



**DISASTER**  
OR  
**NAGALAND STATE DISASTER MANAGEMENT AUTHORITY**  
HOME DEPARTMENT, GOVT. OF NAGALAND  
IN COLLABORATION WITH  
**NATIONAL DISASTER MANAGEMENT AUTHORITY**  
MINISTRY OF HOME AFFAIRS, GOVT. OF INDIA  
DATE: 24<sup>th</sup> OCTOBER 2024

*Profile of* **NAGALAND STATE  
DISASTER  
MANAGEMENT AUTHORITY  
(NSDMA)**

**“Towards a Resilient Nagaland”**



**NAGALAND CIVIL SECRETARIAT**  
Home Department  
Government of Nagaland



*NSDMA Officials & Staff*

*Profile of*

**NAGALAND STATE  
DISASTER  
MANAGEMENT AUTHORITY  
(NSDMA)**



NAGALAND CIVIL SECRETARIAT  
Home Department  
Government of Nagaland

# About Us

The Government of India on the 23rd of December, 2005, enacted the Disaster Management Act 2005, which envisaged the creation of the National Disaster Management Authority (NDMA) headed by the Prime Minister, State Disaster Management Authorities (SDMA) headed by the Chief Minister, and District Disaster Management Authorities (DDMA) headed by the Deputy Commissioners, to spearhead and adopt a holistic and integrated approach to disaster management (DM). Thus giving a paradigm shift, from the erstwhile relief-centric response to a proactive prevention, mitigation, and preparedness-driven approach.

Section 3 of the Disaster Management Act 2005 lays down establishing a State Disaster Management Authority at the State Government level. Accordingly, for the State of Nagaland, the NSDMA was notified vide notification NO.DM&RR/SDMA/MTG-2011 (Pt) dated 22/11/2011. The constitution of the SDMA is as under: -

With support from the GoI- UNDP DRR project, the NSDMA began its journey in the year 2011. A full-time State Project Officer was recruited by UNDP and posted at the NSDMA Secretariat to initiate an institution for Disaster Management in the State. Nagaland State Disaster Management Authority (NSDMA) took its shape in its organizational structure with the appointment of other officers with the support of the GoI-UNDP.

The functions and activities of the Nagaland State Disaster Management Authority (NSDMA) at the State and district level are carried out by officers of sectorial expertise and professionals.

The day-to-day activities of the NSDMA Secretariat are supervised by the Joint Chief Executive Officer, NSDMA, Home Department, through various units/divisions such as Relief & Rehabilitation, Media & Public Relations, Training & Education, Projects & Resources, Response & Communication, Research & Planning, and Establishment.

The various units of NSDMA are led and supported by subject matter experts in Engineering, Geology, Architecture, Social Sciences, Environmental Studies, GIS and Remote Sensing, Agriculture & Horticulture, Computer Science, and Economics. Additionally, specialized teams such as Drone Squad provide technological support.

At the district level, the District Disaster Management Authority (DDMA) is headed by the Deputy Commissioner as Chairman, with the Additional Deputy Commissioner as Chief Executive Officer. The DDMA is further supported by a Nodal Officer from NSDMA Secretariat along with a District Project Assistant and Statistical Assistant.

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## Disaster Risk Transfer Parametric Insurance Solution (DRTPS) Nagaland

### Brief Note

The Nagaland State Disaster Management Authority (NSDMA) has been implementing Disaster Risk Transfer Parametric Insurance Solution (DRTPS) for over three years for the State of Nagaland. The multi-year Disaster Risk Transfer Parametric Insurance Solution (DRTPS) is a unique risk transfer solution implemented for the first time by the Government of Nagaland. The good practices and knowledge gained from this risk transfer solution/scheme will serve as a torch-bearer in the risk transfer sector for Indian states.

Disaster Risk Transfer Parametric Insurance Solution (DRTPS) is especially relevant in the context of an increase in extreme weather occurrences caused by climatic change. The unpredictable and unprecedented nature of catastrophic weather events has resulted in economic losses for numerous regions and nations worldwide.

### Why DRTPS?

1. To protect the State's critical infrastructures and Economic losses in the event of extreme weather.
2. It is estimated that the Insurance Protection Gap for India - the uninsured portion of losses from natural disasters - is as high as around 90%, a burden ultimately borne by the government and taxpayers.
3. Parametric Disaster Risk Financing (DRF) solutions, can complement the State Government, and provide immediate payouts upon the occurrence of natural calamities of pre-agreed severity levels, such as the intensity of rainfall.
4. These can mitigate the financial burden of providing for uninsured losses – and can be used by the State Government for long-term reconstruction, rebuilding of public infrastructure, etc.
5. Such funds can also be invested into disaster risk reduction for resilience as part of the Sendai framework.

### What Is DRTPS?

1. Disaster Risk Transfer Parametric Insurance Solution (DRTPS) is to ensure that the population and critical infrastructure are financially protected in the event of a disaster.
2. To increase the ability of the State Government to respond more quickly and efficiently to disasters and also to Build Back Better in the event of a major disaster.
3. Disaster Risk Transfer Parametric Insurance Solution is a unique parametric multi-year risk transfer insurance solution based on the ground weather station data.

## Vision

Financial Resilient and safe livelihoods for Sustainable Development.

## Objectives

To protect the State's critical infrastructures and Economic losses in the event of extreme weather.

The Government is pleased to announce the implementation of the Disaster Risk Transfer Parametric Insurance Solution (DRTPS), which is a multi-year Disaster Risk Transfer Insurance Solution, a first of its kind being implemented in the Country and also globally by the government of Nagaland.

NSDMA is in partnership with SBI General Insurance as an insurer and GIC-Re India and Munich Re as re-insurers. The insurer and the re-insurers were awarded the contract through a transparent and open tender bidding process. Four parties participated in the tender bidding. Out of which the most competent party was awarded the contract. The bidding process started from February to May 2024.



## Specific Target

1. To establish an effective and efficient disaster risk management system in all districts of Nagaland at all levels.
2. To facilitate community-based disaster risk management for resilient communities.
3. To build effective and sustainable risk transfer initiatives among the community.
4. To create a platform for public-private partnership in risk transfer initiatives in the event of a major Disaster.

## Conclusion

- The Disaster Risk Transfer Parametric Insurance Solution (DRTPS) is a pioneering risk insurance solution in the world that the Government of Nagaland implements with effect from 1<sup>st</sup> of June 2024 to 30<sup>th</sup> May 2027.
- The successful implementation of the Disaster Risk Transfer Parametric Insurance Solution (DRTPS) program of the Government of Nagaland will dawn a new model of Parametric Insurance for Disaster Risk Transfer and also a paradigm shift in the effort to Build Back Better in the event of a major Disaster.

## Automated Weather Station

AWS is a comprehensive device that captures real-time weather parameters like temperature, rainfall, wind, and humidity at a specific location. The highly reliable automated data can be used to extrapolate weather parameters soon. AWS typically consists of a weather-proof enclosure containing the data logger, rechargeable batteries, telemetry, and meteorological sensors. Installation of AWS is based on GIS analysis.

Nagaland's geology and geography have made it highly vulnerable to natural and anthropogenic hazards, which often cause disasters like floods, droughts, thunderstorms, etc. These hazards are dominant in Nagaland, affecting communities with lost lives and damage to infrastructure and properties. To make the entire Nagaland disaster resilient and prepared to deal with any disasters, especially hydrometeorological

disasters, there is a need to adopt automatic sensor-based technology that may provide appropriate data to stakeholders without much human intervention.

