

TRAINING REPORT

Capacity Development of Kerala Virtual Cadre Officers in Departmental Disaster Management Planning

11-20 November 2019



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Organised By
Kerala State Disaster Management Authority
United Nations Development Programme
Facilitated By



SEEDS Technical Services

EXECUTIVE SUMMARY

SEEDS Technical Services facilitated the “Capacity Development of Kerala Virtual Cadre Officers in Departmental Disaster Management Planning”, organised by Kerala State Disaster Management Authority & United Nations Development Programme in November 2019. The training was imparted to the virtual cadre officials from districts and the state level virtual cadre officials from eight departments.

The training was conducted in three batches, three days for each batch. The first day of the training commenced with a formal inauguration, followed by lecture presentations to explain the basic concepts of hazard, vulnerability, risk and disaster. Phases of disaster management such as Mitigation Phase, Preparedness Phase, Response Phase, and Recovery Phase were explained. Hazard, vulnerability and risk profile of Kerala were discussed.

On day two and day three, Departmental Disaster Management Planning steps were introduced, with the participants involved in workshop mode. The participants formed groups department-wise and discussed within their groups and presented to all participants and received their comments. The participant groups made disaster management planning of the respective departments for all the four phases of disaster management – Mitigation, Preparedness, Response, and Recovery.

The departments were clubbed into three batches for the training as follows:

Batch 1: Irrigation, Kerala Water Authority, Agriculture (Nov. 11 – 13)

Batch 2: Land Revenue, Mining Geology, Soil Conservation (Nov 14 – 16)

Batch 3: Animal Husbandry, Health (Nov 18 – 20)

The virtual cadre officials who participated in the training had the opportunity to learn the working of other departments and the need for inter-departmental cooperation in addition to disaster management planning.

At the end of three days of training, a valedictory function was held in which representative participants expressed their views about the training. All participants also filled an evaluation form that will be useful for organising future training programmes.

The training experts were satisfied as the participants took keen interest in understanding the concepts of disaster management and provided valuable inputs from their work experience and knowledge of functioning of their departments.

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Capacity Development of Kerala Virtual Cadre Officers in Departmental Disaster Management Planning

BACKGROUND & OBJECTIVE

Kerala is a multi-hazard prone state. As per the State Disaster Management Plan 2016, the state is prone to 39 hazards including 17 natural hazards. Kerala witnessed the worst ever floods in August 2018. In the Post Disaster Needs Assessment (PDNA) report, 'Mainstreaming Disaster Risk Reduction has been put forth as a pillar of recovery strategy while rebuilding Kerala.

The State Government issued an executive order under Section 16 of the DM Act, 2005 formalizing the virtual cadre with officials for 25 line-departments on 25 November 2017. All departments were asked to select and intimate the members nominated to the virtual cadre to KSDMA.

The main objective of the training is to develop capacities of the departmental virtual cadre officials at district and state levels to act as DRR champions.

CAPACITY BUILDING TRAINING

KSDMA and UNDP entrusted the work of capacity building training of virtual cadre officers from all 14 districts and the state level virtual cadre officer from eight line-departments to SEEDS Technical Services.

The Trainers

The training team comprised the following:

1. Dr. R. Kuberan, Senior Advisor, SEEDS India (Nov 11-20)
2. Miss. Shalini Jain, Senior Director Training, SEEDS India (Nov 11-20)
3. Mr. Hariprasad V M, Social Coordination Manager, SEEDS (Nov 11-20)
4. Mr. G. Padmanabhan, Fellow, SEEDS India (Nov 14-16)
5. Dr. Shibu Augustine, D M Consultant (Nov 18-19)

Ms. Annie George, State Coordinator, UNDP as well as Mr. Joe John George, State Project Officer, UNDP – KSDMA provided valuable inputs during the training.

Training Schedule

The departments were clubbed into three batches for the training as follows:

Batch 1: Irrigation, Kerala Water Authority, Agriculture (Nov. 11 – 13)

Batch 2: Land Revenue, Mining Geology, Soil Conservation (Nov 14 – 16)

Batch 3: Animal Husbandry, Health (Nov 18 – 20)

The training programme consisted of lecture presentations and interactions by experts as well as hands-on exercise and group discussions and presentations by participants on Action Planning for mitigation, preparedness, response and recovery phases of disaster management. The participants were given several handouts. The lecture sessions were made using PowerPoint presentations. At the end of the training a CD was distributed to all participants that contained all Handouts, PowerPoint presentations, Videos and several other useful reference materials.

The Participants

The capacity building training was conducted in three batches. Each of the eight departments were asked by KSDMA to send one virtual cadre official from each of the 14 districts and one state-level virtual cadre official of the department.

The number of officials attended in the training programme is as follows:

Department	Number
Agriculture department	13
Irrigation Department	14
Kerala Water Authority	15
Revenue Department	9
Mining & Geology Department	5
Soil Conservation Department	11
Animal Husbandry Department	15
Health Department	14
Total	96

In addition to the above line departments, 5 officials from KSDMA also attended. List of participants is given in Annexure.

Participants' Expectations

The first session commenced with an icebreaker in which the participants got acquainted with each other. Then participants were asked to write on a slip of paper individually their expectations from the training and the expectations were consolidated. At the end of the training the expectations were revisited to see how much was fulfilled. At the end of the training the participants evaluated the training programme on the evaluation format provided to them.

The expectations of the participants from all the eight departments are summarised as follows:

1. Individual capacity building on DRR; Develop skills in DRM
2. Coordination with other departments in disaster management
3. Coordination with different levels of virtual cadre
4. Designing development projects with DRR elements
5. To know the disaster management activities of other departments
6. To learn disaster management policies
7. To understand disaster management concepts and importance
8. What are the methods to reduce risk?

9. Extend expertise to fellow officials and the public to handle disasters
10. Preparedness planning at institutional level
11. Making of departmental disaster management plan
12. To understand the role of virtual cadre officials

The training comprised lecture presentations and hands-on workshop sessions.

Lecture Presentations

The following presentations were made:

Overview of Disaster Management

A comprehensive lecture was presented introducing various elements of disaster illustrated with several Case Studies.

Disaster is a serious disruption of the functioning of a society, causing widespread human, material, or environmental losses which exceed the ability of the affected society to cope using only its own resources.

Hazard is the natural occurrence or human-induced process or event phenomenon capable of causing loss. Types of hazards include earthquake, landslide, tsunami, Cyclone, tornado, forest fire, Flood, drought, mudflow, Epidemics, pest attacks, Sandstorm, extreme heat, severe cold, avalanche, Accidents: chemical, industrial, fire, transport.

Vulnerability is a set of prevailing or consequential conditions that adversely affect people's ability to prevent, mitigate, prepare for and respond to hazardous events. Types of vulnerabilities include Geological – seismic, Geographical – mountainous, coastal, Weather related – high or low rainfall, Infrastructure – transportation, communication, health facility, Economic – poverty, livelihood, Low literacy level, Lack of awareness.

When a hazard strikes a vulnerable community or infrastructure, there is a chance of the hazard causing a disaster. It is not possible to stop the hazard. Therefore, the aim should be to reduce the vulnerability or enhance the coping capacity for avoiding or reducing the disaster impact. So, emphasis should be given to Risk Reduction activities.

The traditional approach to disaster management was Response, and relief. But the modern approach is Mitigation, Preparedness, and Creating a Culture of Disaster Risk Reduction.

“Disaster Management” means a continuous and integrated process of planning, organizing, coordinating and implementing measures which are necessary or expedient for prevention of danger or threat of any disaster, mitigation or reduction of risk of any disaster or its severity or consequences, capacity building, preparedness to deal with any disaster, prompt response to

any threatening disaster situation or disaster, assessing the severity or magnitude of effects of any disaster, evacuation, rescue and relief, rehabilitation and reconstruction.

The National Disaster Management Act (2005) was introduced to the participants. The formation of Disaster Management Authorities at the national, state and district levels was discussed. Aims of disaster management and disaster management planning concepts were introduced. The need for disaster management planning for every entity such as Nation, Ministries, States, Departments, Districts, Cities, Towns, Villages, Communities, Schools, colleges, campuses, offices, etc. was emphasised. The present concept of disaster management planning aims to (i) Reduce (avoid, if possible) the potential losses from hazards, (ii) Assure prompt and appropriate assistance to victims when necessary, and (iii) Achieve rapid and durable recovery.



Disaster Management Planning necessitates to Identify hazards, risk levels; identify vulnerabilities, Resource mapping – Physical, equipment, manpower; Identify stakeholders and their roles; Mitigation Planning – Infrastructure, equipment, manpower, IEC material; Preparedness Planning, Capacity building training, testing of equipment, pre-positioning of relief materials, mock drills, early warning, evacuation, Response Planning – Rescue, relief; and Recovery Planning - Rehabilitation, livelihood.

It was stressed that each one of us has a role to play in Disaster Management.

Interactive Session on Disaster Management and its Elements

An interactive session was held in which the participants recapitulated the elements and process of disaster management and identify the typical words and their definitions such as Disaster Management, Disaster Risk, Build back better, Early warning system, Preparedness, Recovery, Reconstruction, Rehabilitation, Vulnerability, etc. The history of disaster management in India was explained.

During the British administration, relief departments were set up for emergencies during disasters. The policy was relief-oriented, and activities included designing the relief codes and initialising food-for-work programmes.

The Disaster Management Act was passed by the Lok Sabha on 28 November 2005, and by the Rajya Sabha on 12 December 2005. It received the assent of the President of India on 9 January 2006. The Act calls for the establishment of a National Disaster Management Authority (NDMA), with the Prime Minister of India as chairperson. Nodal Ministry for Disaster Management was changed from Agriculture to Home Ministry.

International frameworks such as Hyogo Framework for Action 2005-2015 and Sendai Framework for Disaster Risk Reduction 2015-2030 were introduced.

Hazards, Vulnerability and Risk Analysis of Kerala

Kerala is a multi-hazard prone state. Floods and landslides are recurring hazards. It is vulnerable to high winds due to the westward movement of cyclonic storms; falls under earthquake Zone III. There are possibilities of chemical and industrial hazards. Global Warming and its resultant climatic variations lead to rise in sea level increase. Lightning and sea erosion are other hazards.

Policy and Legal Framework

The State Government, in line with National Disaster Management Act, 2005, has notified Kerala State Disaster Management Rules, 2007. It aims to establish an optimum system for dealing with disasters, avoiding disruption of economic activity and ensuring continuity in developmental activities.

Kerala State Disaster Management Authority is the apex decision-making body and facilitate, co-ordinate, review and monitor all disaster related activities. State Nodal Departments and Crisis Management Groups are responsible for management of all types of disasters including management of manmade and human induced disasters including air and rail accidents.

Techno-Legal Frameworks include following national building codes. A Techno-Financial Framework consists of Disaster Risk Insurance through appropriate insurance instruments.

Climate change and disaster risk reduction

Climate change is predicted to increase the frequency and severity of certain types of hazard events. Gradual climatic changes are also likely to have a significant impact on people's vulnerability. The risk environment is changing, and the speed and scale of these changes may be greater than in the recent past. People have always adapted their livelihoods and ways of living to climate variability. Climate change also affects people indirectly by influencing prices in crop and livestock markets (at global and more local scales), triggering environmental and economic migration and potentially creating conflicts over natural resources.

In the past, climate change and DRR specialists have operated largely in isolation from one another. However, a growing number of thinkers and organisations are working on ways of integrating DRR with climate change adaptation (CCA), as well as mainstreaming both into development. Development, DRR and CCA are interdependent and mutually reinforcing areas of policy, strategy and action. The key challenge is how to achieve this convergence at conceptual, strategic and operational levels.

A stronger connection between the two areas of work could help to reduce losses from climate-related disasters. CCA measures can become more effective by building on existing DRR experiences and through more widespread implementation of DRR. Greater collaboration could also make more efficient use of limited human, material and financial resources, although it is not necessarily easy to bring such a wide range of scientists, practitioners and policymakers together.

Although DRR and CCA have much in common, they also have differences in their scope and emphasis. The most obvious is that CCA seeks to manage and reduce risks associated specifically with changes in the climate, whereas DRR also considers other hazards and risks (e.g. earthquakes, volcanic eruptions). In adaptation, the emphasis is more on long-term

changes in average climatic conditions, whereas DRR focuses on extreme events. CCA strategies are based on climate science projections of future changes and threats (and the associated uncertainties), whereas DRR remains more grounded in current risks, previous experience and local knowledge. A further challenge is that there is often a lack of climate data on the more local scale at which many development activities and DRR interventions work.

Departmental Disaster Management Planning – Overview

The departmental disaster management plan should be comprehensive and spell out the roles of the departments that are responsible to manage the disasters related to them in each phase of the disaster (during normal times, pre-disaster, during and post-disaster phase).

