241-5874/5067
45	Airport A.I, Agartala	Mr. Bijan Kr. Ghosh	Senior Manager, Fire Dept. (Temporary)	9612336562 bijanghosh@aai.hero
46	Health, Family welfare and preventive medicine	Dr. Biswajit Debbarma	Member Secretary	7005461833 biswajitdb68@gmail.com

Source: SEOC, Tripura

Annexure 4: Mobilisation of Disaster Management Equipment and Trained Manpower in the state for Disaster Response

S.N.	District	Location / contact Person	Telephone Numbers	Mobile Number
1	West Tripura	DM & Collector, Agartala	0381-2323742 Fax-2322971	9436120070
2		SDM Sadar, Agartala	0381-2325973	9366141534
3		SDM, Jirania	0381-2346042	9362821911
4		SDM, Mohanpur	0381-2343088	8415905210
5		2nd Bn, RK Nagar	0381-2391390	8787674836
6		10th Bn, NIT, Jirania	0381-2901218	7085058323
7	Sepahijala	DM & Collector, Bisramgang	0381-2867373 Fax-2867372	9402137307
8		SDM, Bishalgarh	0381-2361294	9485009908
9		SDM, Sonamura	0381-2750222	7005753795
10		1st Bn, Gokulnagar	0381-2950405	9436120310
11		11th Bn, Gokulnagar	0381-2362211	9436126763
12		CO 7th Bn TSR, Jampuijala	0381-2902519	9436120278
13		CO-CTI- Gokulnagar	0381-2903908	9436544792
14		Team Commander, NDRF, Gokulnagar	NIL	9435117479
15	Gomati	DM & Collector, Udaipur	03821-222202 Fax- 223579	9436131142
16		SDM, Udaipur	03821-223573	9402109553
17		SDM, Amarpur	03821-263226	9862771897
18		CO 5th BN TSR, Duluma, Amarpur	03821-290040	8837391716 / 9436949191
19	South Tripura	DM & Collector, Belonia	03823-222012	9436123939
20		SDM, Belonia	03823-222231	9436992405
21		SDM, Sabroom	03823-270225	
22		SDM, Santibazar	03823-272668	9436473162
23		CO 9th BN TSR, Baikhora	03823-296067	9436470022 / 8837391716
24	Khowai	DM & Collector, Khowai	03825-222006	9402136677
25		SDM, Khowai	03825-222236	9402147007
26		SDM, Teliamura	03825-163622	8415961275
27		CO 6th BN TSR, Ramchandraghat	03825-296065	8416043780
28	Dhalai	DM & Collector, Ambassa	03826-267214	9436136006
29		SDM, Ambassa	03826-222220	8019152801
30		SDM, Kamalpur	03826-262222	9863489756
31		SDM, Gandacherra	03826-265242	9436459658
32		8th BN TSR, Lalcherra, lontaravally	03826-211951	9402161515
33		3rd BN TSR, Kachuchara	03826-263321	8119959796
34	North Tripura	DM & Collector, Dharmanagar	03822-234222	9485190611
35		SDM, Dharmanagar	03822-220202	9436465873
36		SDM, Panisagar	03822-271077	9436765229
37		SDM, Kanchanpur	03824-265211	8837099804
38		13th BN TSR, Daspara, Kanchanpur	03822-295100	7005660483/ 9436525118
39	Unakoti	DM & Collector, Unakoti	03824-222277	9402146886
40		SDM, Kailashahar	03824-222218	9436992710
41		SDM, Kumarghat	03824-226100	9436938975

Source: SEOC, Tripura

Annexure 5: Standard Operating Procedures (SOPs)

Other SOPs are available on TDMA website (https://tdma.tripura.gov.in) should be read as part of this Plan.

For EOC SOP - https://tdma.tripura.gov.in/sites/default/files/SOP-EOC.PDF

For Search and Rescue SOP -
https://tdma.tripura.gov.in/sites/default/files/SOP_for_Search___rescue.PDF

For Flood Water Rescue amid Covid-19 Pandemic SOP -
https://tdma.tripura.gov.in/sites/default/files/SOP%20on%20FWR%20amid%20Covid-19.pdf
For Cases of Missing Children SOP-
https://tripurapolice.gov.in/files/uploaded-file/SOP%20circular.pdf
Revised SOP and Inventory of the National Disaster Response Reserve (NDRR) -
https://tdma.tripura.gov.in/sites/default/files/SOP%20and%20Inventory%20of%20NDRR%20%20%281%29.pdf

For Care, Maintenance and Repairing of Disaster Management Equipment SOP-
https://tdma.tripura.gov.in/sites/default/files/SOP-CTI%20WS.pdf

5.1 SOP for Departmental Nodal Officers
- Act as the focal point for disaster management activities of the Department.
- Provide his/her contact and alternate contact details to Revenue Department, State and District Emergency Operation Centres, all line departments and agencies.
- Accountable to any communication/ actions related to disaster management of the department.
- Take lead to prepare the department disaster management plan, Emergency Support Function (ESF) plan and Standard Operating Procedure (SOP).
- Constitute the Quick Response Team (QRT) in the department as per the need and organize training for the members.
- Help the department to procure search & rescue, first aid and department disaster management equipment for the QRTs and for the department if required.
- Provide regular information on disaster or task assigned to him to SEOC/ Revenue Department during and after disasters in consultation with the department head.
- Attend disaster management meetings, trainings, workshops or any related programme on behalf of the department.
- Identify an alternate nodal officer and build his/her capacity.
- As per the need of the department, set up Control room and assign other official(s) for control room duty.
- Identification and staffs for deployment on site operation centers (on site control room during a disaster).
- In consultation with the department, make arrangement of alternative communication system for the department.
- Mobilise resources for disaster response activities as per the resource inventory put in the department DM plan if it is needed by the department or other line departments.
- Organise regular awareness programmes in the department
- Organise the periodic mock drills at least twice a year as per the suitability of the department and update the plans.

5.2 SOP for Emergency Line Departments

Standard Operating Procedures (SOP) for Departments:
General Preparedness:

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

- ✓ Work under the overall supervision of the SEC / the DM & Collectors/ SDMs during emergencies.
- ✓ Designate a Nodal officer for emergency response who will act as the contact person for that department / agency.
- ✓ Designate an alternate Nodal Officer for emergency response, who will act as the contact person for that department /agency in case the Primary nodal person is indisposed.
- ✓ Develop Quick Response Teams within the Department agency and train them for quick response when required.
- ✓ Develop the departmental Disaster Management Plans according to the State Guidelines and periodically update the plans.
- ✓ Conduct mock drills to ensure effectiveness of DM Plan and training.
- ✓ In line with the National / State Disaster Mitigation Fund, prepare the Departmental Mitigation plan. Allocation of necessary funds for Mitigation activities, implementation, documentation and reporting.
- ✓ Develop other mitigation schemes which are not very urgent in nature or involve outlays which cannot be made from the State Disaster Mitigation Fund, and take up their implementation after approval as in case of other schemes and provision of funds through regular budget.
- ✓ Ensure establishment of failsafe two-way communication with the State, District and other emergency control rooms and within the organisation.
- ✓ Emphasis on communication systems used regularly in normal times with more focus on the use of VHFs with automatic repeaters, mobile phones with publicised numbers, HF radio sets etc.
- ✓ Provide training and refresher training to all members of the QRT's. Ensure training including refresher training is completed by the month of April.
- ✓ Ensure that every staff of the department/agency is aware of Disaster Management and their individual roles and responsibilities.

5.3 SOP of Line Departments:

1) Fire & Emergency Services Department

Task: As the first responders, assist the SDMA/DDMA in preparedness, rescue and response activities at all levels.

Advance Preparedness:

- Nominate Zone wise Nodal persons and alternate nodal persons at the State/District and Sub-Division levels.
- Form Quick response Teams at the State / District and Sub-division levels.
- Train the members of the QRT's
- Conduct refresher training of QRT's
- Conduct mock drills [table top as well as on site] for institutions, factories, highways and other establishments vulnerable to fire hazards.
- Prepare SoP's for QRT's and update SoP's based on experiences from real case scenarios.
- Check inventory of firefighting equipment and improve on current inventory to include new age products and systems.
- Identify areas that are vulnerable to fire hazards such as markets, congested areas etc.
- In case of congested areas or hard to negotiate lanes and bye lanes- down size firefighting equipment.
- Map sources of water for fire-fighting across the state.
- Ensure that all constructions [old and new] have adequate compliance of fire safety.

- Promote fire safety awareness.
- Recruit personnel / staff as necessary.

During / Post- Disasters
- Establish linkages with State/District Control Rooms.
- Deploy QRT's at the accident site/s.
- 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 property and loss of life to humans and livestock if any.
- Based on the incident, make a quick assessment of adequacy of available equipment.
- Requisition additional equipment and personnel as required.
- Ensure that personnel are not over stressed and relieve exhausted staff.
- Support NDRF/ SDRF teams as decided by the SEC

2. Department of Agriculture

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

Advance Preparedness: -
- Identify hazard prone zones
- Skill up gradation trainings for the officers/supporting staff & 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/sub-division/ 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 go downs
- 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 updated.
- Monitor pest & disease control
- Generate awareness on community level preparedness

During/Post - Disaster Management: -
- 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.
- Organise 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 centre 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/fertilisers 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

3. Health & Family Welfare Department
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

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 staff & 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/sub-division/ block/village, including relief camps etc in case of an emergency
- Maintain inventory including portable equipment at different locations.

During/Post - Disaster Management: -
- Establish linkages with State/District Control Rooms
- 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 anaesthetic 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 centres.
- 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 centre 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 pradhan/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 centres 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

4. Department of Animal Resources
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 Defence & police in disposal of dead bodies, claimed/unclaimed, after observing all formalities

Advance Preparedness: -
- Skill up gradation trainings for the officers/supporting staff & 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/sub-division/ block/village , including relief camps etc in case of an emergency
- List of possible storage go downs
- 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

During/Post Disaster Management:-

- 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 pradhan/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.
- Organise 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

5. PWD (DWS)

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

Advance Preparedness: -
- Identify hazard prone zones. Maintain a list of weak points/disaster prone areas
- Skill up gradation trainings for the officers/supporting staff
- 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

During/Post - Disaster Management:-
- 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
- Immediately undertake inspection of intake structures, pumping stations, water sources, treatment plants, storage tanks (hospital etc), and sewerage lines and of other equipment and review extent of damage.

- 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 centres, go downs 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 centres
- 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.
- Arrange for temporary pit latrines with adequate privacy for users in relief centres and other sites where affected people have been housed.
- Ensure that latrines that have been damaged / destroyed are documented and repaired / replaced post disaster.

6. Home (Police) Department

Task:
- Maintain law & order
- Undertake search & rescue works as well as orderly evacuation to safer places
- Undertake fire-fighting, if occurs
- Protection of supply & convoys and assist in orderly distribution of relief assistance.
- Maintain traffic and police communications.
- Conduct community capacity building programmes

Advance Preparedness: -
- Formation of teams & delegation or areas
- Skill up gradation trainings for the officers and supporting staffs & wardens /post wardens
- Mock drills according to plans
- Equipment/machines upgraded & are in working condition.
- Conduct community capacity building programmes at State/ District/ Sub-divisions/ Panchayat and school level.
- 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

During/Post- Disaster Management:-
- Establish linkages with State/District Control Rooms
- Close contact with Armed Forces for specialized assistance/equipment for search and rescue
- Establish Radio Communication through Joint Control Room (JCR) to assist evacuation, information dissemination and checking rumours
- Evacuation of People & immediate reporting to higher authority
- Assist seriously injured persons to go to treatment centres
- 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 go downs
- 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

7. Department of Food & Civil Supplies
Tasks:
- To meet the shortage of supply of food, baby food, petroleum, oil, and lubricants, superior kerosene oil, liquefied petroleum gas etc
- Action against black marketers, hoarders, etc.

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, superior kerosene oil, liquefied petroleum gas, petroleum, oil, and lubricants, 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

During/Post Disaster Management:-

- 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, sit with the teams, review situation, discuss problems, suggest remedies, collect feedback etc., to upgrade mitigation as well as action plans

8. Public Works Department (R&B)

Task:

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

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 tent age 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
- Taking up Rapid Visual Screening (RVS) and other necessary assessments, non- destructive test & retrofitting of lifeline buildings & important structure to ensure seismic proof
- 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 and bridges
- List of safe alternative routes
- Important telephone/contact details available
- Training of masons on retrofitting and building bye-laws
- Keeping close contact with administration
- Pre-contract arrangement with suppliers for requisite equipment/stores
- Generate awareness on community level preparedness

During/Post - Disaster Management:-

- 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 labourers 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 places are the roads to hospitals and main trunk routes, routes to relief go downs, camps etc.
- Undertake cleaning of all paved and unpaved road surfaces including edge metalling, pothole patching and any failure of surface foundation the affected areas and keep monitoring their conditions
- Mobilise community/village Pradhans/ Chairpersons/ Counsellors/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 centres, hospitals
- Work under construction should be secured with ropes, sandbags and covered with 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

9. Tripura State Electricity Corp. Ltd.

Tasks:
- Restoration of power supply
- Provision of power/electricity to hospitals, lifeline buildings, feeding centres

Advance Preparedness: -
- Clear definition of individual domain - who will do what?
- Skill up gradation trainings for the officers/supporting staff
- 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
- Pre-contract with suppliers (equipment)
- Arrange disaster management tool kit, at each sub-stations, comprising cable cutters, pulley blocks, jungle knives, axes, crowbars, ropes, back saws spanners and tents for crews.
- Generate awareness on community level preparedness

During/Post - Disaster Management:-
- 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 centres, go downs).

- Recruit casual labours 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 centres and lifeline buildings (DM & Collector Office/State District EOCs/Police Stations/BSNL Buildings/IMD (Agartala Airport 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

10. Forest Department
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) and other tree cutting and road clearing equipment 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 minimise 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 minimise 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, DM & Collector/ SDM 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

11. Department of Transport
Task:
- Arrangement of transport for reaching supplies to affected areas
- Transport for evacuation of people
- Transport of medical teams

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

During/Post - Disaster Management:-

- Get in touch with State/District Control Rooms
- Ascertain the actual requirement from Control Room, Supplies Dept., Revenue 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

12. Panchayat & Rural Development Department
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
- Organise 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 equipment 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 prioritise prevention and preparedness activities while ensuring active community participation

During and Post Disaster Management

- Train the DM Team and Committee Members and provide support for timely and appropriate delivery of warning to the community
- Construct alternative temporary roads to restore communication to the villages
- Operationalise emergency relief centres 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. Counselling
- 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 effectives supportive agencies for reconstruction and recovery activities.

13. ICA Department
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 liasioning 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.

14. Revenue Department
Task
- Coordination with Govt. of India
- Overall control & supervision
- Damage assessment, finalisation of reports and declaration of Emergency
- Mobilisation of finance

15. Education Department.
Task: Preparedness.
- Follow the School Safety Guideline and conduct mock drills as specified.
- Report vulnerable structures in the school premises.
- Conduct awareness on Disaster Management in Schools.
- Include Disaster Management in School curriculum.
- Encourage volunteering for NCC, NSS, Scouts & Guides

During / Post Disasters
- Coordination with the SDMA/DDMA.
- Ensure children have alternative facilities to continue their education, if schools are closed.
- Engage with children who could be suffering from trauma.

16. SW & SE Department
Task
- Vulnerability Assessment of the people who need special care and assets
- Psychosocial and Trauma care
- Training and Capacity Building of the persons with disability and Master Trainer
- Ensuring special infrastructures for the people with disability at the shelter places, prioritization of search and rescue.
- Special medical care.

Annexure 6: Checklist for DM & COLLECTOR for Disaster preparedness in the district

ACTIVITIES	(Y/ N)	REMARKS
Institutional Strengthening		
Whether DDMA is functioning on regular basis		
Whether DDMA is updating information on time		
Whether DDMA is updating reports to TDMA		
Awareness		
Whether awareness programme organised at all levels		
Whether road signals installed on crossroad and nearby schools		
Whether local language dubbed CD/DVDs shared with SDMs/BDOs/ Schools/ Panchayats/ depts.		
IEC materials like posters, hoardings handouts, resource materials prepared/ collected and shared with SDMs/BDOs/ Schools/ Panchayats/ depts.		
Whether line depts. like health, ICA, DWS, education etc incorporated disaster safety components in their awareness programs.		
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 DM/ SDM/BDO given flood preparedness talk in radio/ DD		
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 stakeholders contact no. shared with all departments and other stakeholders		
Whether the DEOC has communication redundancy (telephone, wireless phone, VHF, UHF, IP phone, internet, mega phone, mobile phone)		
Whether four digit telephone (1077) and IP phones other than the normal telephone installed in DEOC and publicised		
Data Management		
Whether weather report, rainfall info, river flow info etc are being received from IMD, CWC, Water Resource Depts. on daily basis		
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, equipments, safe shelters etc available and displayed in EOC		
Equipments		
Whether the equipments available in the district have been physically tested and placed at strategic locations		
Whether new equipments purchased and distributed to the DMTs		
Whether the equipments available in IDRN website have checked and shared in the district website in DM link page		
Whether the operators identified and trained		
Capacity Building		
Whether Master Trainers training conducted at the district level for different subjects i.e. Search & Rescue, First Aid, School Safety, Masons Training (safe construction), Mock drill, Emergency Health Management, DM Planning, PRIs training, NGOs training, Rapid Visual Screening (RVS)		

Whether orientation given to the disaster management committee members, officials, PRIs on their roles and responsibilities in disaster preparedness and cross checked		
Whether masons / helpers/ artisans identified for safe construction training and the list shared with the Revenue Deptt.		
Whether necessary steps taken up for reactivation of search and rescue and first aid teams at the GP/Village levels		
Whether DM training imparted for the NGOs and relevant works assigned to them		
Whether district level advisory committee constituted and the members oriented		
Whether district level master trainers for different subjects identified and database created		
Whether NGOs/ IRCS/ local organisations oriented on flood preparedness and involved on awareness and training activities and confirmed		
Vulnerability Analysis		
Whether hazard prone areas in the district identified indicating area, population, families, houses, crop etc.		
Whether the list of lifeline buildings identified and list shared with the Revenue Dept		
Whether Rapid Visual Screening (RVS) training imparted for the engineers and volunteers at the district level		
Whether a team for RVS constituted and works executed		
DM Plan		
Whether the district DM plan updated and reviewed by DDMA in a meeting		
Whether evacuation plan of the district has been prepared and cross checked		
Whether the flood management plan of the district shared with all line depts, stake Holders		
Whether Emergency Support Function Plan has been prepared and verified		
Whether the rectification / modification done in the FMP as per the mock drill		
Coordination		
Whether DLCC meeting already done with the line depts and agencies		
Whether NGO coordination committee constituted at the district level and works assigned to them		
Whether NGO is coordinating at all levels and providing support		
Whether the line depts constituted quick response teams at district and down levels		
Whether telecommunication dept, Power, DWS, PWD, WR, RD, BRO already been briefed for quick restoration of essential services		
Whether private agencies, local merchants, traders & suppliers have been briefed and confirmed for emergency supply of commodities		
Whether arrangement of safe drinking water in affected areas and alternate arrangement has been done and confirmed		
Whether army, PMF and police deptt water tankers have been assessed and linked up with the district FMP		
Whether separate meeting organized with the Army and Para Military Forces on disaster preparedness and response mechanism and participated in district mock drills		
Whether all temporary shelters in the district have been identified, checked and acknowledged to the vulnerable communities		

Whether pre-negotiation made with the traders, suppliers for supplying of essential commodities in a short time if required		
DM Teams		
Whether the district level search & rescue, first aid, damage assessment team and alternate team constituted and oriented		
Whether damage assessment team and alternate team already formed and oriented		
Whether the disaster management teams (DMTs) constituted under last DRM programme have reactivated		
Mitigation activities		
Whether the villages locating over the fault lines identified		
Whether detailed action plan prepared for taking up comprehensive disaster risk reduction activities over the identified villages		
Whether the boats (country boat and motor boat) have been identified, placed at strategic places and cross checked		
Whether the locations of helipads identified and checked		
Whether pre-positioning of search and rescue, medical (first aid) teams already done or earmarked		
Whether DMTs, PRIs and NGOs trained on use of improvised search and rescue, first aid and shelter equipments for flood		
Whether all departments incorporated disaster mitigation under dept dev plan		
Whether health awareness before, during and after disaster incorporated in NRHM activities		
Whether First Aid subjects included in ASHA trainings		
Whether the engineers and supervisors of SSA have trained on construction of safe SSA buildings		
Whether DIET included school safety and DM subjects in teachers training		
Whether posters, handouts prepared on disaster safety under MGNREGA, NRHM, SSA schemes		
Whether the existing helipads renovated using existing resources other than disaster management funds		
Whether all construction projects/ plans/designs verified by the district advisory committee		
Whether the district advisory committee gives advice on structural and non-structural mitigation and retrofitting measures		
District wise resource inventory prepared and cross checked		
School Safety		
Whether comprehensive school safety programme is prepared with the Dy Director, SE and approved by DDMA		
Whether school level awareness prog conducted through essay, painting, slogan, debate competitions, organizing mass rally etc		
Whether sensitization programme for the teachers and students conducted		
Whether Master Trainers training on school safety conducted		
Whether school safety training for teachers conducted at sub divn and block levels		
Whether the schools prepared school safety plan		
Whether evacuation drills conducted in the schools		
Whether specialized training for senior students (Cl-IX onwards) during summer vacation has planned and conducted		

