Azadi Ka Amrit Mahotsav

G20 भारत 2023 INDIA
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Resilient India - Disaster Free India

TIDINGS

NIDM Newsletter–15/2022
(April - June, 2022)



NATIONAL INSTITUTE OF DISASTER MANAGEMENT
(Ministry of Home Affairs, Government of India)

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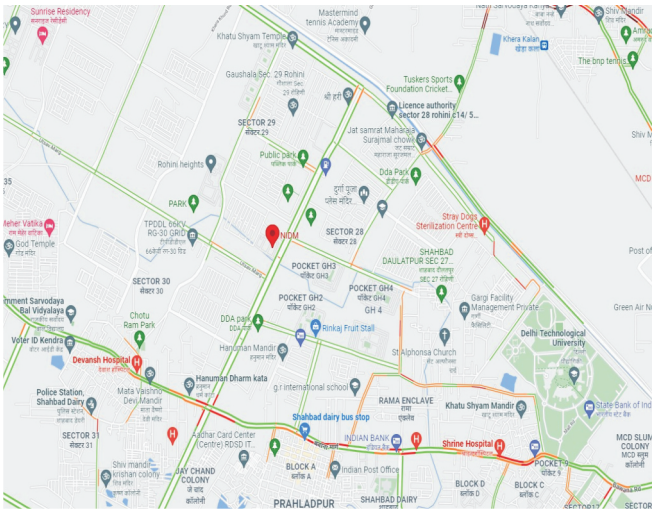
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About NIDM

The National Institute of Disaster Management (NIDM) was constituted under an Act of Parliament with a vision to play the role of a premier institute for capacity development in India and the region. The efforts in this direction that began with the formation of the National Centre for Disaster Management (NCDM) in 1995 gained impetus with its re-designation as the National Institute of Disaster Management (NIDM) for training and capacity development.

Under the Disaster Management Act 2005, NIDM has been assigned nodal responsibilities for human resource development, capacity building, training, research, documentation and policy advocacy in the field of disaster management.

Both as a national Centre and then as the national Institute, NIDM has performed a crucial role in bringing disaster risk reduction to the forefront of the national agenda. The Institute believes that disaster risk reduction is possible only through promotion of a "Culture of Prevention" involving all stakeholders. The Institute works through strategic partnerships with various ministries and departments of the central, state and local governments, academic, research and technical organizations in India and abroad and other bi-lateral and multi-lateral international agencies.

NIDM is proud to have a multi-disciplinary core team of professionals working in various aspects of disaster management. In its endeavour to facilitate training and capacity development, the Institute has state-of-the-art facilities like class rooms, seminar hall and video-conferencing facilities etc. The Institute has a well-stocked library exclusively on the theme of disaster management and mitigation.

NIDM provides Capacity Building support to various National and State level agencies in the field of Disaster Management & Disaster Risk Reduction. The Institute's vision is to create a Disaster Resilient India by building the capacity at all levels for disaster prevention and preparedness.

From the NIDM

Executive Director's Desk



Dear Readers,

As we recover from Covid 19, the floods in north eastern region of our country have already blown its trumpet. The recent flood is not new and unprecedented but rather a mere reoccurrence of the same disaster in Assam. We also expect that climate change will continue to increase the frequency of floods in future. However, the avoidable loss of nearly 200 lives owing to a recurring and seasonal phenomenon shows that more needs to be done in terms of disaster preparedness. Incidences of fire breakouts and cable-car collision in Deoghar district, Jharkhand, India, also drew attention of the policy makers. However, it is only in acknowledging our gaps that we look forward to new possibilities and solutions.

At NIDM, with the waning of Covid 19, we have started offline mode of training and capacity building. However, the pandemic has exposed us to the online mode of webinars and training programmes. Seeing the outreach of such programmes, we will continue marching towards our mandate in both offline and online modes. We hope that it will help us to augment our outreach programmes.

We all need to protect the lives we have built for ourselves from natural hazards and disasters. While we cannot prevent all disasters, we can reduce their impact by investing in risk informed development and warning systems so that we can understand and manage the risk we face. This support from our end will facilitate the task of the government to build a disaster resilient India

tajhassan

Shri Taj Hassan, IPS
Executive Director

Face to Face Training Programmes
(Organized from April-June 2022)

ToT/PDP on Capacity Enhancement for integration and mainstreaming of SFDRR, SDG and CCA, 04-08 April, 2022

Key Takeaway/Recommendations



a) Policy brief identifies approaches that could help achieve better synergies in implementing three major global frameworks dedicated to sustainable development (SD), disaster risk reduction (DRR) and climate change adaptation (CCA) on the ground via programmatic integration, collaboration, capacity, and innovation.

b) World has arrived at a crucial turning point with the inception of three major global frameworks dedicated to sustainable development (SD), disaster risk reduction (DRR) and climate change adaptation (CCA).

c) Coordinated response is now needed from all relevant stakeholders to maximise implementation on the ground.

d) Globally, while SDG, DRR, and CCA interlinkages are acknowledged, DDR is weakly linked to the Paris Agreement. Linking CCA with DRR by strengthening national and local level adaptation planning and implementation would assist here, and loss and damage can provide ample opportunities for this to take place.

e) At the national level, the economic aspect is key to sustainable development in many countries—DRR and CCA can assist in economic development objectives of most developing and least developed countries without compromising environmental integrity or increasing disaster risk.

f) At the local level, strong convergence of SD, DRR, and CCA calls for greater collaboration among related stakeholders with adaptive management—not just in drafting broad plans and policies but also actual implementation, monitoring and evaluation, via collaboration among local governments, local experts, non-government organisations and business sectors.

Climate Change and Disaster Risk Reduction in District Level Plans, 04-08 April, 2022

Key Takeaway/Recommendations

a) Methods and Approaches for including CCA & DRR into Development Planning were discussed in detail and it was learnt that it should be kept in mind by each and every departments while planning for achieving their goals.

b) Legal Policy Framework for Disaster Management and Climate Change related issues were well understood by the participants.

c) Inclusion of DRR into Development Schemes and Projects was also discussed and during field visit it was practically assessed by the participants and understood by the participants well.

d) Lesson was learnt in view of existing Schemes/Projects on Disaster Management & Climate Change in present scenario.

e) Lesson learnt by the participants in the field of Reducing Risk through Local Adaptation Practices with proper and practical examples.

f) Participants were able to understand the importance of climate change adaption by providing training to various stakeholders.



g) Participants were able to understand the Sendai framework and its agenda.

h) Participants were able to understand Hazard, Risk, Vunerability and Capacity analysis concepts, tools and techniques with practical examples.

ToT/PDP on Post Disaster Needs Assessment and Long Term Recovery, 04-08 April, 2022

Key Takeaway/Recommendations

a) When PDNA is conducted, social sector should be given at most priority.

b) Emphasizing on the provisions for e-learning platforms for continuity of learning amongst students in post disaster recovery.

c) Sendai Framework for Disaster Risk Reduction 2015-2030 (Sendai Framework) was the first major agreement of the post-2015 development agenda and provides Member States with concrete actions to protect development gains from the risk of disaster.



d) Emphasizing the need for infrastructure rehabilitation and resilience.

e) India has to be more focused on recovery and rebuilding, and the government should be more concerned with achieving a speedy and comprehensive recovery as well as disaster-resistant reconstruction.

f) Alternate assessment procedure may be more appropriate for smaller countries or smaller disasters.

g) When it comes to the social sector, one thing to keep in mind is the age of the target population; age allows us to get vaccines and education; yet, in catastrophe circumstances, we miss out on such opportunities.

ToT on Understanding Mitigation Measures for Urban Resilience-Role of Civil Defence, 05-09 April, 2022

Key Takeaway/Recommendations



a) Discussion on the paradigm shift in the perception of disaster management and the dynamic role of CDV in pre, during, and post-disaster.

b) Emphasizing community-inclusive knowledge and resource management, capacity building in the context of Delhi, especially the role of civil Defence has been organized.

c) Reasons behind the weak disaster management at the community level and how CDVs can be the resource person for functional and territorial responsibilities.

d) Role of CDVs during wars to national emergencies to recent community frontline warriors in the COVID-19 Pandemic.

e) Urban resiliency in the context of Delhi.

f) Develop village disaster management plans and school disaster management plans to help the community to identify the hazard, risks, and vulnerabilities.

g) Discussion on the social vulnerabilities such as unauthorized construction, haphazard locality planning, and increasing population.

h) Discussion on trainer's Perspective on the issues and challenges in conducting Disaster Management Training in urban areas.

i) Identifying Urban Environment and Disaster Risk (Pollution, Waterlogging, Transport, and Solid Waste Management) and Mitigation measures.

j) Need for capacity-building programs for women with a focus on sustainable practices, as well as measures to improve women and leadership at the local level.

River, Disaster Resilient Development & Planning (for Earthquake, Landslides, Flashflood, Erosion and Climate Risks) at Local bodies North Eastern Regions, 18-22 April, 2022

Key Takeaway/Recommendations



a) Students of Agricultural Engineering should become entrepreneurs and try to learn the latest technology with the moto to serve the farmers of the NE region in general and of the nation in particular.

b) Mainly four strategies are there to mitigate Landslide viz. Stabilization, Protection, Avoidance and Maintenance & Monitoring. Real time Landslide early warning System can help save human life and resources.

c) Nature based solution and alternative livelihoods are most important options for climate change adaptation.

d) Need to identify strategies for enabling institutional support for climate resilient recovery by making proper drainage system, leaving higher percentage of land with grass to protect the soil, awareness programme to protect the resources and integrating climate change strategies into policy intervention.

e) Necessary to cover the coastal areas with appropriate erosion proof measures for proper mitigation of bank erosion and also to preserve the age old cultural and traditional heritage sites.

f) Forecasting and early warning based proper reservoir operation can save from flood.

g) Disaster maps should be prepared to identify the high risk zones as well as disaster impact zones.