State Disaster Management Authority has installed 34 State-wide AWS that generate daily weather data. The department also has a weather portal, [www.nsdmaweather.com](http://www.nsdmaweather.com), which gives weather forecasts hourly and weekly. The NSDMA also shares the hourly data to generate forecasts, alerts, and warnings. The system will provide information on integrated early warnings, severe weather warnings, dangerous thunderstorm alerts, storm attributes, warning levels, proximity alerts, and pulseRad.



# Nagaland Centre for Disaster Management and Atmospheric Research (NaCDAR)

## EXECUTIVE SUMMARY

The establishment of the Nagaland Centre for Disaster Management and Atmospheric Research (NaCDAR) aims to address the growing challenges posed by natural disasters and climate-related phenomena in Nagaland and the Northeast region of India. The center will serve as a multidisciplinary research facility focusing on disaster preparedness, mitigation, atmospheric studies, and climate change monitoring. By developing innovative solutions and providing essential data to policymakers, NaCDAR will contribute significantly to enhancing resilience against disasters and minimizing the impacts of extreme weather events.

## INTRODUCTION

Nagaland is a multi-hazard prone State and is vulnerable to events of disaster in varying degrees, to many natural, as well as human-made disasters on account of its unique geo-climatic and socio-economic conditions. It is highly vulnerable to flash floods, droughts, cyclones, earthquakes, landslides and forest fires.

Though Nagaland is vulnerable to multiple hazards, the State has survived the impact of all such natural phenomena. This further leads to our understanding that we cannot prevent a hazard from happening, but we can



prevent it from becoming a disaster and that a disaster's severity depends on how much impact a hazard has on society or the environment. The scale of the impact depends on the choices we make for our lives and our environment.

In the recent past the Extreme Weather events caused extensive damage in Nagaland to agricultural crops, properties and other public utility infrastructures. Such events had rendered thousands of people homeless in various parts of Nagaland especially due to flash floods.

It is in this context that a centre such as Nagaland Center for Disaster Atmospheric Research (NaCDAR) has emerged with its scope of systematic approach to identifying, assessing and processing disaster data. It aims to reduce socio-economic vulnerabilities to disaster as well as dealing with the environmental and other hazards that trigger them.

NaCDAR is a centre under the Nagaland State Disaster Management

Authority, Home Department, Govt. of Nagaland which studies, manages, and mitigates natural disasters, with a focus on atmospheric and environmental factors. The centre is dedicated to studying the region's distinct geological, meteorological, and environmental concerns, such as floods, earthquakes, landslides, and extreme weather occurrences.

NaCDAR provides a forum for disaster preparedness, risk reduction, and the development of community resilience measures. Its objective is to promote sustainable practices and early warning systems to reduce the impact of disasters on the population by working together with government agencies and academic institutions.

In the context of atmospheric research, NaCDAR analyses climate change, weather conditions, and their potential effects on the region's agricultural sector, infrastructure, and overall health, with the goal of delivering accurate data for better decision-making and methods to minimize disaster risks.

# Vision and Mission

## VISION

To become a leading center for disaster management and atmospheric research, contributing to sustainable development, climate resilience, and effective disaster risk reduction in Nagaland and the Northeast region.

## MISSION

- Conduct advanced research on atmospheric sciences, climate change, and disaster management.
- Provide actionable insights and data to local governments, communities, and stakeholders to enhance disaster resilience.
- Develop early warning systems for various types of natural hazards.
- Foster collaboration with national and international research institutions and universities to enhance the capacity for disaster risk reduction.

# Objectives

1. Disaster Management Research: Investigate and develop strategies for mitigating the impacts of floods, landslides, earthquakes, and other disasters in Nagaland.
2. Atmospheric and Climate Studies: Monitor and analyze weather patterns, climate change, and atmospheric phenomena to understand their impact on the region.
3. Capacity Building and Training: Train local officials, community leaders, and stakeholders in disaster preparedness and response strategies.
4. Early Warning Systems: Develop and implement effective early warning systems to ensure timely alerts for disasters like floods, storms, and earthquakes.
5. Public Awareness: Promote disaster risk reduction awareness programs for local communities to increase preparedness.

# Key Areas of Focus

## 1. Disaster Risk Assessment and Management

- \* Vulnerability mapping of key areas prone to disasters.
- \* Research on building resilient infrastructure.
- \* Development of disaster preparedness and mitigation strategies.

## 2. Atmospheric and Climate Research

- \* Monitoring of atmospheric conditions, including air quality, temperature, and precipitation.
- \* Research on the effects of climate change on local ecosystems and livelihoods.
- \* Forecasting and prediction of extreme weather events.

## 3. Capacity Building

- \* Develop training programs for disaster response and recovery.
- \* Collaborate with local authorities to build a robust disaster management framework.

## 4. Technological Integration

- \* Use remote sensing technologies, GIS mapping, and data analytics to support research and disaster management.
- \* Develop mobile applications and online platforms for real-time disaster information and early warnings.

5. Establish a Centre of Excellence on Disaster Risk Reduction and Atmospheric Data Research in collaboration with premium research organizations and universities within and outside the country.

# Implementation Strategy

## 1. Phase 1: Research Infrastructure Development

- \* Establish a research facility with laboratories, meteorological equipment, and GIS systems.
- \* Set up collaborative partnerships with national meteorological departments and universities.
- \* The technical officers and staff shall be manned from the Nagaland State Disaster Management Authority (NSDMA), Home Department.

## 2. Phase 2: Data Collection and Analysis

- \* Begin large-scale data collection on disaster risks, atmospheric data, GIS imagery using remote sensing and UAV and emerging climatic conditions of the state of Nagaland and the Himalayan Region.
- \* Start developing forecasting models and early warning systems on disaster events and climate risk management.
- \* Conduct pilot projects on disaster management and atmospheric research such as climate change impact on public health addressing region specific challenges in Nagaland based on the unique geographic and climatic conditions.

## 3. Phase 3: Community Outreach and Training Programs

- \* Organize workshops, training sessions, and community awareness programs.
- \* Develop an online platform to disseminate disaster-related information.
- \* Launch the early warning system for specific disaster types.

## 4. Phase 4: Expansion and Policy Advocacy

- \* Expand the scope of research

on disaster preparedness and resilience.

- \* Collaborate with national agencies to collate and share scientific data on disaster preparedness and resilience.
- \* Seek funding from international bodies for disaster preparedness and resilience projects.

### Expected Outcomes from the Nagaland Centre for Disaster Management and Atmospheric Research (NaCDAR)

The establishment of NaCDAR is expected to deliver significant benefits to the state of Nagaland and the Northeast region of India, particularly in terms of disaster preparedness, climate resilience, and sustainable development. Below are the key expected outcomes from the operations and initiatives of NaCDAR:

#### 1. Enhanced Disaster Resilience and Risk Reduction

- Improved Disaster Preparedness: NaCDAR will develop comprehensive disaster risk reduction (DRR) strategies, disaster response frameworks, and early warning systems, enabling local communities and authorities to better anticipate and respond to natural hazards such as floods, landslides, earthquakes, and storms.

- Increased Awareness and Community Engagement: Public outreach programs and community training sessions will ensure that local populations are well-informed about disaster risks, emergency procedures, and mitigation techniques. This will lead to a more resilient population capable of effectively responding to disasters.
- Reduced Losses and Vulnerabilities: Through better riskmapping, hazard assessments, and the implementation of mitigation strategies, NaCDAR will contribute to a reduction in human casualties, infrastructure damage, and economic losses due to natural disasters.

#### 2. Cutting-Edge Research on Climate Change and Atmospheric Sciences

- Accurate Climate Data and Forecasting: NaCDAR will generate reliable data on regional weather patterns, air quality, and climate change impacts. This will enhance forecasting capabilities, allowing for better prediction of extreme weather events such as floods, droughts, and storms, which will be critical for disaster preparedness and response planning.