Mitigation (Pre-disaster) Phase: Pre-disaster prevention and mitigation activities should be carried out with the normal staff. Post-disaster rescue, relief and recovery will need outside resources. Normally in disaster management plans pre-disaster activities are ignored or given less importance. A brief outline of the activities to be undertaken are provided without clearly providing for funds or spelling out the responsibilities. The mitigation plan should consist of the objectives and goals and the necessary strategy to be adopted along with a realistic time frame. The sub-activities and the agencies responsible should also be mentioned in the plan. The plan should also identify the necessary policy and legal framework, which provides the agency the mandate to carry out such activities. If they need a new policy or a legal framework it should also be identified and the time frame within which such a framework will be provided should also be worked out and mentioned in the plan. Administrative orders wherever required should be issued.

The most important aspect of the mitigation plan should be provision of funds for the activity and how it will be provided. Disaster mitigation plan cannot be a stand-alone activity. The plan should also mention how mitigation will be integrated with the normal working of the ministry and the special programs or projects undertaken will be integrated with the normal activity of the ministry and made sustainable.

The plan should also provide for a monitoring mechanism and monitoring indicators. The plan should also have a provision for evaluation and mid-term correction.

Preparedness Phase and post-disaster response Phase: The second part of the plan should focus on the preparedness and emergency response. Preparedness is simply keeping the manpower and equipment required for response in a state of readiness. This manpower and equipment resource base should contain what is readily available with government and what should be requested from outside.

As part of the preparedness measure the existing resources should be identified and augmentation of the same if required should also be worked out. Training, capacity building and maintenance and responsible agencies should also be mentioned. The budget for the same should also be provided in the plan.

The sources outside the government will include non-governmental agencies, private industrial houses, neighbouring states, volunteers and international community. The database of what is available in private within the country, the list of NGOs with their expertise and details about mobilization of volunteers should also be part of the plan.

Disasters are of two types, those that have a warning such as floods, cyclones etc., and those, which strike without warning such as earthquakes and flash floods etc. Many disasters are of seasonal nature such as floods, cyclone etc. Depending on whether a disaster is seasonal or not, the role and duties of the department should be worked out for pre-disaster stage. If the disaster has a prior – warning stage the various activities to be undertaken should be mentioned. For example, cleaning of drains or water channels before the rainy season or vaccination or immunization before rainy or flood season etc.

If the disaster has a warning stage then the method of altering the administrative machinery, volunteers and the communities should be mentioned in the plan along with a evacuation plan if necessary. The method of moving or shifting the response teams etc near to the area where rescue is need should be pre identified.

The main thrust area of the response portion of the plan is post-disaster search, rescue and relief. What should be done, who will do it, when and how it will be done should be clearly covered in the plan. (If necessary one can use a matrix). Though this portion varies from ministry to ministry there are certain general details, which should be covered in every plan such as mobilization of resources, co-ordination with the EOC, reporting system etc. for the purposes of emergency response a SOP should be evolved, which should become part of the plan. A matrix which spells out what should be done up to 72 hours starting from zero hour (the time of receipt of information about the disaster) with increasing time intervals starting from 15 mins will be of help.

Mock-drills and testing and revision and updating the plan: Periodic mock drills should be conducted, and the plan should be tested. The plan should be revised after each mock drill taking in to account the lessons learnt from the drill. Apart from the revision done the plan should also be updated on a periodic basis. An ideal plan should also contain details about when and how this plan will be tested and updated.

National Disaster Management Plan provides (Annexure) a list of “Contents required in Departmental Disaster Management Plans”.

Mainstreaming Disaster Management into Development Planning

Most countries agree that development and disaster management are linked. Development cannot be sustainable unless it incorporates elements of disaster risk reduction. Risk reduction measures should be incorporated into development initiatives to protect development gains. At times development initiatives help to reduce disaster risks. Let us consider the following examples:

- *Construction of a road to connect an isolated settlement. The road helps to develop the area economically and provides a safe evacuation route. However, roads constructed in hilly areas of the country end up destabilizing the slopes leading to frequent and catastrophic landslides.*
- *When water supply and sanitation projects are implemented, they meet the basic needs of the target population. However, it may result in outbreak of water borne epidemic diseases due to water contamination; outbreak of epidemics due to unsanitary conditions, mosquito breeding, etc.*

- *Hospitals are constructed to provide medical facility to the people. If sanitary condition is not properly addressed, it may lead to diseases or epidemics.*

Therefore, to integrate disaster management with development projects, necessary measures should be taken to reduce the disaster risk. It is essential to ensure clean environmental sanitation and appropriate safe methods for disposal of waste. New buildings should be constructed with disaster resisting features. Survey of existing buildings should be done and retrofitting work taken up if needed.

Emergency Operations Centre

The State Emergency operation Centre (SEOC) will be hub of all the activities related with disaster response in the state. The primary function of the SEOC is to implement the State Disaster Management Plan, which includes coordination, data collection, operation management, record keeping, public information, and resource management.

For the effective management of resources, disaster supplies and other response activities, focal points or centres will have to be established. These points will have to be well networked starting from the State to the District and finally leading to the disaster site.

Emergency Operations Centres at the State (SEOC) and the District (DEOC) and Incident Command Post (ICP) at the disaster site are the designated focal points that will coordinate overall activities and the flow of relief supplies from the State.

The State Emergency Operations Centre (SEOC) will be maintained and run round the clock which will expand to undertake and coordinate activities during a disaster. Once a warning or a First Information Report is received, the SEOC will become fully operational.

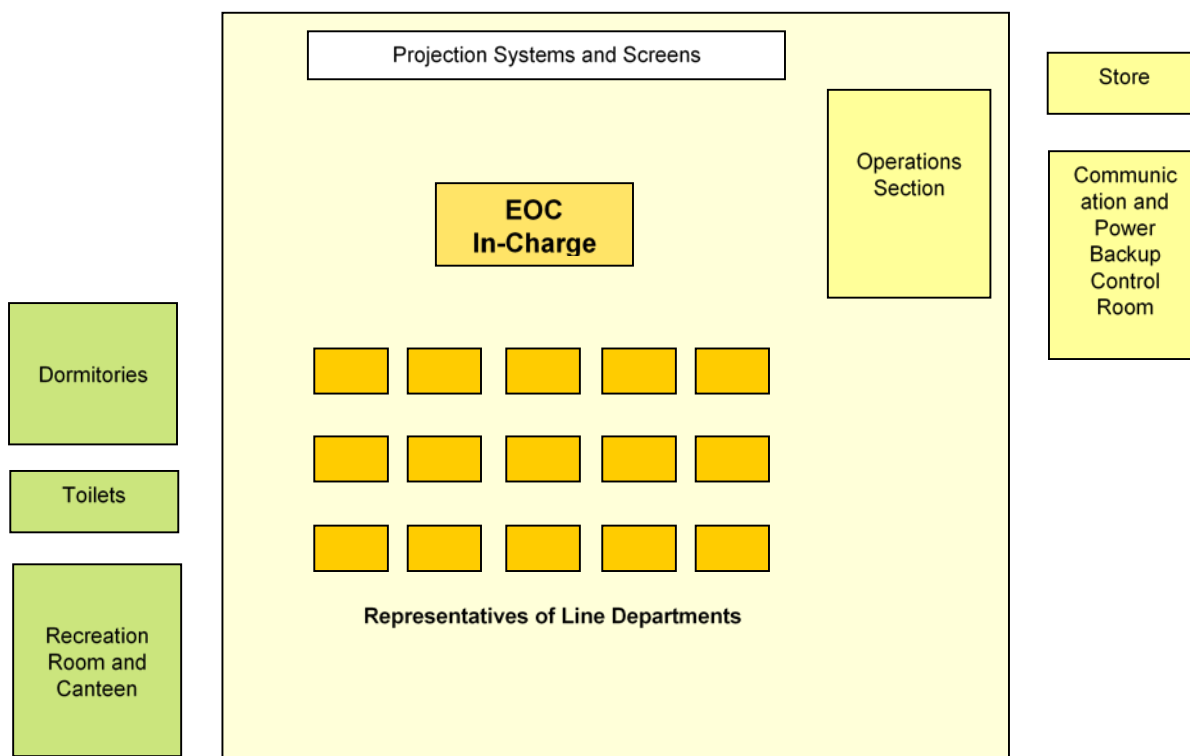
During a disaster situation, the SEOC will be under direct command of the Chief Secretary or the designated person by him as the Chief of Operations.

During non-disaster times, the State Emergency Operations Centre stays operational throughout the year in preparedness mode, working during day time in order to take care of the extended preparedness activities of data management, staff awareness and training, which is essential for the smooth functioning of the SEOC during crisis situations and handling of emergency Toll Free Contact Lines. During an emergency, the SEOC will get upgraded and will have all emergency stakeholders manning it round the clock.

The aim of the EOC will be to provide centralized direction and control of all the following functions:

- *Emergency operations*
- *Communications and warning, which includes handling of 24 hrs emergency toll free numbers.*
- *Centralised state level disaster resource database*
- *Requesting additional resources during the disaster phase from neighbouring districts of the affected area*
- *Coordinating outside support and aid.*
- *Issuing emergency information and instructions specific to departments, consolidation, analysis, and dissemination of Damage Assessment data and preparation of consolidated reports.*

A conceptual layout of the EOC is given below:



SEOC, Thiruvananthapuram

Orange Book

KSDMA updated the 'Orange book of disaster management — Kerala — SOP and emergency support functions plan', and a new and separate document, 'Monsoon preparedness and emergency response plan.' These two documents together form the Orange book. The revision is meant to enhance the capacity of government departments to handle emergencies effectively and the document describes the standard operating procedures and emergency support functions plan to be adopted at the State and district levels. The orange book contains the following contents:

1. Organizational set up of EOC's – SEOC, State Control Rooms & DEOC
2. Present Emergency Operation Scenario
3. Functions of EOCs
4. Minimum Facilities required in EOCs
5. Orange Book – 2 – Monsoon Preparedness
6. Warning Systems and SOPs
7. Maintenance of emergency communication networks
8. Training requirements of human resource at EOCs

The document 'monsoon preparedness disaster response guidelines' looks into the monsoon preparedness and related activities at the state, district and taluk levels. Earlier, the monsoon preparedness directive was given as government circular. But the roles & responsibilities of each department is not specified in the same.

The SEOC has prepared a separate document in Malayalam with the following contents:

- a) Monsoon forecast of multiple agencies
- b) Types of warning from IMD during monsoon
- c) Possible disasters in Kerala during monsoon
- d) Roles of state EOCs, Central agencies, DDMA
- e) Roles of 29 departments

Role of Virtual Cadre

The State Disaster Management Plan 2016 of Kerala Chapter 5. Section 5.3 envisages the setting up of a virtual cadre for disaster management. The Virtual Cadre will principally be 15 selected officers, one each from each of the 14 districts and one from the state level. These officials will be departmental nodal officers for disaster management who shall be as individuals responsible for supporting the district and state disaster management authorities in disaster management. The Kerala State Disaster Management Authority (KSDMA) will ensure that these individuals are adequately trained in matters related to disaster management.

Kerala State Government issued an executive order under Section 16 of the DM Act. 2005 formalizing the virtual cadre with officials for 25 line-departments on 25 November 2017. All departments were given direction to select and intimate the members nominated to the virtual cadre to KSDMA.

The virtual cadre will support the concerned departments in carrying out the following activities (i) support district disaster management authority in preparation of DDMP (ii) during emergency support DDMA and work with the departments (iii) during emergency inform the directions and decisions taken by the SEC and coordinate with district level line

departments (iv) develop and update departmental disaster management plans (v) prepare training calendar for district and assure necessary arrangements for training (vi) provide necessary support and advice to departmental head and make sure that the activities under the departmental plan is not resulting in increase of disaster risk (vi) Implement the projects of the DDMA for the concerned departments.

Hands-on Training Workshops

After lecture presentations and discussions, many sessions were used for giving hands-on experience to the participants in developing departmental disaster management plan. These sessions were conducted in workshop-mode. The participants were asked to consider the hazards faced by various districts of the state, that are addressed by the respective department. During all workshop sessions, the participants discussed in groups among their departmental colleagues and presented the outcome of their discussions using chart papers. Other participants' views were also considered.

Responsibilities During Various Phases of Disaster Management

In this workshop session, the participants were provided with roles and responsibilities of the department as given in the in various phases of disaster management – mitigation, preparedness, response and recovery. These roles and responsibilities were collected by visiting various officials of departments and from desk research. During the workshop sessions, the participants reviewed these and elaborated with more responsibilities based on their experience and understanding of the department's working.