Training of Trainers Programme on Child Centric Disaster Risk Reduction, Vijayawada, 18-22 April, 2022

Key Takeaway/Recommendations

a) Avoid touching Eyes, Nose and Mouth / Maintain respiratory hygiene / wash hands frequently and thoroughly.

b) Wearing a mask helps contain any potentially infectious respiratory droplets that may be released while breathing, talking, or coughing — especially when social distancing is more challenging and even if the person doesn't yet know they're sick.



c) Regularly clean and disinfect frequently touched surfaces to prevent the further spread of the novel coronavirus which stays on the surfaces.

d) Promote social distancing (a term applied to certain actions that are taken to slow down the spread of a highly contagious disease, including limiting large groups of people coming together).

e) Understand basic information about coronavirus disease (COVID-19), including its symptoms, complications, how it is transmitted and how to prevent transmission.

f) Stay informed about COVID-19 through reputable sources such as UNICEF, WHO and national health ministry advisories.

g) Do not circulate social media posts which carry unverified or negative information/Seek information on COVID-19 from credible sources. Seek psychosocial support for any stress or anxiety.

h) Being fully vaccinated is one of the best measures one can take to keep oneself and his/her family safe.

i) Disaster risk reduction planning is must in the time of Covid-19 outbreak.

j) Provide necessary ways for reconstruction, recovery, resilience approach to fight a post disaster situation.

ToT Programme on Child Centric Disaster Risk Reduction, Chandigarh, 18-22 April, 2022

Key Takeaway/Recommendations



a) Promote social distancing (a term applied to certain actions that are taken to slow down the spread of a highly contagious disease, including limiting large groups of people coming together).

b) Effects of the disasters and ways to minimize them in collaboration with various organizations sand NGO's.

c) Sick students, teachers and other staff are advised not to come to school.

d) Update or develop school emergency and contingency plans.

e) Basics of Covid-19 precautions and actions of the individual.

f) Collaboration with local and NGO's and role of the NSS and NCC volunteers.

g) Reinforce frequent hand washing and sanitation and procure needed supplies.

h) Receive and manage information from the public and other source.

i) Independent children (0-12 years) should be the focal point of safety practice.

Preservation & Conservation of Cultural Heritage Sites and Precincts, 18-22 April, 2022

Key Takeaway/Recommendations



a) Setup a special team of responder who has been trained to handle artifacts.

b) Policy should be made to fixing to prioritization of artifacts.

c) Foreigner victims should be treated accordingly to foreign policy.

d) Buildings in Patna must be studied from heritage perspective and listed according to their heritage importance.

e) Adequate parking facility shall be created based on space available.

ToT/PDP on Post Disaster Needs Assessment for Long Term Recovery, 25-29 April, 2022

Key Takeaway/Recommendations



a) Need to develop capacity at the district state and national level by creating a pool of experts who can help state governments in assessing the disaster impacts as helping them with the recovery programs.

b) Social sector should be given at priority when PDNA is conducted.

c) Emphasizing on the provisions for e-learning platforms for continuity of learning amongst students in post disaster recovery.

d) Emphasizing the need for infrastructure rehabilitation and resilience.

e) India has to be more focused on recovery and rebuilding, and the government should be more concerned with achieving a speedy and comprehensive recovery as well as disaster-resistant reconstruction.

f) Alternate assessment procedure may be more appropriate for smaller countries, smaller disasters, or a typical recovery requirements.

g) When it comes to the social sector, one thing to keep in mind is the age of the target population; age allows us to get vaccines and education; yet, in catastrophe circumstances, we miss out on such opportunities.

Training of Trainers Programme on Child Centric Disaster Risk Reduction, 25-29 April, 2022

Key Takeaway/Recommendations



a) Identification of the hazards and assessment of the magnitude and probability of their occurrence.

b) Analysis of vulnerability of individuals, populations, infrastructure and other community elements to the hazards.

c) Capacity of the system to manage the health risks, by reducing hazards or vulnerability, or responding to, and recovering from a disaster.

d) One- on- one support for individuals in need of assistance.

e) Basic information about Covid-19 and the transmission.

f) Ways of the storm surge and floods and tsunami's, effects and actions to be taken.

g) Support around living conditions and income.

Incident Response System (IRS): Basic & Intermediate, 25-29 April, 2022

Key Takeaway/Recommendations



a) Exercises embedded in each of the module of the course, clarifies many doubts pertaining to effective response.

b) IRS course may also include a day on concepts and institutional mechanism of disasters to make all the participants aware about nuances of disasters.

c) Course module may be translated into Hindi for better understanding of participants in Hindi belt.

d) Videos pertaining to live meetings such as planning, pre-planning may be added to buttress the effectiveness of the course.

e) Special session on framing of objectives is a must for this course.

f) Some live case study discussion during the programme will add to its value.

g) Standardization of response mechanism is the need of the hour and every state must adopt IRS system to strengthen coordination, clear roles and responsibilities and safety of responders.

h) Resources must be identified according to their capabilities so that right kind of resources reach the site for effective response.

ToT/PDP on Post Disaster Needs Assessment for Long Term Recovery, 09-13 May, 2022

Key Takeaway/Recommendations



a) Impact of disasters on quality of life and potential for human development.

b) Stakeholder engagement in identifying the needs and priorities as well as the recovery process of affected populations.

c) Inclusions of social-cultural cross-cutting aspects of disaster recovery in complement to economic imperatives.

d) Guidance and support to recovery efforts of the affected population and institutions.

e) Inclusion of governance with the above elements as essential to building resilient communities and societies.

ToT on Multi-hazard Risk Reduction and Resilience with special emphasis on Chemical & Industrial DRR, 09-13 May, 2022

Key Takeaway/Recommendations



a) Disaster risk management should be collective efforts of government, industry, community and stakeholders.

b) Learning of past disastrous events should be employed into future development activities to strengthen the resilience of infrastructures and structures.

c) Strong institutional framework and capacity development of the human resources are utmost important in chemical and industrial disaster management.

d) Coordination between the stakeholders should be improved for a better disaster risk reduction system.

e) Hazards should be identified and vulnerabilities must be reduced at the community level for disaster risk reduction .

f) Need to proceed from hazard assessment to vulnerability analysis by ultimate generation of specific risk maps.

g) Process of sharing information about hazards, risks, capacities, vulnerabilities and adaptive mechanisms within organisations and public should be improved.

h) Enhance preparedness and planning efforts to protect human life and welfare in industrial areas.

i) Need to promote programs and policies aimed at the avoidance/reduction of impact to the existing built environment, as well as to future growth & development in industrial disaster risk areas.

j) Need to have a compulsory discussion to address the gaps and challenges in disseminating the information to the last person in the society.

TOT on School Safety, 09-13 May, 2022

Key Takeaway/Recommendations

a) Teacher plays the role of not only a teacher but also a nurse as a caretaker in disaster management.

b) Teachers will have to help the children and other people without losing patience during disasters.



c) Use the technology given for first aid in a better way to help as many people as possible.

d) To give CPR, two companions should work simultaneously.

e) Disaster emergency kit should be in many places in the school which can be used properly after the disaster.

f) Buildings should be built to ensure "life safety", and be more resilient to hazards.

g) Based on the assessment of needs, the School Development Plan needs to be prepared by the School Management Committee.

Incident Response System (IRS): Basic & Intermediate, 17-20 May, 2022

Key Takeaway/Recommendations

a) Module is designed in such a way that doubts if any gets clarified through practical sessions through exercise after every sub module.

b) Session to clarify the operationalization of IRS on ground must be included in the module.



c) Videos pertaining to live meetings such as planning, pre-planning may be added to buttress the effectiveness of the course.

d) Special session on framing of objectives is a must for this course.

e) Live case study discussion during the programme will add to its value.

f) State must adopt IRS system in its true spirits to strengthen coordination, clear roles and responsibilities and safety of responders.

g) Resources must be identified according to their capabilities so that right kind of resources can reach the site for effective response.

h) Final exercise must be undertaken

ToT Program on Inspiring the Minds for the Disaster Risk Reduction, 17-21 May, 2022

Key Takeaway/Recommendations

a) Train and inform the nodal officers/ trainers of DM in the university with process of teaching.

b) Discussed curriculum with the trainers and teaching methods.



c) Literature/ module have to be developed especially for foundation courses.

d) NIDM needs to strengthen academic wing of IUINDRR for developing and modules.

e) NIDM worked closely with UGC for the implementation and monitoring the progress.

f) NIDM's online courses should gel and integrated with the curriculum and be linked with UGC Swayam portal and Distance education.

g) Core team at NIDM was developed to steer the whole process.

h) Two more regional workshops should be organized by NIDM with IUIN DRR partners for UG and certificate programmes.

i) NIDM should organize a round table conference with Vice chancellor for taking the course forward.

j) NIDM may develop a demonstrative laboratory for DRR with state/ institutions and university.

Climate Information for Disaster Resilient Agriculture, 18-20 May, 2022

Key Takeaway/Recommendations

a) Greater weather variability in agriculture and need for precise weather forecasting for coping with weather vagaries vis-à-vis climate resilient agriculture. Therefore, we need to apply the varied knowledge of climate resilient agriculture for the livelihood security of the farmers.



b) IMD in collaboration with 130 Agromet Field Units (AMFUs) and 200 District Agromet Units (DAMUs) delivers weather forecast and predictions. This forecasting could be better utilized for agro-adversaries and predicting any disaster so that precautionary measures could be taken in advance.

c) Dissemination & Outreach: Use of customized social media like Meghdoot mobile app, WhatsApp for comprehensive dissemination of agromet advisories.

d) Strengthening real time dynamic feedback mechanism. Small videos on agromet advisories to be displayed in social media platforms like YouTube.

e) Use of resource conservation technology to reduce energy consumption in agriculture and advocated for use of renewable energy in agriculture.

f) Soil health is closely with plant, human and environmental aspects. Use of biotechnological and bioengineering tools for addressing the issue of malnutrition and how we could manage our soil at the scenario of climate change. There is an urgent need to tackle the issue of food shortage, crop diversification and climate change/climate resilient agriculture vis-à-vis climate risk/disaster management.

g) Considering distribution of rainfall and total number of rainy days has more importance than total rainfall in agriculture production, particularly drought monitoring and declaration. Thus, there is a need for disaster management in agriculture and emphasis should be given to the dissemination of information related to different weather parameters

h) Urgent need for a disaster risk reduction approach in all development schemes and to identify the local level problem, and their solution through locally available resources.