Whether NCC/NSS volunteers have been trained on specialized training in their special camps		
Health Preparedness		
Whether CMO has been briefed for stocking of medicines and essential medical items at hospitals and vulnerable locations and confirmed		
Whether mobile medical team with requisite medicines equipments and vehicles have been arranged and confirmed		
Whether health infrastructures of army, PMF, police dept has been tagged and confirmed		
Whether the CMO has prepared the contingency plan and cross checked		
Whether the flood warning system of the district has been established and cross checked the system		
Web based information		
Whether IDRN portal updated and each of the items verified on quarterly basis		
Whether surprise checking of the items in IDRN conducted		
Whether district link page on disaster management created and updated		
Fund		
Whether sufficient SDRF is available in the district and confirmed		
Whether 15 FC for Capacity Building programme and other related funds utilized as per the plan and UCs submitted		
Mock Drill		
Whether mock drills conducted regularly		
Whether district level/ dept level / hospital and school mock drills conducted		
Whether dates fixed at half-yearly for conducting mock drills at all levels		
Whether Mock Drills conducted on earthquakes, cyclones, floods and fire incidents		
Whether mock drills conducted separately in hospitals, schools, AMC office and market places		
Whether mock drill reports shared with all stakeholders and the DM plans updated accordingly		
Preparedness for Agartala City/ULBs		
Whether City DM Committee constituted and action plan prepared		
Whether orientation done for AMC officials, ward counsellors etc		
Whether the Agartala city DM plan has prepared and updated		
Whether City DM team has constituted and oriented		
Wither lifeline buildings in Agartala city identified and RVS taken up		
Whether awareness on DM conducted frequently		
Whether strict compliance of building byelaws ensured on construction of new Buildings		
Whether the AMC has control room to assist people on essential services		
Whether ward wise S&R and FA team constituted and trained		
Whether massive training on safe construction practices conducted for masons, engineers, architects, private contractors, estate developers etc		
Whether publicity made to public on engagement of trained masons/ engineers on construction of buildings		
Whether AMC conducted surprise visit to the construction placed to ensure safe construction practices		
Whether AMC purchased equipments for disaster response		

Whether AMC identified focal points/ nodal officers for disaster management at central and ward levels		
Whether AMC has database of the resources and uploaded into the website		
Whether disaster management link page is developed in AMC website		
Whether phone in, panel discussions, DD and Radio programmes conducted on disaster management		
Whether the AMC has disaster management resource centres		
Whether disaster safety hoardings/ banners/ billboards erected in the city		
Whether the city has conducted microzonation		
Whether the city master plan developed and disaster safety aspects addressed		
Whether the City Development Plan prepared addressing to disaster management Aspects		
Whether orientation made for private owners, builders, estate developers, corporate sectors on disaster preparedness and urban safety		
SW Monsoon & Kalbaishaki		
Whether the local excavators/earthmovers/eqipments etc are identified and prepare database of their updated contact details.		
Whether the coordination with the private and government agencies done for the arrangement of heavy and light equipments for immediate response and for cleaning the roads.		
Whether the contact details and information have been shared at strategic locations for public awareness		
Whether the coordination meeting held with all line departments, key agencies and district admin. to know their preparedness		
Daily consolidated reporting to state level from district, village and block level		
Check for the proper functioning of the boats, motor boats, wooden boats etc		
Whether the trained volunteers are placed in required locations		
Updating equipments on the IDRN		
Identify the vulnerable embarkments, and be ready with the sand bags, cement boulders, and flood protection materials		
Disseminating information regarding hazards to district, village and block level through print, social and electronic media.		

All the district authorities need to submit the filled up list every quarter to Revenue Department for monitoring

Annexure 7: Helipad's Location

There are total 78 heliports in Tripura

S.N.	Block	Location	LAT(N)	LONG(E)
GOMATI DISTRICT				
1	Gomati	15-Assam Rifle Camp Dhajanagar, Udaipur.	23.33	91.20
2		OTPC, Palatana, Udaipur, Gomati Dist.	23.29	91.26
3		Chandrapur Stadium, Udaipur, Gomati Dist.	23.29	91.29
4		Amarpur R.D.Block H.Q.	23.28	91.41
5		Near Ompi R.D. Block.	23.40	91.38
6		Anandabazar	23.20	91.45
7		Near Silachari R.D Block	23.22	91.77
SOUTH TRIPURA DISTRICT				
1	Belonia	Near Goutamnagar J.B. School	23.13	91.23
2		Belonia College Ground	23.14	91.28
3		Vidyapith School Ground	23.15	91.27
4	Sabroom	Near O/o the SDO, PWD, Bhuratali	23.05	91.38
5		Near Rupaichari R.D. Block	23.04	91.41
6		Chotokhil BSF Camp	22.59	91.42
7		Near MMD College	23.01	91.42
8		Srinagar H.S School	22.00	91.33
9	Santribazar	West Kathalchari Gaon Panchayat Office	23.19	91.34
10		Baikhora School Ground	23.06	91.49
UNAKOTI DISTRICT				
1	Kailashahar	Ramakrishna Mahavidyalya	24.31	91.99
2		Airport Authority Radhanagar	24.30	92.00
3	Kumarghar	Attached with 29th Bn Assam Rifles	24.10	91.59
4		Kumarghat PWD ground	24.16	92.03
5		Kumarghat PWD ground	24.09	92.20
NORTH TRIPURA DISTRICT				
1	Dharmanagar	ONGC Batarashi	24.21	92.09
2		Bagbasa	24.35	92.22
3		Kadamtala	24.46	92.20
4		Jubarajnagar	24.38	92.16
5	Panisagar	BSF Campus, Panisagar	24.25	92.14
6		Panisagar	24.27	92.15
7		Damcherra	24.24	92.28
8		Khedacherra	24.03	92.20
9	Kanchanpur	Dasda	24.04	92.12
10		Dasda	23.94	91.98
11		Jampui hills	23.90	92.00
DHALAI DISTRICT				
1	Dhalai	MK Para BOP	23.44	91.57
2		Hariyamani para BOP	23.43	91.59
3		Ratia para BOP	23.41	92.00
4		Govindbhari BOP	23.40	92.02
5		Sher BOP	23.41	92.04
6		Garjanpassa BOP	23.41	92.06
7		Bahadur BOP	23.44	92.08
8		Vijay BOP	23.43	92.11
9		Mohan BOP	23.44	92.08
10		Tulpaibhari BOP	23.44	92.10

11		SK para BOP	23.31	91.53
12		Sikander BOP	23.33	91.55
13		JC para BOP	23.35	91.55
14		Wanassa para BOP	23.37	91.46
15		Dalapati para BOP	23.36	91.53
16		Bhagirath para BOP	23.40	91.53
17		Jenrai para BOP	23.40	91.54
18		Bhim BOP	23.44	91.57
19		Kachucherra 3 Bn TSR HQ	23.58	91.51
20		Dolubari (Ambassa)	23.55	91.50
21		Jawaharnagar	23.55	90.52
22		Manikbhander airport	24.07	91.48
23		Bakecheera	23.54	92.00
24		Kama R/Para	24.00	91.99
25		GNC Fishery Ghat	23.35	90.49
WEST TRIPURA DISTRICT				
1	Khumulwng	Khumulwng Stadium	23.79	91.44
2	Agartala	RK Nagar	23.53	91.21
SEPHAIJALA DISTRICT				
1	Bishalgarh	Karaimura H.S School Ground	23.66	91.26
2		Purba Laxmibill High School Ground	23.69	91.29
3		Sports Compound Bishalgarh	23.66	91.28
4		Ghaniamara H.S School Ground	23.66	91.24
5		Murabari High School	23.68	91.26
6		Charilam H.S School Ground	23.63	91.30
7	Jampujijala	Sudhanya Debbarma Memoral H.S School Ground	23.71	91.45
8	Sonamura	Gururband High School, Grantali	23.48	91.30
9		Mohanbhog Block Premises	23.49	91.36
10		Nalchar H.S School Ground (Near Nalchar RD Block)	23.54	91.35
11		Field Opposite of the Uttar Nalchar J.B School at Paschim Nalchar GP	23.53	91.34
12		Play ground of Baranarayan H.S School	23.24	91.16
13		TGBPP (Tripura Gas Based Power Project) Helipad, Monarchak	23.26	91.16
14		Boxanagar Mini Stadium	23.61	91.16
15		Jagannathbari Ground, MLC	23.30	91.20
16		Kabi Nazrul Mahavidalaya Play Ground		91.28
KHOWAI DISTRICT				
1	Padmabil	Baijalbari Class – XII School playground.	24.02	91.33
2	Tulashikhar	Bharat Sardar Class-XII School Playground	24.03	91.40
3	Khowai	Madhya Ganki Gram Panchayet	24.02	91.37
4	Khowai Municipal Corporation	Within Khowai Airport near A.R. camp	24.03	91.36

Source: DDMPs, Tripura 2023-24

Annexure 8: Climate and Rainfall information

In last 50 years, the maximum and minimum range of temperature month wise is given with the mean temperature of a month in last 50 years.

Year	Jan Max	Jan Min	Feb Max	Feb Min	March Max	March Min	April Max	April Min	May Max	May Min	June Max	June Min	Jul Max	Jul Min	Aug Max	Aug Min	Sept Max	Sept Min	Oct Max	Oct Min	Nov Max	Nov Min	Dec Max	Dec Min
1970	27.7	6.1	32.7	7.4	37.2	15.6	36.0	18.4	37.2	19.8	34.7	21.9	34.9	23.0	33.7	23.4	34.4	22.2	33.6	18.4	31.6	9.8	29.3	7.1
1971	29.1	7.6	32.6	6.2	37.9	10.7	34.4	15.7	34.6	18.1	34.5	21.9	33.3	22.6	34.2	22.1	33.9	21.8	33.0	18.4	30.7	9.8	28.7	6.3
1972	29.0	5.6	30.6	6	37.1	9.4	38.1	17.4	37.2	20.1	35.6	21.7	37.7	21.3	33.2	23.4	35.1	23.2	NA	17.3	NA	13.2	NA	2
1973	NA	5.9	NA	8.4	36.3	12.5	37.7	17.4	34.3	19.2	34.4	23.0	34.6	24.3	33.7	24.0	34.4	22.2	33.4	18.5	32.8	12.9	27.6	9.1
1974	27.4	6.2	34.3	5.2	36.6	13.8	34.7	17.8	34.4	19.2	34.4	21.7	32.9	23.2	33.6	23.5	33.6	22.5	33.6	21.0	31.7	16.4	26.5	7.8
1975	28.8	5.7	32.9	8.5	37.4	12.0	38.0	20.0	37.0	20.2	34.9	21.7	33.4	23.1	35.4	23.6	32.9	22.4	33.4	22.0	31.0	12.4	28.4	7.5
1976	30.9	7.2	33.3	10.6	37.9	10.6	37.5	19.0	36.6	19.0	32.9	21.2	32.9	23.2	34.3	22.0	34.0	22.5	34.2	16.8	33.7	15.4	29.2	6.4
1977	28.6	5.3	33.1	6.0	36.6	13.2	33.2	18.8	33.6	18.4	33.4	20.9	33.7	24.0	33.7	23.3	34.5	22.8	32.3	18.4	31.1	14.4	29.5	8.4
1978	29.0	6.1	33.5	6.0	36.0	11.4	38.4	17.8	34.9	20.0	33.8	21.0	33.5	22.8	35.5	23.7	33.5	23.4	33.7	21.0	32.9	10.4	31.0	7.0
1979	29.0	7.6	32.5	7.7	35.8	9.5	38.5	18.9	40.2	20.0	39.8	23.7	34.3	23.5	35.1	23.4	33.9	22.9	32.7	19.5	32.3	16.4	28.7	9.1
1980	31.0	6.8	30.9	7.0	36.9	14.4	37.9	19.7	34.9	19.2	34.2	22.9	33.6	24.4	34.4	24.0	34.2	23.0	32.5	17.8	32.2	11.7	29.0	10.2
1981	28.3	8.0	34.7	9.1	34.7	12.4	33.9	17.6	33.9	20.0	35.2	22.5	33.4	23.8	34.4	24.0	34.9	23.8	33.3	16.7	32.3	11.3	30.3	8.4
1982	30.9	7.0	30.7	8.7	35.3	12.7	37.2	18.1	37.2	18.3	34.8	22.5	34.4	23.7	34.5	23.9	35.2	22.8	33.9	17.8	33.0	9.2	28.2	8.7
1983	31.0	5.9	31.2	4.7	35.0	12.1	35.8	17.3	35.4	19.0	35.6	22.4	33.6	24.4	33.6	23.8	33.6	24.1	33.7	17.3	32.2	12.5	28.2	5.5
1984	26.9	6.1	32.3	6.7	37.2	11.0	37.6	18.7	34.3	20.0	35.8	24.0	33.6	23.2	34.6	24.0	33.1	21.5	33.0	19.5	36.0	13.4	30.6	8.4
1985	30.3	7.6	31.1	9.9	36.0	18.1	35.8	19.3	35.1	19.3	34.1	22.3	33.1	23.2	34.1	24.0	34.0	23.2	35.0	16.4	32.5	11.6	29.5	8.6
1986	29.0	8.0	32.1	8.9	38.7	12.6	35.0	17.2	35.4	17.8	36.4	23.1	33.9	23.0	39.5	23.5	33.5	21.2	33.4	19.4	32.5	13.4	29.0	10.6
1987	29.0	7.0	33.0	9.8	36.3	13.3	36.9	18.2	36.4	18.2	35.5	22.7	33.2	23.6	34.3	23.2	33.7	23.5	34.0	18.5	33.1	13.2	29.6	8.4
1988	28.7	5.6	31.0	9.5	34.4	14.6	36.2	19.1	34.1	20.8	35.2	23.0	33.6	24.0	34.1	24.5	34.4	22.2	33.9	18.2	31.4	14.1	29.0	12.6
1989	27.6	4.1	30.5	9.0	36.0	11.8	36.9	19.5	36.8	21.8	35.6	21.4	34.1	23.5	34.3	23.4	33.4	23.5	33.3	22.9	31.2	12.3	29.3	6.9
1990	31.9	7.0	31.0	11.4	37.0	12.0	34.5	14.5	35.7	20.0	35.2	22.0	35.1	23.5	34.9	23.0	34.9	22.5	33.9	16.9	32.5	12.0	33.1	9.9
1991	30.8	5.0	33.6	9.1	37.1	13.9	36.9	16.6	35.0	18.6	33.8	21.0	34.6	23.4	35.0	22.9	34.2	22.4	33.5	15.9	29.8	11.4	29.0	6.4
1992	28.4	7.1	27.4	9.7	35.9	15.4	36.8	17.4	35.4	18.8	36.2	21.4	34.0	22.6	34.8	23.0	34.0	22.2	34.3	15.6	32.9	11.4	28.1	7.5
1993	29.5	5.1	31.7	10.0	33.2	12.4	36.4	15.9	36.0	18.9	34.0	21.0	33.9	21.7	34.1	23.7	33.8	21.9	33.0	17.6	30.4	12.7	29.3	9.1
1994	28.9	7.7	30.6	9.9	34.4	12.2	36.6	17.9	39.0	19.0	35.2	21.9	34.7	23.4	34.4	23.0	34.6	20.3	33.6	17.3	31.6	12.4	29.8	7.4
1995	30.1	4.0	30.1	7.8	37.6	10.4	38.2	16.6	37.3	20.2	36.0	20.7	34.2	22.0	34.5	21.9	35.0	21.8	33.6	18.3	33.0	12.0	29.2	8.1
1996	28.7	5.3	32.6	6.0	34.5	12.3	37.1	16.9	36.0	18.0	35.4	18.9	34.6	21.0	35.4	21.6	36.0	21.7	35.0	17.8	33.7	10.1	30.9	8.5
1997	28.0	4.9	30.8	5.5	34.4	13.0	35.0	13.2	36.0	18.2	34.6	18.9	34.3	21.2	36.3	20.0	33.5	20.0	32.9	17.5	32.7	13.8	28.6	9.0
1998	27.1	7.0	31.6	8.7	34.0	11.6	34.8	15.4	36.1	20.5	35.4	22.2	34.4	23.0	34.1	23.8	35.0	23.6	35.0	20.3	33.6	14.9	30.2	9.2
1999	29.3	8.5	34.4	7.8	36.2	13.1	38.2	19.5	38.0	20.0	35.6	22.5	34.2	23.5	34.0	23.5	33.2	23.2	33.2	20.8	32.0	14.2	30.4	9.5
2000	29.4	7.0	29.0	9.6	33.4	12.6	34.6	19.0	36.0	18.4	35.8	24.2	34.7	24.2	35.1	23.2	33.6	23.6	35.8	19.8	32.0	13.5	29.4	10.4
2001	28.5	5.9	32.1	9.1	35.6	13.4	37.5	19.9	35.1	20.3	34.9	23.2	35.5	24.4	34.6	24.5	35.2	23.0	33.7	21.3	31.6	14.3	28.8	10.0
2002	29.2	8.5	33.6	8.2	35.6	13.5	34.4	14.2	35.3	19.5	34.1	23.0	34.8	24.2	34.8	24.0	35.6	22.3	34.1	16.4	32.7	14.6	29.8	9.9
2003	28.2	4.7	31.8	11.2	33.8	10.0	35.0	18.2	36.5	19.5	36.8	19.8	35.5	24.6	34.4	23.4	34.2	23.1	33.8	21.7	31.6	12.4	30.0	9.0
2004	27.7	6.7	31.9	7.5	35.0	13.7	34.0	17.4	37.0	20.4	35.5	21.5	35.2	22.1	34.7	24.8	33.9	22.4	33.3	19.6	31.3	13.3	30.6	6.7
2005	29.0	7.8	32.3	8.3	35.0	16.5	35.8	19.2	35.8	19.6	35.7	22.0	36.0	24.0	34.5	24.4	34.5	23.7	34.6	20.7	32.8	13.0	31.6	8.7
2006	29.4	8.0	34.8	12.8	37.0	13.8	37.1	18.8	36.8	20.3	35.1	22.7	35.7	24.5	35.9	24.2	35.4	23.0	34.4	20.2	32.5	10.3	30.7	9.4
2007	28.8	6.2	30.9	11.0	37.0	11.6	35.0	15.5	36.3	21.2	35.8	22.6	34.8	23.0	35.2	24.2	35.4	24.1	35.7	17.3	32.0	15.2	28.8	9.5
2008	29.5	9.2	31.2	10.0	33.5	14.0	37.6	18.2	36.9	20.5	35.6	22.6	34.0	23.0	34.5	22.4	35.2	23.4	34.6	17.5	33.2	14.0	31.0	11.3
2009	28.8	9.4	32.8	10.0	36.0	13.0	39.1	18.7	36.4	21.2	36.0	23.0	36.0	24.5	34.8	24.0	35.4	23.4	35.2	18.7	34.2	13.2	30.1	8.3
2010	30.8	6.8	33.0	8.8	37.2	15.4	35.5	20.7	35.6	20.8	36.1	23.0	35.8	25.0	35.7	25.0	35.0	23.4	36.5	19.8	32.8	14.3	31.6	9.3
2011	29.0	6.0	31.0	9.8	34.2	11.3	35.9	18.7	35.7	21.0	35.7	22.6	35.3	23.4	35.2	24.3	35.8	24.2	34.9	19.6	32.2	14.6	31.0	9.7
2012	29.1	7.5	33.6	7.7	35.6	14.7	36.6	17.8	36.6	19.5	35.4	23.4	34.8	24.3	34.7	24.6	36.7	24.6	34.6	18.3	33.1	11.6	29.1	7.0
2013	29	3.3	33.2	9.8	35.5	12.9	36.8	18.0	35.0	19.0	36.7	23.4	36.0	24.9	35.0	24.5	36.2	23.8	35.9	19.4	32.8	12.5	32.2	8.8
2014	31.1	7.5	30.5	8.9	37.8	11.8	39.4	18.0	35.8	21.2	35.8	23.7	35.6	24.4	34.6	23.7	35.3	24.2	35.1	17.5	34.2	13.2	30.6	8.6
2015	31.7	9.5	32.8	7.4	36.2	12.0	35.2	18.4	36.8	20.3	36.8	22.2	35.0	23.2	35.2	24.0	37.6	23.3	35.6	20.5	33.3	14.9	30.5	8.0
2016	29.6	6.8	34.4	9.8	35.1	16.3	36.6	18.0	36.8	19.5	36.8	23.8	35.8	24.0	36.5	24.3	35.5	24.9	35.8	19.5	34.8	14.8	30.6	12.1
2017	32.2	6.3	33.2	10.2	33.9	13.5	36.0	19.0	37.0	19.8	37.0	23.0	36.4	24.5	35.6	23.2	36.0	23.6	35.7	17.8	34.2	14.3	29.5	12.0
2018	27.4	6.3	33.8	12.0	34.6	15.0	36.0	19.0	36.0	18.6	35.4	22.0	36.6	24.5	36.2	24.8	36.4	24.6	36.2	19.8	33.0	13.1	30.0	7.4
2019	30.6	8.9	32.6	10.0	35.5	11.0	37.3	17.3	37.6	20.8	37.0	21.6	36.0	23.3	37.2	25.0	36.0	23.3	35.5	21.8	33.2	15.8	32.4	9.7
2020	29.2	8.3	32.6	7.8	37.4	14.4	37.6	17.4	37.1	20.7	36.1	23.2	36.5	24.6	37.4	25.0	37.0	25.0	36.0	21.8	34.2	13.5	31.5	8.9
2021	29.6	8.4	34.4	7.5	37.2	18.2	39.5	18.6	38.7	20.0	36.2	23.0	35.6	24.0	36.0	24.6	35.8	24.5	36.0	21.8	32.8	13.3	31.5	11.3
2022	28	9	32	10	36	14	37	19	37	21	36	23	37	25	37	25	36	24	35	19	34	15	31	10
2023	30	8	33	11	34	16	39	20	40	21	39	23												
NA=Not available																								
Max	32.2	9.5	34.8	12.8	38.7	18.2	39.5	20.7	40.2	21.8	39.8	24.2	37.7	25.0	39.5	25.2	37.6	25.0	36.5	22.9	36.0	16.4	33.1	12.6
Min	26.9	3.3	27.4	4.7	33.2	9.4	33.2	13.2	33.6	17.8	32.9	18.9	32.9	21.0	33.2	20.0	32.9	20.0	32.3	15.6	29.8	9.2	26.5	2.0
Mean	29.3	6.8	32.2	8.8	35.8	13.2	36.5	17.9	36.3	19.7	35.6	22.2	34.7	23.6	35.1	23.7	34.8	23.0	34.3	19.0	32.7	13.2	29.9	8.8