Mitigation Action Planning

The participants considered the responsibilities at the normal times (mitigation) and identified the need of any new legislation, regulations, Codes, infrastructure construction or repair, capacity building and IEC activities.

Preparedness Action Planning

Preparedness means preparing to react promptly to save lives and protect properties. The actions in this phase include Maintaining existing Emergency Management capability in readiness; Preventing EM capabilities from themselves falling victim to emergencies; Augmenting the emergency management capability if possible.

Planning involves – Assignment of responsibilities, Classification/ cataloguing of resources, Training, education and awareness, Practice drills and Evaluation of experiences. Early warning, Mobilization of resources and pre-planned evacuation may also be included.

Response Action Planning

This phase includes search & rescue if appropriate to the department, and relief.

Recovery Action Planning

Recovery phase calls for restoration of essential services including communication links, Humanitarian assistance, Survey and quick damage and Needs Assessment, and Rapid environment impact assessment.

Agriculture Department

A total of 13 virtual cadre officials from Agriculture Department participated in the training. The responsibilities of the department at various phases of disaster management identified by them and the results of actions planning exercise are given below:

Responsibilities

Actions During Normal Times (Mitigation)

- Appoint ‘NODAL OFFICERS’ for Agriculture at State, District, Block and Panchayat levels
- Provide disaster management training to Nodal Officers (LSGD, KSEB, Irrigation, Rev, Vet), farmers, NGOs, Youth Clubs
- Awareness to farmers
- Select flood tolerant & Saline tolerant varieties through research
- Set up early warning system for disaster
- Promote risk transfer through crop insurance scheme
- Setting up farmers’ collectives for technology and credit support
- Setting up alternative farming techniques for continuation of agriculture during disasters
- Encourage the farmers to adopt progressive farming practices, high value inputs and higher technology in agriculture
- Adopt inter-cultivation
- Create of Viable Farm Livelihoods by Promotion of Organic Farming & Natural Farming
- Promote intensive research work on stable agriculture in the context of disasters and climate change, in all its aspects
- Take measures to reduce / avoid massive flooding and inundation of fields
- Take measures to reduce / avoid silt deposition and soil erosion and washing away of soil due to landslides.
- Take measures to reduce / avoid damages to agricultural input stocks, farm equipment and machinery, farm bunds and pumping units from floods
- Establish warehouses for food grains
- Ensure crops are insured
- Strengthening of bunds, desilting of channels, removal of blockages of irrigation channels
- Make inventories of farm equipment, pump sets, etc
- Repair and maintenance of pump sets
- Integrated farming, organic farming
- Promote group farming
- Follow crop calendar
- Preventing reclamation of paddy fields
- Rainwater harvesting, well recharging
- Setting up of input materials – seeds, food grains, pump house, power
- Adopt and practice the results arise from the research work on climate change with respect to Agriculture

- Agro-ecological based planning (LSA)
- PMFBY. Major crops to be included
- Use ICT for planning and forecasting
- EWS & AWS at AEMU
- Involve disaster specialist in Annual State and District planning
- ERRF & ERT for departments in State, District and LSGD level
- Equip & train KKS & ASC for immediate response (ATF)

Actions Before Disaster (Preparedness)

- Set up food banks at village levels
- Improved use of Climate and Weather Information and Forecasts
- Coordination with Departments and Agencies
- Organise awareness trainings about flood plain zones to relevant stakeholders
- Take up desilting operations
- Provide testing kits for water
- Check and correct emergency communication / warning system
- Conduct mock drills of search and rescue
- Make adequate bleaching powder available
- Update emergency contact details and share with all concerned
- Identify resources for food banks at village level
- Improved use of climate and weather information & forecasts at district and LSGD

Actions During Disaster (Response)

- Activate task force teams
- Install temporary water purification units and distribute purified water through tankers / jerrycans
- Provide water to temporary toilets in shelters camps
- Coordinate with voluntary organizations for water distribution and hygiene promotion activities.
- Close coordination with other line departments to ensure adequate relief is provided to the farming community.
- Working out alternative cropping for drought as well as flood affected areas and organizing all the inputs required for the same
- Update the contact persons' information in each sector
- Alerts (SMS, WhatsApp group)
- Testing kit (kudumbasree, social welfare department, schoolteachers)
- Check all equipment are kept in readiness
- Drinking water supply
- Camp facilities – collect food grains, disinfectant, medicines, drinking water
- Coordination with other departments
- Training and awareness to farmers / stakeholders
- Dewatering
- Use karshika karma sena, farmers' group & other stakeholders
- FIR

- Review meetings for crop loss assessment, claim preparation
- Use the services of MSTL for detecting the changes during disasters
- Counselling facility at camp & LB
- Immediate temporary management (dewatering, bunds etc)

Actions After Disaster (Recovery)

- Repair and restoration of damaged infrastructure
- Recovery and reconstruction of minor irrigation structures
- Review disaster risk reduction strategy and plan for improving
- Carry out the detailed crop damage assessment.
- Restore the agricultural lands
- Rebuild the livelihoods of farming communities developing sustainable, responsible, integrated, inclusive, eco-friendly, and resilient agriculture in line with the policies of state and central government.
- To increase economic activity and sector resilience to disaster events.
- Short-term activities will address immediate needs by restoring crop production through land clearance, preparing the land and sowing, bailing out water and planting, distribution of agro-inputs, clearing existing drainage systems, and restoring farm machinery and equipment.
- In the medium to long term, further resources would be required for restoring the crop economy, soil health, and plant protection monitoring.
- Provide financial support to the farmers in the event of crop failure as a result of drought, cyclone incidence of pest & diseases etc
- Agriculture Department to coordinate with concerned Departments and agencies for reconstruction of damage infrastructure related to agriculture.
- Provide seeds, fertilizers and pesticides at subsidized rates. Ensure all relief measures, credit facilities and inputs are made available continuously to farmers till their next crop is harvested
- Repairing and maintenance of machineries
- Detailed crop damage assessment
- Supply liming material, bleaching powder etc.
- Rebuild livelihood (collection of crop loss application, field verification, and allowed compensation)
- Distribution of seeds and seedlings free of cost to restart agriculture (short duration crops)
- Provide counselling and training for post-disaster procedures in agriculture
- Soil testing to assess soil-water continuum post disaster
- “Punergeni” – Comprehensive rebuilding
- Emergency fund at Panchayat level for bund reconstruction & dewatering
- Report & restoration of damaged infrastructures
- Report for recovery & reconstruction of minor irrigation structures
- SMART (includes Asset)

Action Planning

Mitigation (Landslide)

Type of activity	Estimated cost	Source	Addl. funding
AWS setting	10,00,000	KAU	
Contour bund & farming (include mixed cropping)	5 crore	Dept. & State govt.	
Retaining wall	2.5 crore	MGNREGA & State govt.	
Manpower	2,10,000	Dept.	
Publications	1,40,500	Dept.	
Trainings	40,000	Dept.	

Preparedness

Activity	Type of equipment	Location	Checking & Certifying	Time of testing	requirement of repair	Estimated cost	Source of fund
Emergency details – update and share	Network based communication system	Panchayat	Panchayat level nodal officer	May – June (before onset of monsoon)			
Machineries & equipment	Earthmoving equipment	Block	Engineering wing	-do-	AE (mech.)	Pumpset 1,00,000	State Dept. LSGD
Safe storage of harvested produce		FCI godown	Agri officer				
Review activities with stakeholders		Panchayat	Nodal officer				

Response

Type of activity	Estimated cost	Source	Addl. funding
Water purification arrangements			
Tankers / jerricans			
Hygiene promotion awareness			
Relief camps			
Review meetings			
Dewatering, bunding			

Recovery

Type of activity	Estimated cost	Source	Addl. funding
Repair damaged structures			
Reconstruction of minor irrigation structures			
Financial support to farmers			
Supply subsidised seeds, fertilisers, pesticides			
Liming materials, bleaching powder			

Irrigation Department

A total of 14 virtual cadre officials from Irrigation Department participated in the training. The responsibilities of the department at various phases of disaster management identified by them and the results of actions planning exercise are given below:

Responsibilities

Actions During Normal Times (Mitigation)

- Appoint ‘NODAL OFFICERS’ (district level) for minor irrigation projects
- Provide disaster management training to Nodal Officers
- Prepare flood maps
- Demarcate flood plain zones and incorporate the flood plain zones in plans and policies
- Develop guidelines for sea and bank erosion related training.
- Organise trainings on mainstreaming DRR in the department
- Organise awareness and risk reduction trainings on river flooding, water logging, sea erosions, drought, water scarcity, contamination of water bodies, cyclone, and dam burst
- Renovate traditional water bodies
- Take up de-silting of tanks.
- Organise trainings on water conservation and water harvesting
- Drought proofing, including forestation and tree plantation;
- Strengthen irrigation canals, including micro and minor irrigation works.
- Review / update design parameters
- Organise Basic disaster management training
- Develop departmental disaster management plan and provide awareness to all concerned
- Provide awareness training on DRR - DM Act 2005, National DM plan, State DM Plan, and national and state DM Policy
- Formulate action plan for reducing risk due to minor irrigation structures
- Repair/renovate minor irrigation structures
- Ensure Annual Maintenance of Irrigation structures
- Set up emergency communication system
- Develop automatic warning system about safety of minor irrigation structures
- Prepare list of all concerned officials along with contact information and share with government
- Desilting of reservoirs, canals, rivers etc.
- Maintenance of dams and appurtenant structures, EAPs, O&M manuals
- Demarcation of drought / flood prone areas (vulnerable areas)
- Obtaining quality data & its analysis with latest modelling tools (hydrology & coastal), specialised training for officers in dam management
- Alternative construction technology for sea wall
- Construction / removal of structures to mitigate flood / drought
- Periodical checking of operation of shutters

Actions Before Disaster (Preparedness)

- Organise awareness trainings about flood plain zones to relevant stakeholders
- Take up desilting operations
- Check and correct emergency communication / warning system
- Conduct mock drills of search and rescue
- Update emergency contact details and share with all concerned
- Clear protocols on rules and responsibilities of officers with SEOC
- Check the operation of irrigation structures
- Removal of any hinderances in river/stream course
- Ensure availability of funds
- Identify local contractors for arranging geo-bags
- Collect contact details of equipment / machinery vendors
- Construct temporary bunds
- Ensure preparedness of contractors for emergency works

Actions During Disaster (Response)

- Activation of task force teams
- Install temporary water purification units and distribute purified water through tankers / jerry cans
- Provide water to temporary toilets in shelters camps
- Coordinate with voluntary organizations for water distribution and hygiene promotion activities.
- Protocols on operations of dams & reservoirs about monitoring of water levels including communication
- Investigation of highly affected areas
- Arrangement of resources / infrastructure (dewatering)
- Emergency provisions for plugging breaches
- Coordination of all sectors in irrigation and other departments

Actions After Disaster (Recovery)

- Make damage assessment
- Repair and restoration of damaged infrastructure
- Recovery and reconstruction of minor irrigation structures
- Review disaster risk reduction strategy and plan for improving
- Post flood audit
- Preparation of PDNA (long term, medium term, short term)
- BBB mode adoption
- Restoration of damaged structures (follow Build Back Better)

Action Planning

Mitigation (Pazhassi Barrage, Kannur)

Action	Reason for demand	Cost
Structure		
Repair of Shutters	Cannot be opened properly	75 lakhs
Desilting	To increase storage	50 lakhs
Lining of canals	To prevent leakage	2.5 crores

Pressure grouting	To prevent leakage	10 crores
Equipment		
Generator (to be hired)		50,000
Excavator (to be hired)		50 lakhs
Manpower		
Supervisors (20)		
Skilled operators (5)		
Manuals	O&M manual	From department
Capacity building	For all section officers on dam operation & maintenance	25,000

Preparedness (Neyyar Irrigation Project)

Activity	Items	Cost	Source
Emergency meeting for fixing roles for all			
Monitor water levels to all stakeholders			
Get permission from District Collector for opening shutters as the need arises			
Organise materials and operations for smooth working of structures	Fuel, canal cleaning etc.	45,000	DDMF
Warning to people by various channels		10,000	Contingency fund
Open shutters in controlled manner after giving tree warnings			
Communicate to the authorities about opening of shutters			

Response

Type of activity	Estimated cost	Source	Addl. funding
Water purification			
Water to temporary toilets in relief camps			
Hygiene promotion			
Investigate highly affected areas			
Dewatering			

Recovery

Type of activity	Estimated cost	Source	Addl. funding
Damage assessment			
Restore damaged structures			
Reconstruction of minor irrigation structures			
Post flood audit			

Kerala Water Authority

A total of 15 virtual cadre officials from Kerala Water Authority participated in the training. The responsibilities of the department at various phases of disaster management identified by them and the results of actions planning exercise are given below:

Responsibilities

Actions During Normal Times (Mitigation)

- Formulate water policies, maintain completed projects, prepare Irrigation projects and execute them in time within the prevailing rules and regulations for the benefit of the people of the state.
- Carry out investigation, design, construction, operation and maintenance of Minor, Medium and Major Irrigation Projects, Flood control works on riverbanks, coastal protection works, inland navigation, hydrological information system collection, drainage works, salinity extrusion and land reclamation work, engineering research, coastal engineering, field studies etc., based on suitable budget provisions.
- Develop Disaster Management Plan for the department
- Appoint NODAL OFFICERS for disaster management in the department
- Provide disaster management training to the Nodal Officers
- Ensure proper early warning mechanism for flood by monitoring water level of surface water bodies
- Ensure proper and timely inspection of conditions of sea walls, bunds, embankments, inlet and outlets of lakes, drains, channels and pump houses and ensure adequate repair
- Ensure proper functioning of all equipment including dewatering pumps
- Ensure that ground water extracting industries reduce the extraction by at least 50% during the peak summer months of March, April and May
- Ensure that No Objection Certificate of Ground Water Department is obtained for landfilling, waste treatment plants and cemetery to ensure that ground water is not contaminated by such activities
- Support government and other authorities in implementing water mitigation schemes
- Training on implementing key mitigation activities like transportation of drinking water through tankers, boats or silt removal from infiltration wells etc.
- Minimise disaster losses such as transfer the cost of loss doing insurance.
- Prepare a long-term action plan for meeting requirements of local people in vulnerable areas such as water etc.
- Check existing fire points and set up new fire points
- Design structures considering earthquake load
- Intake structure should be above flood level
- Construct check dams / weirs to prevent droughts
- Set up common sewage treatment plants in villages
- Desilting of intake sources
- Identify vulnerable assets and determine consequences
- Prepare contingency plans with cost estimate
- Identify alternative water sources
- WTP capable of handling variable turbidity
- Disaster resilient structures

- Automatic weather station

Actions Before Disaster (Preparedness)

- Coordination with department and agencies to respond to potential damage zones in a prompt & coordinated manner
- Training on how to plan and equip the Distts. to have latest technologies to assess the continuation of water supply, with reference to probable disaster.
- Ensure that regular feedback is taken indicating seriousness of disaster, level of distress, condition of hand pumps & platforms.
- Create awareness among local people on various kinds of threats.
- Prepare for arrangement of safe drinking water supply for community in the affected areas, relief camps and shelters
- Prepare for prompt repair of pipelines supplying potable water
- Ensure availability of adequate number of water tankers, drums, jerry cans or identify their private suppliers to prepare for supply of water, in scarcity period and in emergency
- Ensure availability of water supply/filling points for fire tenders, water cannons, hospitals and other necessary lifesaving infrastructure
- Ensure adequate sand filled gunny bags for immediate and temporary repair of sea walls, bunds and polder walls
- Arrange tanker lorries of different capacities
- Arrange water Kiosks for drought situation
- Arrange portable pump sets for dewatering / desilting
- Prevent contamination at sources
- Arrange diesel generators
- Lift all electromechanical equipment above high flood level
- Arrange in advance additional manpower, equipment and chemicals
- Provide vending points at critical areas to arrange tanker supply in minimum distance
- Construction of temporary bunds

Actions During Disaster (Response)

- Implement Incident Response System for Disaster response for organizing the human and material resource
- Facilitate in planning of the water supply related functions (such as provisioning of safe drinking water)
- Ensure water quality and quantity in relief camps
- Locate good quality water source near the affected area and arrange transportation of water
- Line boosting in drought situation
- Plan communication system (officer, action)
- Using alternative sources – mobile WTP
- Mobile / temporary water quality testing labs
- Super chlorination

Actions After Disaster (Recovery)

- Coordination with concerned depts and agencies for the reconstruction of damage infrastructure related to water supply functions and to restore provision of safe drinking water.
- Supervise and scrutinize the enumeration work and list of beneficiaries prepared by the village officials.
- Super chlorination of water
- Leak detection / fixing of distribution system
- Check all electrical equipment before charging
- Develop matrix for evaluation of loss / damage
- Restoration with improved service level / coverage

Action Planning

Mitigation (Kumily Village)

Action	Location	Cost
Providing retaining wall	Kurisumala	3 lakhs
WTP – pre-settling tank	Amaravati	40 lakh
Excavator/earthmover hire	Kumily vill.	20 lakhs
Fitter (1), chemist (1), mazdoor (4)	Kumily vill.	500 – 750 per day
DRM manual by office	Officials/staff	15,000

Preparedness (Ponnani, Malappuram) (Soil erosion, flood, drought)

Description	location	Certifying authority	Time of testing	Requirement of repair	Cost	Source of fund
Arrange Cranes, tanker lorries, portable pump sets, diesel generators, electrical	Ponnani	KWA electrical inspector	1 – 15 days	Immediate / periodical	17 lakhs	KWA revenue / contingency fund
Pamphlets on water conservation						3,000
Video on well sanitizing						5 lakhs
Pump operator						10,000
AE (adv. Structural designing methods)						50,000
Capacity building training						60,000

Response

Type of activity	Estimated cost	Source	Addl. funding
Water quality testing in relief camps			
Mobile WTP			
Mobile water quality testing labs			

Recovery

Type of activity	Estimated cost	Source	Addl. funding
Leak detection in water lines			
Damage assessment			

Land Revenue

A total of 9 virtual cadre officials from Land Revenue Department participated in the training. The responsibilities of the department at various phases of disaster management identified by them and the results of actions planning exercise are given below:

Responsibilities

Actions During Normal Times (Mitigation)

- Develop Disaster Management Plans for all departments
- Organise disaster management trainings to officials of all departments
- Provide disaster management training to Nodal Officers
- Develop hazard and detailed vulnerability maps
- Land Revenue Department is specifically the nodal department for handling natural disasters. Hence the departmental disaster management plan of Land Revenue Department should have natural disaster preparedness, response, recovery and mitigation plans
- It is the nodal department for controlling, monitoring and directing measures for organizing rescue, relief and rehabilitation
- It is the lead department in running the District Emergency Operations Centres and hence the department must ensure that the DEOCs are manned 24 x 7
- Ensure that the disaster management VHF network of the districts are functional
- At the district level the District Incident Commander is the District Collector, at the Taluk Level the Responsible Officer will be a Deputy Collector assigned by the District Collector and at the Village Level the Responsible Officer will be the Village Officer
- Land Revenue Department handles relief assistance to calamity victims since time immemorial. Hence it is the Land Revenue Department that must develop the minimum relief code of the State. Technical Assistance of SDMA will be made available to Land Revenue Department for undertaking and constantly updating the minimum relief code
- Ensure updating of IDRN platform at least once in 3 months with information regarding the status of resources of the department
- Identify and map locations of mass burial of dead bodies in each Taluk
- Set up disaster control room and post officials from all concerned departments
- Develop DRR plans
- Appoint Virtual Cadre Officials in each department and organise training
- Develop accurate and timely warning systems
- Train personnel on setting up and manage safe shelters
- Identify and register risk groups
- Develop operational and tactical public safety and security plans, conducting technical security and/or vulnerability assessments.
- Remove debris from the rivers and drainage system

- Identify vulnerable areas to be evacuated during a disaster
- Construct shelters in safe areas
- Collect ward-wise data of families in vulnerable areas
- Prepare action plan for arranging basic facilities
- Provide learning and create teams of students in all educational institutional institutions to manage and for giving disaster awareness
- Provide Ham Radios and vehicles for village officers
- Collect inputs from civil societies for preparing disaster management plan for the department
- Awareness training to schools, resident associations, NGOs, etc.
- Develop group messaging system to disseminate warning messages in vulnerable areas
- Prepare a centralised online repository of camps, damaged houses etc.
- Identify green channels
- Identify helipad coordinates
- Acquire drones for carrying out survey of affected population and properties

Actions Before Disaster (Preparedness)

- Update contact names and phone numbers of responsible officials and share with all departments
- Organise refresher trainings on disaster management
- Training on departmental DM Plans
- Trainings on disaster preparedness
- Disseminate emergency preparedness information to the community
- Previous disaster events and responses analysed, and lessons learnt incorporated into disaster management plans.
- Training on emergency response
- Training on Hazards, Vulnerability and Risk Assessment (Hazards and sector specific)
- Coordinate with concerned departments to pre-position emergency equipment and supplies
- Ensure availability of funds
- Identify relief camp locations
- Prepare rate contracts for hiring private resources
- Set up warning boards in dangerous locations

Actions During Disaster (Response)

- Coordinate evacuation operations
- Mobilise funds, relief materials, etc.
- Coordinate relief work
- Identify beneficiaries for relief distribution
- Felicitate relief camps during serious coastal erosion time

Actions After Disaster (Recovery)

- Restoration of the infrastructure, facilitates the recovery of systems and applications

- Coordination for disaster grant assistance for debris removal and disposal; emergency protective measures; and the repair, replacement, or restoration of disaster-damaged public facilities.
- Strengthen the ability of communities to respond to natural disasters through enhanced education
- Plan for better land use management

Action Planning

Mitigation

Type of activity	Cost	Source	Purpose
Equipment & vehicles			
JCB (hire) (DEOC)	1,000 per day	State	Debris removal
Crane			
Car			
Ambulance			
Motor pumps (DEOC)			Rescue
Generator			
Chain saw (all taluks)			
Dingy boats (DEOC)			
Manpower			
Teachers	150 per day		
Fishermen	800 per day		
Plumbers	750 per day		
Wood cutters			
Divers			
Computer operators			
Drivers	750 per day		
Manuals & guidelines			
District level SOP, Orange book, DDMP			

Preparedness

Action	Cost	Source	Additional source
Organise refresher trainings			
Organise mock drills			
Identify relief camp locations			
Rate contracts			
Set up warning boards			

Response

Action	Cost	Source	Additional source
Evacuation	10,000	Govt	
NDRF rescue service	50,000	Govt	
NGOs, volunteers			
Camping tents	30,000	Govt	
Coordination			
Collect details of affected people			

Recovery

Action	Cost	Source	Additional source
Financial relief to people	100 crores	SDRF	
Reconstruction of public buildings, roads, bridges, dams, electricity board damages, communication	500 crores	SDRF	
Detailed study of damages by external agencies	1 crore	SDRF	
Land use management planning; flood marking	25 lakhs		
Rebuild coordination with other depts			
Counselling affected people			

Mining & Geology Department

A total of 5 virtual cadre officials from Mining & Geology Department participated in the training. The responsibilities of the department at various phases of disaster management identified by them and the results of actions planning exercise are given below:

Responsibilities

Actions During Normal Times (Mitigation)

- Develop relevant policies and plans related to DRR
- Conduct basic training on DM
- Give awareness on National DM Plan, state DM plan, National and state DM policy
- Develop / update departmental disaster management plan
- Develop Capacity for Disaster Management Training to all concerned officials and contractors
- Preparation of onsite and offsite Emergency Plan
- Communication and Information Technology Support
- Arrangements for transportation in applied mining lease area, Proper loading points, proper fencing of roads, Proper Maintenance of Vehicles, Road signs should be provided.
- Plan Proper Waste management.
- Dust masks, earplugs / muffs and other equipment should be provided and changed timely
- A statutory provision of the fence, constant education, training etc. will go a long way in preventing the incidence of such accidents.
- Quarry operations should be carried out as per Indian Bureau of Mines (IBM) guidelines
- Awareness education
- Instead of fencing of roads – maintenance of roads leading to quarries
- Display blasting times
- Include constraints in rules relating to depth of excavation of ordinary earth

Actions Before Disaster (Preparedness)

- Implementation of the Safety Standards & Procedures laid down by Unit Safety Board & DGMS.
- Correct unsafe acts and Conditions.
- Focus on improvement in health & hygiene for workers.
- Focus on improvement of basic upkeep & cleanliness of atmosphere.
- Learning / sharing safety culture across Mines.

