



DISASTER MANAGEMENT PLAN

DEPARTMENT OF RURAL DEVELOPMENT

GOVERNMENT OF HIMACHAL PRADESH

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1. ABOUT THE DEPARTMENT

The spirit of India lives in villages and only by changing the face of rural areas, can we hope for a better future for the State and nation as a whole. Rural Development Department is working to improve the rural face of Himachal through its manifold development schemes, working in a participatory manner with the community itself. The State Rural Development Department is engaged in the implementation of different rural development and poverty alleviation programmes.

Mandate of the Department:

Department of Rural Development is the Primary agency to:

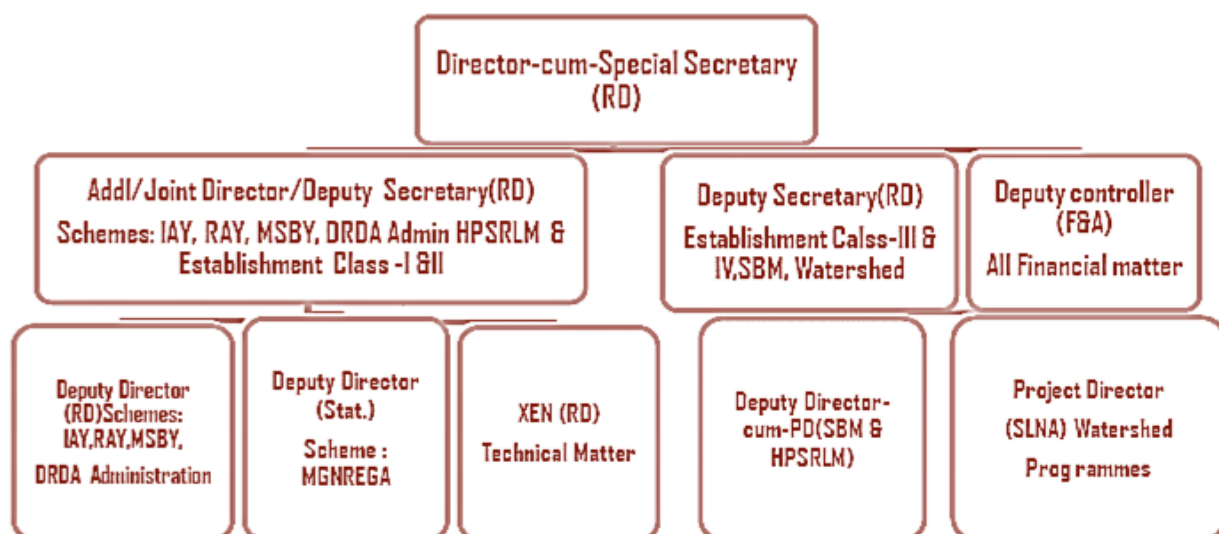
- Implementation of Schemes like MGNREGA, SBM, PMAY-G, Watershed Management Program, SRLM, NRLM etc.
- Implement vulnerability reduction projects to alleviate poverty and improve people's livelihoods.
- Ensure rural development schemes implemented in the State incorporating disaster management measures.
- Preparing the Infrastructure on the lines of resilience.

1.1 ORGANIZATIONAL STRUCTURE

For the implementation of different rural development programmes, Rural Development Department has following administrative structure at various levels:

State Level: The Department is functioning under the overall control of the Secretary (RD) at the Government level assisted by the Special Secretary (RD), Additional Director-cum- Additional Secretary (RD) Deputy Director-cum-Deputy Secretary (RD), Deputy Director (RD), Deputy Director (Stat) Administrative Officer and Statistical Officer (RD).

Directorate Level: The Director-cum-Special Secretary (RD) is the head of the Department and he is assisted by Joint Director-cum- Deputy Secretary (RD), Deputy Directors and Executive Engineer.