Source: IMD Agartala

Year	DISTRICTS	NO. of Rainy day	Total Rainfall	Rainfall in Jan & Feb	Rainfall in Mar,Apr &May Pre-monsoon Season	Rainfall in Jun,Jul,Aug & Sep Monsoon Season	Rainfall in Oct,Nov & Dec Post Monsoon Season
2022	West Tripura	95	1958.3	25.0	624.8	1072.3	236.2
	Sepahijala	85	1606.5	27.6	389.6	947.6	241.7
	Khowai	105	2298.8	39.2	585.8	1302.4	371.4
	Gomati	104	1747.7	22.8	396.1	1088.6	240.2
	South Tripura	101	1821.8	25.3	601.9	1034.8	159.8
	Unakoti	108	2164.6	51.4	589.6	1277.6	246.0
	North Tripura	123	2298.0	46.5	566.5	1426.9	258.1
	Dhalai	118	1874.2	30.9	453.8	1129.3	260.2
2021	West Tripura	106	1891.8	3.8	342.0	1241.0	305.0
	Sepahijala	99	1817.7	0.3	128.3	1366.9	322.2
	Khowai	93	1632.5	8.2	336.8	1019.2	268.3
	Gomati	96	1700.5	2.2	183.9	1257.6	256.8
	South Tripura	115	2187.1	0.0	206.4	1717.5	263.2
	Unakoti	96	1775.6	10.0	443.2	1111.0	211.4
	North Tripura	102	1795.2	2.2	345.8	1257.1	190.1
	Dhalai	115	1507.3	15.8	261.2	1044.1	186.2
2020	West Tripura	97	2127.1	19.5	473.6	1412.5	221.5
	Sepahijala	103	2101.6	27.1	410.6	1405.3	258.6
	Khowai	124	2239.4	26.0	618.8	1347.0	247.6
	Gomati	109	2128.8	38.3	485.7	1345.6	259.2
	South Tripura	122	2227.9	48.6	531.2	1379.6	268.5
	Unakoti	122	2426.6	24.8	676.8	1412.0	313.0
	North Tripura	115	2149.5	31.6	638.5	1121.6	357.8
	Dhalai	128	2183.7	26.7	688.1	1241.3	227.6
2019	West Tripura	99	2077.1	82.0	525.2	1261.8	208.1
	Sepahijala	92	1646.3	59.6	342.6	1128.0	116.1
	Khowai	108	2076.2	36.0	530.6	1308.4	201.2
	Gomati	80	1666.5	53.0	345.4	1109.3	158.8
	South Tripura	102	2150.5	49.8	410.0	1452.9	237.8
	Unakoti	118	2761.5	55.2	865.8	1509.7	330.8
	North Tripura	127	2425.8	38.8	713.2	1353.8	320.0
	Dhalai	127	2503.5	40.3	544.1	1662.4	256.7
2018	West Tripura	104	1946.6	7.5	873.3	947.5	118.3
	Sepahijala	97	1422.2	10.7	687.6	672.3	51.6
	Khowai	102	2277.0	23.8	1082.2	1081.4	89.6
	Gomati	104	1952.2	0.0	885.7	985.5	81.0
	South Tripura	105	2464.8	2.2	789.3	1552.2	121.1
	Unakoti	99	2037.0	30.6	925.7	999.5	81.2
	North Tripura	113	2334.8	15.0	850.6	1296.5	172.7
	Dhalai	120	2477.0	16.1	968.9	1331.9	160.1

Source: IMD Agartala

District	Blind	Low vision	Hearing Impairment	Locomotor dis.	Leprosy cured	Cerebral Palsy	Intellectual disability	Mental illness	Muscular Dystrophy	Parkinson	Acid attack victim	Multiple dis.	Sickle cell dis.
Dhalai	955	33	1428	2508	1	22	87	109	0	2	7	0	0
North Tripura	255	345	430	1346	0	51	346	66	0	0	0	0	0
South Tripura	127	398	352	1684	0	0	1	87	0	0	0	0	0
West Tripura	571	718	1601	3742	10	15	765	430	30	10	2	13	2
Khowai	243	298	505	1534	13	26	243	160	31	23	1	17	3
Sepahijala	248	323	650	1887	4	10	282	115	20	6	1	4	3
Gomati	139	385	405	1944	0	0	2	91	1	0	1	0	0
Unakoti	233	386	575	1637	3	52	381	108	0	0	0	0	1
Total	2732	2886	5947	16282	31	176	2107	1186	82	41	12	34	9

District Name	Haemophilia	Thalassemia	Speech and Lang dis.	Multiple Sclerosis	Specific learning dis.	Chromic Neurological	Autism	Dwarfism	Multiple dis.	Mental retardation	Physical impairment	Visual impairment	Hard of hearing	Multiple Dis.	Ortho	Multiple
Dhalai	1	8	5	0	0	25	3	0	0	445	1	82	0	2	2	286
North Tripura	0	6	1	0	0	0	7	2	0	70	0	0	164	1	0	271
South Tripura	0	8	1	0	0	0	0	0	0	550	1	12	229	0	6	140
West Tripura	14	56	174	16	7	39	30	18	4	781	197	22	9	18	30	773
Khowai	4	7	193	4	6	55	16	19	5	214	0	19	1	5	5	282
Sepahijala	1	27	99	3	2	24	3	2	12	270	5	4	10	4	13	334
Gomati	0	10	4	0	0	0	1	0	0	626	0	49	185	1	5	172
Unakoti	0	12	5	0	0	0	5	1	0	32	0	0	97	1	0	273
Total	20	134	483	23	15	143	65	42	21	2988	204	188	695	32	61	2531

Source: State Resource Centre

Total Number of beneficiaries in Tripura

Name	Total Number of beneficiaries in Tripura
Indira Gandhi National Old Age Pension [IGNOAPS](60-79 years)	97723
Indira Gandhi National Old Age Pension [IGNOAPS] (80 years and above)	13840
Indira Gandhi National Widow Pension [IGNWPS]	16433
Indira Gandhi National Disability Pension [IGNDPS] (80% or above)	123
State Old Age Pension	62602
Widow and Deserted	65010
Deserted Women	4153
State Widow Pension Scheme	1131
Pension to Un-married Women of Age 45 Years and above	2107
Blind and Handicapped Pension	3896
Allowance for 100 % blind	682
Unemployment Allowance for 100% Blind	17

Pension to Person who lost 100% Eye Sight	415
60% and above Disability Allowance	6863
Pension to 80% and above Disable Person	2798
Tripura Cobbler	117
Tripura Rickshaw puller	1210
Bidi Shramik	437
Motor Sramik Pension	646
laundry Workers	478
Barber Workers	626
Handloom Workers	1728
Fishermen	3249
Greha Shahyika Bhata (GSB)	23813
Tripura Incentive to Girl Child (BPL)	69142
Social Pension Scheme for Person living with HIV	1166
Social Pension Scheme for Transgender	7
Social Pension Scheme for Grade-II Deformed Leprosy Patients	17
Social Pension for Cancer Patient	2006
Folk Artists	2281
Carpenter	2683
Blacksmith	239
Pottery	411
SC Traditionally Connected with Sanitation Work (Harizan)	115
State Total	**260045**

Source: Tripura Diary by Government of Tripura 2023

Annexure 10: Trained Persons in Disaster Management by Fire Department

	Trained Persons in Disaster Management	
Date / Year	**Name of the Training**	**Total No of Trained Volunteers & Officials**
2012-2013	Disaster Management Course	43
2013-2014	Emergency Response to Rail Transport Accident	1
2014-2015	TOT combined Community Capacity building on Disaster Management	17
2015-2016	Collapsed Structure Search & Rescue and Medical First Responders	39
2016-2017	Refresher Training course on Disaster Management	5
2016-2017	TT combined Community Capacity building on Disaster Management	5
2016-2017	Operation, Care and Maintenance of Equipments	13
2017-2018	Specialized Training Programme for Development of Improvised Floating devices Flood Management	10
2017-2018	Disaster Management Course	76
2017-2018	Road Traffic Accident and Confined Rescue	2
2017-2018	TOT in MFR & CSSR	5
2017-2018	MOT in MFR & CSSR Course	5
2017-2018	Operation, Care and Maintenance of Equipments	15
2017-2018	First Aid	50
2018-2019	Training of Trainer (TOT)	5
2018-2019	Fire Drill Instructor Course	3
2018-2019	TOT in MFR & CSSR	4
2019-2020	MOT in MFR & CSSR Course	1
2019-2020	Combined Community Capacity building Course	3
2019-2020	Operation, Care and Maintenance of Equipments	14
2019-2020	Course 1912 Training of Trainer (TOT) on Flood Disaster Management Equipments	10
2019-2020	1913 Refresher Training for SDRF	3
2021-2022	HAM Radio Training	100
2022-2023	Training of Trainer (TOT)	2
	Total	**427 Persons**

Source: Fire Department, State office, Tripura

Annexure 11: Trained Persons in Disaster Management by CTI Agartala

	Name of Courses conducted at Central Training Institute, Gokulnagar, Sepahijala District,	
Sl. No.	**Name of the Courses**	**Duration**
1.	Basic Disaster First Responder Course	6 weeks
2.	Refresher Course on DM for SDRF	2 weeks
3.	Orientation Course on Disaster Management	4 weeks
4.	Operation, care & Maintenance course of DM Equipments	1 weeks
5.	Boat Handling & Maintenance Courses	5 days
6.	Food Disaster Response – 'Aapda Mitra'	2 weeks
7.	Casualty Management and Life Saving Techniques	5 days
8.	Community Awareness Pragramme (CAP)	3 days
9.	Community Based Disaster Risk Management (Earthquake)	3 days
10.	ToT for Combined Community Capacity Building	1 weeks
11.	Training on First Aid	1 weeks
12.	Rescue & Relief Operation Course	1 weeks
13.	ToT on MFR & CSSR	2 weeks
14.	Foundation course for Civil Defence Crops	
15.	Basic First Aid Training to Police personal related to Road Traffic	1weeks

Sl. No.	**Source : Central Training Institute , Sepahijala District Tripura**	
1.	Civil Defence Volunteers	895 Nos.
2.	Aapada Mitra Volunteers	1001 Nos.
3.	Others - officials/ Non Officials	10,228 Nos.
4.	Total Trained (from 2008)	12,124 Nos.

	Trainings Conducted	
Institution/Agency	**Target Grade**	**No. of person trained**
SIPARD	Govt. officials, PRIs, SHGs, NGOs	6371
CTI	TSR, Police, HG, CD, Fire personnel and DMTs	6823
PRTI	PRI Members	1230
NIT-A	Engineers	213
DIET & Schools	Teachers	2225
Health Deptt	Doctors and Paramedics	134 and 307
PWD, RD & IE-Tripura	Masons & Helpers	3000+
Dist & Sub-div admn.	Community Volunteers	10000+
ICA	Journalists	137

Source: CTI Agartala

Annexure 12: Dam Status Report

Internal Dam safety audit has been conducted twice till September 2023 thorough Rebound hammer test, from the below table it can be seen that the values of test are under control and it states that the strength of the dam is able to last for upcoming years. Dam is safe to face hazard in limited parameters.

Safety audit must be done by the external or governmental agency to provide more clarity or to know the strength of the Dam. Internal audit must be done regularly and mock drills to be conducted at regular interval of time.

DAM Safety Report of Gumati Hydro Dam in South Tripura

o No safety audit has been conducted.

o Internal safety audit has been conducted twice till now by NIT (National Institute of Technology) Agartala. It is done by Non-Destructive Test (NDT) Hammer rebound

a) 1st test conducted in 2015

b) 2nd test conducted in April 2023

Summary of the Rebound Hammer Test Results

Point	Location	Average Rebound Values	Average Strength Values **(N/mm²)	Standard Deviation (+-)
1	On the Downstream side – outside vertical wall (near to gallery gate)	46.88	42.2	4.01
2	Downstream side – slope portion (near to gallery gate)	46.82	42.1	3.89
3	Upstream side – inside gallery immediately after entry	49.42	44.8	3.68
4	Upstream side – second landing inside gallery	59.36	54.9	3.86
5	Upstream side middle of the downward stairs within the gallery	53.83	49.3	2.98
6	Upstream side – Last point just before water logged bottom portion	50.44	45.8	3.78
7	Downstream side – last point just before water logged bottom portion	45.69	41	4.16
8	Downstream side opposite to point 4	54.38	49.8	4.13
9	Downstream side opposite to point 3	44.87	40.2	3.96
10	Inside the lift room of the first shutter from the road end	42.94	38.2	2.84

** NB; As per IS 13311 (Part 2) 1992, the estimation of strength of concrete by rebound hammer method cannot be held to be very accurate and probable accuracy of prediction of concrete strength in structure is (+-) 25 percent

Source: TGPL Tripura

ANNEXURE 13: [Chapter 3]

13.1 HEAVY RAIN

Apart from the table given below, number of events happened in Tripura are: April 2023 9 houses were damaged, 53 houses were damaged in May 2023, 29 houses were damaged in May 2022, 140 houses were damaged in June 2022, 71 houses damaged in July, August, Sep. 2022, 128 houses damaged in 2021, 46 houses damaged in August 2021, 6 houses were damaged in June 2020, 55 houses were damaged in July 2020, and 19 houses were damaged in 2017.

Year	District	Subdivision	No of Village/ ward Affected	No of Families Affected	House Damage Total	Relief Camp/shelter homes No.	Families took shelter	Inmates
2023	Dhalai	Kamalpur		25	108	1	3	18
	Gomati	Karbook		40	92			
	Khowai	Khowai			49			
	North Tripura	Panisagar			1			
	Sepahijala	Sonamura			1			
	Unakoti	Kumarghat			29			
	West Tripura	Jirania		45	9	1	45	238
2022	Dhalai	Gandacherra			273	1	15	43
	Gomati	Amarpur			37	21	385	1331
	Khowai	Teliamura			32	8	63	226
	North Tripura	Dharmanagar			56	3	77	298
	Sepahijala	Sonamura			33			
	South Tripura	Belonia			1			
	Unakoti	Kumarghat			107	4	201	953
	West Tripura	Jirania		1	118	46	2407	9593
2021	Sepahijala	Sonamura			150	8	190	725
	Dhalai	Kamalpur			65			
	Gomati	Udaipur			162	5	100	364
	South Tripura	Sabroom			1			
	Khowai	Teliamura		1	29			

Year	District	Block						
	North Tripura	Panisagar			15			
	South Tripura	Sabroom			4			
	Unakoti	Kumarghat			1			
	Unakoti	Kumarghat			1			
	Sepahijala	Sonamura			12			
	South Tripura	Sabroom			2			
	Unakoti	Kumarghat			10			
2020	Unakoti	Kailashahar			4			
	Dhalai	Ambassa	4	6	21			
	Gomati	Amarpur	4	3	47			
	North Tripura	Kanchanpur	1	1	1			
	South Tripura	Belonia			3			
	Khowai	Khowai			3			
	West Tripura	Jirania			12			
2018	South Tripura	Santirbazar	8	14	14			
	Unakoti	Kumarghat	5		13			
2017	Dhalai	Ambassa	1	6	6			
	Gomati	Udaipur	2	4	4			
	West Tripura	Jirania	6	42	6	Life loss - 1		
	Sepahijala	Sonamura	5	11	11			
	Khowai	Teliamura			19			
	Unakoti		1	7	0			
	South Tripura	Santirbazar	1		10			
2016	Gomati	Karbook		220	220			
2015	South Tripura	Belonia	1	1	1			
2013	North Tripura	Dharmanagar		19				

Source: State Emergency Operation Centre, Agartala (Tripura)

13.2 HAILSTORM

Year	District	Subdivision	Date	Camps	No of Village/ward Affected and other damages	No of Families Affected	House damage
2023	North Tripura	Kanchanpur	3/28/2023				10
2023	North Tripura	Dharmanagar	3/21/2023				105
2023	Dhalai	gandacherra	3/15/2023				157
2023	Khowai	khowai	4/21/2023				467
2023	Dhalai	gandacherra	4/21/2023				31
2023	Dhalai	Longtharai Valley	4/21/2023	Relief camp - 2, Families took shelter - 114, Inmates took shelter - 584			842
2023	Khowai	khowai	4/21/2023				2112
2023	Khowai	Teliamura	4/21/2023		Public building-2, AWC building at Gouranga Tilla MC and School in Hawaibari		73
2023	Khowai	khowai	4/21/2023				884
2023	west Tripura	Jirania	3/21/2023				114
2023	west Tripura	Jirania	4/21/2023				16
2022	West Tripura	Jirania	4/11/2022				172
2020	Gomati	Karbook	4/11/2020				4
2020	Gomati	Karbook	4/11/2020				40
2020	Sepahijala	Jampuijala	4/11/2020				12
2020	Sepahijala	Jampuijala	4/11/2020				105
2020	Sepahijala	Sonamura	4/25/2020				19
2020	Gomati	Karbook	4/25/2020				10
2020	Gomati	Karbook	4/25/2020				8
2019	North Tripura	Kumarghat	4/2/2019				51
2019	Unakoti	Kumarghat	4/2/2019				191
2017	South Tripura	Belonia	3/18/2017			37	37
2017	West Tripura	mohanpur	3/18/2017			12	
2017	West Tripura	Sadar	3/18/2017				306