- Organise Mock Drills on mines disaster safety
- Give awareness to officials and contractors on disaster management
- Test the warning systems
- Ensure availability of Safeguards at the site such as firefighting and requirement for handling medical emergencies
- Ensure necessary basic emergency medical facility is available at sites
- Pre-position all safety equipment and medical supplies, first-aid kits, etc., at mine sites
- Identify required number of personal protective equipment, firefighting equipment, vehicles, ambulances, emergency management personnel, communication equipment
- Collect details of on-site emergency management personnel in the facility such as their names, numbers and areas of specialization etc
- Identify hospitals and facilities accessible to various mines
- Possibility of accidents should be understood
- Mine employees' details should be maintained
- Temporary ban of mining activities during alert time
- Alert time should be informed to the explosive department

Actions During Disaster (Response)

- When an accident occurs in a mine, rescue the personnel injured and trapped in the debris
- Provide necessary first-aid assistance to the injured
- Arrange to shift accident victims to hospital as needed
- Inform authorities
- Stop mining activities temporarily

Actions After Disaster (Recovery)

- Prompt address of dysfunctions / breakdowns in key infrastructure.
- Rectify dysfunctions
- Conduct meetings with relevant stakeholders to learn from failures
- Awareness to implement safety measures
- Take actions to improve safety systems
- Check violation of mining plans

Action Planning

Mitigation

Action	Cost	Reason
Proper maintenance of quarry roads Warning signage Steel nets Benches	10 lakhs (by quarry owner)	Avoiding accidents
14 vehicles (each district)	10 x 14 lakhs	
Technical staff – taluk level (5 per district)		
Manuals & guidelines (IBM guidelines)		
Capacity building		
Quarry owners (safety of vehicles, equipment)	10,000	
Mine workers (safe working in mines)	10,000	

Preparedness

Action	Cost	Reason
Manpower for conducting mock drills in quarries; awareness classes	50,000 per quarry	awareness
Safety equipment (to be provided by quarry owners)	Depending on quarry size	Safety

Response

Action	Cost	Reason
Provide first aid (private landowner)		
Shift to hospital		
Inform authorities (NOC holder)		
Stop mining activities temporarily		

Recovery

Action	Cost	Reason
Rectifying dysfunctions		
Check violation of mining plans		
Awareness to implement safety measures		

Soil Conservation Department

A total of 11 virtual cadre officials from Soil Conservation Department participated in the training. The responsibilities of the department at various phases of disaster management identified by them and the results of actions planning exercise are given below:

ResponsibilitiesActions During Normal Times (Mitigation)

- Develop Disaster Management Plan for the department
- Appoint NODAL OFFICERS for disaster management in the department
- Organise disaster management training to the officers
- Take up agronomic measures such as contour ploughing / optimal fertilizing, organic farming, etc. for soil erosion control and soil conservation
- Take up engineering measures including contour bunding, land levelling, construction of check dams and water harvesting structure, etc.
- Take up activities and initiatives to reduce the impact of flood, drought and landslides
- Identify the needs and carry out structural upgrading and repair of infrastructures
- Organise awareness trainings on Geomorphological, Geological, Hydrological and other factors which trigger natural calamities.
- Awareness about latest software applications related to prediction of natural disasters.
- Awareness on the rules/ acts/ regulations and government orders regarding disaster management.
- Awareness regarding steps to mitigate the gravity of disaster.
- Technically support and implement drought risk reduction measures in collaboration with DDMA
- Ensure that farmers are not creating rainwater pits in slopes >20o
- Technically support and implement landslide risk reduction measures in collaboration with DDMA
- Take up agronomic measures – mulching, coconut husk burial, cover crops, afforestation, agrostology, bamboo, vetiver planting along contours
- Take up engineering measures – strip terracing, graded bunds, well recharging
- To reduce flood impact – desilting of thodu, geotextiles, strengthening of bunds with bamboo, arecanut poles

- To reduce drought impact – contour bunding, well recharging, WHS, check dams
- To reduce landslide impact – Planting deep rooted plants, geotextiles in sloping grounds, gabion retaining walls in high ranges
- Awareness to farmers on land use pattern – include pulses and cover crops in cultivation
- Sloping terrains – scientific conservation measures
- DSS – entire Kerala – online updating – SHC
- Soil monitoring system – availability of moisture – (insitu soil stations)

Actions Before Disaster (Preparedness)

- Imparting psychological preparedness training to the virtual cadre officers for facing the challenges and to cope up with the panic.
- Provide training on warning systems
- Stockpile repair materials like sandbags, bamboo at vulnerable points etc.
- Implement projects for conservation of Soil and Water resources and utilization of land on a sustainable basis for productive purpose
- Identify vulnerable areas
- Identify incident response
- Mapping vulnerable areas – coordination with other depts (avoid construction)
- Form active team within district
- Avoid congestion in drainage channels

Actions During Disaster (Response)

- Locate the most vulnerable areas & do rescue activities with the help of identified active volunteers.
- Organise relief operation with the help of NGOs.
- Maintaining co-ordination with all agencies involved in disaster management
- Provide human resource and technical support
- Utilising active team – field visit – study

Actions After Disaster (Recovery)

- Start Rehabilitation Process
- Assess and evaluate the extent of damage.
- Implement scientific interventions for the restoration of the affected ecosystem
- Carry out steps for rehabilitation of the affected community.
- Analyse the calamity and chalk out future course of action
- Study the case studies from similar cases across the world
- Organise capacity building training for the officers to organize campaigns to prevent future disaster in the affected area
- Study nutrient-deficiency status of soil of affected areas and provide recommendations to recover
- Soil quality enhancement
- Cover crops – barren land

Action Planning

Mitigation (Meppadi, Wayanad – 1000 Ha)

Action	Description	Cost
Equipment, vehicles	Jeep (hire) GPS Laptop Other equip	14 lakhs
Manpower	Skilled workers Data entry operators Driver Lab Assistant	5.6 lakh
Capacity building	Farmers and field staff	1 lakh
Manuals & Guidelines	Soil testing, soil conservation	20,000
Awareness materials	Pamphlets, videos, audios	85,000

Preparedness

Action	Cost	Source
Labour for cleaning of drainage channels	4,80,000	

Response

Action	Cost	Source
Field visit (Team inspection) Technical support Humanitarian activities Coordination of relief	25,000	OE
Unforeseen expenses	10,000	

Recovery

Action	Cost	Source
Soil nutrient analysis & post disaster report	1.5 lakh	State Plan
Soil health enhancement (collaboration with Agri. dept)	3 lakhs	State Plan
Slope stabilization scheme	70 lakhs	State Plan
Training (officers)	30,000	Dept

Animal Husbandry Department

A total of 15 virtual cadre officials from Animal Husbandry Department participated in the training. The responsibilities of the department at various phases of disaster management identified by them and the results of actions planning exercise are given below:

Responsibilities

Actions During Normal Times (Mitigation)

- Develop Disaster Management Plan for the Department of Animal Husbandry at state level by consolidating the District Level Disaster Management Plans of the Department.
- Officials of the Department of Animal Husbandry should take part in the district level trainings on disaster management along with officials of other concerned departments. This would lead to better coordination between various departments.
- At least five officials from each district should be trained at state level as Master Trainers. Enough financial provision should be made for trainings.
- Organise disaster management trainings for hospital staff
- Carryout mock evacuation drills in hospitals periodically
- Ensure that all new health facility structures are designed and constructed disaster-safe
- Carryout safety audit of all health facilities in the State and identify weak structures
- Undertake structural retrofitting of weak structures

- Identify the need and procure necessary equipment for ensuring safety of health facility structures from disasters
- Identify or create damage proof rooms and buildings within hospitals that can be used as evacuation shelter during an emergency.
- Ensure that hospital staff are aware of the hospital rooms and buildings which are damage proof.
- Identify the seasonality of disease outbreak and geographical distribution
- Adopt vaccination programmes
- Form block level DRR committee / team
- Identify medicine availability, feed supply, fodder plots, water sources, vehicles, cow lifters, dog handlers, snake handlers
- Plan and equip for man-animal conflicts
- Emergency kits
- Conduct disaster management workshops at state level and district level
- Assign taluk level emergency response teams
- Conduct resource aping of animal population, vulnerability and availability of resources
- Identify safe evacuation areas for individual farms
- Ensure new constructions to be disaster resilient
- Prepare list of animal handlers, local vets, NGOs, feed suppliers

Actions Before Disaster / Epidemic (Preparedness)

- Within the affected district all available personnel will be made available to the District Disaster Manager (District Magistrate). If more personnel are required, then out-of-station officers or those on leave may be recalled.
- All personnel required for Disaster Management should work under the overall supervision and guidance of District Disaster Manager (District Collector).
- Establish link officer system
- Allocate available vehicles and hire additional vehicles as per need
- Establish radio communications with
 - Emergency Operations Centre
 - Divisional Commissioner
 - District Control Room and
 - Veterinary aid Centres and Hospitals (including private practitioners) within the division.
- Appoint one officer as "Nodal Officer - Veterinary Services" at the State Level.
- The District Animal Husbandry Officer will act as "Officer-in-Charge - Veterinary Services" at the District Level.
- Review and update precautionary measures and procedures and review with staff the precautions that have been taken to protect equipment and the post-disaster procedures to be followed.
- Fill department vehicles with fuel and park them in a protected area.
- Stock emergency medical equipment, which may be required after a disaster.
- Determine what injuries illnesses may be expected, and what drugs and other medical items will be required, in addition to requirements of setting up cattle camps, and

accordingly ensure that extra supplies of medical items and materials can be obtained quickly.

- Provide information to all staff of veterinary hospitals and centres about the disasters, likely damages and effects, and information about ways to protect life, equipment and property.
- Surgical packs should be assembled and sterilised.
- Enough stock of surgical packs should be sterilised to last for four to five days.
- The sterilised surgical packs must be stored in protective cabinets to ensure that they do not get wet. Covering the stock with polythene is recommended as an added safety measure.
- All valuable equipment and instruments should be packed in protective coverings and stored in the most damage-proof room.
- All electrical equipment should be unplugged when disaster warning is received.
- Check the emergency electrical generator, to ensure that it is operational, and that a buffer stock of fuel exists. If an emergency generator is not available at the hospital, arrange for one on loan. Arrange for emergency supplies of anaesthetic drugs.
- Check stocks of equipment and drugs, which are likely to be most needed after the disaster.
- Request central warehouses for immediate dispatch of the needed drugs to the hospital on an emergency priority basis.
- Fill hospital water storage tanks and encourage water savings. If no storage tanks exist, water for drinking should be drawn in clean containers and protected.
- Prepare an area of the hospital for receiving large number of livestock.
- Develop emergency admission procedures (with adequate record keeping).
- Cattle camps and hospital administrators should
 - Establish work schedules to ensure that adequate staff are available
 - Set up teams of veterinary doctors, and assistants for visiting disaster sites.

Actions During Disaster / Epidemic (Response)

- Organise transfer of seriously injured livestock from villages to veterinary aid centres wherever possible.
- The provision of medical services should be coordinated by the District Animal Husbandry Officer with District Control Room, SOC's and cattle camps.
- Establish cattle camps and additional veterinary aid centres at disaster sites and designate an Officer-in-Charge for the camp.
- Estimate the requirement of water, fodder and animal feed, for cattle camps and organise the same.
- Ensure that adequate sanitary conditions are maintained through cleaning in order to avoid outbreak of any epidemic.
- Carryout culling of birds if necessitated.
- An injury and disease monitoring system should be developed, to ensure that a full picture of risks is maintained.
- Plan for emergency accommodations for veterinary staff from outside the area.