District Level: At the district level, DRDAs are responsible for the implementation and monitoring of all rural development programmes. The Deputy Commissioner-cum-Chief Executive Officer of the DRDA is assisted by the Project Director, Project Officer, APO(SE), APO(Women), APO (Watershed), Project Economist, Superintendent, Statistical Investigator, Senior Assistant, Clerks and Peon DRDA in the execution of various developmental activities Besides this, at district level there is a Governing body of DRDA under the Chairmanship of Zila Parishad. This body is responsible for monitoring of various Rural Development Programmes.

Block Level: At the Block level, the Block Development Officer is the main catalyst for the following administrative set up:

#	Name of Post
1	Superintendent
2	Junior Engineer
3	Lady social education organizer
4	Senior assistant
5	Senior assistant (Progress)
6	Clerk/steno typist
7	Panchayat secretary/ Sahayak
8	Computer operator
9	Gram rozgar sewak
10	Lady village development coordinator
11	Driver
12	Peons
13	Chowkidar / Sweeper

1.2 PURPOSE OF THE PLAN

Every department of the State Government is legally mandated under Section 40 of Disaster Management Act 2005 to prepare its disaster management plan in accordance with the guidelines laid down by the State Disaster Management Authority. The Act stipulates that while preparing the plan, every Department shall make provisions for financing the activities specified therein. The plan shall be reviewed and updated annually and a report on the status of implementation of the plan has to be furnished to the State Executive Committee.

The basic purpose of the plan is to provide guidance to all the agencies within the Department of Rural Development to manage the risks of disasters before, during and after disasters with a multi-hazard approach. These include assessing the sectoral and departmental risks of disasters, mitigating the existing risks, preventing the creation of new risks, presenting the status of its preparedness to perform its role and responsibilities as defined in the state DM policy and state DM Plan.

Thus in case of any eventuality of a disaster, the department must be able to perform its functions without any hindrance and this can happen only when the department specific plan is ready. Some of the objectives are as follows:

- To know the standard operating procedures of the department at the time of disaster.
- To assist the line departments, block administration, communities in developing compatible skills for disaster preparedness and management.
- To disseminate factual information in a timely, accurate and tactful manner while maintaining necessary confidentiality.
- To develop immediate and long-term support plans.
- To ensure that all the components of DM are addressed to facilitate planning, preparedness, operational, coordination and community participation to minimize the losses.
- To ensure smooth relief and response according to the needs of the vulnerable community followed by reconstruction.

1.3 SCOPE OF THE PLAN

In accordance with the Disaster Management Act 2005 and Himachal Pradesh Disaster Management Plan 2012, the scope of the plan is to handle certain hazard in the state, which affects the department and the sector as a whole. Himachal Pradesh still has almost 90 percent rural population according to the 2011 census, which means the role and responsibilities of the Rural Development department are further increased. The plan aims to help the Department to assess its own capacity in terms of available resources and get ready to mitigate any unexpected disaster effectively and to prevent the loss of human lives and property through preparedness, prevention & mitigation of disasters.

Some of the tasks which were considered while making the plan are as follows:

- To identify the vulnerable areas and community of the state to different forms of natural calamities as well as man-made hazards.
- To take measures to be adopted for prevention and mitigation of disasters.
- To integrate the disaster management measures with all the central and state-sponsored schemes and programmes under the Department of Rural Development.
- To work towards the awareness and capacity building of the community and staff members is necessary.
- To specify the roles and responsibilities of each agency in relation to pre-during-post disaster phases.

1.4 AUTHORITIES, CODES AND POLICIES

Functioning of Disaster Management in Himachal Pradesh is governed as per the Disaster Management Act 2005 and Himachal Pradesh Disaster Management Plan 2012. Apart from that, various policies and schemes funded by state and central both also contain disaster risk mitigation measures. According to Section 23 of the DM Act 2005, there shall be a DM plan for every state and within the state, there have to be departmental plans for the concerned agencies to deal with disastrous situation smoothly. It provides for the departments of the state governments to draw up their own plans in accordance with the state plan. It also provides for annual review and updating of the departmental plan every year and enjoins upon the state governments to make provisions for financing the activities to be carried out under the departmental plans.