2017	West Tripura	mohanpur	3/18/2017	Abhicharan ADC Village		30	
2017	South Tripura	Belonia	3/18/2017			6	6
2017	South Tripura	Belonia	3/18/2017			1	1
2017	South Tripura	Santirbazar	3/18/2017			2	2
2017	South Tripura	Sabroom	3/18/2017			2	7
2016	West Tripura	Jirania	5/14/2016	PurbaBarjala	No of Village/ward Affected - 2	23	23
2016	West Tripura	Jirania	5/14/2016	Champamurra	No of Village/ward Affected - 1	2	2
2016	North Tripura	Dharmanagar	5/17/2016	Algapur,Ward No-3	Life loss -1, Injured - 1, Relief camp -3		
2015	Dhalai	Longtharai Valley	4/5/2015				18
2015	Dhalai	Longtharai Valley	4/5/2015				86
2015	Gomati	Karbook	4/5/2015			22	22
2015	Khowai	Khowai	4/5/2015				99
2015	Sepahijala	Sonamura	4/5/2015				20
2015	Gomati	Karbook	4/5/2015			15	
2015	Gomati	udaipur	4/5/2015			2	
2015	Sepahijala	Bishalgarh	4/5/2015		Electric post damage – 18	41	41
2015	Sepahijala	Jampuijala	4/5/2015			6	
2015	West Tripura	Sadar	4/5/2015				38
2015	West Tripura	mohanpur	4/5/2015			145	145
2015	West Tripura	Jirania	4/5/2015				70
2015	Dhalai	kamalpur	4/5/2015				175
2015	Dhalai	Longtharai Valley	4/5/2015			1	
2015	Unakoti	kumarghat	4/5/2015			315	312
2015	Unakoti	pecharthal	4/5/2015			93	101
2015	North Tripura	Panisagar	4/5/2015			30	
2015	North Tripura	kanchanpur	4/5/2015			30	
2015	North Tripura	Dharmanagar	4/5/2015			110	
2014	Sepahijala	sonamura	4/8/2014		No of Village/ward Affected - 3	498	498
2014	west Tripura	Jirania	4/4/2014		No of Village/ward Affected -1	2	
2014	west Tripura	mohanpur	4/4/2014		No of Village/ward Affected -2	17	
2014	Gomati	udaipur	4/9/2014			30	30
2014	Khowai	khowai	4/7/2014		No of Village/ward Affected -4	9	9

2014	west Tripura	Sadar	6/23/2014			45	
2013	Sepahijala	sonamura	4/1/2013		No of Village/ward Affected -2	58	58
2013	Khowai	khowai	4/3/2013		No of Village/ward Affected -4	4	4
2013	Khowai	khowai	4/3/2013		No of Village/ward Affected -5	5	5
2013	north Tripura	dharmanagar	4/19/2013		No of Village/ward Affected -2	8	8
2013	Dhalai	longtharai valley	4/20/2013		No of Village/ward Affected -3	16	
2013	west Tripura	Sadar	4/27/2013		No of Village/ward Affected -3	15	
2013	west Tripura	Jirania	4/27/2013		No of Village/ward Affected -22	100	
2013	west Tripura	mohanpur	4/27/2013		No of Village/ward Affected -7	45	
2013	Khowai	khowai	4/27/2013		No of Village/ward Affected -27	410	99
2013	Khowai	khowai	4/27/2013		No of Village/ward Affected -2	24	24
2013	Khowai	teliamura	4/27/2013		No of Village/ward Affected -7	66	69

Source: State Emergency Operation Centre, Agartala (Tripura)

13.3 Thunderstorm / Thundering

Year	District	Subdivision	No of Village/ward Affected	No of Families Affected	Life Loss No.	Injury No.	House Damage Total	Damage of property	Relief Camp/shelter homes No.	Families took shelter	Inmates	Affected GPs
2023	Dhalai	Longtharai Valley					1372		2	114	584	
	Gomati	Udaipur					109					
	Khowai	Teliamura			1		3144					
	North Tripura	Panisagar					240					
	Sepahijala	Bisalgarh					284					
	South Tripura	Santirbazar					24					
	Unakoti	Kumarghat			2	12	230					
	West Tripura	Jirania					171					
2022	Dhalai	Gandacherra			1		302					
	Gomati	Karbook			2	2	119	18				
	Khowai					2	118					
	North Tripura	Dharmanagar					33					
	Sepahijala	Bishalgarh					101					
	South Tripura	Belonia					139					
	Unakoti	Kumarghat					226					
	West Tripura	Jirania					172					
2021	Dhalai	Kamalpur		4			836					
	Gomati	Amarpur					127					
	Khowai	Khowai					234		2	27	113	
	North Tripura	Dharmanagar			1		103					
	Sepahijala	Sonamura					7					
	South Tripura	Belonia					37					
	Unakoti	Kailashahar					2					
2020	Dhalai	Longtharai Valley	24	104			873					

Year	District	Name						2 class rooms of Nutun bazar High School				
	Gomati	Karbook	57	125		1	764	2 class rooms of Nutun bazar High School				
	Khowai	Teliamura	14	35			610		7	96	397	
	North Tripura	Dharmanagar	34	1899			3070					
	Sepahijala	Sonamura	29	121		1	3019	1	21	2402	9600	
	South Tripura	Belonia	24	82		1	410					
	Unakoti	Kumarghat	2	48			441					
	West Tripura	Mohanpur		308			1921					
2019	Dhalai	Gandacherra	88	647			832					
2019	Gomati	Udaipur	7	172			1254					
2019	Khowai	Teliamura	2	6	2		26		16	1425	5700	
2019	North Tripura	Kumarghat	29	2333			2534					
2019	Sepahijala	Bishalgarh	19	443			491					9
2019	South Tripura	Santirbazar	24	355			359					
2019	Unakoti	Kumarghat	5	53			296					
2019	West Tripura	Jirania					93		4	58	217	
2018	Dhalai	Gandacherra	127	962		4	978					
2018	Gomati	Amarpur	28	101	1		487					
2018	Khowai	Teliamura	5	80	1		194					
2018	North Tripura	Panisagar					530					
2018	Sepahijala	Bishalgarh	94	110			373					
2018	South Tripura	Sabroom	5	9			16					
2018	Unakoti	Kumarghat	60	483			483					
2018	West Tripura	Sadar	71	4169	1		3345					
2017	Dhalai	Longtharai Valley	26	286			1546					
2017	Gomati	Udaipur	3	11			95					

Year	District	Subdivision										
	Khowai	Khowai	56	296			428					
	North Tripura	Dharmanagar	16	500	1					652	1278	
	Sepahijala	Bishalgarh	14	132	1		385					
	South Tripura	Santirbazar	28	323			328					
	Unakoti	Kumarghat	32	265			223					
	West Tripura	Mohanpur	25	199	1		527					
2016	Dhalai	Ambassa	39	171			175					
	Gomati	Amarpur		82			93					
	Khowai	Khowai		8			9					
	North Tripura	Kanchanpur	58	206	1		8			7	239	
	Sepahijala	Bishalgarh	4	13			255					
	South Tripura	Santirbazar	4	6			75					
	Unakoti	Kumarghat	80	472			472					
	West Tripura	Mohanpur	38	252			247					
2015	Dhalai	Kamalpur	82	1041			1412		3	4	15	
	Gomati	Karbook		39			38					
	Khowai	Khowai					100					
	North Tripura	Panisagar		170							0	
	Sepahijala	Bishalgarh	19	177			244		1	3	12	
	South Tripura	Belonia	8	20	4		24					
	Unakoti	Kumarghat		408			413					
	West Tripura	Jirania	61	478	1		592					
2014	Dhalai	Longtharai Valley				55						
	Gomati	Udaipur		30		8						
	Khowai	Khowai	4	9		3						
	Sepahijala	Sonamura	3	498		8						
	West Tripura	Jirania	3	64								
2013	Dhalai	Longtharai Valley	60	713								
	Gomati	Udaipur	15	320								

Year	District												
	Khowai	Khowai	183	864		9	513						
	North Tripura	Dharmanagar	59	430	2	8				8	16	46	
	Sepahijala	Sonamura	7	88		9	98						55
	South Tripura	Sabroom			1								
	Unakoti	Kailashahar	1	126	1	26							
	West Tripura	Sadar	108	597	2	49							
2012	Dhalai	Gandacherra	5	144									
	Khowai	Khowai	6	83			52						
	North Tripura	Kanchanpur		1272		9					9	859	
	Sepahijala	Sonamura	4	51		11							
	Unakoti	Kailashahar	5	230		45							
	West Tripura	Sadar		133		215							

Source: State Emergency Operation Centre, Agartala (Tripura)

13.4 Agriculture affected in Tripura (District / Sub - Division wise) from 2017 – 2022

S.N.	District	Year	Type of Natural Calamities	Crop Damages (Rs. In Lakh)	Areas affected (Ha.)	Nos. of family affected
1	West Tripura	2017(June)	Heavy Rainfall	10	256	560
		2017(August)	Heavy Rainfall	1109.3	3739	7649
		2017(October)	Heavy Rainfall	45.48	1934	1799
		2017(December)	Untimely Rainfall	125.53	344	1637
		2018(May)	Heavy Rainfall	148.49	497	1644
		2018(June)	Heavy Rainfall	146.4	120	730
		2019(July)	Heavy Rainfall	79.5	204.9	570
		2020(October)	Cyclone	118.3	594	2374
		2021(December)	Cyclone Storm Jawad	724.27	1960	5498
		2022(October)	Cyclone Sitrang	8.908	416	1054
2	North Tripura	2017(June)	Heavy Rainfall	460	2332	2933
		2017(October)	Heavy Rainfall	47	568	1098
		2017(December)	Untimely Rainfall	244.44	2640.3	9063
		2018(May)	Heavy Rainfall	164.06	439	2111
		2018(June)	Heavy Rainfall	223	640	1684
		2019(July)	Heavy Rainfall	23.3	60	96
		2019(November)	Untimely Rainfall	27.41	203	72
		2021(December)	Cyclone Storm Jawad	745.15	1670	3330
3	Unakoti	2017(June)	Heavy Rainfall	1605	578	1957
		2017(August)	Heavy Rainfall	0	0	0
		2017(October)	Heavy Rainfall	152.68	290	1098
		2018(June)	Heavy Rainfall	644.01	8773	12494
		2020(October)	Cyclone	142.68	267	465
		2021(December)	Cyclone Storm Jawad	444.15	1185	3330
4	Dhalai	2017(April)	Heavy Rainfall	13.89	25	78
		2017(June)	Heavy Rainfall	63	376	1281
		2017(August)	Heavy Rainfall	15.21	114.3	262
		2017(October)	Heavy Rainfall	666.67	859	3087
		2017(December)	Untimely Rainfall	756.46	1125	2958
		2018(June)	Heavy Rainfall	200.69	817	2556
		2019(July)	Heavy Rainfall	80.9	218	912

		2019(November)	Untimely Rainfall	7.94	27	347
		2020(April)	Hailstorm & Cyclone	13.5	74	141
		2020(October)	Cyclone	132.48	237	2603
		2021(December)	Cyclone Storm Jawad	632.27	1417	5479
5	Khowai	2017(April)	Heavy Rainfall	21.19	478	76
		2017(June)	Heavy Rainfall	611	618	726
		2017(August)	Heavy Rainfall	184.46	629	724
		2017(October)	Heavy Rainfall	599.65	716.82	3978
		2018(May)	Heavy Rainfall	829	1769.5	5509
		2018(June)	Heavy Rainfall	74.73	156	1337
		2019(July)	Heavy Rainfall	153.5	533	3085
		2020(April)	Hailstorm & Cyclone	13.92	135	192
		2020(October)	Cyclone	118.3	595	2374
		2021(June-July)	Heavy Rainfall	21	210	400
		2021(December)	Cyclone Storm Jawad	323.5	725	4313
		2022(October)	Cyclone Sitrang	786.29	1260.49	4367
6	Sepaihijala	2017(April)	Heavy Rainfall	88.14	2192.95	2104
		2017(August)	Heavy Rainfall	2279.95	7311	12771
		2017(October)	Heavy Rainfall	1379	5833	12487
		2017(December)	Untimely Rainfall	256	1289	4588
		2018(June)	Heavy Rainfall	3	35	30
		2019(July)	Heavy Rainfall	6.5	43.5	273
		2019(November)	Untimely Rainfall	9.05	739.1	3787
		2020(April)	Hailstorm & Cyclone	48.5	201	986
		2020(October)	Cyclone	224.99	945	3370
		2021(June-July)	Heavy Rainfall	2012.61	1436	5228
		2021(December)	Cyclone Storm Jawad	613.97	1376	7091
		2022(October)	Cyclone Sitrang	626.9	863.04	2894
7	Gomati	2017(April)	Heavy Rainfall	196.95	1046	4004
		2017(August)	Heavy Rainfall	420.78	3394	6163
		2017(October)	Heavy Rainfall	2138.43	3660	13901
		2017(December)	Untimely Rainfall	159.18	1037	3587
		2018(May)	Heavy Rainfall	1154.49	2374.5	10920
		2018(June)	Heavy Rainfall	148.65	29.5	670

		2019(July)	Heavy Rainfall	182.2	116.5	737
		2019(November)	Untimely Rainfall	46.99	205.5	991
		2020(April)	Hailstorm & Cyclone	1.58	3.68	17
		2020(October)	Cyclone	322.82	695.8	2619
		2021(June-July)	Heavy Rainfall	2012.61	1463	5228
		2021(December)	Cyclone Storm Jawad	1492.54	3067	7227
		2022(October)	Cyclone Sitrang	128.54	324.3	998
8	South Tripura	2017(April)	Heavy Rainfall	2.24	32	95
		2017(August)	Heavy Rainfall	87.06	435	2152
		2017(October)	Heavy Rainfall	4000.37	3156.02	11322
		2017(December)	Untimely Rainfall	375.61	995	3020
		2018(June)	Heavy Rainfall	391.16	1502.68	8400
		2019(July)	Heavy Rainfall	109.3	318.16	511
		2019(November)	Untimely Rainfall	40.95	534.5	1587
		2020(October)	Cyclone	188.51	640.5	2126
		2021(December)	Cyclone Storm Jawad	1308.5	2142	7432
		2022(October)	Cyclone Sitrang	205	861	1986

Source: Agriculture department

Crop Damage by SITRANG Cyclone

Name of District	No. of Farmers affected	Total Area affected (in Ha.)	Total Fund involved (in Lakhs)
North Tripura	Damage below 33%		
Unokoti	No Damage		
Dhalai	Damage below 33%		
Khowai	4367	1260.49	53.46
West Tripura	1045	416	8.91
Sephaihijala	2894	863.04	42.63
Gomati	998	324.3	8.74
South Tripura	1986	861	13.94
Total	11290	3724.83	127.69

Source: Agriculture Department

Crop Damage by different Hazards

District wise Crop Damage by different Disasters

Year	Incidence of Hailstorm	Incidence of Flood/ inundation	Pest & disease epidemic	Drought/ drought like situation	Cyclone
1988-89	Nil	Nil	Nil	North, West, South	Nil
1999-2000	Nil	North, West, South	Nil	Nil	Nil
2001-02	Nil	Dhalai, North, West, South	Nil	Nil	Nil
2002-03	Nil	Dhalai, North, West, South	Nil	Nil	Nil
2003-04	Dhalai, West	Dhalai, North, West, South	Nil	Nil	Dhalai, West
2004-05	Nil	Dhalai, North, West, South	Nil	Dhalai, North, West, South	Nil
2005-06	Nil	North	Dhalai, North, West, South	Dhalai	Nil
2006-07	Nil	North, South	Nil	Nil	Nil
2007-08	Nil	Dhalai, North, West, South	Nil	Dhalai, North, West, South	Nil
2008-09	Dhalai, South	Dhalai, North, West, South	Nil	Dhalai, North, West, South	Nil
2009-10	Dhalai, North, West, South		Nil	Nil	Nil
2010-11	Nil	Dhalai, North, West, South	Nil	Nil	Nil
2013-14	Nil	Dhalai, West, South	Nil	Nil	Nil
2014-15	South Tripura, Khowai		Sepahijala, Gomati, South	Nil	Sepahijala (Damage to exotic flowers)
2015-16	Khowai, West, Sipahijila, Dhalai, South, Unakoti	Khowai, West, Sipahijila, Dhalai, South, Unakoti	Nil	Nil	Nil
2016-17	Khowai, West, Sipahijila, Dhalai, South, Unakoti	Khowai, West, Sipahijila, Dhalai, South, Unakoti	Nil	Nil	Nil
2017-18	North Tripura, Unakoti, Dhalai, Khowai, West Tripura, Sephaihijila, Gomati & South Tripura	North Tripura, Unakoti, Dhalai, Khowai, West Tripura, Sephaihijila, Gomati & South Tripura	Nil	Nil	Nil
2018-19	North Tripura, Unakoti, Dhalai, Khowai, West Tripura, Sephaihijila, Gomati & South Tripura	North Tripura, Unakoti, Dhalai, Khowai, West Tripura, Sephaihijila, Gomati & South Tripura	Nil	Nil	Nil
2019-20	North Tripura, Unakoti, Dhalai, Khowai, West Tripura, Sephaihijila, Gomati & South Tripura	North Tripura, Unakoti, Dhalai, Khowai, West Tripura, Sephaihijila, Gomati & South Tripura	Nil	Nil	Nil
2020-21	North Tripura, Unakoti, Dhalai, Khowai, West Tripura, Sephaihijila, Gomati & South Tripura	North Tripura, Unakoti, Dhalai, Khowai, West Tripura, Sephaihijila, Gomati & South Tripura	Nil	Nil	Nil
2021-22	North Tripura, Unakoti, Dhalai, Khowai, West Tripura, Sephaihijila, Gomati & South Tripura	North Tripura, Unakoti, Dhalai, Khowai, West Tripura, Sephaihijila, Gomati & South Tripura	Nil	Nil	Nil

Source: Agriculture Department

13.5 Earthquake

Year	District	Subdivision	Type of Disaster	No of Families Affected	Loss Life No.	Injury No.	House Damage Fully	House Damage Severely	House Damage Partly	House damage Total
2021	Unakoti	Kumarghat, Kailashahar	Earthquake							37
2017	West Tripura	Mohanpur	Earthquake			1			6	6
	Unakoti	Kailashahar	Earthquake			6	31	1210	3589	4830
	North Tripura	Kanchanpur	Earthquake						123	123
	Khowai	Teliamura	Earthquake						4	4
	Dhalai	Ambassa	Earthquake		1		11	447	2385	2843
	South Tripura	Belonia	Earthquake						1	1
	Sepahijala	Bishalgarh	Earthquake						43	43
2016	Khowai	Teliamura	Earthquake	3						0

Source: State Emergency Operation Centre, Agartala (Tripura)

Date and time	Magnitude	Depth	Location
Jun 16, 2023 10:16 am (GMT +5:30)	Mag - 5	10 km	24 km southeast of Sylhet, Bangladesh
Aug 30, 2020 01:47:38 UTC (01:47 GMT)	Mag -5.1	38 km	34 km north of Khagrachhari, Khagrachari, Chittagong, Bangladesh
Aug 27, 2020 12:07 GMT	Mag -5.3	10 km	24 km east of North Vanlaiphai, Serchhip, Mizoram, India
Jun 21, 2020 22:40 GMT	Mag -5.5	10 km	26 km east of North Vanlaiphai, Serchhip, Mizoram, India
Jun 21, 2020 10:46 GMT	Mag -5.2	42 km	47 km northeast of Aizawl, Mizoram, India
Apr 15, 2019 01:39 GMT	Mag -5	10 km	43 km west of Hakha, Chin State, Myanmar (Burma)
Jan 3, 2017 09:09 GMT	Mag -5.5	36 km	14 km northeast of Āmbāsa, Dhalai, Tripura, India
Sat, 2 Mar 2013 07:30 (Asia/Dhaka)	Mag -5.5	37 km	42 km southeast of Sylhet, Bangladesh
Sep 10, 2010 17:24 GMT	Mag -5.1	10 km	Chandpur, Chittagong, 27 km south of Sonargaon, Bangladesh
Aug 12, 2006 20:46 GMT	Mag -5	43 km	20 km southwest of Silchar, Cachar, Assam, India
Feb 15, 2005 11:15 GMT	Mag -5	35 km	15 km south of Hailākāndi, Hailakandi, Assam, India
Dec 9, 2004 08:49 GMT	Mag -5.4	35 km	Karimganj, 27 km west of Silchar, Cachar, Assam, India
Jul 27, 2003 12:07 GMT	Mag -5.5	10 km	Rangamati, 59 km east of Bibir Hat, Chittagong, Bangladesh
Jul 26, 2003 23:18 GMT	Mag -5.7	10 km	Rangamati, 56 km east of Bibir Hat, Chittagong, Bangladesh
Jul 31, 1997 15:59 GMT	Mag -5.3	33 km	Champhai district, 48 km east of Aizawl, Mizoram, India
May 8, 1997 02:53 GMT	Mag -6	35 km	38 km east of Sylhet, Bangladesh
Nov 19, 1996 00:12 GMT	Mag -5.4	50 km	Hailakandi, 40 km southwest of Silchar, Cachar, Assam, India
Dec 20, 1991 02:06 GMT	Mag -5.4	41 km	Imphal West, Manipur, 33 km east of Silchar, Cachar, Assam, India
Nov 15, 1990 03:28 GMT	Mag -5.2	49 km	29 km northeast of Aizawl, Mizoram, India
Feb 22, 1990 22:07 GMT	Mag -5.1	52 km	34 km northeast of Silchar, Cachar, Assam, India
Apr 13, 1989 07:25 GMT	Mag -5.5	33 km	Hailakandi, 49 km southwest of Silchar, Cachar, Assam, India
Feb 6, 1988 14:50 GMT	Mag -5.9	33 km	Sunamganj, 38 km southwest of Sylhet, Bangladesh
Feb 8, 1986 00:28 GMT	Mag -5.4	39 km	34 km northeast of Aizawl, Mizoram, India
Dec 30, 1984 23:33 GMT	Mag -6	23 km	23 km southeast of Silchar, Cachar, Assam, India
May 21, 1984 09:59 GMT	Mag -5.3	33 km	34 km east of Agartala, West Tripura, India
Oct 30, 1980 05:29 GMT	Mag -5	33 km	11 km north of Agartala, West Tripura, India
Dec 23, 1977 21:00 GMT	Mag -5.1	33 km	India-Bangladesh Border Region
Jun 21, 1963 15:26 GMT	Mag -5.7	51 km	India-Bangladesh Border Region
Jun 19, 1963 10:47 GMT	Mag -5.6	45 km	India-Bangladesh Border Region
Dec 29, 1950 22:35 GMT	Mag -5.9	15 km	Tripura, India Region
Sep 9, 1923 22:03 GMT	Mag -6.8	15 km	Bangladesh
Jul 8, 1918 10:22 GMT	Mag -7.2	15 km	Bangladesh