Incident Response System (IRS) for Police, 23-27 May, 2022

Key Takeaway/Recommendations

a) Well designed module based course with a combination of theory and exercises to not only gain knowledge but also perform to get skills and learn and overcome challenges associated.

b) Various notions of the participants about disasters, disaster response, capacity and coordination of industries and civil authorities were clarified during the course.



c) Course module may be translated into Hindi for better understanding of participants in Hindi belt.

d) Videos pertaining to live meetings such as planning, pre-planning may be added to buttress the effectiveness of the course.

e) Some live case study discussion during the programme will add to its value.

f) IRS system strengthens coordination, establishes clear roles and responsibilities and safeguards responders and hence leads to less expenditure by avoiding duplication of efforts.

g) Resources must be identified according to their capabilities so that right kind of resources reach the site for effective response.

Training of Trainers Programme on Child Centric Disaster Risk Reduction, 23-27 May, 2022

Key Takeaway/Recommendations

a) Appropriate actions at all points in the cycle lead to greater preparedness, better warnings, reduced vulnerability or the prevention of disasters during the next iteration of the cycle.

b) Capacity to obtain, analyze, and communicate information on risks, relief needs and lessons learned from earlier disasters in order to formulate strategies for mitigation in future scenarios with the ability to clearly present and discuss their conclusions and the knowledge and arguments behind them.



c) Coordinating and collaborating with all disaster management and related organizations, NGO's, local and international agencies and creating strong network among them.

d) Formulating and implementing disaster management policy, plan, law and regulations in regional, national and global sector.

e) Shifting exposure from vulnerable area into safe place.

f) Long-term planning for particular disaster to reduce its risk.

g) Hazard Analysis: Identification of the hazards and assessment of the magnitude and probability of their occurrence.

h) Analysis of vulnerability of individuals, populations, infrastructure and other community elements to the hazards.

i) Safer and prepared hospitals, health facilities, infrastructure and organizations.

Training of Trainers Programme on Engaging Youth & Adolescents in DRM & CCA, 23-27 May, 2022

Key Takeaway/Recommendations



a) Enforce regular hand washing with safe water and soap, alcohol rub/hand sanitizer or chlorine solution and, at a minimum, daily disinfection and cleaning of school surfaces.

b) Ensure water, sanitation and waste management facilities and follow environmental cleaning and decontamination procedures.

c) Promote social distancing (a term applied to certain actions that are taken to slow down the spread of a highly contagious disease, including limiting large groups of people coming together).

d) Understand basic information about corona virus disease (COVID-19), including its symptoms, complications,

e) Stay informed about COVID-19 through reputable sources such as UNICEF, WHO and national health ministry advisories. Be aware of fake information/myths that may circulate by word-of-mouth or online.

f) Update or develop school emergency and contingency plans.

g) Work with officials to guarantee schools are not used as shelters, treatment units, etc.

h) Consider cancelling any community events/meetings that usually take place on school premises, based on risk.

i) Reinforce frequent hand washing and sanitation and procure needed supplies.

Integrating Disaster Management Plan with Gram Panchayati Development Plan, 25-27 May, 2022

Key Takeaway/Recommendations



a) Micro-level planning with accountable authorities holds immense importance in disasters.

b) Certain tools/assessments used in the Disaster Management realm may require proper understanding of basic concepts and methodology. Training and capacity building activities for as micro as block level must be made mandatory.

c) Understanding basic concepts related to resilient infrastructure, may help even a layman to ask questions to a mason regarding strong built, disaster resilient and safe homes.

d) Disaster Risk Reduction (DRR) and Disaster Risk Management (DRM) do not fall under the same box. While DRR aspects may be used in a pre-disaster scenario, DRM is used in a post-disaster. In India, for decades, focus has been mainly on the post-disaster scenario and efforts are being made currently to work on the pre disaster (DRR) aspects as well.

e) Hazard-Risk-Vulnerability and Capacity Assessment in any given disaster scenario, help rapidly to chalk out the most useful and accessible solutions as well as facilitates the use of DRR aspects.

f) India's diversity in terms of topography, ecology and culture demands tailor made solutions for specific spaces and communities. A village development management plan facilitates communities in the villages to tailor make solutions and to follow them during emergencies.

Training Programme on Disaster Management, 30 May-03 June, 2022

Key Takeaway/Recommendations



a) Culture of planning and preparedness is to be inculcated at all levels for capacity building measures.

b) Appropriate training imparted to officials and public at various levels to ensure coordinated and quick response at all levels.

c) Communication and coordination is very much required among policymakers, stakeholders in all sectors to ensure the sharing of experiences and knowledge.

d) Need to have a compulsory discussion to address the gaps and challenges in disseminating the information to the last person in the society

e) Addressing the psychological effects is an essential component of disaster management. This should be implemented through the whole spectrum of disaster management including preparedness, mitigation, response, and recovery.

f) Everyone should know the basic life saving techniques and other measures which can reduce/minimize the risk of any hazard.

g) Focus should be given to the documentation and creation and utilization of data for a better policy and plan level implications.

h) Monitoring and review to ensure that new and up-to-date scientific information is used in data collection and monitoring progress towards disaster risk reduction and resilience building.

Long Term Recovery and Reconstruction Strategies, 30 May-03 June, 2022

Key Takeaway/Recommendations



a) NE region of India falls under the seismic zone V making it prone to earthquake of moderate to very high intensity and considered vulnerable to earthquakes of magnitude exceeding 8.0.

b) Gravity Anomaly over Shillong Plateau is distinctively positive (+40 mGal) as compared to its surroundings, which makes it the most anomalous part of the NE Indian Region.

c) Scientific publications have warned that very severe earthquakes are likely to occur anytime in the Himalayan Region, which could adversely affect the lives of several million people in India.

d) According to the Global Seismic Hazard Assessment Program, the highest peak gravitational acceleration (PGA) up to 0.24g to 0.48g can be expected along the Assam- Meghalaya's border - the site of the Great Indian earthquake of 1897.

e) Lot of data collection and data mining is required to find patterns of earthquake. There has been lack of continued success in observing precursors.

f) Forecasting may not be helpful in avoiding or reducing damages caused by earthquakes because buildings and other structures cannot be evacuated. It can, at the most, be helpful in saving human lives. In spite of this, efforts are on in making a forecast possible.

g) Multi hazard approach need to be taken while working on disaster management aspects.

h) Construction, re-construction should be done in alignment with the topography, lithology, vulnerabilities and capacities present within the state.

i) Growth and development if not properly evaluated, monitored and planned may add to the disaster risks of the nation.

j) Mainstreaming of actions in context of 'Disaster Management' should be taken as an inter-disciplinary effort.

Urban Flood Management for Smart Cities Coordinators on Disaster Management, 01-03 June, 2022

Key Takeaway/Recommendations



a) Increasing vulnerability to urban flooding in smart cities and measures for mitigating the impact of the disaster as well as strengthening public awareness and community resilience at all levels;

b) Learning and capacity building for urban flood management helped build their knowledge, skills, and perspectives toward flood and disaster risk reduction;

c) Best practices on the emerging risk and vulnerabilities of Smart Cities to disasters with special reference to urban floods;

d) Urban flood vulnerabilities have compelled policy planners to frame policies on urban flood management and inculcate the culture of prevention and preparedness;

e) Diverse concepts, issues, challenges, and opportunities of urban flood management in smart cities and how the policy planners may adopt suitable planning strategies were discussed in detail;

f) Various aspects of weather forecasting and Early Warning for early preparedness and mitigation and discussion about new technologies in weather forecasting and early warning with special reference to urban flooding;

g) Prevention preparedness and mitigation planning to deal with hydro-meteorological disasters in urban agglomerations were covered;

h) Insights on the key areas related to resilient infrastructure development in smart cities for urban flood risk mitigation by adopting various structural and nonstructural measures;

i) Urban Flood and its impact on crucial health infrastructure in smart cities. Discussed the safety of hospitals at the time of disasters and how people can use basic lifesaving skills to save lives during disasters.

Public Health Emergency, Disaster Preparedness and Response, 02-04 June, 2022

Key Takeaway/Recommendations

a) Risk communication should be measured and accompanied by solutions to avoid panic.

b) Accurate information flow should be strengthened.

c) Lack of uniformity in implementing IHR and COVID-19 regulations.

d) Execution of existing frameworks needs to be reviewed and improved in the future.

e) Roles of departments other than health during the pandemic, for example, water, local bodies, hospitality and police should be emphasized.

f) Community-level workers/ volunteers are important in response; hence there is a need to increase their capacity.



g) Isolation of international travellers should be strictly implemented as soon as an outbreak, or a pandemic is determined.

h) Preventive measures such as screening, testing and isolation needs to be implemented at the earliest.

ToT on Comprehensive Disaster Management, 06-10 June, 2022

Key Takeaway/Recommendations



a) Hazard vulnerability analysis can systematically evaluate the damage that a potential disaster can create.

b) Reducing the disasters death tolls requires a comprehensive disaster management approach that accounts for the causes of vulnerability to disasters

c) Flexibility and mobility are needed for the proper functioning of disaster management teams.

d) Disaster management does not eliminate the threats but it can create proper plans to decrease the effect of disasters.

e) Preparing for disasters saves lives and speeds up recovery.