#### 3. Capacity Building and Training for Stakeholders

- Climate Change Adaptation Strategies: Research into climate change impacts on local ecosystems, agriculture, and livelihoods will provide actionable insights for adaptation strategies, helping communities and industries cope with the changing climate, such as altered rainfall patterns and temperature fluctuations.
- Development of Climate Models: NaCDAR will produce localized climate models tailored to Nagaland's unique environmental conditions, facilitating informed decision-making for sustainable land-use planning, agriculture, and infrastructure development.
- Trained Personnel and Decision-Makers: By organizing regular training programs, workshops, and simulations for government officials, disaster response teams, and community leaders, NaCDAR will enhance the technical capacity of key stakeholders to handle disaster management and climate change challenges.
- Empowered Local Communities: Community-based training programs will empower local

residents, particularly in rural and vulnerable areas, with the skills and knowledge required to mitigate disaster risks, engage in preparedness activities, and utilize early warning systems.

- **Institutional Strengthening:** NaCDAR will help strengthen local institutions by building their capabilities in disaster risk management and atmospheric research, ensuring they are equipped to lead and manage disaster response and recovery efforts.

#### 4. Improved Disaster Risk Management and Recovery Mechanisms

- **Early Warning Systems:** NaCDAR will develop and implement state-of-the-art early warning systems that will provide timely and accurate alerts for impending natural disasters, helping to reduce the loss of lives and minimize property damage.
- **Disaster Recovery Frameworks:** Research and planning undertaken by NaCDAR will guide the development of disaster recovery plans for affected regions, ensuring a swift and coordinated response to rebuild infrastructure, restore essential services, and support affected

communities in their recovery efforts.

- **Integrated Disaster Response Networks:** Through collaboration with local governments, NGOs, and international organizations, NaCDAR will foster a network for coordinated disaster response, ensuring a unified and efficient approach to disaster management.

#### 5. Collaboration and Policy Advocacy for Sustainable Development

- **Policy Influence:** By generating reliable data and innovative research, NaCDAR will provide evidence-based recommendations to state and national policymakers. This will help shape policies related to disaster management, climate resilience, and sustainable development, ensuring they are tailored to the specific needs of Nagaland and the Northeast region.
- **Collaboration with National and International Organizations:** NaCDAR will build partnerships with national and global institutions, such as the Ministry of Environment, Forest and Climate Change, the United Nations, and other disaster management

agencies. These collaborations will ensure that NaCDAR's research and initiatives are in line with global best practices and contribute to international climate resilience and disaster risk reduction efforts.

- **Knowledge Sharing Platform:** NaCDAR will establish itself as a knowledge hub for disaster management and atmospheric research, hosting conferences, seminars, and publishing research findings that can be shared with other research centers, governments, and civil society organizations.

#### 6. Technological Advancements in Disaster Management

- **Use of Remote Sensing and GIS:** By incorporating advanced technologies like remote sensing, satellite imaging, and Geographic Information Systems (GIS), NaCDAR will enhance disaster monitoring, risk mapping, and vulnerability assessments, providing real-time data that can be used for planning and decision-making.
- **Use of Drone Technology:** Deployment of drones being the evolving means for capturing of

high-resolution aerial imagery and for real-time data collection during times of emergency, NaCDAR will integrate the drone and UAV technology in carrying out surveillance and mapping activities.

- **Mobile and Digital Platforms:** Development of mobile applications and online platforms to provide real-time disaster alerts, preparedness tips, and early warning information will increase community engagement and enhance disaster response time.

#### 7. Sustainability and Long-Term Impact

- **Sustainable Practices and Resilient Infrastructure:** NaCDAR will advocate for and support the adoption of sustainable development practices, including eco-friendly construction, the use of climate-resilient crops, and the development of disaster-resistant infrastructure.
- **Long-Term Research on Ecosystem Protection:** Through its climate change and atmospheric research, NaCDAR will also address environmental degradation, such as deforestation and soil erosion, helping to restore natural

ecosystems and improve environmental resilience in Nagaland.

- Institutional Longevity: By fostering a culture of continuous research and collaboration, NaCDAR will become a sustainable institution capable of adapting to emerging challenges, ensuring that its services and contributions remain relevant and impactful for future generations.

## Conclusion

The Nagaland Centre for Disaster Management and Atmospheric Research (NaCDAR) plays a critical role in strengthening disaster resilience and improving climate-related research in the region. By focusing on disaster preparedness, response, and recovery, as well as atmospheric studies, NaCDAR contributes significantly to enhancing the capacity of local communities and authorities to manage natural disasters effectively. The centre's emphasis on research helps in understanding the region's unique climate challenges, enabling the development of tailored strategies to mitigate the impact of hazards such as floods, landslides, and droughts. With an integrated approach to research, training,

and community engagement, NaCDAR will contribute to the long-term goal of building a safer, more resilient Nagaland.

In conclusion, NaCDAR stands as an essential unit of NSDMA, Home Department for fostering sustainable development, climate adaptation, and disaster risk reduction in Nagaland. Its work ensures a better-prepared, safer, and more resilient society, improving the lives of the people in the region while contributing to national and global knowledge on disaster management and atmospheric sciences. Continued support and collaboration with other organizations and stakeholders will be key to enhancing NaCDAR's impact in addressing the evolving challenges posed by climate change and natural disasters.

## Nagaland Disaster Risk Reduction (NDRR) Roadmap

Nagaland is prone to multiple hazards and vulnerable to climate variability and its negative manifestations with increasing complexities due to climate change, which has induced various disasters. The gaps in preparedness measures exposed by the COVID-19 pandemic were more predominantly observed. As there is no baseline data and no specified Departmental guidelines or frameworks at the State/Disasters/Village levels for Disaster Management, achieving community resilience remains challenging. There is a

need to prepare action plans to take timely actions for prevention, preparedness, and mitigation.

NSDMA and UNICEF seek to collaborate and finalize to strengthen strategies for disaster resilience through developing the DRR Roadmap and building capacities for the State of Nagaland, which involves a wide range of stakeholder consultations. The handbook for Disaster Risk Reduction was launched on the 1<sup>st</sup> of December 2023 by our honorable Chief Minister.





### Key objectives of the Nagaland DRR Roadmap are :

- Develop a baseline of disaster loss and damage from 2010 to 2020
- Identify strategic opportunities for stakeholders (Government, civil society organizations, academic institutions, private sector, and UN Agencies) to collaborate for disaster risk reduction actions.
- Set realistic short-, medium-, and long-term targets for stakeholders based on the baseline data in line with the Prime Minister's Ten Point Agenda on Disaster Risk Reduction, SFDRR, SDGs, and Paris Agreement commitments.
- Mobilise long-term commitment of human and financial resources from the stakeholder

### The expected outcomes of the Nagaland DRR Roadmap are as follows :

- Address the data and evidence gaps in disaster loss and damage through improved reporting and MIS.
- Reinforced stakeholders' base and commitments towards disaster risk reduction.
- A common platform for stakeholders to collaborate and share their resources
- Supplement towards achieving national and global frameworks (SFDRR, SDGs, and Paris Agreement) for disaster risk reduction and sustainable development.
- System-wide accountability through risk-informed programming by the stakeholders.

## Earthquake Monitoring System

The Nagaland State Disaster Management has installed a seismic monitoring system called GEOTinyBH10 Borehole Compact Digital Seismometer in three different parts of the State. One is at Nagaland Legislative Assembly (Kohima), Chumoukedima and Meluri District.