Earthquake Information of Tripura for the period 1822 – 2000 (Magnitude 5+)

S. N.	DATE			TIME			LAT	LON	DEPTH	MAGNITUDE
	Year	Month	Day	Hour	Min	Sec				
1	1822	4	3	0	0	0	23.5	91	0	6
2	1845	8	6	0	0	0	24.8	91.8	0	6.5
3	1868	6	30	0	0	0	24.9	91.9	0	5.5
4	1869	1	10	0	0	0	24.5	92.5	0	7.5
5	1898	4	20	0	0	0	24.8	92.8	0	6.3
6	1918	7	8	10	22	7	24.5	91	0	7.6
7	1924	1	30	0	5	24	25	93	0	6
8	1926	10	23	14	30	18	25	93	0	5.5
9	1944	12	24	14	46	40	24.7	92.2	0	5.9
10	1949	7	15	11	0	3	24	93	0	6
11	1950	8	15	21	42	14	25	93	0	6
12	1950	9	25	12	25	28	24	93	0	5.5
13	1950	12	29	22	35	20	24	91.8	0	6.3
14	1957	12	12	0	0	0	24.5	93	0	5.5
15	1963	6	19	10	47	24	24.97	92.06	44	5.2
16	1968	6	12	4	29	21.7	24.83	91.94	39	5.3
17	1968	12	27	14	38	12	24.12	91.61	27	5.1
18	1968	12	27	14	38	12	24.12	91.61	27	5.1
19	1971	2	2	7	59	55.8	23.71	91.66	37	5.4
20	1977	12	23	21	0	27.1	23.71	92.31	33	5.1
21	1984	5	21	9	59	5	23.66	91.55	12	5.2
22	1984	12	30	23	33	35	24.66	92.85	3	5.5
23	1986	2	8	0	28	54	23.87	93	30	5.2
24	1988	2	6	14	50	45.9	24.67	91.56	33	5.8
25	1988	11	14	1	36	57	24.4	92.4	33	5.3
26	1989	1	16	10	49	27	24.2	92.2	33	5.1
27	1989	4	13	7	25	33	24.4	92.43	10	5
28	1989	6	22	22	4	19	23.2	92.9	33	5.2
29	1991	5	8	11	41	20	23.2	93	33	5
30	1997	5	8	2	53	14.7	24.8	92.25	35	5.6
31	1997	5	10	19	26	17.7	24.9	92.4	33	5

(Source: Vulnerability Atlas of India)

13.6 Road Accident

District wise Accident report

S.No	District	Number of Accidents				Persons Involved			
		Fatal	Injury	(Hospitalised)	(Non Fatal)	Killed	Grievous Injury	Minor Injury	Total
1	GOMATI	25	104	101	226	27	60	268	355
2	KHOWAI	22	39	20	67	25	20	91	136
3	SEPAHIJALA	33	38	7	46	34	23	70	127
4	DHALAI	14	31	6	45	16	25	45	86
5	TRIPURA NORTH	21	33	38	87	24	24	126	174
6	TRIPURA SOUTH	36	38	13	53	38	22	109	169
7	TRIPURA WEST	74	113	14	134	78	65	138	281
8	UNAKOTI	24	36	19	62	24	32	67	123
	Total	249	432	218	720	266	271	914	1,451

Source: RTO

Type of Collision (Road Accident)

S.No	Type of Collision	Number of Accidents					Persons Involved			
		Fatal	Injury	(Hospitalised)	Total (Non Fatal)	Total	Killed	Grevious Injury	Minor Injury	Total
1	Vehicle to Vehicle	76	153	71	255	331	83	76	410	569
2	Vehicle to Pedestrian	60	64	21	88	148	60	47	87	194
3	Vehicle to Bicycle	15	13	6	21	36	16	10	15	41
4	Vehicle to Tricycle	2	1	2	5	7	2	0	7	9
5	Vehicle to Animal Driven Cart	1	0	0	0	1	1	0	7	8
6	Vehicle to Object / Property	12	10	4	17	29	13	3	22	38
7	Vehicle to Animal	1	2	3	5	6	1	0	11	12
8	No Collision	18	31	26	68	86	23	19	90	132
9	Fallen down while Boarding / Alighting	4	17	3	21	25	4	11	21	36
10	Data Not Available	63	144	83	244	307	66	106	253	425

Source: RTO

Highways Information of Tripura

S.N.	Name	Highways
1	MAJOR DISTRICT ROAD	15
2	STATE HIGHWAY	10
3	OTHER DISTRICT ROAD	2
4	NATIONAL HIGHWAY	32
5	PWD NATIONAL HIGHWAY	4
6	VILLAGE ROAD UNDER PWD(RB)	8
	TOTAL	**71**

Source: RTO

Top Accident grid District wise

S.N.	District name	Lat	Long	Total Accidents
1	West Tripura	23.8274	91.2724	16
2	Gomati	23.5328	91.4902	12
3	Gomati	23.5328	91.4774	11
4	Khowai	23.8402	91.6311	11
5	West Tripura	23.789	91.2852	11
6	Gomati	23.5328	91.503	11
7	Gomati	23.52	91.4645	10
8	Gomati	23.5072	91.4517	10
9	Gomati	23.5456	91.4774	10
10	Gomati	23.4815	91.4005	9
11	Gomati	23.4815	91.4902	9
12	West Tripura	23.8402	91.2852	9
13	Gomati	23.4943	91.4261	8
14	Unokoti	24.3141	92.0025	8
15	Sipahijala	23.7121	91.2596	8
16	South Tripura	23.0588	91.6567	7
17	Gomati	23.5456	91.4645	7
18	Gomati	23.5584	91.4261	7
19	West Tripura	23.7761	91.2596	7

20	Unokoti	24.1732	92.0025	7
21	Gomati	23.5072	91.4389	7
22	North Tripura	24.2885	92.1562	7
23	Gomati	23.5456	91.4902	6
24	Gomati	23.5072	91.503	6
25	Dhalai	24.0836	92.0025	6
26	West Tripura	23.8402	91.3493	6
27	Gomati	23.4815	91.4133	6
28	West Tripura	23.8146	91.2724	6
29	West Tripura	23.853	91.3493	6
30	West Tripura	23.8402	91.2724	6
31	West Tripura	23.853	91.2852	6
32	North Tripura	24.3782	92.1562	5
33	Sipahijala	23.6993	91.2724	5
34	Gomati	23.5584	91.4517	5
35	North Tripura	24.2365	92.2933	5
36	Gomati	23.4303	91.503	5
37	Gomati	23.4943	91.4902	5
38	West Tripura	23.8402	91.298	5
39	South Tripura	23.315	91.5542	5
40	West Tripura	23.8786	91.2852	5
41	Khowai	23.8658	91.7079	5
42	Gomati	23.5328	91.5158	5
43	Khowai	23.8146	91.5798	5
44	Sipahijala	23.7249	91.2724	5
45	Gomati	23.5072	91.4902	5
46	Khowai	23.8402	91.6183	5
47	North Tripura	24.3782	92.169	4
48	Khowai	23.8786	91.7079	4
49	South Tripura	23.0716	91.6439	4
50	Khowai	24.0579	91.6054	4

Source: RTO

13.7 Urban Flood

Distric t	Year s	Disaste r	Area Affected	Area Affected	How many days Disaster lasted **	Infrastructure Loss / House Damaged	Total Compensation Provided
West Tripura	2023	Flood/ Urban Flood	i) Jirania Sub-Division ii) Sadar Sub-Division	No	No	No	No
West Tripura	2022	Flood/ Urban Flood	i) Jirania Sub-Division ii) Sadar Sub-Division	i) Jirania - Baldakhal, Uttar Champamura, Khayerpur, Jirania, Purbabarjala, ii) Sadar- West Pratapgarh, Bhattapukur, Battala, Radhanagar, Bhati Abhoynagar, Abhoynagar, Aralia, Rishipara, Nabodaypara, Indranagar, Pratapgarh Hrishi Colony, Madhya Dukli, East Pratapgarh, Kali Tilla, Shymaprasad Colony, Balurchar, Ramkrishna Para, Kanchanpalli.	i) Jirania -1 day ii) Sadadr-1 day	i) Jirania house damage fully-Nil, Severely-19 Partly, -151 Nos ii) Sadar house damage 3546 Nos	i) Jirania : Rs.8,72,000/- ii) Sadar : Rs-70,92,000/-
West Tripura	2021	Flood/ Urban Flood	i) Mohanpur Sub-Division ii) Sadar Sub-Division	i) Bamutia RD Block, ii) Sadar- West Pratapgarh, Bhattapukur, Battala, Radhanagar, Bhati Abhoynagar, Abhoynagar, Aralia, Rishipara, Nabodaypara, Indranagar, Pratapgarh Hrishi Colony, Madhya Dukli, East Pratapgarh, Kali Tilla, Shymaprasad Colony, Balurchar, Ramkrishna Para, Kanchanpalli.	i) Mohanpur - 2 days ii) Sadar-02 days	i) Mohanpur house damage-37 Nos ii) Sadar house damage -Nil	No
West Tripura	2020	Flood/ Urban Flood	i) Jirania Sub-Division ii) Sadar Sub-Division	i) Jirania-Baldakhal, Uttarchampamura, Khayarpur, Jirania, Purbabarjala. ii) Sadar- West Pratapgarh, Bhattapukur, Battala, Radhanagar, Bhati Abhoynagar, Abhoynagar, Aralia, Rishipara, Nabodaypara, Indranagar, Pratapgarh Hrishi Colony, Madhya Dukli, East Pratapgarh, Kali Tilla, Shymaprasad Colony, Balurchar, Ramkrishna Para, Kanchanpalli.	i) Jirania- 1 day ii) Sadar- 2 days	i) Jirania House damage fully Nil, Severely-185, Partly-355 Nos ii) Sadar house damage-608 Nos	i) Jirania : Rs. 69,63,810/- ii) Sadar: Rs. 42,41,000/-

West Tripura	2019	Flood/ Urban Flood	i) Jirania Sub-Division ii) Mohanpur Sub-Division iii) Sadar Sub-Division	i) Jirania-Baldakhal, uttarchampamura, Majlishpur. ii) Tarapur, Bijoynagar, Noagaon, Taranagar, iii) West Pratapgarh, Bhattapakur, Battala, Radhanagar, Bhati Abhoynagar, Kashipur, Reshambagan, College Tilla, Abhoynagar, Aralia, Rishipara, Nabodaypara, Indranagar, Pratapgarh, Kali Tilla, Shyamprasad Colony, Balur Char, ramkrishna para, kanchanPalli.	i) Jirania-1 day ii) Mohanpur - 1 day iii) Sadar- 2 days.	i) Jirania House damage fully-Nil, Severly-120, Partly-222 Nos ii) Mohanpur house damage- 1338 Nos iii) Sadar house damage-14 Nos	i) Jirania : Rs.45,39560 /- ii) Mohanpur Rs. 47,88,000/- iii) Sadar : Rs. 1,27,500/-
West Tripura	2018	Flood/ Urban Flood	i) Jirania Sub-Division ii) Mohanpur Sub-Division iii) Sadar Sub-Division	i) (Baldakhal Uttar Champamura, Majlishpur, Mandwi, Khayerpur,Jirania) ii) West Pratapgarh, Bhattapukur, Battala, Radhanagar, Abhoynagar, Kashipur, Reshambagan, College Tilla, Abhoynagar, Aralia, RishiPara, Nobodaypara, Indranagar, PratapgarhHrishi Colony, Balur Char, Ramthakur para, Kanchan Palli	i) Jirania-1 day ii) Sadar- 5 days.	i) Jirania House damage fully-Nil, Severly-120, Partly-172 ii) Mohanpur House damage-1540 Nos iii) Sadar house damage 167 Nos	i) Jirania : Rs.33,24,560/- ii) Mohanpur : Rs.48,50,000/- iii) Sadar :Rs.6,65,000/-
West Tripura	2017	Flood/ Urban Flood	i) Jirania Sub-Division ii) Sadar Sub-Division	i) Baldakhal, Uttar Champamura, Majlishpur, Mandwi, khayerpur, Jirania, PurbaBarjala, Champaknagar, ii) West Pratapgarh, Bhattapukur, Battala, Radhanagar, Abhoynagar, Kashipur, Reshambagan, College Tilla, Abhoynagar, Aralia, RishiPara, Nobodaypara, Indranagar, PratapgarhHrishi Colony, Balur Char, Ramthakur para, Kanchan Palli	i) Jirania-1 day ii) Sadar-5 days	i) Jirania House damage fully -13, Severely-208, Partly-2509 Nos ii) Sadar House damage- 3553 Nos	i) Jirania : Rs. 95,71,732/- ii) Sadar:Rs. 54,66,000/-
West Tripura	2017	Urban Flood	i) Sadar Sub-Division	Radhanagar	No	No	No
West Tripura	2016	Flood/ Urban Flood	i) Jirania Sub-Division ii) Sadar Sub-Division	i) Uttar Champa Mura, Belbari, Mandwi ii) West Pratapgarh, Bhattapukur, Battala, Radhanagar, BhatiAbhoynagar, Abhoynagar, Aralia, Rishipara, Nabodaypara, Indranagar, PratapgarhHrishi Colony, Madhya Dukli, East Pratapgarh, Kali Tilla, Shymaprasad Colony, Balurchar, Ramkrishna Para, Kanchanpalli.	i) Jirania: 1 day ii) Sadar Sub-Division: 3 days	i) Jirania House damage Fully-03, Partly-70 ii) Sadar House Damage: 490 Nos	i)Jirania -Rs. 4,36,000/- ii) Sadar -Rs. 24,50,000/-

Source: District Admin

13.8 Drowning

Drowning cases in Tripura

Year	District	Type of Event	No. of Life Loss
2023	West Tripura	Drowned into the Water	2
	Unakoti	Drowned into the Water	2
	Dhalai	Drowned into the Water	2
	Gomati	Drowned into the Water	4
	Khowai	Drowned into the Water	3
2022	Gomati	Drowned into the Water	3
	Unakoti	Drowned into the Water	1
	West Tripura	Drowned into the Water	2
	Sepahijala	Drowned into the Water	1
	South Tripura	Drowned into the Water	2
	Dhalai	Drowned into the Water	2
2021	Gomati	Drowned into the Water	1
	Khowai	Drowned into the Water	1
	Dhalai	Drowned into the Water	2
2020	Gomati	Drowned into the Water	1
	West Tripura	Drowned into the Water	1
2017	Dhalai	Drowned into the Water	3
2016	West Tripura	Drowned into the Water	1
2015	Dhalai	Drowned into the Water	1
2014	West Tripura	Drowned into the Water	1

Source: State Emergency Operation Centre, Agartala (Tripura)

13.9 Lightning

Year	District	Subdivision	No of Village/ ward Affected	No of Families Affected	Life Loss No.	Life Loss Animal	Injury No.	House Damage Total
2023	South Tripura	Belonia			1			
	Sepahijala	Bishalgarh			1			
2022	Khowai	Teliamura			1			1
	Sepahijala	Bishalgarh					2	1
	Dhalai	Kamalpur			1			1
	Unakoti	Kumarghat			1			1
2021	Gomati	Amarpur				1(cow)		1
	Khowai	Khowai		18			3	39
	North Tripura	Kanchanpur					1	
2020	South Tripura	Santirbazar	1	1	1	1 Cow	3	
	Gomati	Udaipur			3		10	
2019	South Tripura	Santirbazar			1			
2017	North Tripura	Kanchanpur			1		5	98
	Gomati	Udaipur			2		2	112
	Unakoti	Kumarghat		2				2
	Sepahijala	Bishalgarh	14	41	2		1	53
2016	Dhalai	Longtharai Valley					2	
	Gomati	Karbook		64				64
	Sepahijala	Bishalgarh					6	181
2014	North Tripura	Kanchanpur			3			
2013	South Tripura	Belonia	2	20	2			
2012	North Tripura	Panisagar			1			
	South Tripura	Belonia			1	10		
	Sepahijala	Jampuijala		60	1	3	16	61

Source: State Emergency Operation Centre, Agartala (Tripura)

13.10 Fire

Year	District	Subdivision	House Damage Total	Damage of property	Life loss
2023	Dhalai	Gandacherra	3		
	South Tripura	Santirbazar	1		
	West Tripura	Sadar			1
2022	Dhalai	Gandacherra	20	12 shops	
	Khowai	Khowai	1	1 shop	
	North Tripura	Dharmanagar	6		
	Unakoti	Kumarghat	3		
	West Tripura	Sadar	0	18 shops	
2021	Gomati	Amarpur	7		
	South Tripura	Santirbazar	17		
	North Tripura	Dharmanagar	10		
	Unakoti	Kumarghat	4		
	Dhalai	Gandacherra	6		
	Unakoti	Kumarghat	1		
	West Tripura	Jirania	1		
2020	Dhalai	Longtharai Valley	1		
	West Tripura	Sadar	0	1 shop	
	Gomati	Amarpur	2	6 shops	
	South Tripura	Belonia	2		
	West Tripura	Sadar	14	20 shops	
2017	South Tripura	Belonia			3
	West Tripura	Sadar		1 shop	
2016	North Tripura	Dharmanagar	4		1
	West Tripura	Mohanpur	1		
2015	South Tripura	Belonia	2		
2013	South Tripura	Sabroom	3		

Source: State Emergency Operation Centre, Agartala (Tripura)

13.11 Landslide

Year	District	Subdivision	Life Loss No.	Injury No.	House Damage Total	Relief Camp/shelter homes No.	Families took shelter	Inmates
2023	Gomati	Udaipur	1					
	Khowai	Khowai	1					
2022	Khowai	Teliamura				4	59	206
	North Tripura	Dharmanagar			38	10	353	1419
	Sepahijala	Sonamura			29			
	South Tripura	Belonia			2			
	Unakoti	Kumarghat			3			
	West Tripura	Sadar			0	5	306	1120
2021	Khowai	Teliamura		1	364	13	353	1412
	Gomati	Amarpur	1		38			
	South Tripura	Belonia	1	2	20			
2020	Unakoti	Kumarghat			1			
	South Tripura		1					
2016	South Tripura		1					
	Gomati		1	4	53			
2012	Gomati		1					

Source: State Emergency Operation Centre, Agartala (Tripura)

13.12 Tree Falling

Year	District	Subdivision	Type of Disaster	Type of Event	Loss of life No.
2023	Khowai	Teliamura	Thunderstorm	Tree falling	1
2023	Sepahijala	Sonamura	Thunderstorm	Tree falling	1
2021	North Tripura	Dharmanagar	Thunderstorm	Tree Falling	1
2020	Sepahijala	Jampuijala	Thunderstorm	Tree falling	1
2018	Sepahijala	Sonamura	Thunderstorm	Tree Falling	1
2012	North Tripura	Dharmanagar	Thunderstorm	Tree Falling	1