ToT Programme on Child Centric Disaster Risk Reduction, 06-10 June, 2022

Key Takeaway/Recommendations

a) Types of disasters and types of effects on different age groups.



b) Building of Strong network and coordination with local govt.

c) Educating of Children regarding the disasters and making them aware.

d) Knowledge of the assets that are to be used during the disasters, technology and safety and protocol.

e) Proper leadership among the person involved in the disaster management should be there.

f) Pass information and requests for assistance to the District Disaster Coordination Centre (DDCC).

g) Rehabilitation plans should focus on reducing the impact of children.

h) Inclusion of children in the disaster mitigation planning phase.

Training Programme on Safe Hill Area Development, 15-17 June, 2022

Key Takeaway/Recommendations



a) Capacity, vulnerabilities, and resource availability of the town must be evaluated.

b) In addition to increasing the intensity and frequency of catastrophes, climate change influences health, transportation infrastructure, and lifeline facilities. Due to this, the effects of disasters and those of climate change must be combined.

c) Cities that are rapidly expanding have a rising number of

structures that are sub standardly built or poorly maintained, which causes avoidable fatalities. Although urbanisation is inevitable, efficient urbanism is necessary.

d) Create a disaster risk reduction action plan to lessen the possibility of harm, fatalities, and financial loss in the event of a hazard or catastrophe.

e) Emergency Operation Center's importance for efficient coordination and communication should be there.

f) High significance of a detailed risk analysis in creating a city development plan.

g) With the aid of robust infrastructure and funding systems, as well as by understanding vulnerabilities, potential causes and effects, economic and social impacts, mitigation plans, preparedness, and response, one can resist and reduce risks by concentrating on urban planning and sustainable development.

h) By using in-built techniques, such as a fire detection and safety alarm system with automated water sprinklers to douse the flames, fire hazards can be reduced.

i) Installation of fire pumps in potential locations to facilitate the dispatch of emergency services.

j) Encourage the use of fire-resistant building materials, water-powered fire extinguishers inside the structure, and public education about evacuation procedures.

ToT Programme on Forest Fire Risk Mitigation, 15-17 June, 2022

Key Takeaway/Recommendations



a) Forest Fire is a burning issue not only for Himachal but throughout the globe. Early identification and quick response are the only methods to control and combat forest fire.

b) Geospatial technologies along with Early warning devices (IoT / LoRaWAN) could be used for forest fire monitoring, mitigation, response and afforestation.

c) Prevention and Mitigation techniques/methods should be promoted at local levels.

d) Local communities can play a vital role in forest fire mitigation, we should make them aware of the disadvantages of a forest fire.

e) Vetiver grass, a cost-effective bioengineering solution is an important solution. From forest fire to water conservation it has a multi-dimensional use.

f) Data acquired by IIRS about fire data on daily basis free of cost which could be utilized by state authorities for forest fire warnings.

g) Coordination Between DMAs & State Forest Departments, Fire Departments etc. and local communities should be promoted.

h) Community sensitization for mainstreaming forest conservation into their lifestyle should be encouraged

i) Different tools, instruments, and gears that are important for combating forest fire should be arranged for ground staff.

j) Mitigation Measures such as watch towers, and fire lines (Inner – Outer) should be practically thought by the concerned staff and people living near forest areas.

ToT Programme on Child Centric Disaster Risk Reduction, 20-24 June, 2022

Key Takeaway/Recommendations

a) Proper leadership among the person involved in the disaster management.

b) Hazard Analysis: Identification of the hazards and assessment of the magnitude and probability of their occurrence.



c) Coordinating and collaborating with all disaster management and related organizations, NGO's, local and international agencies and creating strong network among them.

d) Children being in impressionable age, DRR training of young children is 'generational investment'.

e) School safety, including safety of school infrastructure is important from point of view of life and safety of children.

f) Stay informed about COVID-19 through reputable sources such as UNICEF, WHO and national health ministry advisories. Be aware of fake information/myths that may circulate by word-of-mouth or online.

g) Update or develop school emergency and contingency plans.

Community Based Disaster Risk Management, 20-24 June, 2022

Key Takeaway/Recommendations

a) Need for awareness generation and participatory approaches at the community level.

b) Proper planning and strategy for dealing with disasters is a must for proper response in order to save maximum people.



c) Identification of hazard-prone areas, vulnerable localities and standard operating procedures for different disasters is very important for disaster risk reduction.

d) Community-Based Disaster Management (CBDM) is an approach to disaster management that involves the community in a way that they decide what to do when to do and how to do it to minimize the risk of catastrophe.

e) CBDRM promotes the involvement of grassroots community disaster risk management at the local level. A series of efforts are required, including community self-interpretation of hazards and disaster risk, reduction and monitoring and evaluation of their own performance in disaster risk reduction.

f) Understanding of hazards is essential among the grassroots communities living in hazard-prone areas. Failure in such knowledge will lead to unsustainable disaster risk reduction at the grassroots

level. If disaster risk reduction agendas do not come from the awareness of local community capacity and community priority, the effort will not be sustainable.

g) Disaster risk reduction planning needs to be formalised in the shape of manuals and Standard Operating Procedures for school safety by drafting our plan of action in advance for proper security and safety of schools, children, infrastructure and surrounding areas.

h) CBDRM approach provides opportunities for the local community to evaluate their own situation based on their own experiences initially. Under this approach, the local community not only becomes part of creating plans and decisions but also becomes a major player in its implementation.

Addressing Disaster and Climate Change Issues for Safer Sustainable Hill Area Development covering Forest Fires, Landslides, Avalanches, Lightning, Earthquakes, Cloudburst, Floods, Droughts and Extreme Weather Events, 22-24 June, 2022

Key Takeaway/Recommendations

a) Develop better understanding about hazards and sustainable hill area development strategies and creation of awareness about the mitigation process to combat natural disasters.

b) Collaborate and strengthen mechanisms for effective implementation of disaster management related activities at national, state as well as local level to develop better understanding about hazards and sustainable hill area development strategies.



c) Implementation of forest fire pre warning alert system, and to focus on assessment of forest fire using remote sensing and damage assessment.

d) Need to focus on impact of climate change on disaster and mitigation measures upon existing biodiversity through a Free Air CO_2 Enrichment (FACE) technique which is used to maintain desirable environmental conditions like CO_2, temperature, etc. In natural field conditions.

e) Forest Fire causes immense loss to the environment and that remote sensing is useful in forest fire management that can be managed with the co-operation of government and local community.

f) Need to develop a scientific approach for identification of highly fire prone areas in the country with the help of Forest Fire Pre-Warning Alert System.

g) Various issues and challenges in terms of prevention, the exiting institutional setup forest fire management, forest fire control measures, budget and schemes covering the recent forest fire initiatives taken by ICFRE, Dehradun were discussed with the participants

h) Impact of earthquake on societies and how to mitigate earthquake hazards is important.

i) Remote Sensing and GIS in disaster management can effectively be utilized for pre and post disaster monitoring as well as in preparedness, response and recovery stages of disaster.

j) Use of Advanced Technologies such as helicopters, UAV, Aircraft becomes essential for effective forest fire management and their mitigation processes. In this regard, handling of aircrafts used in forest fire controlling, fire occurrence probability map and fire sensitivity area map should be carried out for effective implementation.

Training Programme on Basics of DM with focus on Preparations of DM Plan & Business Continuity, 27-29 June, 2022

Key Takeaway/Recommendations

a) Like any other social, economical or political factors, environmental factors also play a key role in entrepreneurship and may positively or negatively impact the market economy and business continuity based on the fluctuations.



b) Usage of indigenous and traditional knowledge always acts as a boon in the Disaster Management sector.

c) For entrepreneurs who seeks a future in small scale business, being well informed about governmental schemes like insurances as well as skills/techniques like drones, may prove to be extremely significant in mapping the future growth.

d) Basic lifesaving skills are not technical or complicated all the time. Certain skills like performing CPR and rescue breaths are best to be known and can be used handy whenever required.

e) Lack of focus on disciplines like Mental Health and Psychology may not necessarily be due to insensitivity but largely due to unawareness among people about the existence of such challenges in disaster.

Conference/Workshop/Seminar
(Organized from April-June 2022)

Workshop Capacity Enhancement for Disaster Risk Reduction and Resilience, 20-21 April, 2022

Two days workshop was organized at Rafi Ahmed Kidwai National Postal Academy (RAKNPA), Ghaziabad, Uttar Pradesh for the officers of the postal service to share and exchange knowledge/ information on Disaster Risk Reduction and Resilience and to ensure the capacity enhancement of the community. The workshop aimed to develop solutions for development projects and mitigation and management of recurring disasters. It also focused on strengthening mechanisms for effective implementation of disaster management related activities at national, state and local level.

Workshop on Public Health Emergency, Disaster Preparedness and Response, 01 June, 2022

The workshop aimed to appraise the mentors about Public Health Emergency and Disaster Management. Besides sharing the strategies for effective mentoring, it was structured to discuss the roles, responsibilities and attributes of a mentor. The workshop highlighted that mentors play a crucial role in capacity building and system strengthening. It was suggested that the Uttarakhand state could develop a model to enhance capacity and system strengthening. Based on a review, it could be documented as best practices and shared with other states.



Orientation Workshop for Nodal Officers of Disaster Management of Ministries/Departments of Government of India, 27-28 June, 2022

Orientation workshop aimed to sensitise and design the Disaster Management Plans for the respective sectors. The objective was to acquaint with National Disaster Management Plan and responsibilities of the Ministries. It approached to develop the DM Plan, review and update of existing DM Plan. To examine DM Plan in the context of climate change. Lastly, to have a comprehensive understanding of the Sendai Framework and PM 10 Point Agenda on DRR.

Prof. Santosh Kumar emphasised that the sustainable development goal is the major focus of their concern. He emphasised the workshop's discussion on the D.M. plan template and execution, as well as the significance of science and technology in D.M. plans.