System installed in Nagaland Legislative Assembly (Kohima)

## BACKGROUND

Earthquakes are an actual and potential danger to the State of Nagaland. The seven northeastern states, including Nagaland, are considered by seismologists to be the sixth central earthquake-prone belt in the world. Nagaland falls under high level of seismic activity. The state has had at least two quakes above magnitude eight since 1900, which suggests that more significant earthquakes of this size occur infrequently, probably every 60 to 65 years and given the location of the state being in seismic zone-v, where the zone where the most intense earthquakes occur.



## SPECIFICATION

The system GEOtiny BH10 is a compact miniature digital seismometer. It supports a high-resolution 24-bit digitizer, embedded Linux OS, and GPS or NTP timing. The instrument has a deficient power consumption, so it can operate by getting power from a small 12V DC battery. Due to its small size, it can be buried underground.

GEOtiny BH10- Borehole Compact Digital Seismometer, which has the following features:

- Aftershock Monitoring
- Regional seismicity monitoring
- Seismic tomography acquisition
- Induced Seismicity Monitoring
- Volcano Monitoring
- Structural monitoring
- HVSR, MASW survey
- Global Earthquake Monitoring
- Educational seismograph
- Personal seismograph

# Aapda Mitra

*“Aapda Mitra training benefited me as I learned many lifesaving skills, such as CPR, Earthquake, flood rescue, fire incident, and forest fire. Hands-on training on these topics was more effective.”*

*~Mr Keyipeigongbe, Aapda Mitra trainee, Peren.*

*“The training was a good learning experience as I can confidently say that I am prepared and equipped with knowledge and practical skills to rescue during disasters.”*

*~Mr. Angukha, Aapda Mitra, Zunheboto*

Aapda Mitra, meaning “Friends in Disaster,” is a central sector scheme that aims to train community volunteers with the skills they need to respond to their community’s immediate needs in the aftermath of a disaster. The Scheme would enable them to undertake essential relief and rescue tasks during emergencies such as floods and urban flooding. Community youths in Dimapur completed the pilot project of Aapda Mitra with the support of the Nagaland State Disaster Management Authority, and over 200 volunteers have been trained

in flood search and rescue. NSDMA trained over 700 volunteers for seven more districts on May 2022-2<sup>nd</sup> September 2022.

Over the years, the state has witnessed inundated cases of disaster causing immense loss of lives, livelihood, and properties. The disaster has increased due to unpredictable weather and climatic change phenomena. Therefore, the need to strengthen the local community to respond to the catastrophe effectively has surged.



## THE OBJECTIVES OF THE SCHEME

- Development and Standardization of training modules at the National Level;
- Development of Information Knowledge Management System at National level linked to States/UTs;
- Training institutions to be empaneled by respective States/UTs at the State/UT level;
- To train 6000 community volunteers in life-saving skills of disaster response (flood relief and rescue), coordination, assistance, and provide personal protective equipment and emergency responder kits;
- To create a Community Emergency Stockpile/Reserve at the district/block level containing essential light search and rescue equipment, medical first aid kits, etc;
- To disseminate training and education tools developed under the project to more flood-prone districts in subsequent phases of the Scheme.

Thus, to effectively manage disasters, the Nagaland State Disaster Management Authority, in collaboration with the Home Guard & Civil Defence and SDRF, with support from the National Disaster Management Authority, organized training programs.

## 3D DIGITAL HAZARD & RISK MAPPING PROJECT

### INTRODUCTION

Disaster management requires the involvement of varied technologies. The mapping of natural risks and disasters is one of the sectors or areas that has seen significant growth in the last few years. Virtual environments such as Google Earth and Virtual Earth have contributed to the process of “Build Back Better” after the event of Disaster. This approach, which emphasizes rebuilding to reduce the risk of future disasters, has been instrumental in post-disaster recovery. These new visualization approaches offer new opportunities for disaster managers, enabling users to obtain a clearer perception of the characteristics of disasters, including providing details on the magnitude of an event and improving estimates of evacuation conditions.

Geoinformatics Technology (GIT) has recently significantly contributed to disaster management by making high-resolution data available and by timely disseminating and utilizing such information. In line with this, NSDMA, as the lead agency, is undertaking the 3D Hazard and Risk Mapping project using UAV and GPS for all the Administrative Headquarters in the State. As the lead agency, NSDMA will oversee the project’s implementation, coordinate with stakeholders, and ensure the project’s objectives are met.



The project aims to bring the pre-disaster data and a 3D Map of the District Headquarters in Nagaland, which will include detailed topographic information, infrastructure locations, and potential hazard zones. This will help us understand the past and present historical disaster events to mitigate Disaster for preventive measures. The project is a comprehensive disaster-related data collection and collation such as digital aerial data, social and economic loss data, atmospheric data, disaster legacy data, and ground truthing data.



### GOAL AND OBJECTIVES

1. To minimize the impact of Disaster on the State.
2. To identify potential risks in the District Headquarters.

### STRATEGIC OBJECTIVES 1

Identification of resources to carry out the risk identification.

1. Orientation workshop with the stakeholders.
2. Social mapping of the District Headquarters.
3. Listing of hazards and risks in the District Headquarters.

### STRATEGIC OBJECTIVE 2

To carry out space EUAV (Extended Unmanned Aerial Vehicle) mission and operation for 3D Disaster Hazard and Risk Mapping. This involves using advanced UAV technology to collect high-resolution aerial data for mapping and risk assessment.

1. Coordinating with security agencies to obtain clearance for UAV missions in each District Headquarters.
2. Deployment of UAV for mapping.
3. Development of UAV flight mission plan.
4. Correlating 3D maps with identified hazards and risks of the area.
5. Re-deployment of the flight mission plan.

### STRATEGIC OBJECTIVE 3

#### Data Collection and Collation.

1. Identification of 3D digital elevation and slope map of district headquarters.
2. Asset density mapping of all district headquarters.
3. Collection of data through UAV flight missions.
4. Collation of data into server.
5. Screening of raw data.
6. Feeding appropriate screened data into the platform.

### EXPECTED OUTCOME

1. NSDMA possesses a pre-disaster map of all the district headquarters.
2. NSDMA identified the hazards and risks of all district headquarters.
3. NSDMA identified digital elevation data and digital slope mapping of all the district headquarters.
4. Asset density map of all districts of the State is mapped.

## NAGALAND EMERGENCY PREPAREDNESS EXERCISE (NEPEX)

### BACKGROUND

Nagaland, nestled in the northeastern region of India, is a picturesque state characterized by its lush landscapes, vibrant culture, and rich biodiversity. However, beneath its stunning exterior lies a significant vulnerability, an increased susceptibility to seismic activities. Earthquakes particularly in the Himalayan region, pose a grave threat to the safety and security of its residents. In response to this pressing concern, a comprehensive emergency preparedness exercise was conducted by the Nagaland State Disaster Management Authority (NSDMA) in collaboration with the National Disaster Management Authority (NDMA) and Districts Disaster Management Authority (DDMA) by focusing on enhancing disaster management protocols across the state.

### THE RATIONALE OF THE TRAINING PROGRAM

The necessity for this Emergency Preparedness Exercise stems from Nagaland's geographical positioning within a seismically active zone. Historical data indicate that the region experiences tremors, with the potential for devastating earthquakes that could lead to extensive loss of life and infrastructure damage. The Shillong Earthquake of 1897 with a magnitude of 8.7, and the recent 2001 earthquake in Aizawl region serve as a stark reminder of the catastrophic impacts that seismic events can have. Therefore, the state must adopt proactive measures and response capabilities.

The context of conducting the Nagaland Emergency Preparedness Exercise (NEPEX) is aimed to strengthen the Incident Response System (IRS) of the state disaster management capacities through practical simulations and collaborative problem-solving.