Source: State Emergency Operation Centre, Agartala (Tripura)

13.13 Flood

Year	District	Subdivision	No of Village/ ward Affected	No of Families Affected	Life loss	House Damage Total	Relief Camp/shelter homes No.	Families took shelter	Inmates
2022	Dhalai	Gandacherra	27	32	1	35	1	9	39
	Gomati	Amarpur				88			
2021	Gomati	Amarpur		20		4			
	Unakoti	Kumarghat				0	1	12	52
2020	North Tripura	Panisagar				21			
	Sepahijala	Sonamura				12	1	6	25
2019	West Tripura	Mohanpur				92	5	281	505
2018	South Tripura	Sabroom				5			
2017	West Tripura	Jirania				0			
2016	Sepahijala	Bishalgarh		645		524			
	West Tripura	Jirania		12	1	12			
2015	Dhalai	Kamalpur			1				
	South Tripura	Belonia	10	84		84			
2013	North Tripura	Dharmanagar		9					

Source: State Emergency Operation Centre, Agartala (Tripura)

Annexure 14: Low Lying areas

DISTRICT	SUB DIVISION	LOW LYING AREAS
WEST TRIPURA	Sadar	Radhanagar, BhatiAbhaynagar (East & West), Hrishi Colony Para, Bitarban, Mullapara, Joynagar, Dashamighat, Rajnagar, Rampur, Kalikapur, East Banamalipur, Jagatpur, Town Indranagar, Town Pratapgarh, Shibnagar, Katakhal Area, Sakuntala Road, Madhyapara Road , Jagannath Bari Road, Office Lane Rabindra Palli, Harijan Colony,Shanmura, Ranjitnagar, Indranagar, Bamutia Low Lying Areas, Trish Gharia, Mohanpur, Gangagatipur, Kamalghat, Minabari, Kapalika, Chandrapur, Khayerpur, Reshambagan, Mariamnagar, Trinath, Daspara, Briddhanagar, East Noagaon, Uttar Champamura, Baldakhal, Part of Mekhilapara, Kashipur, West Champamura, North Majlishpur, North Side Of Jirania Block, Joynagar, Ichhamoa, Assampaara, KobraKhamar, Ranirbazar Nagar Panchayat, Kowaban, Birendranagar
SEPAHIJA LA	Bishlagarh	Laxmibil, Chandranagar, Baidyerdighi, Kalkalia, BhatiLarma, Routhkhala, Naraura, Ambagan, Golaghati, Dayarampara, Purathal Rajnagar, Kaiyadhepa, Arabindanagar, Krishna Kishore Nagar, Chelikhala, Durganagar, Nabinagar, Teparia, Gazaria, South Chariam, Lalsingmura, Ramcherra, Bishalgarh, Madhupur, Raghunathpur, Sutarmura, Pathaliabari, Uttar Charilam, Kasba, Brajapur, Uttar Brajapur, Ghaniamara, Pravapur, Gopinagar, Jogalkishorenagar, Mohanpur, Pekuarjala, Kendraicherra, East Takarjala, Badharghat, South Badharghat, Aralia, Purba Aralia, Jogendranagar, Pratapgarh, Paschim Pratapgarh, Dukli, Bhatta Pukur, Rabindranagar, Subhashnagar
	Sonamura	Rangamatia, Bejimara, Barnarayan, Telkajla, Chandanmura, Mainamura, Radijala, Aralia, Kemtali, Choumohani, South Nalchar, West Nalchar, Indiranagar, Dasharathbari, MohanbhoogCherra Para, Debnagar, Chandul, Kamrangatali, Srimantapur, South Bejimara, Gramtali, Urmai, Kalsimura, Rahimpur, Ashabari, South Maheshpur, Dhalaiai, Sonamura Nagar Panchayat Ward No. 3,8,9.
KHOWAI	Khowai	Bailarber, Paschim Sonatala, Khowai River -Lalcherra, Alepsa On T-K Road, Bagan Bazar, Krishnapur- Nayanpur, Trishabari Area, Paschim Ghilatali, Ramchandraghat, Moharcherra, Kamalnagar, Karailong Jahar Colony, Gungral, Manipuri Basti(Kalyanpur), Tatia (Santinagar), Singhicherra, Jambura, Barabil, Sonatala ,Dwarikapur
	Teliamura	Kuch Para, Bathekha, Ghaniamara, MdhyaKalyanpur, Kamalnagar, Maimansingh Para, Kalibari, Laltilla (12 Card), Raichand Das Para, Jawhar Colony, Dashamighat, Shantinagar, JoynagarKalibari, Naranpur, Ghilatali (Sinaibill, Palpara, Rambabu Sampadak Para, Shantinagar (West), SarduKarkari, Lembucherra
GOMATI	Udaipur	Amtali, Kushamara, Lulunga, Palatana. Salgarah, Hadra, Part Of Shilghati And Baishnabirchar, Jamjuri, Rajdharnagar, Murapara, Maharani, Low Lying Areas Of Udaipur, Rajarbag, Pitra, Fulkumari, Matabari And Laxmipati
	Amarpur	Bampur(Samatalpara), Birganj, Kararikhola, Mailak, Rangamati, Bawswamani, Dhanlekha, Nagrai, Thirthamukh, Natunbazar, Parts Of Amarpur Town, Kamlai And Changang, Town Rangkang, Birbal Das Para, Santipalli, Dhakaiya Para, Vivekananda Palli, Babi Choudhury Char, Thalchara(Dalak), West Malbashaekchari, Chellagang, Rangachara, Ompinagar, South Taidu, Haripur, Uttar Taidu, Paschim Sarbong, Karaichara(Tirthamukh), South Sangang, Chechua, Chandipara And HrishiArabinda Colony, Baroj Colony(North Sarasima), Raipara, Ram Chandra Reang Para, Satrugna Para, Das Para, Majumder Para, Mahamani, Gardhang, Lawgang, Amlapara, Datta Para, Jirtali, Amzadnagar

SOUTH TRIPURA	Sabroom	Betaga, Gangfera, Dowang Choudhury Para, Bijoynagar, Bragendranagar, Sindukpathat, Bhuratali, Amtali, Kaladhepa, Mahamuni, Angthai Mog Para
	Belonia	Masterpara, Amalpara, Madhyapara, Kalinagar, Nattapara, Sarasima, AmzadnagarBaraj Colony, Sonaichari, Sbc Nagar, Sukanta Colony, Manurmurmukh, Kalabaria
	Santirbazar	Gardhang, Lowgong, West Charakbal, Muhuripur, South Jolaibari, West Pilak, North Jolaibari, Debdaru, Banik Para, Latua Tilla
DHALAI	Ambassa	Kulai Purba Nalichara, Paschim, Balaram, Paschim, Lalchari, Vivekananda,Nagar, Shanti palli in Ambassa
	Kamalpur	Halhuli, Panchasi, Barasurma, Singibil, Chandan Nagar, Sonrai, Kuchainala, Methirmia, Lengutiabasti, SantosIAPara, Baradrone, Part of Darangtilla, Part of Debichara, East Side of Salema, Kaborkhola, Duraisibbari, Muslimpara of Halahali, Halahali Market, Kandigram, Kalachari, Harerkhola, Noagaon, East Fulchari, Fulchari,Kamalanagar, Eastern Part of R.K. Ashram, Baligaon Road Area, Malaya, Tillagaon, Kurmaghat,Goalmara, Lower Area of Ganganagar And Baligaon, East Part of Lambuchara, Part of Mayachari
	Gandachara	Ramnagar, Raima, Laxmipur, Bolongbassa, Kamla, Ashram, Narikel bagan, Drunnaharipara.
	LT Valley	Part of Jamircherra, Manu, Mainama, Gainama, Lalchara, and Chailengta, Part of Chawmanu and Makarchara
NORTH TRIPURA	Dharmanagar	Kameswar, Signal Basti, Tangibari, Dhigalbank, Pratyckroy, Jail Road, Algapur, Hurua, Bhagypur, Ichailalcherra, Tulgoan, Kurti, Satsangam, Tarakpur, Kalagangerpar, Ranibari, Sarala, Brajendranagar, Radhapur, Charupassa, Shivbari(ULB), Sukanta, Sarani (Sakaibari), Durgapur, Rajbari
	Kanchanpur	Kanchanpur market area, Srirampur, Aheliapur, Tri Janction, Subratanagar, Rabindranagar - North & South, Narsingpur, Battala, Gopalpur.
	Panisagar	Deocheraa,Bilthai near Rail line, South Padmabil, Ramnagar Ward-4, Hamsapara to Koloi, Molsompara, Bahadurpara, Narendranagar, Chandra kr. Para (Near Piplacherra High School), Charupassa, Deocherra, Ramnagar, Bilthai Part (near Rly line), South Padmabil (part) Narendranagar, Khedacherra, Bahadur Para
UNAKOTI	Kailasahar	Jalai,Latiapura,Rangautti, Durganagar, Kritantali, Chandipur,Srirampur,Dalugao,Chaintail,Pechardhar
	Kumarghat	Nidevi,Sonaimuri, Notingcherra, Mati Colony,KumarghatMCWardNo-6, WardNo-3(allunderKGTTK), Tarapur, Indira Colony, Krishnanagar,Radhanagar,Jagannathpur,Assambasti,Taraninagar (all under FTK TK)PaschimKanchanbari,EastRatacherra, Brajendranagar,MasauliMadhyaKanchanbari,Saiderpar(allunderKCBTK), UttarMachmarra,Dhanicherra,Santipur, Nabincherra,Bagaicherra, Pecharthal, Andharcherra

Source: SDMP, Tripura 2016-2017

Annexure 15: Guidelines for Minimum Standards of Relief notification dated 30th April, 2016

As per the Sec.19 of the Disaster Management Act, 2005, the State Authority shall lay down detailed guidelines for providing standards of relief to persons affected by disasters in the State, provided that such standards shall in no case be less than the minimum standards in the guidelines laid down by the National Authority in this regard.

In this regard, National Disaster Management Authority (NDMA) has developed the guidelines on minimum standards of relief. As advised by NDMA, detailed guidelines on minimum standards of relief for the State of Tripura are as follows:

1. Definition of Relief and Rehabilitation Camp:
Relief shelters and Rehabilitation camps shall be set up in order to accommodate people affected by a disaster. The camps shall be temporary in nature, with basic necessities. People in the camp shall be encouraged to return to their respective accommodation once the normalcy is returned.

2. Minimum standards in respect of Shelter in relief camps:
a) State / District /Sub-District Admin., shall take necessary steps to pre-identify locations/ buildings like local schools, Anganwadi Centres, Community Halls, etc. which can be used as relief shelters where people can be accommodated in case of disaster in the area. In such centres, necessary facilities like sufficient number of toilets, water supply, generators with fuel for power backup during disasters shall be ensured.
b) For meeting the extra and large covered space after a disaster, the concerned line departments and authorities can explore the option of pre-contract/ advance MoU with manufacturers / suppliers for supplying of factory made pre-fabricated shelters/tents/toilets/ mobile toilets and urinals etc. which can be dismantled and taken back by the supplier after the closure of the camp. This arrangement shall avoid delay in setting up of camp and exorbitant billing of essential supplies.
c) In the relief centres, adequate space (covered area) shall be provided to all the victims. Special care shall be taken for safety and privacy of inmates, especially for women, widows and children. Special arrangements should be made for differently-abled persons, old and medically serious patients.
d) Relief camps shall be temporary in nature and be closed as soon as normalcy returns in the area.
e) The areas where evacuation camps can be located are earmarked in advance so that unnecessary time is not lost in deciding about the location of such centres.

3. Minimum standards in respect of Food in relief camps:
a) It shall be ensured that, adequate food is provided to all men, women, children and infants in the relief camps.
b) DMs/SDMs/BDOS are responsible to provide dry food items like Chira, Gur, Biscuits, Milk and other dairy products and cooked food like Khichudi, Rice and Sabji etc. to the relief camp inmates. Every effort shall be taken in the given circumstances to ensure availability of sufficient quantity of food to the affected people (especially for aged people, pregnant, lactating mothers and children) staying in the relief shelters/camps.
c) Appropriate steps shall be taken to ensure hygiene at community and camp kitchens. Date of manufacturing and date of expiry on the packaged food items shall be kept in view before distribution.

4. Minimum standards in respect of water in relief camps:
a) Adequate quantity of water shall be provided in the relief camps for personal cleanliness and hand wash, if required, the local administration shall provide additional water from nearby sources through tanker or other means.

b) It may be ensured that adequate drinking water is made available in the relief camps. If other means for providing safe drinking water is not possible, atleast double chlorination of water needs to be ensured.

c) The location of the sources of water supply shall preferably be within the premises of relief shelter/ camp. However, the maximum distance from the relief camp to the nearest water point shall not be more than 500 mtrs. if tapped water supply is available.

5. Minimum standards in respect of Sanitation in relief camps:

a) Adequate number of toilets and quantity of water for sanitation and bathing should be provided. Separate provision for women should be made. Hand wash facility in toilets should be ensured. Steps may be taken for control of spread of diseases. Dignity kits for women shall be provided with sanitary napkins and disposable paper bags with proper labelling.

b) The relief camp inmates should use toilets within the relief camp in case the camp is in school or any community centre wherein such facilities are available. If such facilities are not available or in case of temporary shelters, the toilets shall not be more than 50m away from the relief camps Pit latrines and soak ways shall be at least 30m from any ground water source and the bottom of any latrine has to be at least 15 m above the water level.

c) Local authorities should ensure the cleanliness and proper sanitation of the relief camps to avoid spreading of diseases or outbreak of epidemics. Drainage or spillage from defecation system shall not run towards any surface water source or shallow ground water source.

6. Minimum standards in respect of medical cover in relief camps:

a) Local authorities in coordination with the health department should take adequate health measures in the relief camps. The mobile medical teams shall visit relief camps to attend the affected people Steps shall be taken to avoid spread of communicable diseases.

b) The local administration should take care of the psychosocial needs of the relief camp inmates in case the relief camps are extended over a long time.

c) Local authorities should take appropriate measures for publicizing information to the public Helpline should be set up and contact number and details of which shall be displayed at the relief shelters and adequately publicized to inform the people.

d) Necessary basic arrangements shall be made by the local administration for the pregnant women for their safe delivery.

e) Appropriate advance tie-up/ arrangement shall be made with the Govt./ private hospitals for mobilization of doctors/ para-medical staff at short notice for relief camps to attend to the affected people. In respect of people who are affected and being referred to hospitals for treatment/ operation etc., suitable transportation shall be arranged to reach to referred hospital.

f) Advance contingency plans for management of multiple casualties shall be developed to manage mass casualty in a disaster.

7. Minimum standards of relief for Widows and Orphans:

a) Local authority should make the provision of maintaining register for the relief camps in which the details of all the inmates are registered, including widows and orphans. A separate list contain complete details of women who are widowed and for children who are orphaned due to the disaster shall be duly countersigned by the concerned officials and this list shall be kept as a permanent record with the Sub-Divisional Administration.

b) District/ Sub-divisional administration should take special care to widows and orphans who are separated from their families due to the disaster. For widows, certificate by the Sub-Division Admn.

shall be issued stating that she lost her husband in the disaster and the same shall be issued within 15 days of disaster.

c) The District/Sub-division administration shall provide a reasonable amount for the funeral rites of the husband to the widow/ family who has lost life in disaster and is economically weak. As advance, Rs.25,000/- (Rupees Twenty Five Thousand) may be given in this regard to the widow /family and this payment shall be deducted from the subsequent financial compensation/ relief that shall be paid by the Govt as per SDRF norms.

d) The local administration should act promptly to provide basic rights and services to the affected families. Necessary financial compensation and other government assistance need to be arranged within 45 days of the disaster to the widow and to the orphaned children. In respect of orphaned children, similar certificate shall be issued and the children need to be taken care of property and the funds that may be given to the children by the Govt shall be duly deposited in a PSU Bank in a Joint A/C where the SDM shall be the first account holder of the Bank account Interest from the fund can be given to the child/ guardian every month for his/her proper upkeep. Education for the child shall be ensured by the Sub-Division/local administration.

e) As far as ex gratia assistance an account of loss of life as also assistance on account of damage to houses and for restoration of means of livelihood, the norms provided by Govt. of India (Ministry of Home Affairs) for assistance from SORF should be the minimum standards of relief.

8. Criteria on extent of relief to be ensured in relief and rehabilitation camp
For administering reel and rehabilitation camp, following method shall be followed:
a) First 3 days Relief should be provided addressing at least the basic needs of the affected families.
b) 4 to 10 days - Efforts should be made to follow most of the guidelines on relief as given above.
c) 11 days and more - All prescribed norms shall be followed.

Annexure 16: NGOs involved in Disaster Management in Tripura

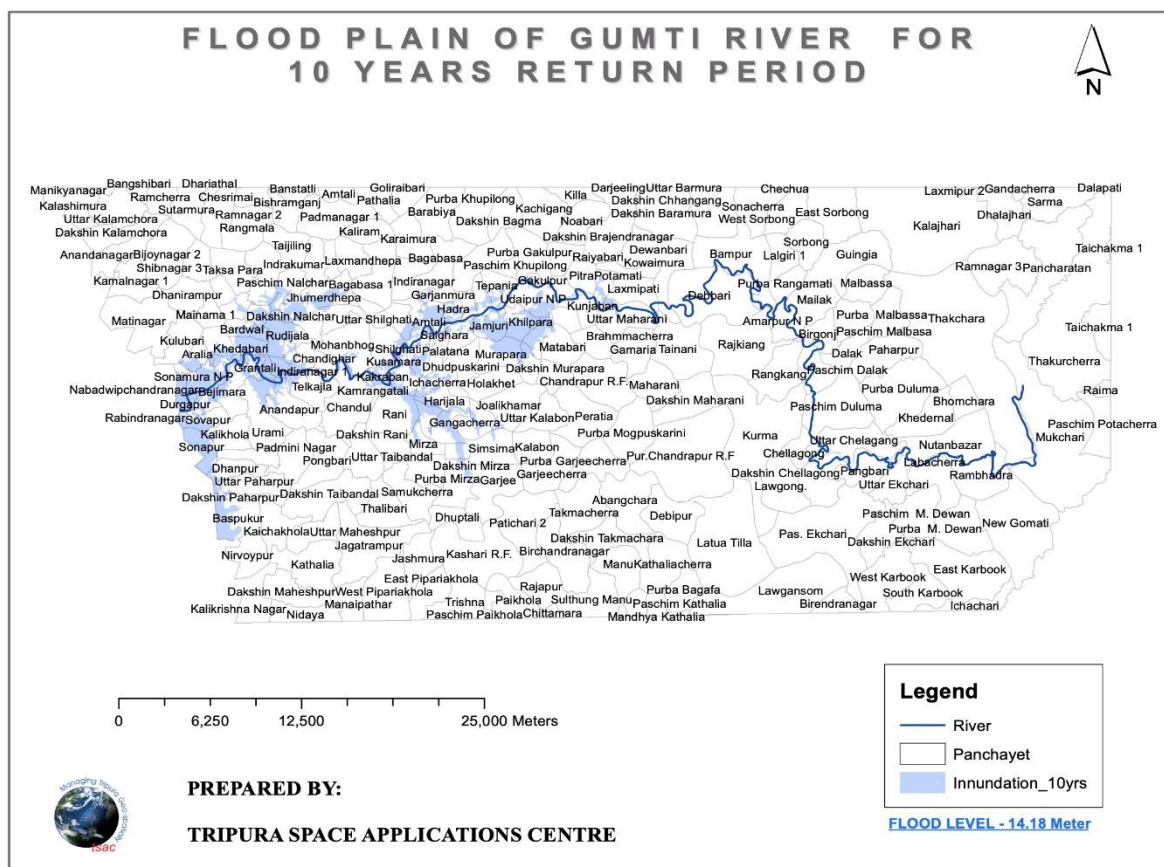| S.N.	Name of NGO	Disaster Management related activities done if any.
1	Hitaashi Social Welfare and Social Education Organisation, Durganagar, Khowai Tripura (w) Bipul Bhadra.Ph.9436513013.	Awareness campaign. Taking part in training of DM.
2	Tripura Swimming Academic Society, Udaipur, Fullkumari No-1, Ashis Debnath. M: -9856423525	Imparted training on first- aid, during flood.
3	Ramkrishna Mission, P.o- Viveknagar, Tripura West Pin-799130, Dipanakar Datta Choudhori, M: -9436482116	1. During natural disaster the Mission's volunteers are taking active part for rescue and relief operation every time. 2. Demonstration of disaster materials are available with the Mission.
4	Kishalay Mahila Samiti, P.O-Arundhutinagar, Road No.5, Tripura (W) (Bishalghar Sub-Division) Pin-799003, Tapash chakrabarty M: -9862219278, 9774316758	Awareness campaign. The NGO may be engaged for rescue operation during disaster.
5	Indian Red Cross Society North Tripura Branch Kailasahar M: -9436465451	Block wise First -Aid Training and awareness organized Search & Rescue, first Aid, Treatment and further evacuation of causalities.
6	State NSS Cell Dept. Of Education (YAS) Government of Tripura Netaji Choumuhani, Agartala, Bibhuti Palit M: -9436134561	NSS units organized seminar/ workshop on DM in association with concerned Dept.
7	Nehru Youva Kendra Sangathan Under Ministry of YAS, Government of India. T. Nag, J. Chakrabarty. M: -9436476497	NYKS volunteers participated in seminar /Workshop. NYK organized awareness campaign. There are trained Volunteers those who may be engaged in the rescue operation during disaster.
8	Lions Club of Agartala, Vivekananka Sarani. Sivaji Kar Bhowmik.9436124696.	Taking active part on relief during flood and rescue operation on natural disaster.
9	Lions Club of Agartala Sivaji Kar Bhowmik.9436124696	Awareness campaign, Training on disaster management and providing medical aid during disaster.
10	Indian Red Cross Society, South Tripura	• There are 5 master trainers who are participating in different programme on disaster management. • First- aid training programme in school and community level. • Mick drill training • Disaster Preparedness management training programme had been done with the assistance of the South Tripura • District Administration.
11	Sachindra nagar Social Organizing, Vill+Po: - S.N.Colony PS:-Jirania, Dist:- Tripura (W), Biplab Karmaker. M: - 9862074592	Members are trained on Building collapse from NCDC -Nagpur.
12	NB Institute for Rural Technology. Mohitlal Acharjee.Ph-230-805	Providing Technology for housing, drinking water etc.