- Information formats and monitoring checklists as given in Annexure should be used for programme monitoring and development and for reporting to Emergency Operations Centre. This is in addition to existing reporting system in the department.
- Establishment of a Public Information Centre with a means of communication, to assist in providing an organized source of information. The hospital is responsible for keeping the community informed of its potential and limitations, in disaster situations.
- The local police and rescue groups should be aware of the resources of each veterinary aid centres and hospital.
- Find safer places for temporary cattle camps
- Identify vehicles for transporting animals
- Inform milkmen and animal handlers
- Stock feed, fodder, medicines
- Emergency kits, personal protective equipment
- Carryout culling of animals / birds
- Record keeping / loss assessment

Actions After Disaster / Epidemic (Recovery)

- Disinfect hospital premises and public areas
- Safe disposal of scattered animal carcasses
- Replenish stock of medicines, tools and accessories in hospitals
- Hold meetings with staff and discuss the departments' performance
- Draw lessons from the performance and identify actions to be taken for future improvement
- Implement action plan for improving future performance
- Proper recording of loss / damages
- Post-disaster medical management
- One health approach

Action Planning

Mitigation

Action	Description	Cost
Vet dispensary	10 cents of land; Standard Plan; quality service	1 crore
Equipment & Vehicles		
	Iceline refrigerator	1 lakh
	Generator	1 lakh
	invertor	60,000
	Fire safety equipment	1 lakh
	First aid kits	20,000
	Cow lifter, cages, etc	60,000
	Vehicles at block level	20 lakhs
Manpower		
	Veterinary surgeon	1 lakh
	Data entry operator/ clerk / multi tasking officer	50,000
	Volunteers / NGO / local body	20,000
	Driver	10,000
Manuals & guidelines	DAHO – no. of institutions	50,000
Awareness materials	Pamphlets for farmers, general public	50,000
	Videos for farmers, general public	1 lakh
Risk analysis	Natural calamities	

	Disease / epidemics	
Risk reduction	Assess strength & weakness, resource mapping	
	Capacity building at all levels	
	Round the clock veterinary services	
	Upgrading veterinary institutions	State budget
	Strength disease surveillance system	1 crore per year
	SOP for each disease	
RRT at taluk level		
	Insurance	5,000 per head
	Training	1 lakh per block
	vaccination	
	Vehicle	12 lakhs
	Drone for areal survey	1 lakh
	Remote drug delivery system	10 lakhs per taluk
	Emergency stock of medicines	1 lakh per taluk
Affiliation with major labs, strengthening of existing labs		
Affiliation with other departments	Health, LSGD, Forest and wild life, Agriculture, Police, Fire, National labs, Revenue	

Preparedness

Action	Cost	Source
Vehicles to be arranged with fuel stock		
Emergency medical equipment		
Stocking of surgical packs		
Check and make sure all equipment are in working condition		
Stock drugs		

Response

Action	Description	Cost	Source
Epidemics	Reporting, RRT	50,000	
	Disposal, disinfection	25,000	
	Quarantine, vaccination (ring, blanket)	50,000	
Natural calamity	Evacuation of animals, people		
	Camps organising, medicines, feed	2 lakhs	
	Additional staff		LSGD, AHD
	Vehicles hire (RRT)	2,500 per day	
	Emergency medicines	50,000 per RRT	
	Feed & fodder	2 crores	
Coordinating NGOs & other stakeholders			
Disease monitoring	Temporary labs, diagnostic kits	10 lakhs per lab	
Control room	Sending out Warnings		

Disinfection & sanitization		1 lakh per taluk	
Culling animals, Quarantine, vaccination, controlling animal movement (milk, meat)			
Animal relief camps	Handling of aggressive animals		
Carcass disposal			LSGD

Recovery

Action	Cost	Source
Loss assessment (ward, equipment, medicine), Ward reconstruction	5 lakhs	
Furniture	15 lakhs	
Medicines	2 lakhs	
Bed sheets, curtains	1 lakh	
AHS Ambulance	30 lakhs	
Equipment	10 lakhs	
Hospital Insurance, building safety, electrical & fire safety		
PSTD / medicine		
Staff debriefing, staff appreciation		
Infection control		
Periodical mock drills		
Future planning		

Health Department

A total of 14 virtual cadre officials from Health Department participated in the training. The responsibilities of the department at various phases of disaster management identified by them and the results of actions planning exercise are given below:

Responsibilities

Actions During Normal Times (Mitigation)

- Plan and implement mass health awareness programmes
- Develop Disaster Management Plan for the Department of Health & Family Welfare
- Develop Disaster Management Plan for each hospital in the State
- Organise disaster management trainings for staff of the public health department
- Organise disaster management trainings for hospital staff
- Carryout mock evacuation drills in hospitals periodically
- Ensure that hospital staff are aware of the hospital rooms and buildings which are damage proof.
- In the case of hospitals located in proximity to industrial areas obtain Chemical Data Sheet from the different industries.
- Ensure that all new health facility structures are designed and constructed disaster-safe
- Carryout safety audit of all health facilities in the State and identify weak structures
- Undertake structural retrofitting of weak structures
- Disaster management committee – quarterly meetings
- ALS/BLS training to public and staff
- Structural safety measures
- Emergency help of external sources (display of numbers)

- Assess surge capacity
- Collect details of equipment / drugs available – ventilator, ambulance, ICU bed etc.
- Mobile hospital
- Triage system & EMT cadre – trauma care upgrade
- Water and air quality monitoring using related departments
- Surveillance of epidemics with respect to climate change
- Buy items for setting up temporary hospitals
- Networking of hospitals – public / private

Actions Before Disaster / Epidemic (Preparedness)

- Within the affected district / local govt. all available personnel will be made available to the District Disaster Manager. If more personnel are required, then out of station officers or those on leave may be recalled.
- All personnel required for disaster management should work under the overall supervision and guidance of the District Collector.
- Establish radio communications with Emergency Operations Centre, district and divisional commissioner, district control room and hospitals (including private) within the division.
- Ensure that personnel working within the district come under the direction and control of the Collector / Civil Surgeon.
- Appoint one person as "NODAL OFFICER – Health Services at the State Level.
- The Civil Surgeon will act as "Officer-in-Charge – Health Services at the District Level.
- All district level officials of the department would be asked to report to the District Collector.
- The District Collector will provide Officer-in-Charge – Health Services, or the field staff as the need be, with all relevant authorisations with respect to the following:
 - Recruiting casual labourers
 - Procuring locally required emergency tools, equipment and materials
 - Expending funds for emergency needs
- The Officer-in-Charge – Health Services will ensure that all field staff and other officers submit the necessary reports and statement of expenditure in a format as required by the collector.
- Review and update precautionary measures and procedures, and review with staff, the precautions that have been taken to protect equipment and the post-disaster procedures to be followed.
- Fill department vehicles with fuel and park them in a protected area.
- Stock emergency medical equipment, which may be required after a disaster.
- Determine type of injuries illnesses expected and drugs and other medical items required, and accordingly ensure that extra supplies of medical items can be obtained quickly.
- Provide information to all hospital staff about the disasters, likely damages and effects, and information about ways to protect equipment and property.
- Discharge all ambulatory patients whose release does not pose a health risk to them. If possible, they should be transported to their home areas.

- Non-ambulatory patients should be relocated to the safest areas within the hospital. The safest rooms are likely to be:
 - On ground floor
 - Rooms in the centre of the building away from windows
 - Rooms with concrete ceilings.
- Equipment supplies such as candles, matches, lanterns and extra clothing should be provided for the comfort of the patients.
- Surgical packs should be assembled and sterilized.
- A large enough number should be sterilized to last four to five days.
- The sterilized surgical packs must be stored in protective cabinets to ensure that they do not get wet. Covering the stock with polythene is recommended as an added safety measure.
- All valuable instruments, such as surgical tools, ophthalmoscopes, portable sterilizers, CGS, dental equipment, etc., should be packed in protective coverings and stored in rooms considered to be the most damage-proof.
- Protect all immovable equipment, such as x-ray machines, by covering them with tarpaulins or polythene.
- Keep mobile medical units in preparedness.
- All electrical equipment should be unplugged when disaster warning is received
- Check the emergency electrical generator to ensure that it is operational and that a buffer stock of fuel exists. If an emergency generator is not available at the hospital, arrange for one on loan.
- All fracture equipment should be readied.
- If surgery is to be performed following the disaster, arrange for emergency supplies of anaesthetic gases (usually supplied daily)
- Check stocks of equipment and drugs, which are likely to be most needed after the disaster. These can be categorized generally as:
 - Drugs used in treatment of cuts and fractures, such as tetanus toxoid, analgesics and antibiotics
 - Drugs used for the treatment of diarrhoea, water-borne diseases and flu (including oral rehydrating supplies)
 - Drugs required to treat burns and fight infections
 - Drugs needed for detoxication including breathing equipment.
- Assess the level of medical supplies in stock, including:
 - Fissure materials
 - Surgical dressings
 - Splints
 - Plaster rolls
 - Disposable needles and syringes
 - Local antiseptics.
- Request central warehouse for immediate despatch of supplies likely to be needed to hospitals on an emergency priority basis.
- Fill hospital water storage tanks and encourage water savings. If no storage tanks exist, water for drinking should be drawn in clean containers and protected.
- Water purification tablets should be stocked
- Prepare an area of the hospital for receiving large number of casualties

- Develop emergency admission procedures (with adequate record keeping)
- Orient field staff with EMRP standards of services and procedures including tagging.
- Hospital administrators should
 - o Establish work schedules to ensure that adequate staff are available for in-patient needs
 - o Organise in-house emergency medical teams to ensure that adequate staff are always available to handle emergency casualties.
 - o Set up teams of doctors, nurses and dressers for visiting disaster sites.
- Media communication
- DMO to be designated as nodal officer
- Set up control room in IDSP
- Communication to periphery – emergency stocking medicines
- Keep ready disaster wards
- Keep ready all emergency medicines – PPE kits, bleaching powder, etc.
- Tents / kiosks for attending medical emergency in field and mobile hospitals for all districts
- Satellite phones / HAM Radios
- RRT teams at all hospitals with necessary equipment like “BRICKS”
- Triage area in hospital
- Isolation ward for CD
- Medical camps – food safety – waste disposal
- IEC
- All-terrain vehicles, boats
- Check condition of vehicles / boats
- Line up contractors for hire conveyance

Actions During Disaster / Epidemic (Response)

Evacuation

- Assign physically fit and trained medical officers and equally trained paramedics
- All evacuations will be ordered only by the District Collector, Police, Fire Brigade, Health Department or by the Industries Security Officer.
- For appropriate security and for maintaining law and order, evacuation should be undertaken with assistance from community leaders.
- All evacuations should be reported to Divisional Commissioner and District Collector, or Superintendent of Police immediately.
- For evacuation follow the evacuation procedures as outlined in “Operating Procedures for Evacuation”.
- For Marooned Persons
 - o A senior medical officer will ensure that water supplied is in accordance with acceptable standards of potable water and is packed under appropriate conditions and containers.
 - o A senior medical officer should accompany the rescue team along with required medical kit and ensure priority for shifting of those seriously injured or requiring immediate medical attention (the procedure for tagging as given in the Annexure should be followed).

Relief

- Transport should be arranged for the transfer of seriously injured patients from villages and peripheral hospitals to general hospitals. If roads are blocked, a method should be established to request helicopter transport.
- Establish health facility and treatment centres at disaster sites.
- The provision of medical services should be coordinated by the District Medical Officer (DMO) with district control room.
- Procedures should be clarified between
 - Peripheral hospitals
 - Private hospitals
 - Blood banks
 - General hospitals and
 - Health services established at transit camps, relief camps and affected villages.
- Maintain check posts and surveillance at each railway junction, bus depots and all entry and exit points from the affected area, especially during the threat or existence of an epidemic.
- An injury and disease monitoring system should be developed to ensure that a full picture of health risks is maintained. Monitoring should be carried out for epidemics, water and food quality and disposal of waste in transit and relief camps, feeding centres and affected villages.
- Plan for emergency accommodations for auxiliary staff from outside the area.
- Information formats and monitoring checklists should be used for programme monitoring and development, and for reporting to Emergency Operations Centre. This is in addition to existing reporting system in the department.
- Seek security arrangements from district police authorities to keep curious persons from entering hospital area and to protect staff from hostile actions.
- Establishment of a public information centre with a means of communication to assist in providing an organized source of information. The hospital is responsible for keeping the community informed of its potential and limitations in disaster situations.
- The local police, rescue groups and ambulance teams should be aware of the resources of each hospital.
- On the recommendations of the EOC ("NODAL OFFICER-Health Services") Collector / District Control Room / Public Health Department will
 - Send required medicines, vaccines, drugs, plasters, syringes, etc.
 - Arrange for additional blood supply.
 - Provide for sending additional medical personnel equipped with food, bedding, tents, etc.
 - Send vehicles and any additional medical equipment.
- Hospitals – isolation wards
- Infection control – immunisation – sanitation – food safety – waste disposal in camps
- Special attention to patients with NCD / dialysis / mental health care / acute stress syndrome
- Awareness / IEC
- Correct and timely reporting to authorities
- Special packing of medicines for air dropping
- Registration of all inmates in camps
- Follow medico-legal aspects and autopsy

- Mental health support for the affected people as well as concerned staff
- Green protocol as much as possible

Actions After Disaster / Epidemic (Recovery)

- Disinfect hospital premises and public areas
- Replenish stock of medicines, tools and accessories in hospitals
- Hold meetings with staff and discuss the departments' performance
- Draw lessons from the performance and identify actions to be taken for future improvement
- Implement action plan for improving future performance
- Surveillance of CD's
- PTSD
- Post disaster briefing
- Inter departmental coordination
- Assessment of structures, equipment, non-structural issues, loss of medicines
- Mental health of affected people and staff
- Continued surveillance
- Evaluation

Action Planning

Mitigation

Action	Cost	Source
Develop DM Plan		
Ensure safety of health institutional buildings		
Staff capacity building		
Regional RRT		
Fill staff vacancies		
Identify shortage and order necessary equipment		
Emergency numbers of external agencies		
Trainings to FRIENDS OF HOSPITAL (local drivers, NGOs, nearby shops)		
Fire safety of buildings, fire safety cabinet, digi-lock system		
Periodic mick drills		
Route mapping to shift equipment, patients, drugs		
Awareness manuals – Dos and Don'ts		
Budget		NHM, DDMA, MP fund, MLA fund