By involving all the 17 districts DDMA's, the exercise promotes a unified approach to emergency preparedness. Each district participates in exercises and simulations of tailored IRS to address local vulnerabilities and response strategies. The exercise includes training sessions focusing on critical areas such as first aid, evacuation protocols, and communication strategies. These

components are essential in ensuring that all participants have the necessary skills to respond effectively during an actual disaster. The involvement of local authorities, NGOs, and community leaders further enriches the exercise, creating a comprehensive network of stakeholders committed to disaster resilience.

The Nagaland Emergency Preparedness Exercise (NEPEX) is a pivotal step towards enhancing the state's resilience to earthquakes and other natural disasters. By acknowledging the region's seismic vulnerabilities and actively involving all 17 districts in a collaborative simulation, the exercise lays the groundwork for a more robust Incident Response System (IRS) framework. The commitment demonstrated by stakeholders to work together in addressing these challenges signifies a positive shift towards a culture of preparedness in Nagaland.

As the state continues to navigate the complexities of disaster risk reduction, the lessons learned from this exercise will contribute to safeguarding lives and property in the face of future emergencies.



# Inter-Agency Group Nagaland: IAG (NL)

## Introduction

### Inter-Agency Group (IAG) - Nagaland guidelines

The Inter-Agency Group (IAG) is a forum for regional/ local resource/ networks, organizations - International NGOs and UN Agencies - to enhance information exchange, capacitate and act through members and perform coordination with State, Central and Local Self Govt., based on National and state acts, policies and Guidelines<sup>1</sup>.

### National Vision (As per Disaster Management Policy 2009, GOI)

“To build a safe and disaster resilient India by developing a holistic, proactive, multi disaster and technology driven strategy for Disaster Management. This will be achieved through a culture of prevention, mitigation and preparedness to generate a prompt and efficient response at the time of disaster. The entire process will center

stage the community and will provide momentum and sustenance through the collective efforts of all government agencies and non-governmental organizations.”

### IAG Nagaland Vision

Towards a safe and resilient state to enhance the quality and accountability of humanitarian action/initiatives in disaster in Nagaland.

### Mission

IAG Nagaland strives for appropriate initiatives as per national vision, towards Disaster Risk Reduction, response to emergencies in a timely and cost efficient manner with an aim to enhance coordination and complementarity amongst members and stakeholder organizations.

### Purpose of IAG

Improved coordination and integrated efforts on Emergency Response and DRR initiatives taken up by IAG members in Nagaland

Facilitate better environment in terms of coordination and integration for disaster management through Government and Civil Society interaction the same has been described in Disaster Management Act 2005, that enables; enhanced community based disaster risk reduction (CBDRR) and quick response to emergencies in Nagaland.



*IAG Meeting in Progress*

# SEC, SDMA, DDMA & PRE-MONSOON MEETING

## SDMA, DDMA & SEC MEETING

As mandated by the DM Act 2005 sub-section 1 of section 15, the Nagaland State Disaster Management Authority (NSDMA) and the State Executive Committee (SEC) meeting shall be held "as and when necessary and at such time and place as the Chairperson of the State Authority may think fit." The State Disaster Management Authority (SDMA) is headed by the Chief Minister while the State Executive Committee (SEC) is headed by the Chief Secretary.

### The Nagaland State Disaster Management Authority (NSDMA) members as provided under the Disaster Management Act 2005, as follows:

- |  |   |
|--|---|
| 1. The Chief Minister  | : Chairperson                           |
| 2. The Minister in charge of Home Department                     | : Member                                |
| 3. The Minister in charge of Finance                             | : Member                                |
| 4. The Minister in charge of Health & Family Welfare             | : Member                                |
| 5. The Minister in charge of Agriculture Department              | : Member                                |
| 6. The Minister in charge of Planning & Coordination             | : Member                                |
| 7. The Minister in charge of Environment Forest & Climate Change | : Member                                |
| 8. The Minister in charge of Law & Justice                       | : Member                                |
| 9. The Minister in charge of Public Works Department             | : Member                                |
| 10. The Chief Secretary  | : Chief Executive Officer, Ex- Officio. |
| 11. Home Commissioner/ Commissioner Disaster Management          | : Secretary, Ex- Officio                |

### The State Executive Committee (SEC) members as provided under the Disaster Management Act 2005, as follows:

- |  |               |
|--|---------------|
| 1. The Chief Secretary                                 | : Chairperson |
| 2. The Addl. Chief Secy. & Commissioner Nagaland       | : Member      |
| 3. The Addl. Chief Secy. & Development Commissioner    | : Member      |
| 4. The Addl. Chief Secy. & Finance Commissioner        | : Member      |
| 5. The Principal Secretary Home / Commissioner DM      | : Member      |
| 6. The Principal Secretary / Secretary H&FW            | : Member      |
| 7. The Principal Secretary / APC/Secretary Agriculture | : Member      |
| 8. The Commissioner & Secretary PWD                    | : Member      |
| 9. The Secretary, Forest, Environment & Climate Change | : Member      |
| 10. The Secretary, NSDMA, Home Department              | : Member      |
| 11. The Special Secretary, Home                        | : Member      |
| 12. Joint CEO, NSDMA                                   | : Member      |

Director General of Police and Director CD&HG and Prisons will be special invitee. The SEC may invite any other considered relevant to the Committee.

### DISTRICT DISASTER MANAGEMENT AUTHORITY MEETING

The District Disaster Management Authority (DDMA) meetings are conducted as and when required. The Deputy Commissioner serves as Chairman, with the Additional Deputy Commissioner serving as the Chief Executive Officer.

The members of the DDMA include the Superintendent of Police, the Deputy Controller of Civil Defense, the Chief Medical Officer (CMO), the Executive Engineer PWD (R&B), and the District Forest Officer.

### PRE-MONSOON PREPAREDNESS MEETING

The Pre - Monsoon Preparedness meeting of the Nagaland State Disaster Management Authority (NSDMA) Home Department is conducted annually with all the line departments before the onset of monsoon. All the District Disaster Management Authority (DDMAs) also conduct this meeting annually. The meeting deliberates the preparedness status of the State to meet any eventualities that can occur during the monsoon season. Status/ stock of essential commodities in the DDMA's are also reviewed during this meeting.



SEC, SDMA, DDMA & Pre-Monsoon Meetings in progress

## COMMUNITY FIRST RESPONDER (CFR)

### Introduction

The Community is always the first responder in any disaster as they have an inherent capacity to respond immediately

'Community' First Responder Training' for fastest and most effective response.