Workshop on Public Health Management of Chemical Emergencies, 30 June-01 July, 2022

A consultative workshop on "Public Health Management of Chemical Emergencies" was organized by the National Centre for Disease Control (NCDC), Delhi in collaboration with World Health Organization, Country Office for India. The participants were representatives from the National Disaster Management Authority (NDMA), State Disaster Management Authorities (SDMAs), National Institute of Disaster Management (NIDM), Public Health experts and other officials engaged in the management of chemical emergencies, the First Responder Groups, such as officials from SDRF, experts from research organizations such as, DRDE, ICMR-NIO, Medical Institutes & Health care facilities, and the officers and regulators from the local administration. A total of 56 participants attended the program.



Online Training Programs
(Organized from April-June 2022)

S No	Name of the program	Date	Detailed reports can be accessed at following URL
1	Virtual International Conference on Challenges to Disaster Risk Reduction and Resilient Habitat Shaheed Bhagat Singh College, Delhi University	05-06 Apr, 2022	https://nidm.gov.in/pdf/trgReports/2022/April/Trg_05 - 06April2022akg.pdf
2	Disaster Risk Climate Change and Resilient Development	05-07 Apr, 2022	https://nidm.gov.in/pdf/trgReports/2022/April/Trg_05 - 07April2022akg.pdf
3	Drought & Flood Analysis and their Management	14-18 Apr, 2022	https://nidm.gov.in/pdf/trgReports/2022/April/Trg_14 - 18April2022sp.pdf
4	Disaster Risk Reduction and Resilience	19-21 Apr, 2022	https://nidm.gov.in/pdf/trgReports/2022/April/Report_19 - 21April2022spal.pdf
5	Earth Observation Technology in Disaster Management	27-29 Apr, 2022	https://nidm.gov.in/pdf/trgReports/2022/April/Trg_27 - 29April2022akg.pdf
6	Agri-Systems and Infrastructure Resilience to Disaster	28-30 Apr, 2022	https://nidm.gov.in/pdf/trgReports/2022/April/Trg_28 - 30April2022akg.pdf
7	Engaging Youth and Adolescents in DRM & CCA	28-30 Apr, 2022	https://nidm.gov.in/pdf/trgReports/2022/April/Trg_28 - 30April2022ccdrr.pdf
8	Infrastructure Health Assessment & Grading System	28-30 Apr, 2022	https://nidm.gov.in/pdf/trgReports/2022/April/Trg_28 - 30April2022ga.pdf
9	Engaging Youth and Adolescents in DRR & CCA	04-06 May, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Report_04 - 06May2022ccdrr.pdf
10	Industrial Risk and Disaster Management	09-11 May, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Trg_09 - 11May2022akg.pdf
11	Capacity Enhancement on Disaster Risk Management	17-19 May, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Trg_17 - 19May2022sp.pdf
12	Child Centric Disaster Risk Reduction	18-20 May, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Trg_18 - 20May2022ccdrr.pdf
13	Understanding Coastal Disasters through Geospatial Technologies	18-20 May, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Trg_18 - 20May2022sp.pdf

S No	Name of the program	Date	Detailed reports can be accessed at following URL
14	Role of Youth, Police and Communities in Disasters and Forest Fire Management	18-20 May, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Trg_18 - 20May2022ga.pdf
15	Making Indian Cities Disaster Resilient towards Responsive and Actionable Urban Planning, Policy and Development	23-25 May, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Trg_23 - 25May2022akg.pdf
16	Coastal Climate Change Adaptation and Disaster Risk Reduction	30 May -01 June, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Trg_30 - 01May2022sp.pdf
17	Role of Emerging Technologies in Risk and Safety Management	01-03 June, 2022	https://nidm.gov.in/pdf/trgReports/2022/June/Trg_01 - 03June2022akg.pdf
18	Advances in Teaching and Research in the field of Disaster Resilience and Green Technology for Sustainable Development Goals	06-10 June, 2022	https://nidm.gov.in/pdf/trgReports/2022/June/Trg_06 - 10June2022akg.pdf
19	Emerging Technology Trends for Effective Disaster Management	08-10 June, 2022	https://nidm.gov.in/pdf/trgReports/2022/June/Trg_08 - 10June2022akg.pdf
20	Engaging Youth and Adolescents in DRM & CCA	08-10 June, 2022	https://nidm.gov.in/pdf/trgReports/2022/June/Report_08 - 10June2022ccdrr.pdf
21	Industrial Safety and Disaster Management	14-16 June, 2022	https://nidm.gov.in/pdf/trgReports/2022/June/Trg_14 - 16June2022akg.pdf
22	Disaster Risk Reduction and Resilience	14-16 June, 2022	https://nidm.gov.in/pdf/trgReports/2022/June/Trg_14 - 16June2022spal.pdf
23	Disaster Resilient Built-up Infrastructure of the Institutions: Focus on Earthquakes & Fires	14-16 June, 2022	https://nidm.gov.in/pdf/trgReports/2022/June/Trg_14 - 16June2022ga.pdf

Webinars
(Organized from April - June 2022)

S No	Name of the webinar	Date	Detailed reports can be accessed at following URL
1	Heat Wave and Health Management	04 Apr, 2022	https://nidm.gov.in/pdf/trgReports/2022/April/Webin ar_04April2022sp.pdf
2	Orientation For Basic Online Course (Comprehensive Disaster Risk Management Framework)	04 Apr, 2022	https://nidm.gov.in/pdf/trgReports/2022/Apri l/Webinar_04April2022el.pdf
3	DRR for Business Continuity towards Zero Hunger	05 Apr, 2022	https://nidm.gov.in/pdf/trgReports/2022/April/Report_05April2022akg.pdf
4	Forest Fire Management	05 Apr, 2022	https://nidm.gov.in/pdf/trgReports/2022/April/Report _05April2022spal.pdf
5	Multi-layered, multi-sectoral and multi-agency coordination in context of COVID-19 in collaboration with National Centre for Disease Control (NCDC) and U.S. Centers for Disease Control and Prevention (CDC), Country office India	06 Apr, 2022	https://nidm.gov.in/pdf/trgReports/2022/April/Webinar_06April2022sp.pdf
6	Our Planet, Our Health: Clean Water, Air & Food Preventing Health Emergencies and Disasters in collaboration with ABVIMA & RML Hospital	07 Apr, 2022	https://nidm.gov.in/pdf /trgReports/2022/April/Webinar_07April2022akg.pdf
7	Climate Change 2022: Impacts, Adaptation and Vulnerability- Challenges & Solutions	12 Apr, 2022	https://nidm.gov.in/pdf/trgReports/2022/April/Report_12April2022sk.pdf
8	Legislation and policy framework to deal with Disaster and Health Emergencies in collaboration with National Centre for	13 Apr, 2022	https://nidm.gov.in/pdf/trgReports/2022/April/Webinar_13April2022sp.pdf

S No	Name of the webinar	Date	Detailed reports can be accessed at following URL
	Disease Control (NCDC) and U.S. Centers for Disease Control and Prevention (CDC), Country office India		
9	Child Protection in Emergencies	15 Apr, 2022	https://nidm.gov.in/pdf/trgReports/2022/April/Webinar_15April2022ccdrr.pdf
10	Role of Remote Sensing and Emergency Operation Centre for Management of Heat waves	20 Apr, 2022	https://nidm.gov.in/pdf/trgReports/2022/April/Webinar_20April2022sp.pdf
11	Public Health Emergency Management (PHEM) and Public Health Emergency Operations Centers (PHEOC) in context of public health emergency preparedness and response in collaboration with National Centre for Disease Control (NCDC) and U.S. Centers for Disease Control and Prevention (CDC), Country office India	20 Apr, 2022	https://nidm.gov.in/pdf/trgReports/2022/April/Webinar_20April2022sp2.pdf
12	Satellite Remote Sensing for Understanding the Natural Hazards and Mitigation Strategies	25 Apr, 2022	https://nidm.gov.in/pdf/trgReports/2022/April/Webinar_25April2022sp.pdf
13	Glacial Lake outburst flood (GLOF), Causes and Consequences	26 Apr, 2022	https://nidm.gov.in/pdf/trgReports/2022/April/Report_26April2022spal.pdf
14	LoRa Technologies for Early Warning System: A Practical Demonstration	26 Apr, 2022	https://nidm.gov.in/pdf/trgReports/2022/April/Webinar_26April2022ga.pdf
15	Youth for Climate Action	26 Apr, 2022	https://nidm.gov.in/pdf/trgReports/2022/April/Webinar_26April2022ccdrr.pdf
16	Overview of WHO's PHEOC Framework and Global Common Minimum Standard in	27 Apr, 2022	https://nidm.gov.in/pdf/trgReports/2022/April/Webinar_27April2022sp.pdf

S No	Name of the webinar	Date	Detailed reports can be accessed at following URL
	collaboration with National Centre for Disease Control (NCDC) and U.S. Centers for Disease Control and Prevention (CDC), Country office India		
17	Chemical (Industrial) Disaster Management – Part I	28 Apr, 2022	https://nidm.gov.in/ pdf/trgReports/2022/April/Webinar_28April2022akg.pdf
18	Impact of Climate Change and Disaster on Agriculture and Mitigation Strategies	29 Apr, 2022	https://www.youtube.com/watch?v=VQKN5wu9yLI
19	Chemical (Industrial) Disaster Management – Part II	29 Apr, 2022	https://nidm.gov.in/pdf/trgReports/2022/April/Webinar_29April2022akg.pdf
20	Industrial Safety and Disaster Management	30 Apr, 2022	https://www.youtube.com/watch?v=UK7xzxyt6rI
21	Developing and Strengthening a PHEOC-Infrastructure and Information Technology: in collaboration with National Centre for Disease Control (NCDC) and U.S. Centers for Disease Control and Prevention (CDC), Country office India	04 May, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Webinar_04May2022sp.pdf
22	Application of Space-based Technology in Disaster Management in collaboration with Kerala State Disaster Management Authority	10 May, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Webinar_10May2022sp.pdf
23	Brainstorming Session cum Webinar on SDMPs and DDMPs in collaboration with Sphere India	10 May, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Webinar_10May2022akg.pdf
24	Linking PHEOCs with Integrated Health Information Portal	11 May, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Webinar_11May2022sp.pdf