Apart from that, there are guidelines and provision for State Disaster Response Fund (SDRF) and National Disaster Response Fund (NDRF) which can be claimed by the departments at any stage of the disaster management.

Department of Rural Development will be guided by the following:

- Disaster Management Act, 2005
- National Disaster Management Plan, 2016
- Himachal Pradesh Disaster Management Plan, 2012
- National Action Plan on Climate Change
- National Guidelines issued by the NDMA
- Guidelines and provision for State Disaster Response Fund (SDRF)
- Guidelines for administration of the National Disaster Response Fund (NDRF)

1.5 INSTITUTIONAL ARRANGEMENTS FOR DISASTER MANAGEMENT

The State Government has adopted the Disaster Management Act 2005 as enacted by the Govt. of India for providing an effective mechanism for Disaster Management in the State of Himachal Pradesh.

1.5.1 STATE DISASTER MANAGEMENT AUTHORITY

As per clause b of sub-section (2) of Section 14 of the Disaster Management Act 2005, the Himachal Pradesh Disaster Management Authority under the chairperson of the Honourable Chief Minister was constituted on 1st June 2007 with the following persons as a member of the Himachal Pradesh Disaster Management Authority (HPSDMA):

Table 1: Members of State Disaster Management Authority

#	Member	Designation in HPSDMA
1	Hon'ble Chief Minister	Chairman
2	Hon'ble Revenue Minister	Co-Chairman
3	Chief Secretary	Member
4	Principal Secy. (Rev)	Member
5	Principal Secy. (Home)	Member
6	Principal Secy. (PWD)	Member
7	Principal Secy. (Health)	Member
8	Director General of Police	Member
9	Secretary / Additional Secretary (Revenue)	Member Secretary

1.5.2 STATE EXECUTIVE COMMITTEE (SEC)

As per sub-section (1) of section 20 of the Disaster Management Act 2005, the State Executive Committee under the chairmanship of Chief Secretary was constituted by the Government of Himachal Pradesh. SEC coordinates and monitors the implementation of the National Policy, the National Plan and the State Plan in addition to management of disasters in the state. It monitors the implementation of disaster management plans prepared by the departments of the Government of the State and District Authorities.

1.5.3 ADVISORY COMMITTEE OF SDMA

As per Sub Section (1) of section 17 of the Disaster Management Act 2005, the chairperson of Himachal Pradesh State Disaster Management Authority nominates members of the Advisory Committee to assist the Authority and to make recommendations of different aspects of Disaster Management.

1.5.4 DISTRICT DISASTER MANAGEMENT AUTHORITY

As per Section 25 of the DM Act 2005, District Disaster Management Authority has also been constituted in every district of Himachal Pradesh which is chaired by the Deputy Commissioner of the district.

1.6 PLAN MANAGEMENT (IMPLEMENTATION, MONITORING AND REVISION)

Implementation of the Plan

Directorate of Rural development shall be responsible for implementation of the Plan. The Nodal Officer shall coordinate with all stakeholders for implementing the Plan. Annual Progress on implementation of the Plan will be submitted to HPSDMA.

Revision of the Plan

The Disaster Management Plan is a living document. It will be revised on annual basis as per provisions of the DM Act-2005. Any changes in guidelines under the NDRF and SDRF shall be incorporated in the plan as and when such changes are made. The introduction of new technology for hazard risk mitigation shall also be incorporated as when the same is tested and found feasible and acceptable in particular geographical area of the State.

System of Updation

The document shall be updated at the Directorate level with the help of State Disaster Management Authority at least once in a year or as per the requirement. Consultations will be held with the stakeholders for making changes in the Plan. The Nodal Officer shall be responsible for holding consultations and updating the Plan.

Dissemination of Plan

After finalization of the Plan, a copy will be submitted to the HPSDMA for approval. After approval, it shall be disseminated to all agencies, field offices and other stakeholders. Further, whenever it revised / updated, it shall be submitted to HPSDMA for endorsement of changes. The revised Plan shall be shared with all concerned.