### Vision

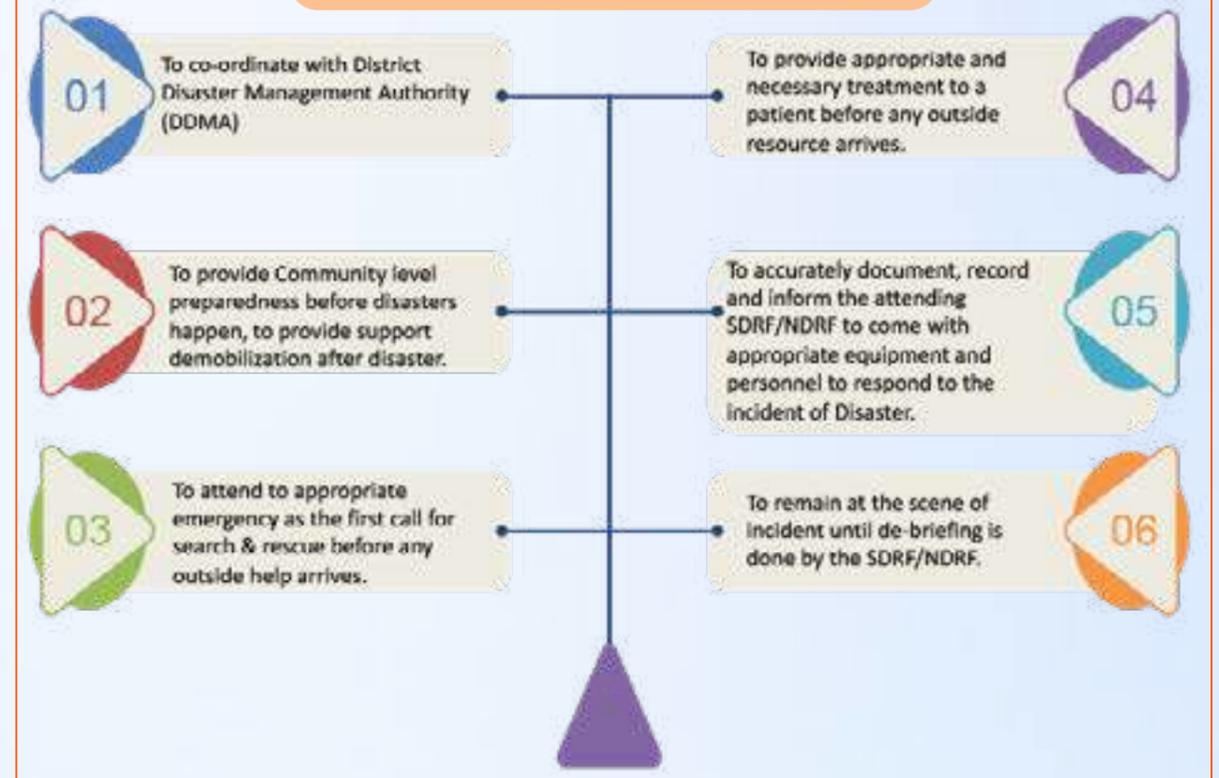
To train as many people as possible across all the villages of the State.

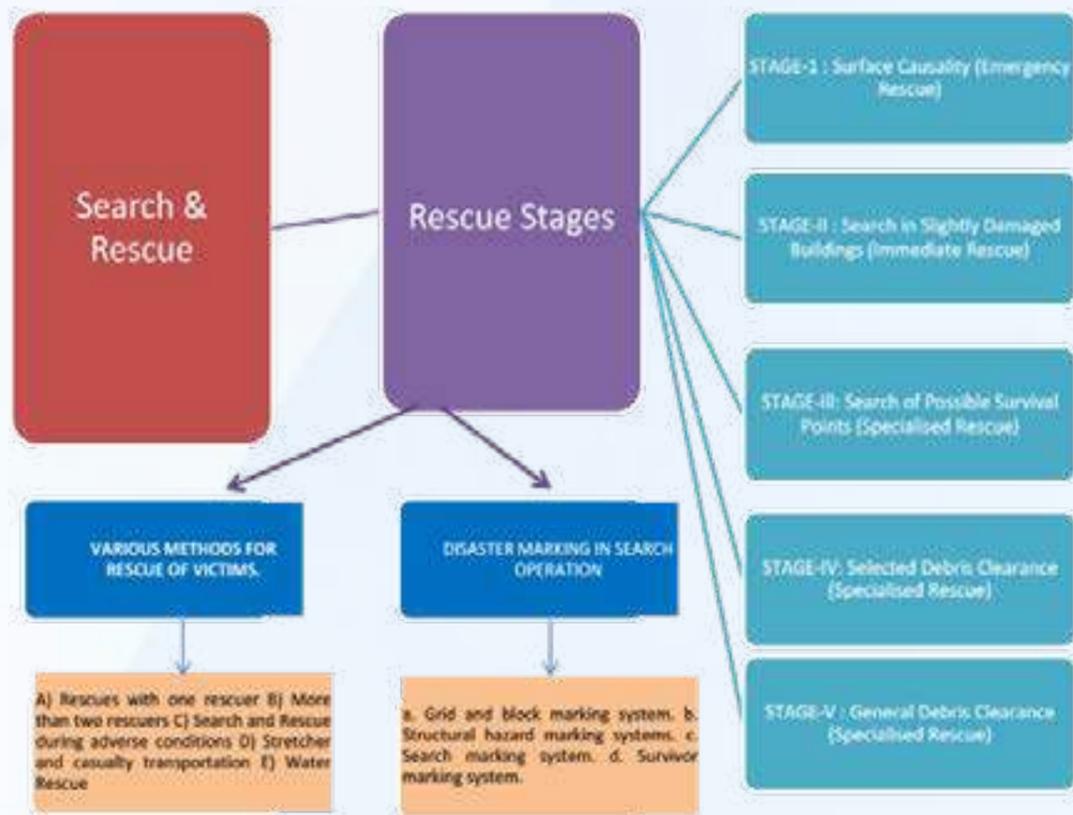
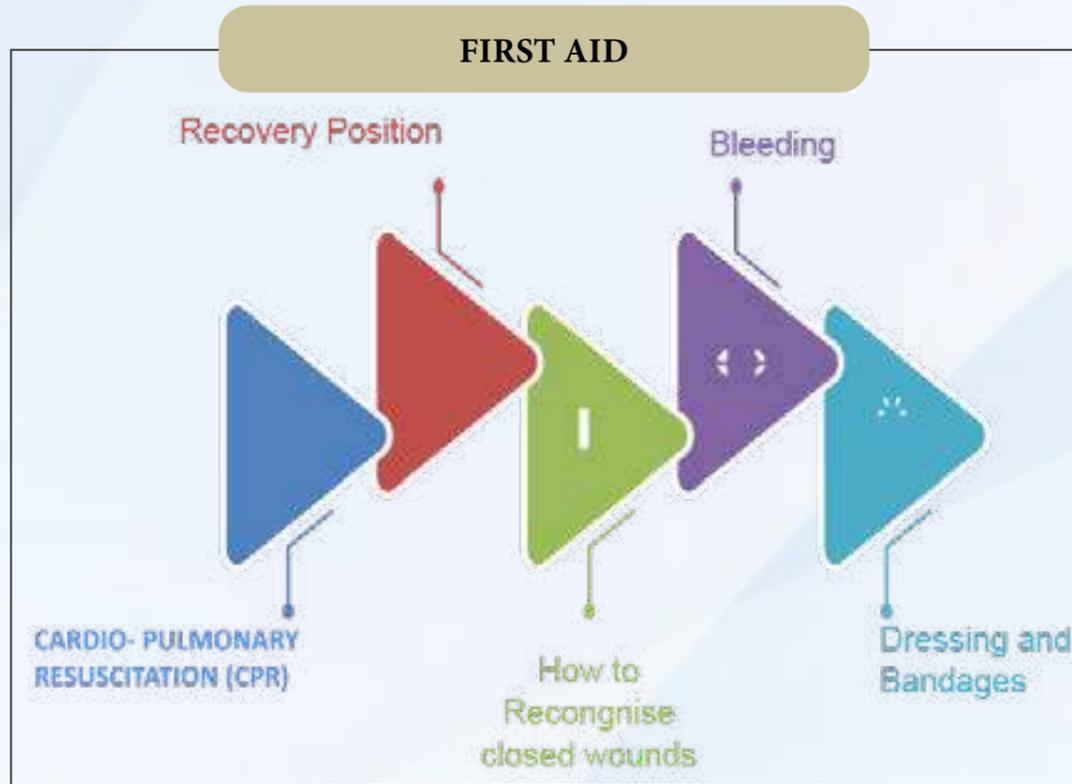
The module is based on a cascading system; Master of Trainers (MoTs) at State level, Training of Trainers (ToTs) at the district level and block level

### Composition

One TEAM LEADER or Incident Commander,  
One LIAISON,  
Four Search & RESCUE MEMBERS &  
Four First AIDERS.