13	NB Institute for Rural Technology (ARKANEER) Kapilbaran Bhowmik, M-9436127054.	Awareness campaign and providing training on disaster management. Trained some masses/artisans and trainers.
14	SANGHADIP (MNGO) Po. Dewanpasha Dharmanager Tripura (N) Amit Bikram Bhattacharya. M-9862603787	• Awareness campaign was conducted at South Hurua, Dewanpassa, Kadamtala, Lalchari and Tongibari. • Members trained on rescue operation during disaster. NGO has already prepared a plan involving all the members of the NGO for rescue operation.
15	CFDP Jana Unnayan Samiti Tripura (JUST), Teliamura	• Awareness campaign with PRI body, teachers, students, local youth groups, SHGs. • Capacity building training conducted. • Mock-drill was conducted at community & family level disaster preparedness and Response plan.
16	Indian Reds cross Society, Udaipur, Tripura, South Branch. Ujjal bhowmik. M-9436470807	Disaster First –aid training. Mock drill training was conducted at community & family level disaster preparedness and Response plan.
17	Bodhan Social Welfare and Social Education Organization Po. Khowai, Tripura(W), Babul Sen.M: - 9436568859	The NGO is taking part on Training and Capacity buildings of officials.
18	Indian Red Cross Society, Po: -Khedabari, Sonamura. Tripura(w) Anchar Ali. M-9856371516	First- aid Training on DM / Emergency response, conducted some awareness programme.
19	Indian Red Cross Society, Vill: -Dhaliai, PS: Sonamora Tripura(W) Bapan Dey M-9856552207	Organized awareness campaign and Disaster management training programme.
20	Subha Chetana, Madhya Laxmibill, Bishalgarh, Tripura(W) Bidhan Krishna Das, M-9402172621.	Conducted awareness campaign with the help of NYK
21	Arpan Society, Ganaraj Chowmuhani, Agartala, 799001, Tripura	Interest on Disaster Management
22	Jana Unnayan Samiti Tripura, Durjoynagar, Airport Road, Agartala-799009, Tripura	Have five years' experience on Disaster Management
23	Indian Red Cross Society, Red Cross Bhavan, A.K. Road, Agartala-799001, Tripura	Actively involved in Disaster Management, First Aid Training
24	Tripura Adibashi Mahila Samity, Krishna Nagar Road, Agartala-799001	Interest on Disaster Management
25	Manab Kalyan Welfare Society, Ramnagar, Road no. 6	Interest on Disaster Management
26	Ahana Social Organisation, Hospital Extension Road, Agartala-799001, Tripura.	Interest on Disaster Management
27	VHAT Regional Community College, Voluntary Health Association of Tripura, Circuit House Area, Agartala-799006, Tripura.	Lots of local NGOs have interest to work in the field of Disaster Management
28	Maitraye Social Welfare and Social Education Society, Chamanu, North Tripura President: - Sri Madhav Barua, Ph.No.9612019476 Secretary: - Sri Ashish Barua Ph.No.9862219679	Capacity building training on DM SHG formation. Solar Survey, and R.Ch. Survey. President of this NGO is working on HIV AIDS under NACO. (TI project)

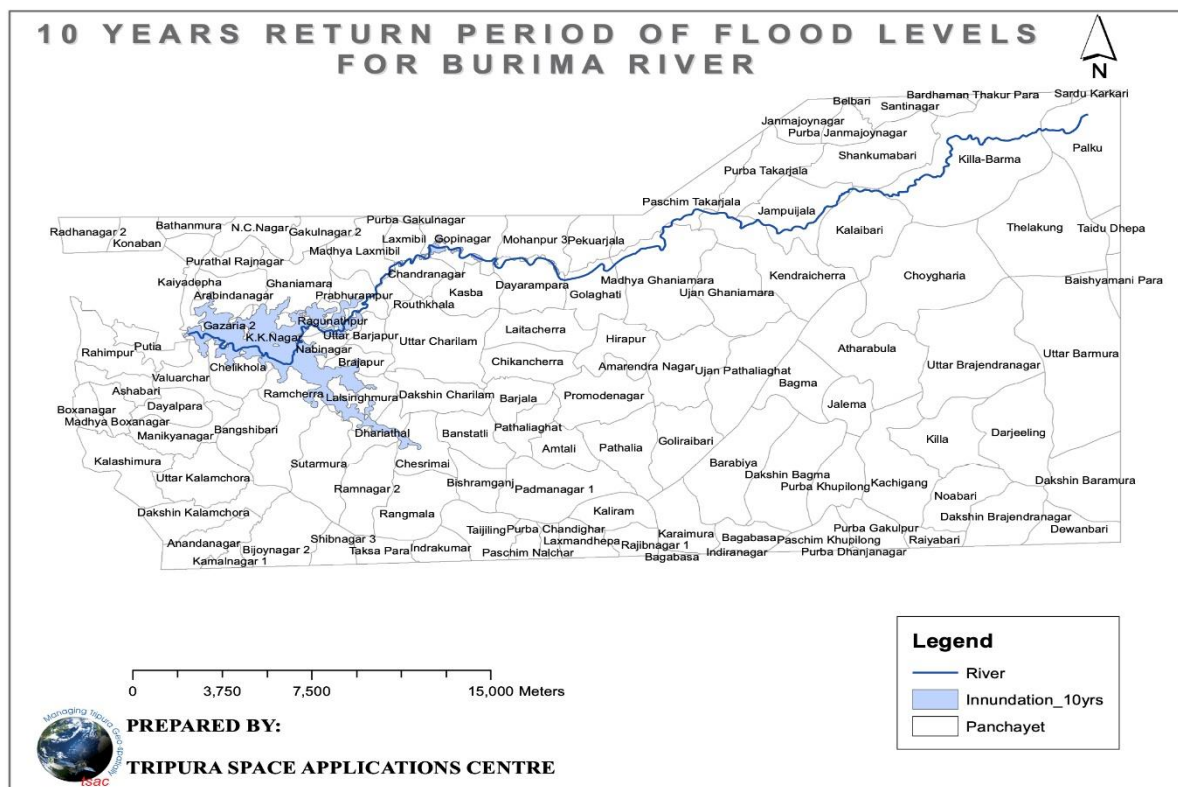| 29	Sachindranagar Social Organisation, Sachindranagar Coloney, Jirania President: - Sri Sadhananda Das, Ph.No.9612040483. Secretary: -Sri Biplab Karmakar.	1. Capacity building training on DM 2. HIV AID awareness campaign. Sri Biplab Karmakar has taken on HIV awareness. 3. Disaster training, risk preparedness training
30	Tripura Adventure Social Expedition Organisation, Purba Chandigarh, Melaghar, Tripura(W) President: -Sri Sukanta Datta Ph.No.9615197513. Secretary: -Sri Litan Shil Ph.No. 9856648534	1. Capacity building training on DM 2. Youth Development Camp. 3. Adventure training camp, NIC camp, Rain water harvesting and environment protection training. 4. Youth Awareness on different social matter. 5. Mock Drills have been conducted by the NGOs members.
31	Hepatities Foundation of Tripura, Dalaswar, near Panthi Club, Tripura(W) President: -Dr. Pradip Bhowmik, Ph.No.9436120250. Secretary: -Sri Dibakar Debnath Ph.No. 9436122745.	Capacity building training on DM Training on Hepatities Vaccination. Awareness Campaign on Hepatities
32	Shine Social Welfare and Social Education Society, Mandai. President: -Sri Sanjib Debbarma Ph. No.96122229612; Secretary: - Sri Debabrata -Ph.No. 9612644266	Leprosy training Workshop on SSG Capacity building training on DM
33	Kanchanmala Gram Unnan Sanstha, Kanchanmala, West Tripura. President: -Sri Subrata Saha Ph. No.9862212622	Development of club on different areas of the state. SHG training Capacity building training on DM Mock Drill: -No mock drill has done yet by the NGOs members
34	Sujit Memorial Computer Educational and Social fare Society, Fatik Charra, West Tripura. President: -Sri Sanjib Kr. Datta Ph. No.03812343559 Secretary: - Sri Rajib Datta, Ph.No.9856644493	Capacity building training on DM Computer training has been done among the BPL families in local area near Fatik charra 4. Mock Drill: -No mock drill has done yet by the NGOs members
35	Prayash Social Organisation, East Champamura, Dasspara, Po-Old Agartala, Jirania R.D Block. President: -Sri Sanjoy Das Ph. No.8014032274 Secretary: - Sri Biswajit Das Ph.No.9862975146	Capacity building training on DM HIV AIDs awareness training. Training on rural sports, eye donation training, Skill development training.
36	Joint Forest Management Committee, East Sarashima, P.O-Sarashima, P.S- Belonia, South Tripura. President: -Sri Amar Paul Ph. No.8974175624 Secretary: - Ranger	Capacity building training on DM Fishing, Plantation Training (Andhra Pradh) Training on Labour act conducted by Samabikash Daptar. Pollution awareness and illiteracy.
37	Indian Red Cross Society, Dhalai President:-D. M. Dhalai Secretary: - Sri Subir Deb, Ph.No.9436188185	Capacity building training on DM First Aid Training Disaster Management Training. Mock Drill- Health awareness and water bond disease. Health awareness training conducted by Health Department of Tripura.
38	Prachesta Social Welfare and Social Education Society, East Hawai Bari, P.S-Taliamyra, Tripura(W)	1. Capacity Building on DM. 2. Training on sports, Yuga.

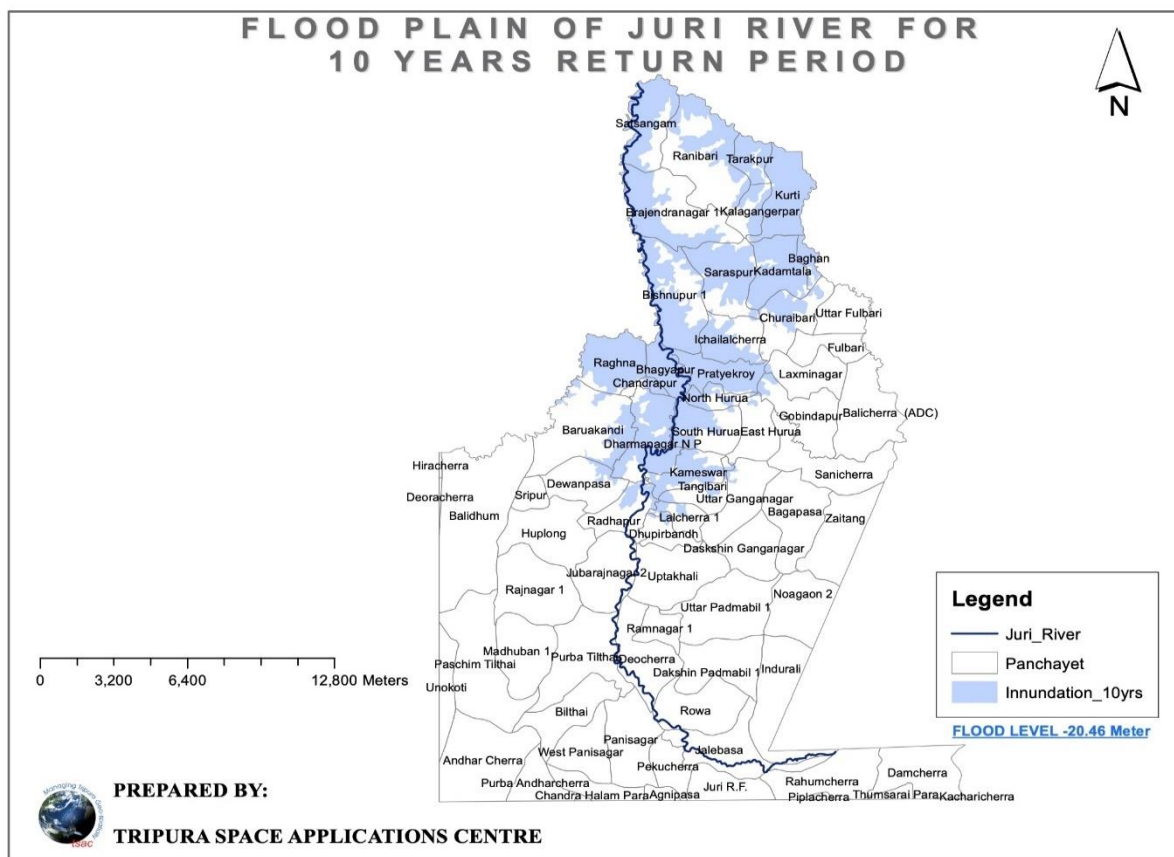|		
	President: -Uttam Kumar Das, Ph.No.9615931788, Secretary: -Jhutan Sarker Ph.No. 9436184214	3. Youth leadership & Personality Development Training. 4. Organised awareness camp and Health awareness.
39	HELP, Gamai Bari, Teliamura. President: - Narayan Bhowmik. Ph.No.03825262612 Secretary: -Susanta Choudhory. Ph. No - 9862153819.	1. Capacity Building on DM. 2. Water Crisis relief Training. 3. AIDS awareness conference.

Source: SDMP, Tripura 2016-2017

Annexure 17: Maps
Source of all Maps: TSAC (Tripura State Application Center)
Map 17A: Flood Plain of Burima river for 10 years Return period

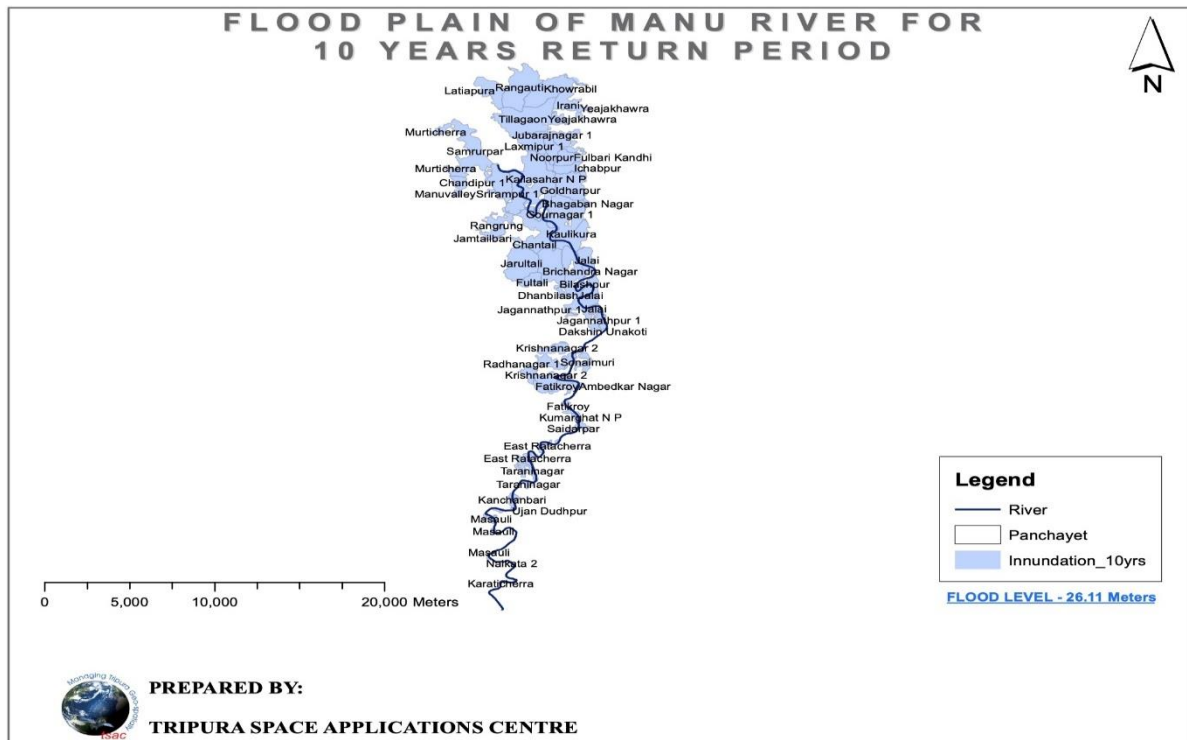**Map 17B: Flood Plain of Gumti river for 10 years Return period**

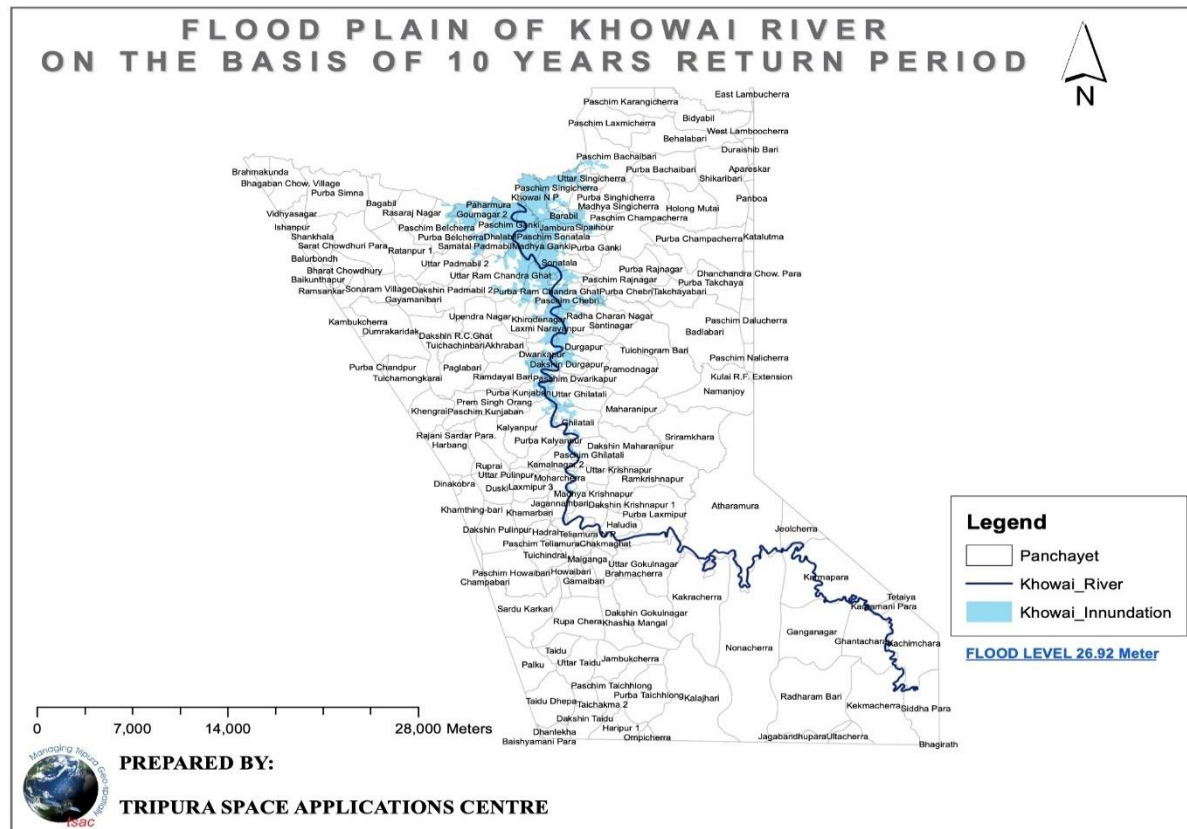**Map 17C: Flood Plain of Juri river for 10 years Return period**