S No	Name of the webinar	Date	Detailed reports can be accessed at following URL
25	Glacial Lake outburst flood (GLOF) in Himalayan Region	13 May, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Webinar_13May2022sp.pdf
26	NIDM Online Courses & Self Study Programme: How to Participate	17 May, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Webinar_17May2022el.pdf
27	Application of Incident Management System and Incident Response System in Managing Disasters and Public Health Emergencies with focus on Covid-19 Pandemic Response	18 May, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Webinar_18May2022sp.pdf
28	National Consultation on Disaster Risk Reduction in collaboration with Sphere India	20 May, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Webinar_20May2022akg.pdf
29	Ham Radio Communications during Emergencies	20 May, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Webinar_20May2022ga.pdf
30	Cyclone Impacts on Infrastructures	23 May, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Report_23May2022ga.pdf
31	Application of Remote Sensing in Disaster Management	24 May, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Webinar_24May2022sp.pdf
32	Logistics and Supply Chain Management in Public Health Emergencies and Disaster Management	25 May, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Webinar_25May2022sp.pdf
33	Urban Flood and Its Impact	26 May, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Webinar_26May2022sp.pdf
34	Prospective Farming for Disaster Resilient Agriculture: Ground Experiences	27 May, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Webinar_27May2022akg.pdf
35	Heat Waves and Drought in Disaster Risk Reduction	27 May, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Webinar_27May2022sp.pdf
36	Technology for Disaster Resilient Agriculture	30 May, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Webinar_30May2022akg.pdf
37	Heat Wave Risk Management	31 May, 2022	https://nidm.gov.in/pdf/trgReports/2 022/May/Webinar_31May2022akg.pdf

S No	Name of the webinar	Date	Detailed reports can be accessed at following URL
38	Post-COVID Transitioning of Children from Home to Schools: A Psycho-Social Perspective	31 May, 2022	https://nidm.gov.in/pdf/trgReports/2022/May/Webinar_31May2022ccdrr.pdf
39	International Health Regulations and Global Health Security with focus on COVID19 Pandemic Management	01 June, 2022	https://nidm.gov.in/pdf/trgReports/2022/June/Webinar_01June2022sp.pdf
40	Living Sustainability in Harmony with Nature	05 June, 2022	https://nidm.gov.in/pdf/trgReports/2022/June/Webinar_05June2022sp.pdf
41	Lightning and Thunderstorm: Risk Reduction and Safety Measures	06 June, 2022	https://nidm.gov.in/pdf/trgReports/2022/June/Webinar_06June2022sp.pdf
42	Early Warning System for Lightning and Mitigation Measures	08 June, 2022	https://nidm.gov.in/pdf/trgReports/2022/June/Webinar_08June2022ga.pdf
43	Ocean Climate Change and Disaster Management	08 June, 2022	https://nidm.gov.in/pdf/trgReports/2022/June/Webinar_08June2022akg.pdf
44	Rapid Response Team (RRT) for Pandemic Preparedness	08 June, 2022	https://nidm.gov.in/pdf/trgReports/2022/June/Webinar_08June2022sp.pdf
45	Industrial Disaster Risk Reduction and Resilience	10 June, 2022	https://nidm.gov.in/pdf/trgReports/2022/June/Webinar_10June2022spal.pdf
46	Risk Communication and Community Engagement (RCCE) in context of COVID-19	15 June, 2022	https://nidm.gov.in/pdf/trgReports/2022/June/Webinar_15June2022sp.pdf
47	Leveraging Geospatial Technology in Disaster Management	17 June, 2022	https://nidm.gov.in/pdf/trgReports/2022/June/Webinar _17June2022sp.pdf
48	Safe, Sustainable and Resilient Health Infrastructures, Systems and Services	22 June, 2022	https://nidm.gov.in/pdf/trgReports/2022/June/Webinar_22June2022sp.pdf
49	Integrating SDGs and DRR into Higher Education	28 June, 2022	https://nidm.gov.in/pdf/trgReports/2022/June/Webinar_28June2022akg.pdf
50	Hydrological Resilience towards agriculture and Food Security	28 June, 2022	https://www.youtube.com/watch?v=W9CwbsiA2S4

S No	Name of the webinar	Date	Detailed reports can be accessed at following URL
51	Community Engagement in Public Health Emergency and Disaster Management	29 June, 2022	https://www.youtube.com/watch?v=GdvDsJSkjsI
52	Geo-spatial Technology for Landslide Risk Reduction and Resilience	30 June, 2022	https://nidm.gov.in/pdf/trgReports/2022/June/Webinar_30June2022sp.pdf

Upcoming/Proposed Face to Face Training Programmes (July- September 2022)

S No	Name of the program	Date	Details can be accessed at following URL
1	Technical Support to States: Addressing Child Centric Vulnerability, Enhancing Capacity & Promoting Resilience	04-08 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Report_04-08July2022ccdrr.pdf
2	ToT/ PDP on Urban Flooding and Mitigation	11-15 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Trg_11-15July2022sk.pdf
3	Training of Trainers Programme on School Safety	11-15 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Report_11-15July2022ccdrr.pdf
4	FDP on Disaster Resilient Healthcare Infrastructure	11-15 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Trg_11-15July2022aak.pdf
5	Training Programme on Integration of Disaster Risk Reduction (DRR) with Gram Panchayat Development Plan (GPDP) for Rural Development Sector PM Agenda 8 & 9	18-20 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Report_18-20July2022sg.pdf
6	Training Programme on Children in Disasters and Emergency	18-22 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Report_18-22July2022ccdrr.pdf
7	Training Programme on Disaster Risk Mitigation for Telecommunication Sector	18-22 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Trg_18-22July2022aak.pdf
8	Training of Trainers Programme on Engaging Youth & Adolescents in DRM & CCA	25-29 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Report_25-29July2022ccdrr.pdf
9	Training Programme on Cyclone Risk Mitigation and Erosion Control by Bio-Engineering Measures	25-29 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Trg_25-29July2022cg.pdf
10	Mainstreaming DRR & CCA into Rural Development Schemes for Resilient Infrastructure	26-29 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Trg_26-29July2022ga.pdf

S No	Name of the program	Date	Details can be accessed at following URL
11	Foundation Course on Public Health Emergency and Disaster Management	28-30 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Report_28-30July2022sp.pdf
12	Technical Support to States: Addressing Child Centric Vulnerability, Enhancing Capacity & Promoting Resilience	01-05 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Trg_01-05August2022ccdrr.pdf
13	Faculty Development Training Programme on Disaster Risk Reduction	01-05 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Trg_01-05August2022aak.pdf
14	Regional Training Programme on Environment Sector & Disaster Management	02-04 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Trg_02-04August2022akg2.pdf
15	Training Programme on Children in Disasters and Emergency	08-12 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Trg_08-12August2022ccdrr.pdf
16	TOT on Psychosocial Care in Disaster Management	16-18 Aug, 2022	https://nidm.gov.in/pdf/trgRep orts/2022/August/Trg_16-18August2022aw.pdf
17	Training Programme on Comprehensive Disaster Management	22-26 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Trg_22-26August2022sc.pdf
18	ToT Programme on Engaging Youth & Adolescents in DRM & CCA	22-26 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Trg_22-26August2022ccdrr.pdf
19	Faculty Development Training Programme on Disaster Management	22-26 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Trg_22-26August2022aak.pdf
20	Post Flood Reconstruction Measures using Nature Based Solutions	23-27 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Trg_23-27August2022cg.pdf
21	Disaster Management with focus on Water Resource Management during and after disaster	29-31 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Report_29-31August2022sg.pdf
22	Building Risk Assessment and Disaster Resilient Construction Technologies: Focus on Earthquakes and Fires	29 Aug -02 Sept, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Report_29-02August2022ga.pdf
23	School Disaster Management Plan	12-15 Sept, 2022	https://nidm.gov.in/pdf/trgReports/2022/September/Trg_12-15September2022sc.pdf

S No	Name of the program	Date	Details can be accessed at following URL
24	Training Programme on IRS: Basic & Intermediate	19-23 Sept, 2022	https://nidm.gov.in/pdf/trgReports/2022/September/Trg_19-23September2022sc.pdf
25	ToT Programme on District Disaster Management Plans	20-23 Sept, 2022	https://nidm.gov.in/pdf/trgReports/2022/September/Trg_20-23September2022ga.pdf
26	ToT Programme on Engaging Youth & Adolescents in DRM & CCA	26-30 Sept, 2022	https://nidm.gov.in/pdf/trgReports/2022/September/Report_26-30September2022ccdrr.pdf
27	ToT/PDP on Post Disaster Needs Assessment for Long Term Recovery	26-30 Sept, 2022	https://nidm.gov.in/pdf/trgReports/2022/September/Report_26-30September2022sk.pdf
28	Multi-Hazard Risk Management Solutions for Cities, Industries and Business	26-30 Sept, 2022	https://nidm.gov.in/pdf/trgReports/2022/September/Report_26-30September2022akg.pdf
29	ToT on Integration of DRR into Gram Panchayat Development Plan (GPDP) PM Agenda 8 & 9	26-30 Sept, 2022	https://nidm.gov.in/pdf/trgReports/2022/September/Report_26-30September2022sg.pdf
30	Post Disaster Stress Management for First Responders of Disasters	27-29 Sept, 2022	https://nidm.gov.in/pdf/trgReports/2022/September/Trg_27-29September2022aw.pdf
31	School Safety Plan and Auditing	27-29 Sept, 2022	https://nidm.gov.in/pdf/trgReports/2022/September/Trg_27-29September2022aak.pdf

Upcoming/Proposed Online Training Programs
(July- September 2022)