2. HAZARD, RISK AND VULNERABILITY ANALYSIS

2.1 RISK ASSESSMENT OF HIMACHAL PRADESH

Himachal Pradesh is a mountainous state situated in the western Himalayas with an elevation ranging from 350 meters to 6000 meters. Thus, there is a great variation in the geo-climatic conditions of the state due to the extreme variation in the elevation. The climate varies from hot and sub-humid tropical in the southern tracts to cold, alpine and glacial in the northern and eastern mountain ranges with increasing elevation. These conditions make the state prone to various hazards both natural and manmade. Main hazards consist of earthquakes, landslides, flash floods, cloudburst, snowstorms and avalanches, droughts, dam failures, fires - domestic and wild, accidents - road, rail, air, stampedes, boat capsizing, biological, industrial and hazardous chemicals etc.

Table 2: Frequency and Intensity of Major Hazards

#	Nature of Disaster	Frequency	Intensity
1	Flood/ Flash Flood	Regular Frame	High
2	Drought	Every 3-5 Years	Moderate
3	Cloud Bursts	Regular Feature	High
4	Earthquake	Regular Feature	Moderate to Very High
5	Landslides	Regular Feature	High
6	Avalanches	Regular Feature	Low
7	Lightening	Rare	Low
8	Disease Epidemics	Rare	Low
9	Fire	Regular Feature	High
10	Stampede	Moderate	Moderate

The districts of Chamba, Kinnaur, Kullu and part of Kangra and Shimla fall in very high vulnerable risk (Figure 2). Similarly, districts of Kangra, Mandi, Una, Shimla and Lahaul and Spiti fall in high vulnerable risk status. The district Hamirpur, Bilaspur, Solan and Sirmour falls in moderately vulnerable risk status. The disaster management strategies and infrastructure required to be evolved by taking the factor of vulnerability into consideration.

There is no specific hazard which affects the rural development department because any hazard which affects the rural community is to be taken into consideration by them, be it earthquake, landslide, drought or even hail storm. These hazards can also affect the assets of the department. Therefore, the department should assess the risk of its own assets.

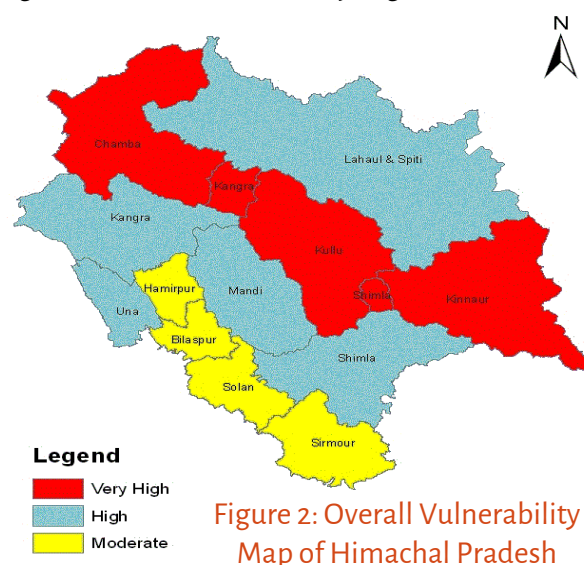


Figure 2: Overall Vulnerability Map of Himachal Pradesh

2.2 ASSESSMENT OF SECTORAL AND DEPARTMENTAL RISKS

The sectoral risks of disasters consist of the risks for the entire sector that the department represents. For example, the rural development department may assess the potential risks of the rural population due to certain hazard like earthquake and landslides in the specific region. The flash floods, in particular, have increased their frequency at the places situated near the river, like Kullu. The departmental risks of disasters consist of the risks arising out of the exposure of vulnerable departmental assets to the natural or manmade hazards.

Sectoral risk to the Rural Development department:

2.2.1 CLIMATE CHANGE

Climate change refers to a statistically significant variation in either the mean state of the climate or in its variability, persisting for an extended period (typically many decades or longer). Climate change may be due to natural internal processes or external forcing, or to persistent anthropogenic changes in the composition of the atmosphere or in land use. The long-term trends in observed seasonal precipitation and temperature over Himachal Pradesh using IMD gridded rainfall and temperature at daily time scales has been performed to arrive at current baseline climatology for the state. IMD gridded data was used for Climate change hazard risk analysis.