Preparedness

Action	Cost	Source
Incident Commander		
EOC		

Message to DMO, fire, police, RTO, PRO, ambulance service, blood bank		
Based on surge capacity arrange space to shift patients		
Cancellation of leave of staff		
Crash carts & shifting of equipment, medicines		
Arrange ambulance and fill with fuel and park in accessible area		
Shift patients based on condition		
Arrange generator & diesel, communication system, torches, emergency lamps		
Buffer stock medicines for one week		
Rotation of duty staff. If needed, request for additional staff		
Mobile medical team to be ready		
Dingy boat in flood prone areas		

Response

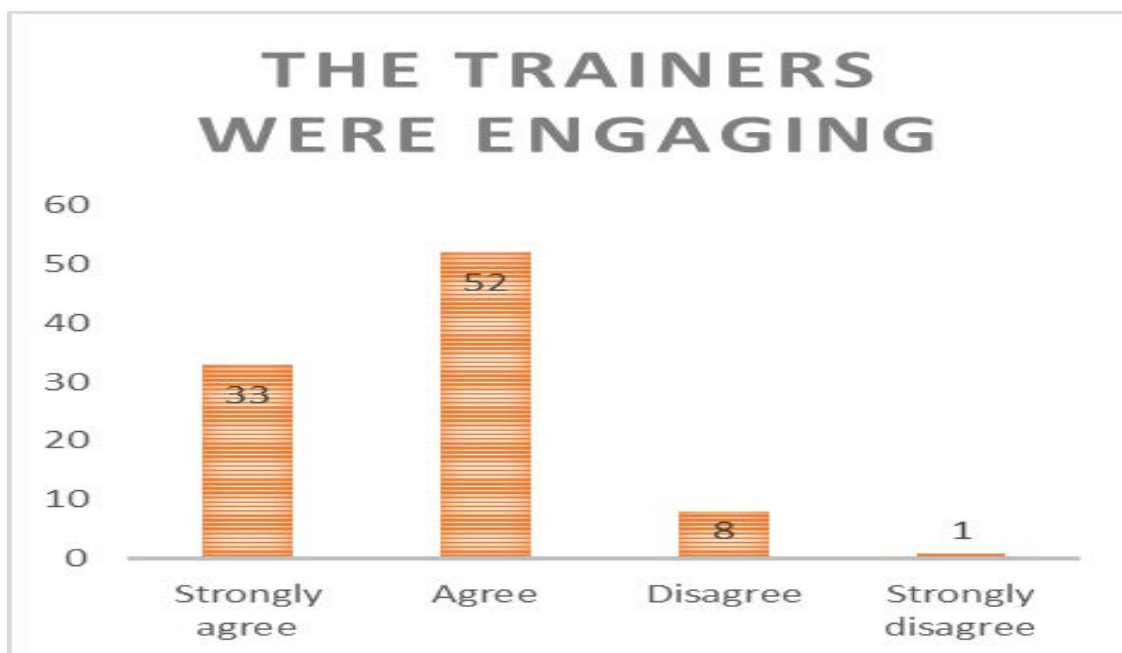
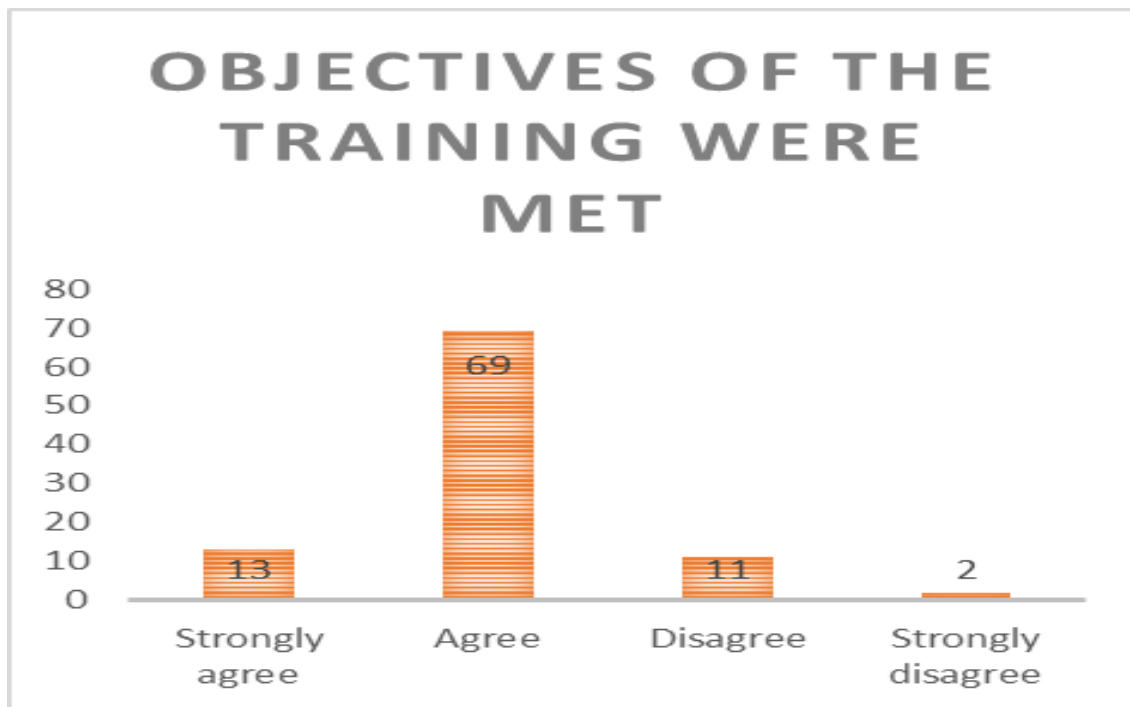
Action	Cost	Source
First Aid	50,000	LSGD / Donation
Mobile Units	15,000 per day	LSGD / Donation
Drugs / consumables	10,000 per camp	LSGD / Donation
POL	50,000	State
Food (staff, volunteers)	100 per head per day	State
Vehicles	50,000	LSGD / State

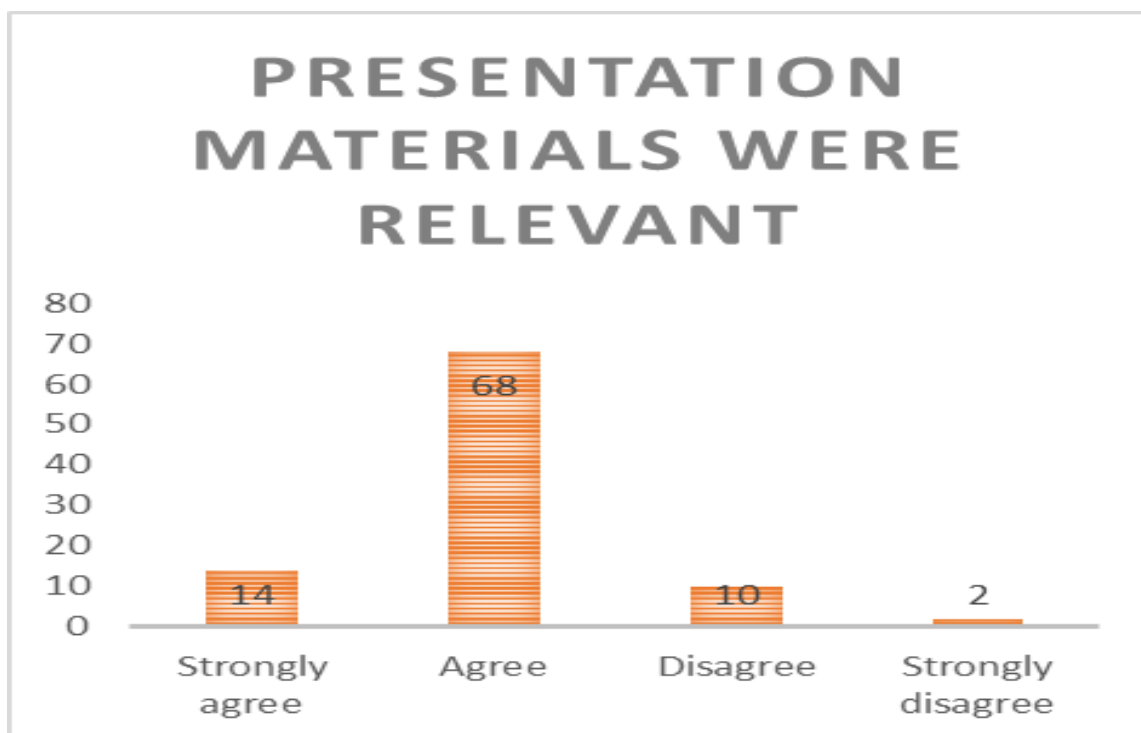
Recovery

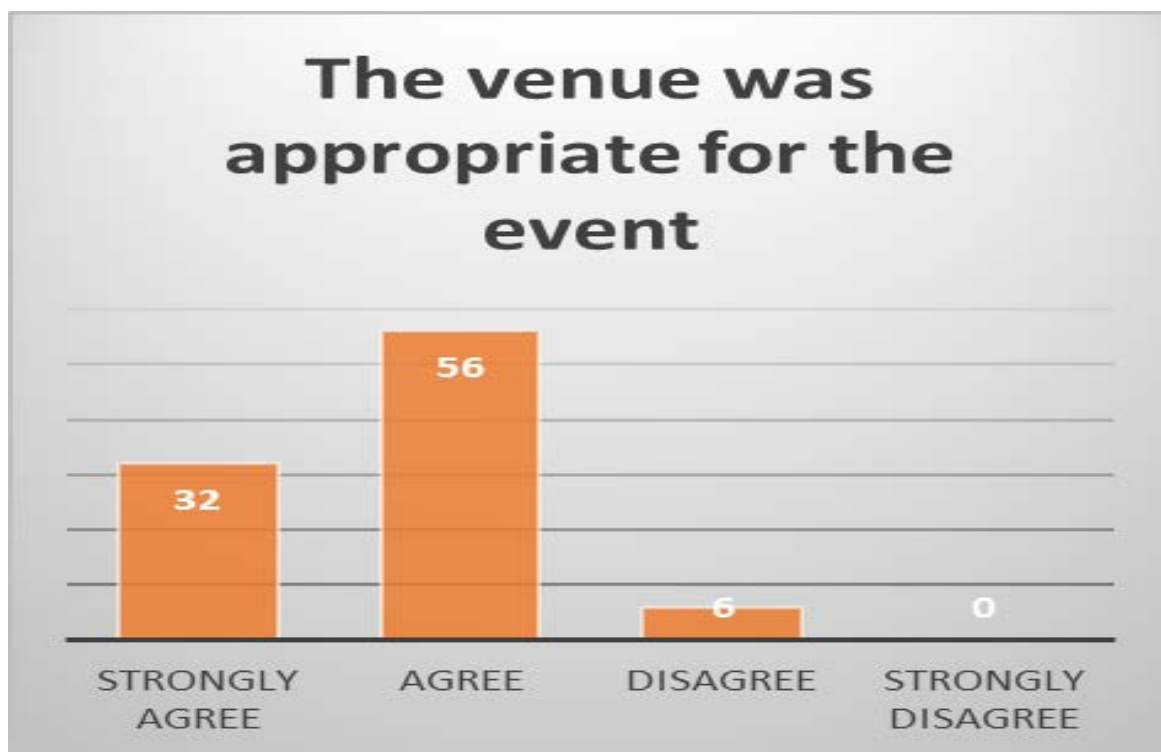
Action	Cost	Source
Hospital & community disinfection	5 lakhs	LSGD / State
PPE / Drugs	2.5 lakhs	
Equipment / maintenance	5 lakhs	
Research Documentation	50,000	
Appreciation, etc	1 lakh	