S No	Name of the program	Date	Details can be accessed at following URL
1	Capacity Building on Ecosystem Restoration and Disaster Management	05-07 July, 2022	https://www.youtube.com/watch?v=gyHLxfsX69I
2	Engaging Youth and Adolescents in DRM & CCA	14-16 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Trg_14-16July2022ccdrr.pdf
3	Impact of Climate Change on Natural Hazards	16-20 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Trg_16-20July2022sp.pdf
4	Public Participation for Disaster Risk Management	18-20 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Trg_18-20July2022spal.pdf
5	Building a Sustainable Resilient Disaster Waste Management System	19-21 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Report_19-21July2022akg.pdf
6	Engaging Youth and Adolescents in Disaster Risk Management & Climate Change Adaptation	20-22 July, 2022	https://nidm.gov.in/p df/trgReports/2022/July/Trg_20-22July2022ccdrr.pdf
7	Resilience Measures of Buildings with Special reference to floods and cyclones	20-22 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Trg_20-22July2022ga.pdf
8	Observing Geohazards from Space	25-27 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Trg_25-27July2022sp.pdf
9	Recurring Heat Waves: Risk, Impact and the way forward for Resilience	26-28 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Trg_26-28July2022akg.pdf
10	Implementing Rainwater Conservation: Practitioners' Perspective on Rainwater Harvesting and Efficient local water governance and resilience	02-04 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Trg_02-04August2022akg.pdf
11	Engaging Youth and Adolescents in DRM & CCA	03-05 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Trg_03-05August2022ccdrr.pdf
12	Multi-stakeholder - Multisector Coordination for Response and Resilience: Assam	22-24 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Report_22-24August2022akg.pdf
13	ToT Programme for the faculties on Disaster Risk Management and Climate Change	22-24 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Report_22-24August2022iuindrr.pdf

S No	Name of the program	Date	Details can be accessed at following URL
14	Geospatial Technologies for Disaster Management	23-25 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Trg_23-25August2022sp.pdf
15	Community Based Disaster Risk Reduction for Biomedical Waste Management	23-25 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Trg_23-25August2022sk.pdf
16	Communication on Infrastructure Resilience in Rural and Tribal Communities in India	23-25 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Trg_23-25August2022ga.pdf
17	Child Centric Disaster Risk Reduction	24-26 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Trg_24-26August2022ccdrr.pdf
18	Disaster Risk Assessment and Management	29-31 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Trg_29-31August2022spal.pdf
19	GIZ on DM Concept & Urban Resilience	13-15 Sept, 2022	https://nidm.gov.in/pdf/trgReports/2022/September/Trg_13-15September2022ga.pdf
20	Women as Agents of Change for Disaster Risk Reduction and Resilience Building	14-16 Sept, 2022	https://nidm.gov.in/pdf/trgReports/2022/September/Trg_14-16September2022sk.pdf
21	Multi Sector Coordination for Response and Resilience Building for Tamil Nadu State	14-16 Sept, 2022	https://www.youtube.com/watch?v=UyANbK-_r18
22	Basics of Disaster Management	19-21 Sept, 2022	https://nidm.gov.in/pdf/trgReports/2022 /September/Trg_19-21September2022sp.pdf
23	Multi Sector Coordination for Response and Resilience Building	20-22 Sept, 2022	https://www.youtube.com/watch?v=UnZGEsKYZ3M
24	Disaster Risk Reduction	21-23 Sept, 2022	https://nidm.gov.in/pdf/trgReports/2022/Septe mber/Trg_21-23September2022spal.pdf
25	Wetlands in Cities- Spatial Planning for Disaster Risk Reduction	27-29 Sept, 2022	https://nidm.gov.in/pdf/trgReports/2022/September/Trg_27-29September2022akg.pdf

Upcoming/Proposed Webinars
(July- September 2022)

S No	Name of the program	Date	Details can be accessed at following URL
1	Lightweight Construction Technologies	05 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Webinar_05July2022ga.pdf
2	Building the Public Health Emergency and Disaster Management Workforce	06 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Webinar_06July2022sp.pdf
3	Flood Disaster and Risk Reduction	12 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Webinar_12July2022spal.pdf
4	Orientation Programme on Online Courses of NIDM	12 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Webinar_12July2022el.pdf
5	Flood Monitoring and Management Using Remote Sensing	13 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Webinar_13July2022sp.pdf
6	Advocacy in WASH Advocacy for Health Sustenance	13 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Webinar_13July2022sp2.pdf
7	Cyclone Monitoring and Forecasting Using Earth Observation Technologies	15 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/We binar_15July2022sp.pdf
8	Health Emergency of Climate Change and Extreme Weather Events	20 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Webinar_20July2022sp.pdf
9	Pros and Cons of Mask Usage during Pandemic	22 July, 2022	https://nidm.gov.in/pdf /trgReports/2022/July/Webinar_22July2022ga.pdf
10	Disaster Management in Horticultural Crops	26 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Webinar_26July2022akg.pdf
11	Sustainable Resilience Development	26 July, 2022	https://www.youtube.com/watch?v=HLC279QZaU4&feature=youtu.be
12	Training and Psychosocial Impacts of Public Health Emergencies in context of COVID-19	27 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/Jul y/Webinar_27July2022sp.pdf
13	Disaster Resilience and Sustainability in Business Startups	27 July, 2022	https://www.youtube.com/watch?v=qj_WgGqDJhI
14	Flash Drought: Understanding Risk and Developing Resilience	28 July, 2022	https://nidm.gov.in/pdf/trgRe ports/2022/July/Webinar_28July2022akg.pdf
15	Role of Stakeholders and Coordination in Response and Relief	29 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Webinar_29July2022akg.pdf

S No	Name of the program	Date	Details can be accessed at following URL
16	Online Roundtable workshop on "Role of Panchayati Raj Institutions in COVID19 Response: Key Lessons for Long Term Impact	29 July, 2022	https://nidm.gov.in/pdf/trgReports/2022/July/Webinar_29July2022sp.pdf
17	Integrating Public Health Interventions and Strategies in Disaster Risk Reduction (DRR)	03 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Webinar_03August2022sp.pdf
18	Human Resources Capacity Development for Public Health Emergency and Disaster Management	10 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Webinar_10August2022sp.pdf
19	Innovations in Solar Tree & Tsunami Belt	12 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Webinar_12August2022ga.pdf
20	Youth for Climate Action	17 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Webinar_17August2022ccdrr.pdf
21	Funding in Disaster Risk Reduction: 15th Finance Commission & Guidelines (Relief, Mitigation and Reconstruction)	17 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Webinar_17August2022sk.pdf
22	Glacial Lake outburst Flood (GLOF) Hazard Assessment	17 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Webinar_17August2022spal.pdf
23	Urban Fire Risk Mitigation: Experiences and Initiatives	17 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Webinar_17August2022aak.pdf
24	Best Practices in CBRN Waste Management	17 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Webinar_17August2022sp.pdf
25	An Interaction and experience sharing session with the Pondman of India Shri Ramveer Tanwar	24 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/Aug ust/Webinar_24August2022akg.pdf
26	Leveraging Advance Technology in Public Health Emergency and Disaster Management	24 Aug, 2022	https://www.youtube.com/watch?v=H_AptoweE7Q
27	Importance of DM Plans in DRR	26 Aug, 2022	https://www.youtube.com/watch?v=Y8Y 8b0EUCrE
28	Emergency Operations Centre	29 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Webinar_29August2022sp.pdf
29	Urban Resilience: A Pathway for DRR	29 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Webinar_29August2022akg.pdf
30	Webinar on Mental Health and Disasters	31 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Webinar_31August2022akg.pdf

S No	Name of the program	Date	Details can be accessed at following URL
31	Geospatial Methods and Tools for Landslide Management	31 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Webinar_31August2022sp.pdf
32	"Community & Climate Change: Impacts, Adaptation and Vulnerability – Challenges & Solutions"	31 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Webinar_31August2022sk.pdf
33	Bio-Engineering for Kangsabati Riverside Erosion	31 Aug, 2022	https://www.youtube.com/watch?v=2cFqFK_o6dM
34	Understanding One Health Concept in Context of the Covid-19 Pandemic	31 Aug, 2022	https://nidm.gov.in/pdf/trgReports/2022/August/Webinar_31August2022sp2
35	"Designing and Management Techniques to Mitigate Natural Disasters"	01 Sept, 2022	https://www.youtube.com/watch?v=qe -lAfODccw
36	Flood Disaster Management	05 Sept, 2022	https://nidm.gov.in/pdf/trgReports/2022/September/Webinar_05September2022spal.pdf
37	Training workshop cum Webinar on "Cash & Voucher Assistance	10 Sept, 2022	https://www.youtube.com/watch?v=L4DqnpHmCTo
38	Chemical Disaster in Industries- causes and impact	14 Sept, 2022	https://nidm.gov.in/pdf/trgReports/2022/September/Webinar_14September2022spal.pdf
39	Public Health Emergency and Disaster Management and Edging Forward	14 Sept, 2022	https://www.youtube.com/watch?v=ZBUmepFJuIw
40	Application of Earth Observation Data for Disaster Mitigation and Management	17 Sept, 2022	https://nidm.gov.in/pdf/trgReports/2022/September/Webinar_17September2022ga.pdf
41	Mainstreaming Heritage Conservation in Disaster Risk Reduction	20 Sept, 2022	https://nidm.gov.in/pdf/trgReports/2022/September/Webinar_20September2022sk.pdf
42	Post-earthquake Reconstruction Programme in India: Experiences and Initiatives for Build Back Better	20 Sept, 2022	https://nidm.gov.in/pdf/trgReports/2022/September/Webinar_20September2022aak.pdf
43	Role of Remote Sensing and GIS in Metrological Hazards	23 Sept, 2022	https://nidm.gov.in/pdf/trgReports/2022/September/Webinar_23September2022sp.pdf
44	Disaster Resilient Agriculture	23 Sept, 2022	https://nidm.gov.in/pdf/trgReports/2022/September/Webinar_30September2022sp2.pdf
45	2047: Disaster Risk Reduction	23 Sept, 2022	https://www.youtube.com/watch?v=X9UWcTf2zRk