The PRECIS data on precipitation, maximum and minimum temperature have been analysed for Himachal Pradesh by TARU. Preliminary inferences on the variations of these entities show that the annual maximum temperature is projected to increase by 1.90°C and annual minimum temperature by 2.30°C towards mid-century. This change in temperature is going to harm the apple produce, crop production etc. in the region; which will further impact the livelihood of the rural population per se.

It is also seen from the INRM analysis that cold spell duration indicator is projected to decrease and warm spell duration indicator is projected to increase for all the districts, implying warming up over Himachal Pradesh districts. The warming up of the entire state will further result in a change in cropping patterns too. Certain schemes of rural development department need to be modified to help the community during these times.

The increase is projected for average annual rainfall by 15.0% and 28.0% respectively for mid and end century scenarios. Mean monsoon rainfall increases by 182 mm by mid-century and by 384 mm by end century. This huge increase will have a severe impact on the entire sector. Because with an increase in rains there are chances for a hail storm, flash floods which can affect the infrastructure constructed by the department.

It is also projected that heavy and very heavy precipitation day for all the districts in Mid Century and End Century compared to the Base Line are going to increase implying that count of heavy rainy days would increase in the future. Increase in the count of very heavy precipitation days is expected to be the maximum for Salon, Bilaspur and Kangra of Himachal Pradesh districts. These heavy rains again will have a devastating impact on the infrastructure related schemes and also schemes which try to alleviate poverty from the region.

2.2.2 EARTHQUAKE

Building vulnerability assessment in the state of Himachal Pradesh shows that stone masonry and rammed earth building types are the most vulnerable one which may cause the huge loss of life in the state. In last two decades, brick masonry and RC frame construction have been on the rise but the quality of construction was not maintained which resulted in increased vulnerability.

2.2.3 LANDSLIDE

Past landslide location map was prepared using GSI Atlas No. 71. Most of the past landslides reported were along the roads / highways and along the pilgrimage routes as observed in NRSC Atlas. This clearly indicates that the slides are triggered mainly due to anthropogenic factors. This result calls for taking immediate measures to improve the design of development activities considering the landslide risks.

2.2.4 DROUGHT

The results of TARU report show that the once in 10-year rainfall can be significantly lower than the median rainfall. Nearly half the state gets less than 1200 mm of annual median rainfall. Given the high slopes and skeletal soils, the moisture retention is likely to be low and regular and frequent rainfall is required for water-demanding crops.

The report also indicates that almost all parts of the state except region around Shimla face medium to high drought risks in monsoon rainfall. Shiwalik region of Hamirpur faces summer water shortages due to lack of any perennial sources. Since the soils in Hamirpur are sandy and shallow, the meteorological droughts can translate into agricultural droughts. In high-risk zone, the once in 10-year drought may be nearly two-third of the median monsoon rainfall, which can cause severe distress to the rain-fed crops and flowers.

2.2.5 GLACIAL LAKE OUTBURST FLOOD:

The possibility for a GLOF to occur sometime in the future cannot be dismissed, particularly in view of continued atmospheric warming and the associated increase in the volume of glacial lakes. Furthermore, expansion of infrastructure in the vulnerable sectors downstream means that the actual risk associated with an individual event is increasing.

It has been observed that glacial lake outburst floods have cascading effect on life, livelihood and infrastructure. In the state of HP, the local economy and state gross domestic product (GDP) is highly dependent on horticulture production. This activity is in turn dependent on the glacial ice melt and snowmelt during summers. Changes in the glaciers or resultant GLOF may have an impact on the regional economy.

2.2.6 RIVERINE FLOODING:

The amount of flooding is a function of the amount of precipitation in an area, the amount of time it takes for rainfall to accumulate, previous saturation of local soils, and the terrain around the river system. The TARU study about the riverine flood shows that about 59 villages in Beas basin and 280 villages in Sutlej basin are potentially at risk due to inundation caused by river flooding.