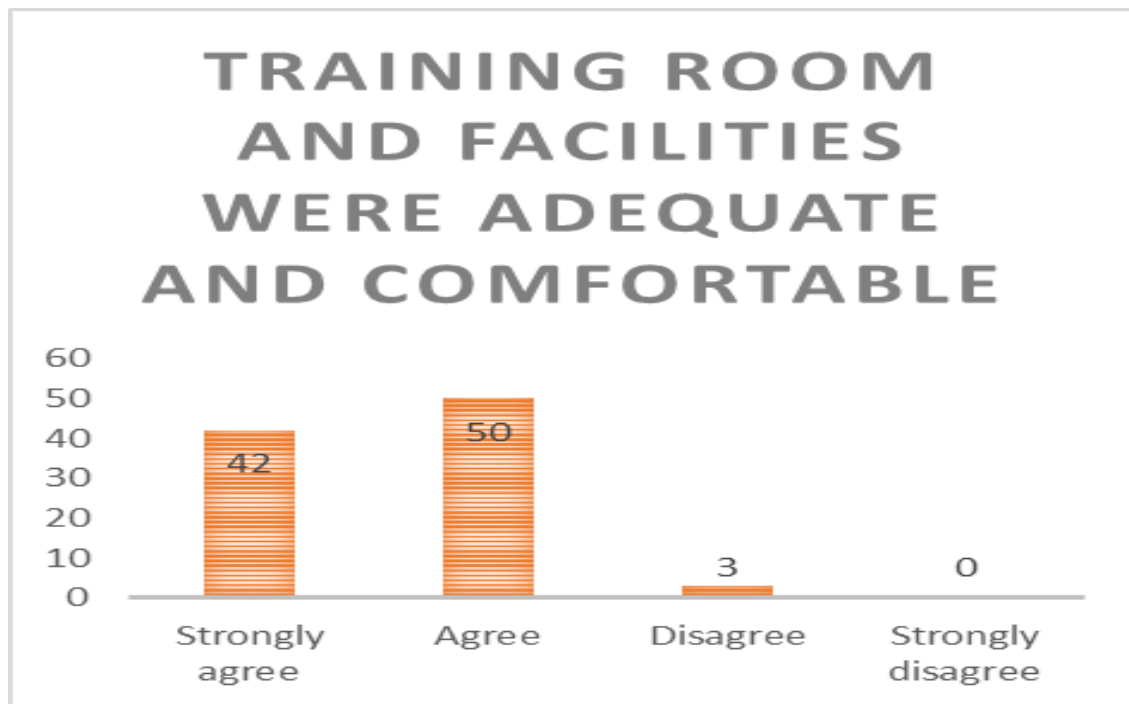
Evaluation of Training

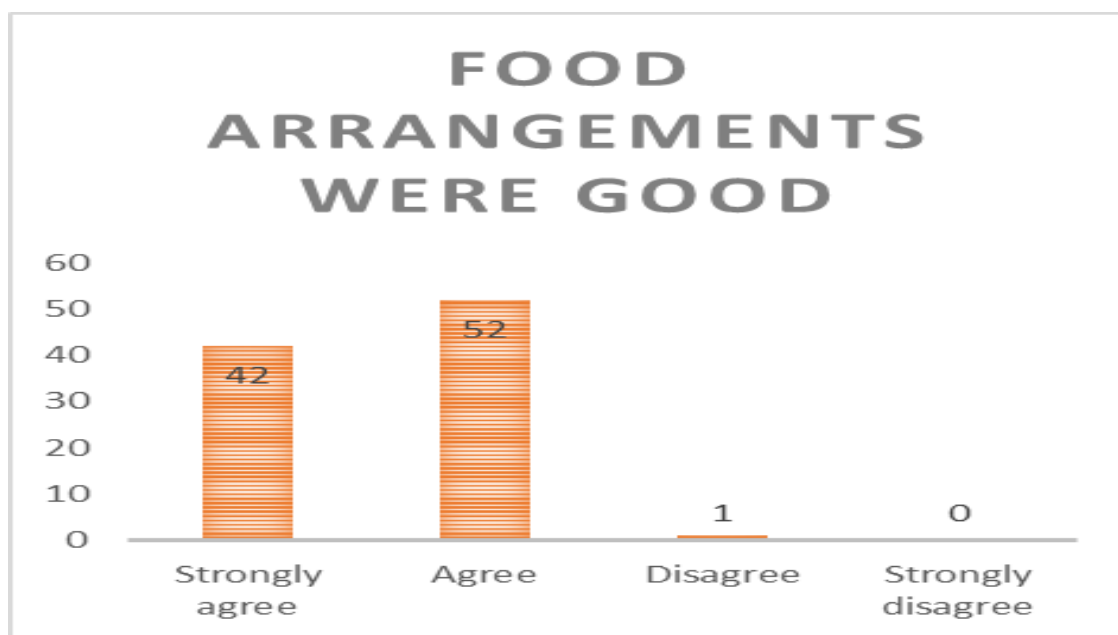
At the end of three-days training the participants gave feedback of the training in the Evaluation Form provided to them. The opinion of all participants has been summarised as follows.











Other comments of the participants included the following.

What was most useful in this training?

The lectures and group discussions of the training were very useful and informative for preparing disaster management plans. We came to better understanding of hazards, vulnerabilities and disasters. We learnt more about KSDMA and DM planning. Interaction with other departments was useful. Good understanding of the concepts of DM. Presentation and discussion sessions were very informative. Got an overall idea about the virtual cadre. Had practical experience on DM Planning.

What else would you like to see included in the virtual cadre training? Are there any other topics that you would like to be offered training courses in?

Real experience sharing is needed. Need video clippings on different types of disasters. Some topics and faculty from each department. Child centric risk reduction. Training programme should repeat at regular intervals. More case studies of successfully managed disaster situations would be useful. Introduction to ICT tool, communication systems, survival skills and techniques. DM strategies adopted by other communities/ other places. Periodic refresher trainings needed. Community based disaster management should be included. Mock drill training, human resource management, administrative management. A comparative study of disaster management in the developed countries. Specific disasters must be addressed by the experts from that field like explosion, chemical leak, geological etc. Special topics like chemical, nuclear disasters, psychological aspects, disaster epidemiology training (hands on) on triage etc should be included. Training at national level. Field trip. Video presentation of mock drills, model relief camps, experience sharing by tahsildars/ village officers/ fire force official.

Need more practical oriented training classes; dam operation; flood management programmes. Recent climate changes in Kerala and its effects. Sector-wise training would be more helpful. Communication skills improvement training will be useful.

Kindly provide disaster management as a certificate course. That should include more days; virtual cadre training must go deeper. Training should be done at a place where disaster occurred in previous years. Practices followed in developed countries should be included. Procedures for releasing fund from KSDMA, DDMA etc. in connection with emergency response of each department during disasters. Include more topics for procedures to reduce the impact of hazards. The actual role of a virtual cadre officer is to be elaborated.

Any other comments / feedback related to the training?

Add 3 or 4 persons from each district to replace in case of absence. Trainees are executive officers; hence executive rooms should be provided. Participants took room outside. More than one officer should be designated. More group exercises will be useful. Interaction section was good, open platforms to put our thoughts was great. History of different disasters happened and the flaws in management activities of that disaster should be detailed and included as case studies for specific disasters and to specific department.

Kindly refurbish the training module, give more emphasis to successful models in mitigation/ response/ recovery, faculty should have some knowledge of Kerala scenario or give them brief note about scenario and staff problems. Try to include more disasters happening in Kerala. The duration of the training could have been 6 days with resources from national and international levels. More similar learnings at national level. Training was good overall, refining in modules and improvement in quality of sessions needed.

Duration should be for 5 days, could have included field visits also. This is starting point, got details or classes as an initiative venture. More trainings are needed. More practical sessions needed. Form a WhatsApp group, then it will be helpful to us in future for updating and sharing of information.

Trainings at district level including all VCO from diff depts will be more effective to district level decisions, since each district have its own geographical characters. Virtual cadre are preparing DM plan for each district, could able to conduct district wise VC officers of various departments. Most of the officers got good fundamental ideas about duties. Frequent training. Good and effective. A clear picture needs to be framed in assigning responsibilities to other offices as well without whose support, the preparation of plan would be nearly impossible

The training is very informative. All the arrangements made re excellent. All the teachers and the training coordinators are excellent and very friendly. Include video clips of various recovery and disasters that happen in other districts in every region. Rooms were poor and try to make better rooms from next batches. Need a training at district level with all nodal officers of each department covering the hazards of that district. Give more in-depth training in future. Mock drill workshop to be arranged on how to manage a disaster with participation of all departments.

Conclusion

96 virtual cadre officials belonging to eight departments from state level and district level were trained on 'Departmental Disaster Management Planning'. Basic concept of hazards, vulnerabilities, disaster and their interlinkages were explained. The phases of disaster management and the concept of disaster management planning was introduced. The participants received hands-on experience on identifying the responsible actions of the departments during mitigation, preparedness, response and recovery phases. The participants took keen interest in understanding the concepts of disaster management and provided valuable inputs from their work experience and knowledge of functioning of their departments. The virtual cadre officers will be successful in developing disaster management plans for their departments.

ANNEXURES

Contents required in Departmental Disaster Management Plans as per National Guidelines.

Chapter 1: Prevention, Mitigation and Preparedness Plan

1. Brief profile of the department
2. Measures necessary for prevention of disasters, mitigation, preparedness and capacity-building in accordance with the guidelines laid down by the National Authority and the State Authority.
3. Integration into its development plans and projects, the measures for prevention of disaster and mitigation in the departmental annual plan.
4. Provision of funds for prevention of disaster, mitigation, capacity- building and preparedness from the respective departmental budget head
5. Drawing up mitigation, preparedness and response plans, capacity-building, data collection and identification and training of personal in relation to disaster management
6. Review the enactments administered by it, its policies, rules and regulations with a view to incorporate therein the provisions necessary for prevention of disasters, mitigation or preparedness
7. Provision of emergency communication in the affected areas for the department
8. Such other actions as may be necessary for disaster management

Chapter 2: Response plan

1. Mechanism for early warning and dissemination thereof based on warnings issued by IMD, State Emergency Operations Centre or the District Control Rooms
2. Trigger Mechanism for response – who in the department will alert the concerned officers in the department and if alerted what triggers are to be initiated by the concerned officer
3. Response plan for responding effectively and promptly to any threatening disaster situation or disaster in accordance with the State plan, and in accordance with the guidelines or directions of the National Executive Committee and the State Executive Committee and the State Government and the SDMA
4. Appointment of Nodal Officers to perform Emergency Support Functions (ESFs)/roles in emergency in the format already circulated by the State Government V. Constitution of the incident Response Teams (IRTs) at all levels with provision of delegation of authority
5. Reporting procedures and formats
6. Role of NGOs and Voluntary Sector and coordination thereof
7. System of assessing the damage from any disaster
8. Roles and responsibilities and coordination mechanism for the department
9. Disaster Specific response Plan – Response plan for major disasters such as earthquake, flash flood/cloud burst, snow avalanche, landslide etc in which State level response would be needed
10. Identification of suppliers for departmental supplies and pre-contracting for supplies in case of emergencies

Chapter 3: Relief, Rehabilitation and Reconstruction

1. Norms of relief if applicable
2. Minimum Standards of relief
3. Rehabilitation Plan
4. Financial mechanism
5. Action plan for reconstruction – ‘Building back better’
6. Please mention schemes of insurance and relief packages available in the department. Norms of the National /State Disaster Response Fund may be mentioned separately

Chapter 4: Knowledge Management

1. Documentation of losses in the animal husbandry & dairy sector for every department
2. Documentation of lessons learnt
3. Documentation of best practices and uploading of the same in the departmental websites

Chapter 5: Review, updating and Dissemination of Plan

1. DM Plan is a “living document” – would require regular improvement and updating – at least once a year
2. System of updating – who, when and how?
3. Dissemination of Plan to stakeholders – how? – Printing of document, uploading in departmental website, meetings, seminars etc

Annexures

1. Important contact details – National, State, local level of the department etc
2. Resource list (available with Department) with contact persons details (kindly follow IDRN Format) www.idrn.gov.in
3. Resources available with National Govt. level
4. Detailed Standard Operating Procedures (SOPs) for all phases of disasters – before, during and after
5. List of NGOs/INGOs/CBOs working in the field of the department
6. List of suppliers relevant for the department
7. Damage Assessment Formats
8. Reporting formats

List of Participants

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Batch 1 Training Photos – Agriculture, Irrigation & Kerala Water Authority





Batch 2 Training Photos – Land Revenue, Mining Geology & Soil Conservation





Batch 3 Training Photos – Animal Husbandry & Health





Evaluation Format



Virtual Cadre Training Evaluation Form

Training for virtual cadre officers on mainstreaming disaster risk reduction



Empowered lives.
Resilient nations.

Please give your honest feedback, Personal Information in this box is not mandatory

Name

Department

Designation

District

Instructions Please tick your level of agreement with the statements listed below	Strongly Agree	Agree	Disagree	Strongly Disagree
1.The objectives of the training were met				
2.The Trainers were engaging				
3.The presentation materials were relevant				
4.The training length (3 days) was appropriate				
5. The pace of the training was appropriate to the content and participants				
6.The venue was appropriate for the event				
7. The meeting rooms and facilities were adequate and comfortable				
8. Accommodation was comfortable* (*For those who availed)				

9. Food Arrangements were good				
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Feel free to write in Malayalam/English

10. What was most useful in this training?

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11. What else would you like to see included in the virtual cadre training? Are there any other topics that you would like to be offered training courses in?

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12. Any other comments / feedback related to the training?

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THANK YOU FOR YOUR VALUABLE FEEDBACK
FEEDBACK RECEIVED WILL BE USED TO PROVIDE IMPROVEMENTS TO FUTURE EVENTS.