### ROLES & RESPONSIBILITIES





# Landslide Risk Mitigation Scheme

Under Improving Disaster Risk Governance of SDMA's in Landslide Mitigation & Management.

### AIM OF THE SCHEME

The Scheme aims to reduce economic losses and human lives, greater public awareness and capacity building about landslides hazards and methodologies for mitigating losses with improved technology.

### BEST PRACTICES

Employing technical & Scientific approach like rock, bolting, shotcrete, cement grouting of sub-surface cracks and cavities & 3D ring net in mitigating the landslide.

### KEY CHALLENGES

- The private land holding system prevalent in the state.
- Lack of sufficient state of art machineries, material and expertise in the state.

### LEARNING

Baseline data & best practices needed for formulation & implementation for future projects, capacity building and better execution of problematic landslide sites on landslides risk mitigation.

### OUTCOME

- Minimizing loses of lives & property with reducing recurring cost in landslide mitigation.
- Preparedness, Awareness & Sensitization activities imparted to state holders with experience gained during landslide mitigation.

# Nagaland State Disaster Monitoring Information System



Drone captured picture before the commencement of mitigation work



Drone captured picture after the completion of mitigation work



## NSDMIS

Nagaland State Disaster Monitoring Information System

Simplify the core operations of NSDMA

Core operations include-

- Keeping records of disasters & fund assistance to disaster affected people
- Keeping track of weather patterns to anticipate and mitigate disasters and all aspects related to disaster
- Disaster reduction and mitigation in line with global frameworks such as Sendai and Hyogo Frameworks.

### NEED OF NSDMIS

Activities are time consuming and involves many manpower and these activities are prone to human error

1

2

Currently, SDRF fund management, from verification, fund disbursement to reports of disasters and status of disasters are done manually.

Migrate core operations of NSDMA to a digital platform in line with DIGITAL INDIA and e-Governance Plan (NeGP).

3

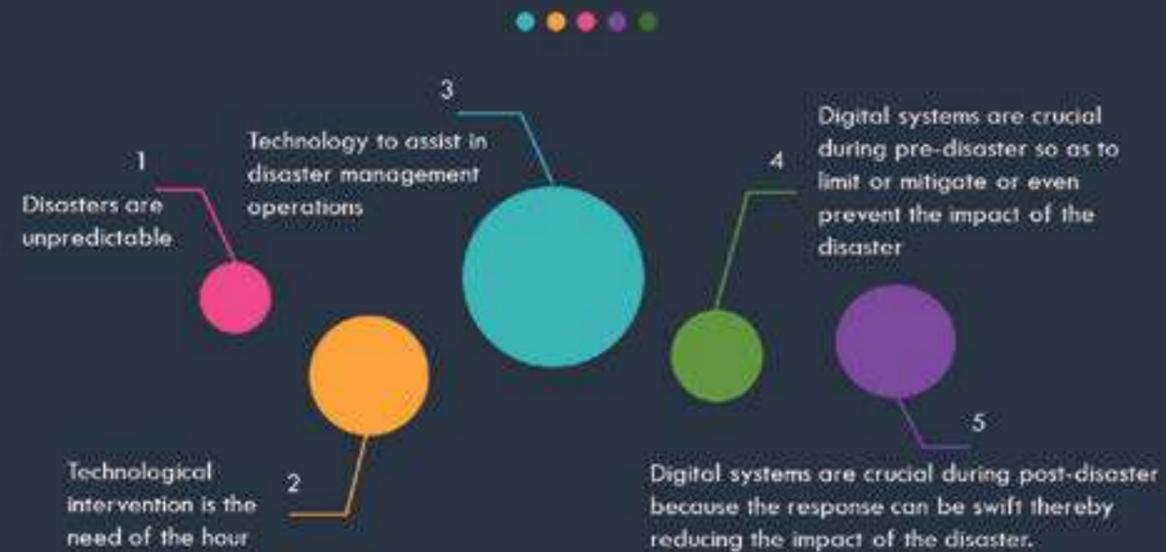
4

5

Physical files are not safe from disasters

NSDMIS will contribute exponentially towards making Nagaland a disaster-resilient state

## RELEVANCE OF NSDMIS



40

## Overview of NSDMIS

- NSDMIS will enable all the main operations of NSDMA to be performed on a digital platform.
- NSDMIS is a unique software, first-of-its-kind in India which provides a great opportunity for NSDMA as well as Nagaland to gain recognition at national as well as globally.
- NSDMA staff and software development agency NSDMIS will be developed in phases and all components of the NSDMIS will be fine tuned through active and robust coordination.
- Considering the internet connectivity challenges in Nagaland, the NSDMIS will have the provision to work offline and syncing mechanisms to synchronize all data to main database.

Just to summarize, the NSDMIS in a glimpse:



41

## Conclusion

- NSDMIS will become a crucial asset for the NSDMA in the years to come. With the opportunity to be pioneers in the field of digital management of disasters in India with this unique software system, the NSDMIS needs to be given full support by all the stakeholders.
- With increase in data and information as the days go by, the NSDMIS will become a crucial decision support tool for the key decision makers.
- In that, the NSDMA will move a step closer towards realizing its vision to make Nagaland a disaster-resilient state.



## The NSDMA School Safety Policy Compliance Course

Launched on 1<sup>st</sup> December 2023 by the Honourable Chief Minister of Nagaland, Shri Neiphiu Rio, the Nagaland Disaster Management School Safety Policy (NDMSSP) Compliance Course is a collaborative initiative by the Nagaland State Disaster Management Authority (NSDMA), the Department of School Education (DoSE), and NagaEd. This online training course is aimed at ensuring the safety and preparedness of every school community across Nagaland.



### Phase 1 Highlights

Phase 1 of the NDMSSP Compliance Course achieved significant milestones (to date):

- 7,571 Registrations from teachers across Nagaland.
- 3,287 Teachers Certified, enhancing their understanding of school safety protocols.
- Promotional efforts reached over 3 lakh individuals, generating 16.76 lakh advertisement impressions through social media, print media, and influencer engagement.

During the State-level Teachers' Day celebration on 5<sup>th</sup> September 2024, six schools that excelled during Phase 1 were awarded the School Safety Excellence Award for achieving the highest number of teacher registrations and certifications.

### The award-winning schools were:

- Government High School Kobulong, Mokokchung
- Government Higher Secondary School, Wokha
- Government High School Sechu Zubza, Kohima
- Holy Child School, Dimapur
- Holy Angel's School, Tizit Town, Mon
- Woodland School, Zunheboto

### Phase 2

Building on the success of Phase 1, Phase 2 is set to begin in 2025 to onboard an additional 5,000 teachers in 2024, bringing the total target to 10,000 teachers trained and certified. This expansion underscores the commitment to fostering a safer learning environment for every school in Nagaland.



# Village Disaster Management Authority (VDMA)

## Why and when was then establishment of the Village Disaster Management Authority (VDMA) initiated in the state?

- The Village Disaster Management Authority (VDMA) was initiated so that the village authority may act as the village planning, coordinating and implementing body for Disaster Management and take all measures for the purposes of Disaster Management in the village in accordance with the guidelines laid down by the National Authority, the State Authority, the District Authority and the Sub-division Authority.
- The Village Disaster Management Authority (VDMA) was initiated in the State on 23rd September, 2013

## How many Village Disaster Management Authority (VDMA) have been activated in the State till date?

- 1066 villages in 16 districts namely Kohima, Longleng, Phek, Dimapur, Tseminyu, Peren, Kiphire, Tuensang, Mokokchung, Zunheboto, Noklak, Shamator, Chumoukedima, Niuland, Mon, and Wokha have constituted the Village Disaster Management Authority (VDMA) till date.