Risk to Assets/Infrastructure of Rural Development Department:

The infrastructure available with the department at various levels is given in table 3.

Table 3: Risk to Assets/Infrastructure of the Department

Assets / infrastructure at Risk	Hazard	Likely Impact	Details of assets
State headquarters office building, office equipment's, furniture etc.	Earthquake, Landslide, Flood	Partial or complete damage to the building, equipment's and loss of important documents	Number of offices-1
District level office buildings, office equipment's, etc.	Earthquake, Landslide, Flash Flood	Partial or complete damage to the building, equipments and loss of important documents.	Number of buildings- 24
District Rural Development agencies	Earthquake, Landslide, Flash Flood	Partial or complete damage to the building, equipment and loss of important documents.	Number of offices-12
Block level office buildings, office equipment's, etc.	Earthquake, Landslide, Flash Flood	Partial or complete damage to the building, equipment and loss of important documents.	Number of offices-78
Gram Panchayat office buildings and office equipment's, furniture, etc	Earthquake, Landslide, Flash Flood, cloudburst	Partial or complete damage to the building, equipment and loss of important documents.	Number of offices-3226

- Besides this, there are 3 PRTI buildings and Hostel/ Guest Houses at the divisional level.
- As developmental schemes are being executed by the Gram Panchayats, the tools like shovel, spear and grubbing mattock etc. are available at Gram Panchayat level.

As informed by the department, many buildings lie in different hazard-prone areas of earthquake and are also prone to fire but any kind of safety audit / risk audit or retrofitting per se has never been done. Although there is a separate fund which comes every year for the maintenance of the assets of the department, that fund is not sufficient to maintain the large number of assets that the department possess. The risk which these assets of the department have during the time of a disaster is to be considered by the department itself. Further, the department should try to get ready for disaster with the help of various mitigation strategies which might differ for different areas as some of the assets are on the plains, the other situated on mid hills and some situated on the hills itself.

2.3 ASSESSMENT OF CAPACITY GAPS AND NEEDS

The department should also make a critical assessment of their capacity for disaster risk management before, during and after disasters. Rural Development department has a large pool of human resource comprising officials and coordinators working on the field. It is one department which has communication

network up to the gram panchayat level through well-structured institutions. Although, after having a discussion with the department, certain gaps were identified in the existing capacity:

- Officers and staff are lacking in the basic knowledge of disaster management and response.
- The human resource of the department also should have training on certain mitigation measures. Various orientation camps can be organized for the gram panchayat.
- Department also needs to establish a monitoring mechanism at the district level to check the Disaster management plans from Gram Panchayat level to the district level.
- Adequate financial powers need to be vested with the district, Block and Gram Panchayat level to manage the crisis and setting up of adequate safety measures in the premises, such as Disaster Preparedness Kit, Fire Extinguishers etc.
- Although they have a well-built communication system, the training on dissemination of information during the time of disaster should be provided.
- Immediate fund for disaster mitigation activities is not available with the department.

2.4 ASSESSMENT OF PROBABLE DAMAGE AND LOSS

The department assessment of the damage may provide details of loss suffered by the sector per se. The statistical department has calculated that almost 56,000 Kucha houses were damaged in rural areas due to various disaster during 2007-2014, while the number of pucca houses damaged during the same period was 6741. Similarly, 31,079 km length of the road was damaged due to disasters in the state of Himachal Pradesh due to various disasters. The amount of losses tells how much the sector of rural development can be affected by the disasters in Himachal. Considering, the trend of past losses in the account, projections can be made about the future losses and planning can be done considering the risk of the sector in mind.

3. RISK PREVENTION AND MITIGATION

3.1 RISK PREVENTION

Risk prevention is preventing the creation of new risks of disasters. Such risks may be created unwillingly by the Departments directly through public investments or indirectly through the facilitation of private investments that are vulnerable to the risks of disasters. Therefore every investment should go through HRVA to check if new programmes, activities or projects have the potential to create new risks of disasters. If such investments cannot be avoided these must be protected by safeguards through adequate structural and non-structural prevention measures so that the benefits of investments are fully protected from risks of disasters. For example, assets of the Rural Development department like offices, equipment's and others should be located at places which have lesser chances of getting affected by a hazardous event. The main idea here is what the department can do within its mandate to increase the idea of risk prevention.