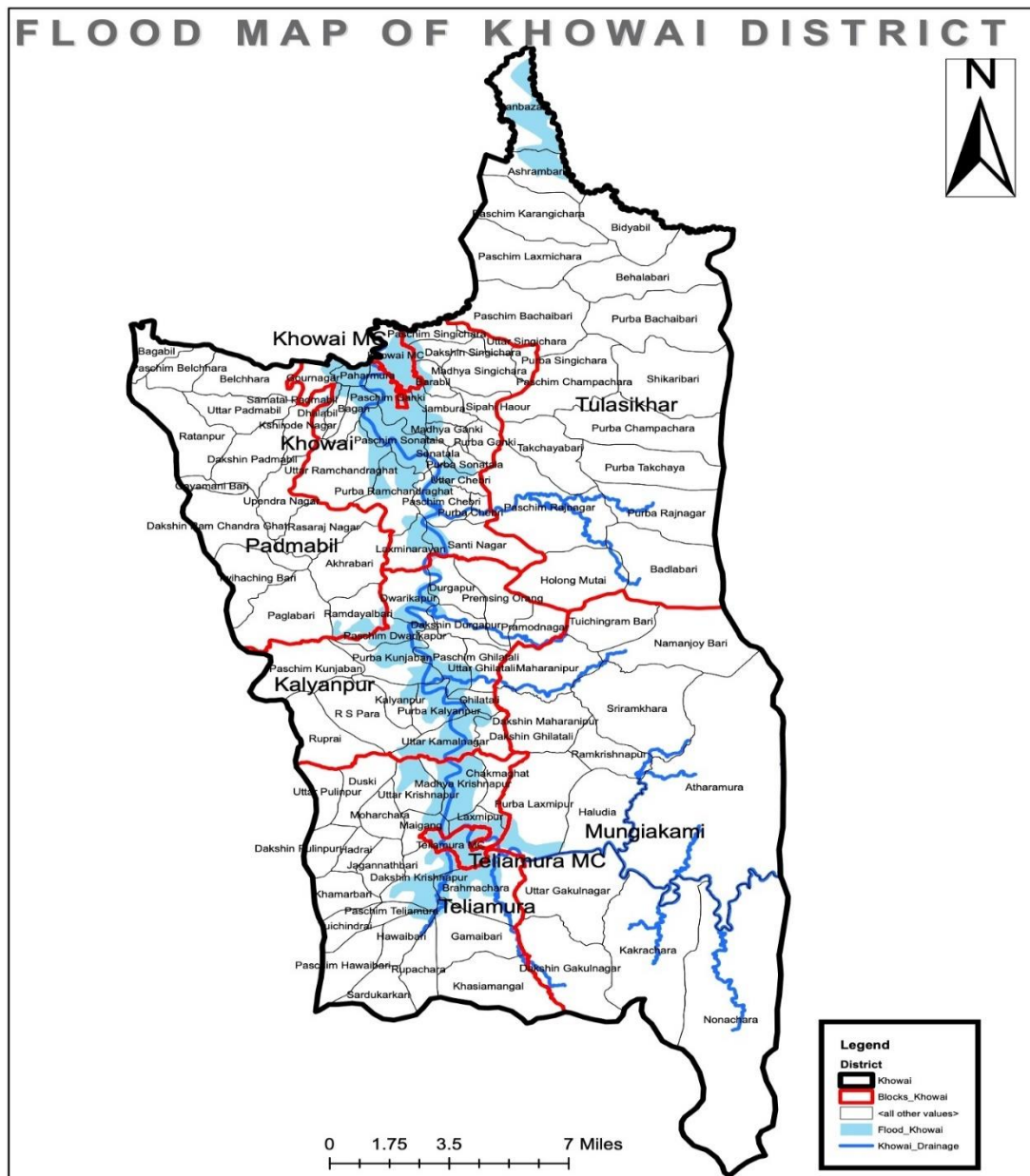**Map 17D: Flood Plain of Howrah river for 10 years Return period**

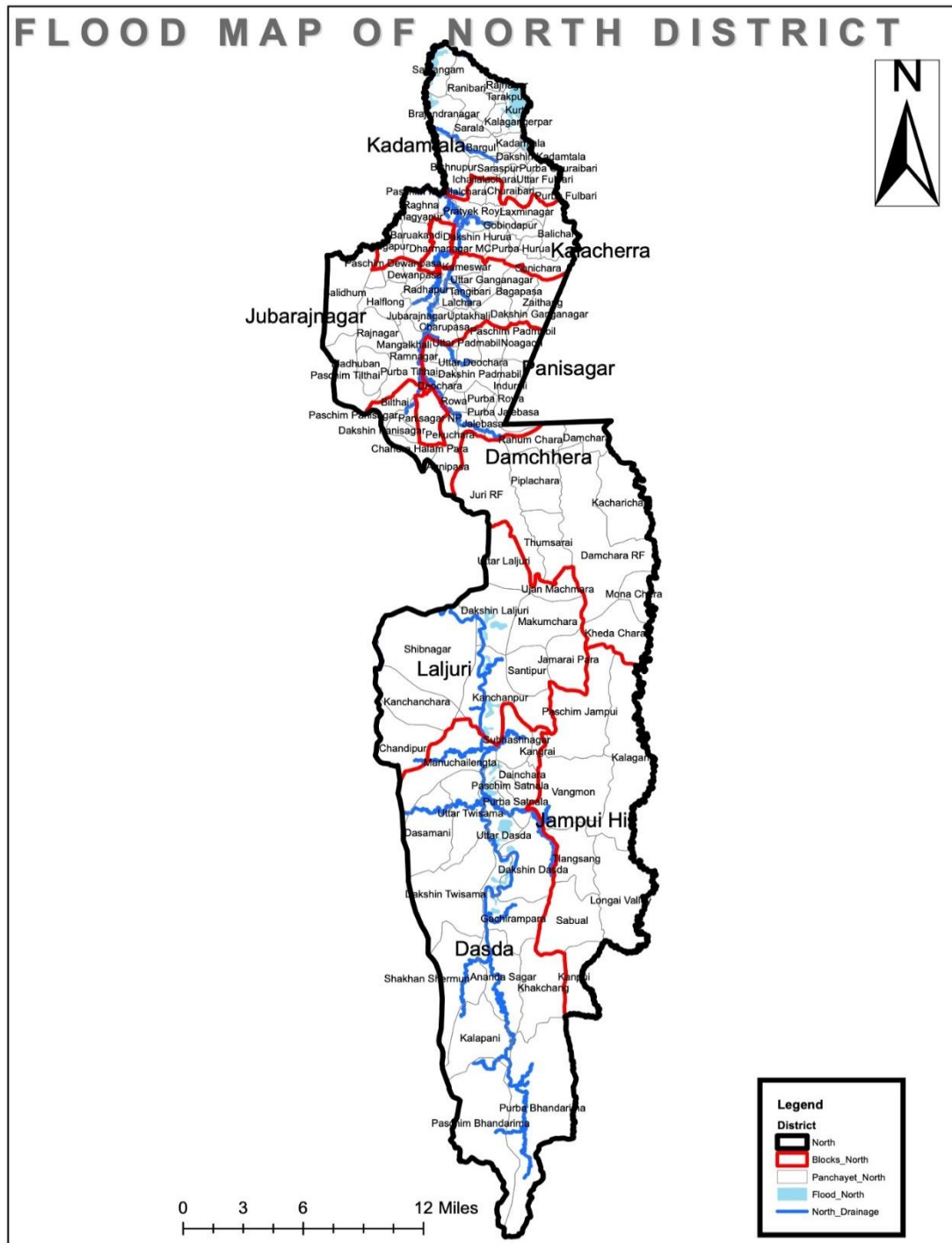**Map 17E: Flood Plain of Manu river for 10 years Return period**

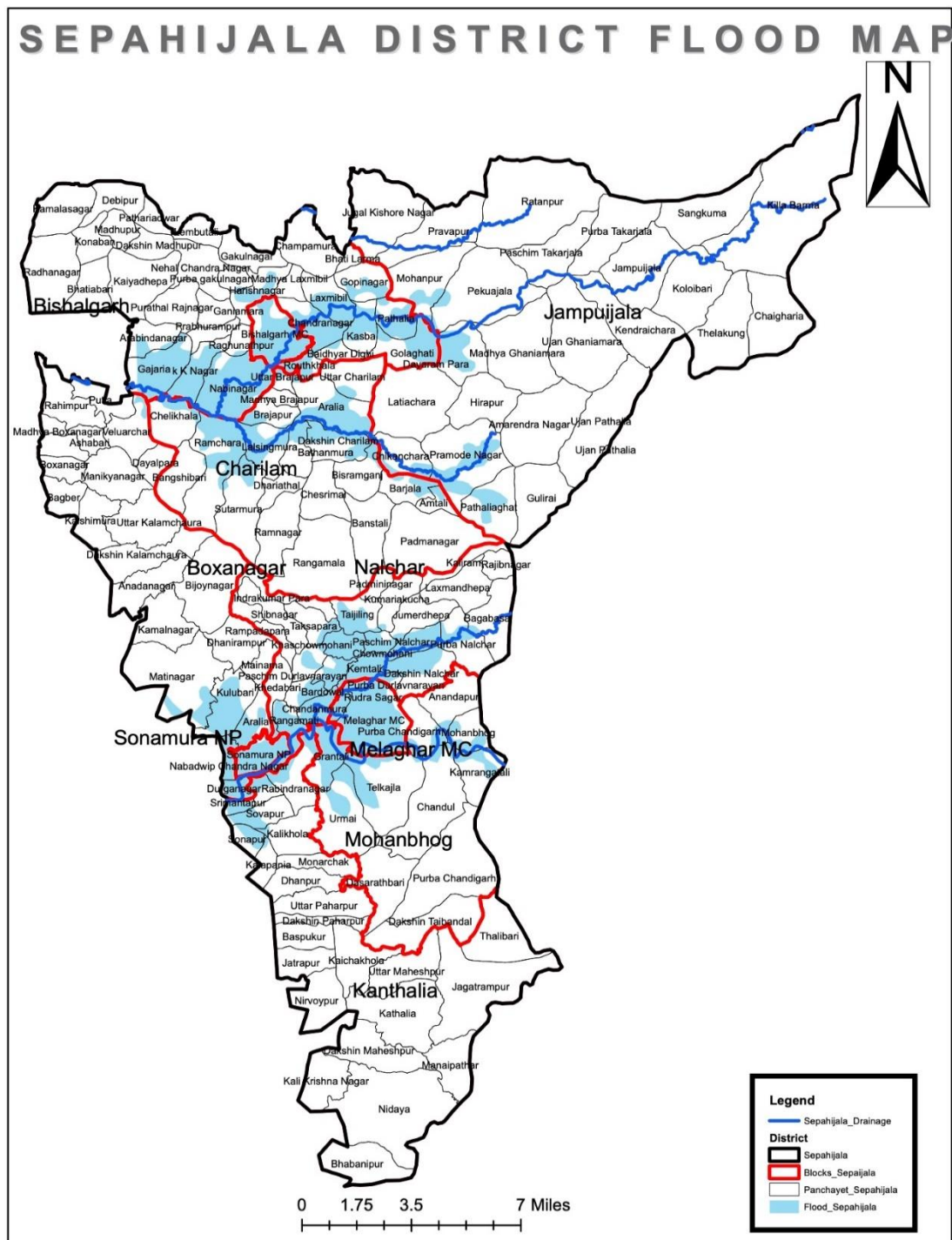**Map 17F: Flood Plain of Khowai river for 10 years Return period**

Map 17G: Flood map of Khowai district

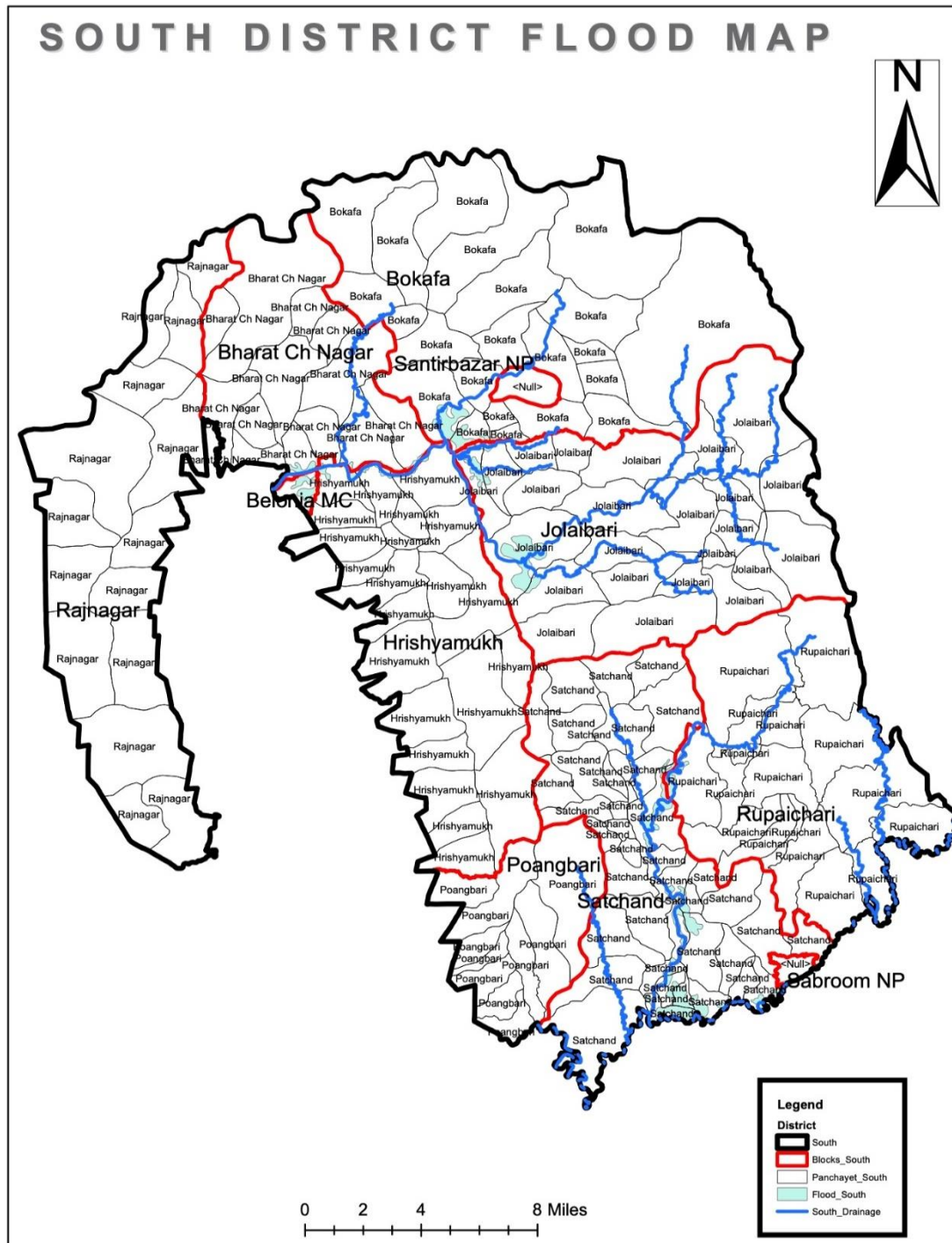FLOOD MAP OF KHOWAI DISTRICT

Legend
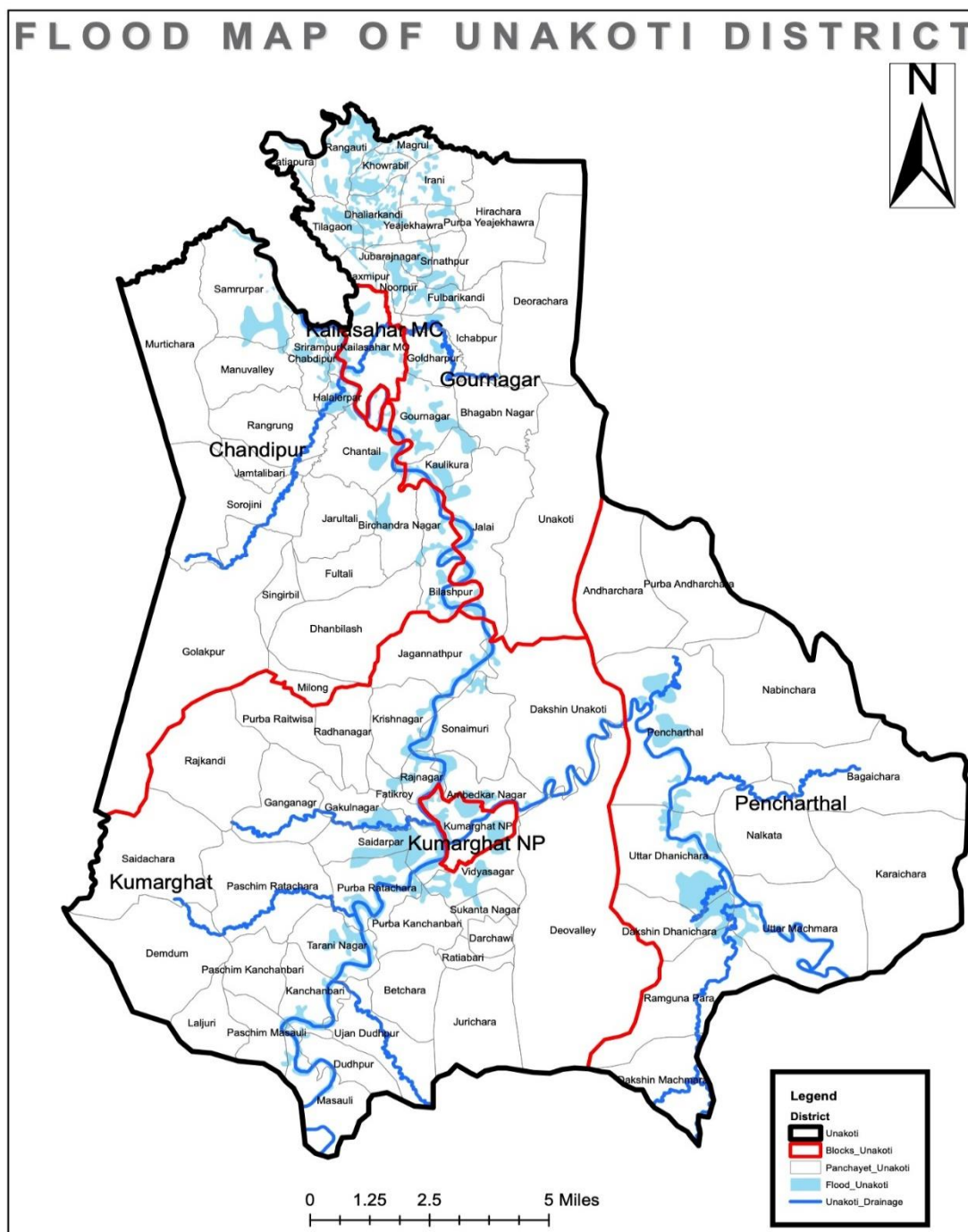District
Khowai
Blocks_Khowai
<all other values>
Flood_Khowai
Khowai_Drainage

0   1.75   3.5   7 Miles

Map 17H: Flood map of North district

FLOOD MAP OF NORTH DISTRICT

Map 17I: Flood map of Sepahijala district

Map 17J: Flood map of South district

SOUTH DISTRICT FLOOD MAP

N

Bokafa
Rajnagar
Bharat Ch Nagar
Santirbazar NP
Belonia MC
Hrishyamukh
Jolaibari
Rajnagar
Rupaichari
Poangbari
Satchand
Sabroom NP

Legend

District
South
Blocks_South
Panchayet_South
Flood_South
South_Drainage

0 2 4 8 Miles

Map 17K: Flood map of Unakoti district

FLOOD MAP OF UNAKOTI DISTRICT

Map 17L: Flood map of West district

Map 17L: Flood map of West district

WEST DISTRICT FLOOD MAP

Legend
Blocks_West
West_Drainage
Panchayet_West
Flood_West
District
West

0 1.25 2.5 5 Miles