## How will the VDMA contribute towards building a disaster resilient community?

- The Village Disaster Management Authority (VDMA) will contribute towards building a disaster resilient community by carrying out the tasks as enshrined in section 30 (2) of the Nagaland State Disaster Management Rules 2011;

### 30. (2) The Village Authority may-

- i. Prepare a disaster management plan including Village response plan for the Village;
- ii. Coordinate and monitor the implementation of the National Policy, State Policy, District Policy, Sub-Division Policy, National Plan, State Plan, District Plan and Sub-Division Plan;
- iii. Ensure that the areas in the Village vulnerable to disasters are identified and measures for the prevention of disasters and the mitigation of its effects are undertaken by the Village Authority as well as by the local authorities;
- iv. Ensure that the guidelines for prevention of disasters, mitigation of its effects, preparedness and response measures as laid down by the National Authority, the State Authority, District Plan and Sub-Division Plan are followed by the Village Authority and the local authorities in the district;

- v. Monitor the implementation of disaster management plans prepared by the Village Authority at the Village level;
- vi. Review the State of capabilities for responding to any disaster or threatening disaster situation in the village and give directions to the relevant local authorities at the village level;
- vii. Review the preparedness measures and give directions to bring the preparedness measures to the levels required for responding effectively to any disaster or threatening disaster situation;
- viii. Facilitate community training and awareness programmes for prevention of disaster or mitigation with the support of local authorities, governmental and nongovernmental organizations; (x) Set up, maintain, review and upgrade the mechanism for early warnings and dissemination of proper information to public;
- ix. Prepare, review and update village level response plan and guidelines;
- x. Coordinate response to any threatening disaster situation or disaster;
- xi. Coordinate with, and give guidelines to, local authorities in the district to ensure that measures for the

- prevention or mitigation of threatening disaster situation or disaster in the village are carried out promptly and effectively;
- xii. Identify buildings and places which could, in the event of any threatening disaster situation or disaster, be used as relief centres or camps and make arrangements for water supply and sanitation in such buildings or places;
- xiii. Establish stockpiles of relief and rescue materials or ensure preparedness to make such materials available at a short notice;
- xiv. Provide information to the Sub-Division Authority relating to different aspects of disaster management;
- xv. Encourage the involvement of nongovernmental organizations, Self-help groups and voluntary social-welfare institutions working at the grassroots level in the village for disaster management; (xviii) Ensure communication systems are in order and mock drills are carried out at least twice in a year;
- xvi. Perform such other functions as the State Government or State Authority may assign to it or as it deems necessary for disaster management in the Village.

# Decentralized Relief Pay out System (DRPS)

DRPS is developed to provide easy access of relief assistance to the citizens and to mainstream instant and timely relief payment to the affected community. Embarking on the Blockchain Technology as a powerful way to enhance—or supplant—traditional relief payment systems, Nagaland State Disaster Management Authority (NSDMA) forges instant relief payment to the remote parts of the State through this platform.

### OBJECTIVES



Decentralised Relief Pay-out System (DRPS) is developed with an aim to provide easy access of relief services to the citizens.

Mainstreaming instant and timely relief payment system for the affected community.

### THE HOW?



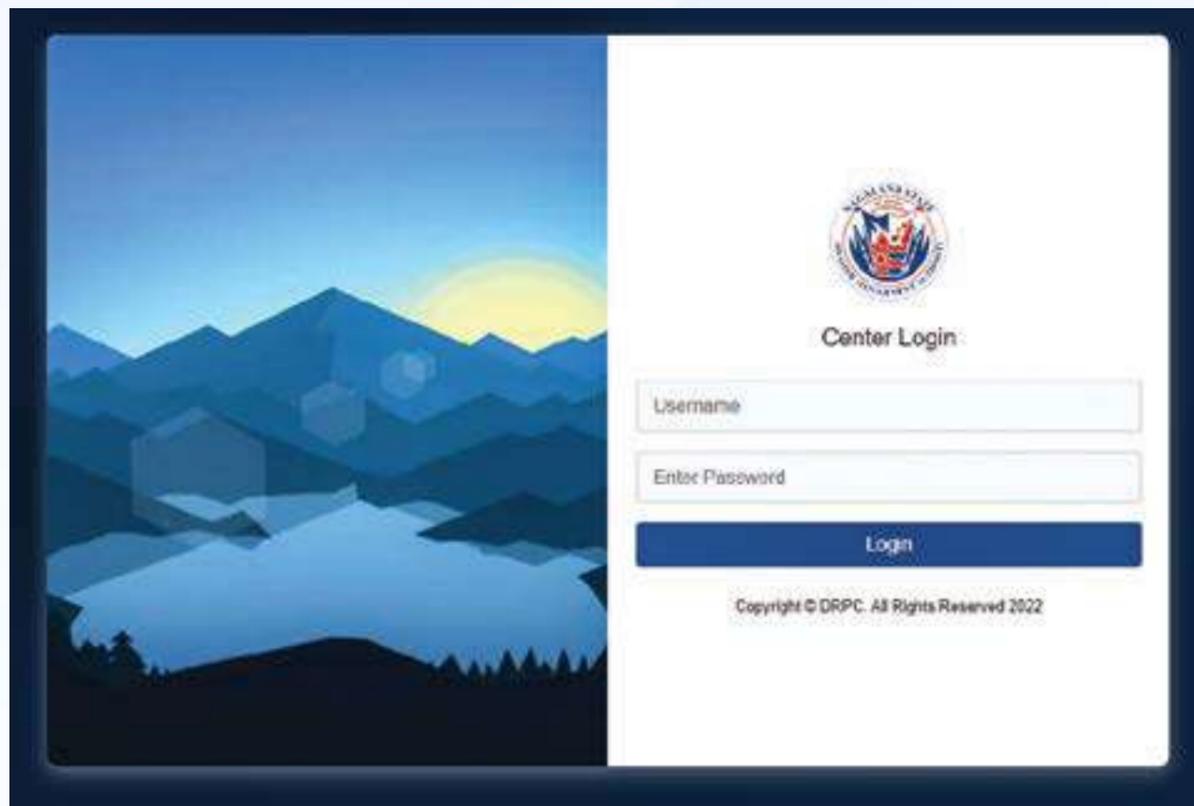
- Step 1** Login through unique ID
- Step 2** Enter OTP received in the beneficiary's registered mobile number
- Step 3** Take picture of the beneficiary/recipient for record
- Step 4** Save information
- Step 5** Release relief fund
- Step 6** Report sent to NSDMA

- 01** The Emerging Technology is transforming humanity in many areas of lives. Big Data and Artificial Intelligence technologies made profound changes to financial services.
- 02** Powered by Blockchain, NSDMA is on the path towards a decentralized relief payment system to fulfil the obligation of timely relief payment to the affected communities/families by the extreme weather disaster events.
- 03** Embarking on the Blockchains Technology as a powerful way to enhance—or supplant—traditional relief payment systems, NSDMA forges instant relief payment to the remote parts of the State through this platform.

## Our other Activities



*State Disaster Response Force (SDRF) in Action*



*Disbursement of Immediate Relief*



*Search & Rescue in action*



*Inter Ministerial Central Team (IMCT) visit at Zunheboto District, 2024*



*Glimpses of disaster incidents across the State*



**NAGALAND STATE DISASTER MANAGEMENT AUTHORITY (NSDMA)**

NAGALAND CIVIL SECRETARIAT

Home Department

Government of Nagaland

**STATE EMERGENCY OPERATION CENTRE (SEOC)**

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