Certain methods which can be implemented for risk prevention are:

- The department should be risk sensitive while implementing any project in future. Although the idea of risk sensitivity already exists in the department. For example, the water storage tanks are being fenced to stop drowning of children in it.
- Proper implementation of the government schemes and programs can also reduce the risks. For example, the integrated watershed development program helps in decreasing the chances of any drought situation to arise.
- Establish clear and measurable objectives for seismic safety that can be implemented and supported by the community with the timeline.
- Establish programmes as long-term undertakings with a strong commitment to sustained effort rather than one-time action.
- Adopt a multi-hazard approach to safety with earthquake mitigation strategies that complement and enhance disaster counter measures for other hazards.
- The department should consider Disaster impact assessment while doing the Environment Impact assessment.
- The idea of climate change adaptation is to be kept in mind at the time of implementation of a new project.

3.2 RISK MITIGATION

Risk mitigation is reducing the risks of disasters that are already there due to exposure of vulnerabilities to the hazards. Mitigation projects reduce the level of exposures or the depth of vulnerabilities or both through a combination of various structural and non-structural measures. Mitigation projects are always costly and therefore these have to be planned with proper Cost Benefit Analysis (CBA) to ensure that the benefits of the projects outweigh the costs. On the basis of its developmental responsibility, the department can liaise with other line departments and agencies for a coordinated mitigation approach.

The primary objective of mitigation efforts would be:

- To identify, delineate and assess the existing and potential risks and to work towards reducing potential causalities and damage from disasters.

- To substantially increase public awareness of disaster risk to ensure a safer environment for communities to live and work.
- To reduce the risks of loss of life, infrastructure, economic costs, and destruction that result from disasters.

In view of the prevailing risk and the vulnerabilities perception, the mitigation measures proposed have been categorized under following five major groups:

- **Risk assessment:** Risk information should be provided to the farmers on time and for that a proper risk assessment should be done by the department.
- **Construction work:** All the newly constructed assets should follow the building by-laws of the state.
- **Repair and maintenance:** Retrofitting and renovation of the lifeline buildings should be done by the department.
- **Research and technology transfer:** The department should identify and interact with research institutions to evolve mitigation strategies both structural and non-structural.
- **Training and capacity building:** Training programs about the awareness of disaster with respect to agriculture can be planned at the village level.
- **Communication arrangements:** The department already has a good communication system which can be utilized in providing information about disaster mitigation to the ground.

3.3 MATRIX OF HAZARD SPECIFIC MITIGATION MEASURES

HAZARD	MITIGATION MEASURES	
	STRUCTURAL	NON-STRUCTURAL
Earthquake	<ul style="list-style-type: none"> • Undertaking mandatory technical audits of structural designs of infrastructure under department by the competent authorities. • Retrofitting and reinforcement of old and weak structures. • Assessing the seismic risk and vulnerability of the existing built environment by carrying out structural safety audits of all critical structures. 	<ul style="list-style-type: none"> • Seismic hazard risk mapping pertaining to departmental assets. • The training to the local masons for construction of earthquake resistant structures. • Developing appropriate risk transfer instruments by collaborating with insurance companies and financial institutions.
Floods, Flash Floods and GLOF	<ul style="list-style-type: none"> • Along with DDMA, the department should demarcate the flood-prone area and no construction related to the department should be done there. • Open space for emergency construction of sheds etc. shall be left to the extent possible. 	<ul style="list-style-type: none"> • Flood mapping pertaining to departmental assets. • Mitigation plan should be in place to safeguard the departmental infrastructure/ inhabitants from the flash flood.
Landslides	<ul style="list-style-type: none"> • Check dams to be constructed at the places where required. • Contour trenches to be made. 	<ul style="list-style-type: none"> • Conduct land suitability studies on GIS and Remote Sensing platform before building an infrastructure.