S No	Name of the program	Date	Details can be accessed at following URL
46	Nature-Based Solutions for Disaster Risk Reduction	23 Sept, 2022	https://www.youtube.com/watch?v=4xuYaEhP5hw
47	Role of Early Warning and Communications in Disaster Management	30 Sept, 2022	https://nidm.gov.in/pdf/trgReports/2022/September/Webinar_30September2022sp.pdf
48	School Safety Disaster Risk Reduction	30 Sept, 2022	https://nidm.gov.in/pdf/trgReports/2022/September/Webinar_30September2022sp2.pdf
49	Bio-Engineering Method for Landslide Mitigation: A Field Experience Sharing	30 Sept, 2022	https://nidm.gov.in/pdf/trgRepor ts/2022/September/Webinar_30September2022ga.pdf

Geospatial Technologies in Disaster Risk Management

Surya Parkash[1] and Goutham Krishna Teja Gunda[2]

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In recent decades, the increased frequency and intensity of disasters has become a menace to human life across the world. Every year, natural hazards such as earthquakes, landslides, floods, fires, tsunamis, volcanic eruptions, and cyclones kill many people and destroy property and infrastructure throughout the globe. Enhancing resilience to increasing hazards, exposure, and vulnerability, therefore, requires leveraging of advanced geospatial technologies for better disaster mitigation and management. The use of these geospatial technologies i.e., Remote Sensing (RS), Geographic Information System (GIS), and Global Positioning System (GPS) for all phases of disaster management, including prevention &mitigation, preparedness, response, and recovery, can result in effective disaster risk reduction and management (Figure 1). In disaster risk management, the objectives of the disaster experts are to monitor the situation, simulate the complicated disaster occurrence as accurately as possible so as to come up with better prediction models, suggest appropriate contingency plans and prepare spatial databases. The high resolution RS data (optical, radar, thermal, and LiDAR) can be used very effectively for quickly assessing severity and impact of damage due to, earthquakes, landslides, flooding, forest fires, cyclones and other disasters. Noteworthy, all these data-sets have been contributing in different ways to mapping and assessing damages. For example, Thermal data, aids in determining any damage caused by heat signatures such as explosions or gas leaks, among other things. Radar and LiDAR data can be used to effectively handle events like earthquakes and landslides. Surface damage, such as destroyed buildings, is mapped using high resolution optical data, while floods are assessed using Digital Elevation Models and other indices. One of the most commonly used techniques for determining the severity of damage is temporal change detection i.e., images from before and after the disaster/event are compared to assess the change in terms of damage. In addition, GIS allows for the combination of different kinds of spatial data with non-spatial data, attributes data, and uses them as useful information in the various stages of disaster management. The GIS, in conjunction with a global positioning system (GPS), is also extremely useful in search and rescue operations in disaster-affected areas during the disaster relief phase. However, with continuous improvements in satellite data sensor acquisition parameters, geospatial technologies have emerged as the most powerful technology for all phases of disaster management.

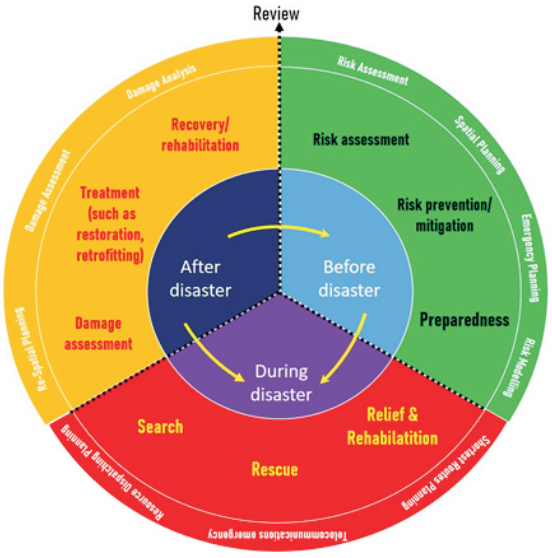


Figure 1: Geospatial technologies in Disaster Risk Management Cycle

Supporting Infrastructure's Function in Telecommunication during Disaster

Prof. Surya Parkash[1] and Ajit Batham[2]

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[2]Young Professional, Centre for Early Warning and Communication, Geo-meteorological Risks Management Division

Indian sub-continent has experienced a number of natural & man-made disasters like earthquake, cyclone, flood, drought, famine, fire, Bhopal gas tragedy etc., causing loss of life, damage to property & disruption of essential services like failure of telecommunication, interruption in electricity & water supply, disruption of transportation etc. The breakdown of essential communications is one of the most widely shared characteristics of all disasters. The most common cause of telecommunications failures during disasters occur through a variety of mechanisms like:

1. Physical destruction of network components
2. Disruption in supporting network infrastructure
3. Network congestion.

It is necessary for comprehensive disaster management, including search and rescue, to maintain key services like telecommunication; hence telecom services might be considered the lifeblood of all such activities.

While less frequent than outages brought on by physical telecommunications damage, outages brought on by disruptions in the telecommunication tower's supporting infrastructure typically are much more pervasive and detrimental to response and recovery operations after any disaster. Telecommunications networks rely upon many other local and regional technical systems to ensure their proper operation (Townsend and Moss 2005). These supporting infrastructures (Figure 1) often date from an earlier era and lack resiliency to physical damage.

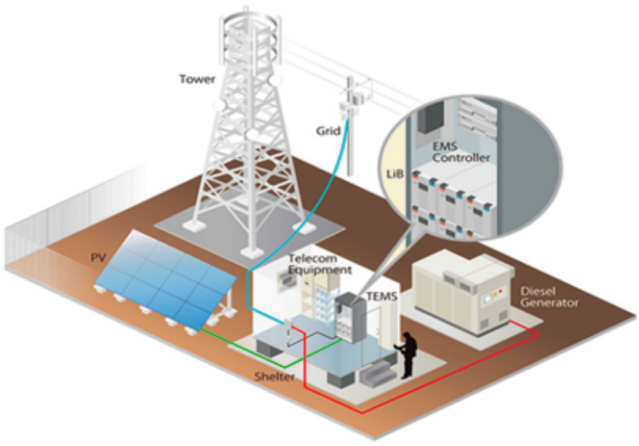


Figure-1: Telecom supporting infrastructure

Electrical distribution systems are by far the most important supporting infrastructure for telecommunications networks. Electrical power is required to operate all modern telecommunications equipment, often in large amounts. Yet electric power distribution systems lack the “self-healing” capabilities of telecommunications networks, although future improvements are expected to give power networks greater capabilities in this area.

While electrical power systems remain the most important supporting infrastructure for telecommunications facilities, cooling systems are critical and can fail independently of power supply.

Finally, failures in transportation disruptions can also impact the supply of fuel for electric power generation. This may cause the power supply to the telecommunication facilities, which can probably

lead to the disruption in the telecom services during any threatening situation. The risk associated with communications failures remains serious because of growing dependence upon these tools in emergency operations.

However, modern telecommunications infrastructure has also provided powerful and flexible tools to enable cities/communities to cope with crisis, and quickly relocate and restore displaced or disrupted social and economic activities. The Internet, mobile telephony, and satellite communications provide unprecedented communications capabilities to a wide range of institutions and communities in disaster areas.

Reference:

Townsend, A. M., Moss, M. L. (2005)." Telecommunications Infrastructure in Disasters: Preparing Cities for Crisis Communications. https://sarwiki.informatik.hu-berlin.de/images/2/2a/Report1.pdf.

Disaster Risk Management

Karpooram Pandian
Young Professional

India has developed two complementary lines of effort in disaster management (DM). The first one significantly reorganized and improved its domestic capability. The second saw India grow as an emerging donor that increasingly provides disaster relief to other countries, particularly neighbours in its region.

India is one of the world's most disaster prone countries, as it is exposed to many natural hazards including floods, cyclones, droughts, and earthquakes. India started reorganizing its domestic Disaster Management system after a succession of major disasters. It was an inclusive and exclusive effort on priority based disaster preparedness, engaging best practices in collaboration with Indian Ocean countries, and accelerating priority for a global level of disaster risk reduction platform.

In the year 2022, in the first quarter before the monsoon, we face several disasters events.

Date	Event
1 January 2022	Vaishno Devi Temple stampede
6 January 2022	Surat gas leak
13 January 2022	Bikaner-Guwahati Express Accident
10 April 2022	Trikut cable car accident





(Source: UNDRR 2019)

Comparatively at global level, an increasingly complex and inter-connected risk landscape are characterized by unprecedented patterns of international and local mobility, strengthening disaster risk management and prevention at all levels. Currently, around 25 million people are displaced each year by disasters. It is expected that hazardous events – amplified by compound risk factors such as ecosystem degradation, climate change, conflict, epidemics and pandemics, water scarcity and unregulated urbanization – will increase displacement in the years to come and compel millions more to migrate within and across borders.

Disaster Risk management can be prevented by addressing potential threat population movements and by harnessing the value that mobility can bring to reduce risk and building resilience to multi-hazard risk.

Disaster Risk Management (DRM) and Climate Change Adaptation (CCA) policies and strategies also integrate human mobility considerations. In communities facing high-risk of disasters and displacement, and vulnerability analysis, community-based disaster risk management, livelihoods'

diversification strategies, and community early warning and preparedness systems prevents risk and enable more effective response.

In post-disaster settings, the organization supports “build back better” goals and durable solutions by integrating Disaster Risk Management & Disaster Risk Reduction measures in the rehabilitation of infrastructure, services, livelihoods, and the environment. Through specific initiatives and programs, incorporating global partnerships and multi-stakeholder engagement would ensure the disaster risk management activity.



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