	<ul style="list-style-type: none"> • Contour bunds and gabion structures can also be made under IWMP. • Afforestation should be done. 	
Fire	<ul style="list-style-type: none"> • Open space for emergency exit in the case of fire. • Fire extinguishers should be installed on each floor. • Replacement of dilapidated electrical wires. 	<ul style="list-style-type: none"> • Fire safety mock drill. • In order to tackle the local/ forest fire, the Gram Panchayats will be sensitized and involved.

Early Warning System for Meteorological disasters: Forecasting and early warning helps in mitigating the effects of disasters. The loss of life and property can be considerably reduced with an accurate and timely warning. Climate meteorological disaster such as flash floods/cloudburst/snow gauges would be strengthened so that Early Warning System can be effectively communicated to the vulnerable areas.

- A network of rain / snow gauges could be strengthened for this information.
- Tie up with weather reports, Indian Meteorological Department could be strengthened so that Early Warning System can be effectively communicated to the vulnerable areas.
- Networking would be done to communicate the Early Warning System to the vulnerable sections of the village.
- Media would be utilized to communicate the Early Warning System.
- Information & Communication Technology tools need to be used for data receptions, forecasting and timely dissemination.

4. MAINSTREAMING DISASTER RISK REDUCTION IN DEVELOPMENT

Disaster Management Act has stipulated that DM Plans of the Departments of State Government shall integrate strategies for prevention and mitigation of the risks of disasters with the development plans and programmes of the department. Mainstreaming disaster management into the development planning process essentially means looking critically at each activity that is being planned, not only from the perspective of reducing the disaster vulnerability of that activity but also from the perspective of minimizing that activity's potential contribution to the hazard.

Every development plan in the state would require incorporating elements of impact assessment, risk reduction, and adoption the 'do no harm' approach. The linkage of DRR in Development has the following three purposes to achieve:

- To make the future environment free from construction risk.
- To utilize the funds of the govt. to mitigate the vulnerability to any disaster, thus progressing towards physical, socio-economic and environmental vulnerability free era.
- To make sure that all the govt. plans should be integrated with disaster risk reduction programmes by integrating such elements in these plans so that disaster risk-free environment can be created.

Rural development and poverty alleviation have been the major areas of concern and thrust for the nation since independence. There are two categories of policy approaches addressing disaster risks in the context of climate change in the development sector. The first involves integrating disaster risk reduction as a part of the implementation strategy in rural development programmes. The other is to focus on incorporating resilience building elements, focused primarily on appropriate adaptation strategies, into the design and delivery of these development programmes. There are several schemes within the department of Rural Development advocating disaster management measures, out of which some of them are as follows:

Table 4: Mainstreaming DRR in Flagship Schemes/Programmes

#	Name of Scheme	Key Component of the scheme	Key activities for mainstreaming
1	Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGA)	<ul style="list-style-type: none"> • The salient feature of the scheme is to provide for the enhancement of livelihood security of the households in rural areas of the State by providing 100 days of guaranteed wage employment in every financial year to every household whose adult members volunteer to do unskilled manual work. • Permissible Works - As per schedule 1 of the Act the focus of the scheme is on the following works in their order of priority: <ul style="list-style-type: none"> ○ Water Conservation and Water Harvesting works; ○ Drought proofing works (including afforestation and tree plantation) 	<ul style="list-style-type: none"> • The list of permissible works within the scheme gives a whole range of works which already have the idea of Disaster Risk Reduction. Most of the work planned can be done to mitigate the risk of the community. Also, the department of rural development is the nodal body for the implementation of the scheme at the ground body if the idea of

		<ul style="list-style-type: none"> ○ Irrigation canals including micro and minor irrigation works; ○ Provision of irrigation facility, horticulture plantation and land development facilities on land owned by the households belonging to the Scheduled Caste and Scheduled Tribes or to below poverty line families or to beneficiaries of land reforms or to the beneficiaries under the Indira Awas Yojana of the Government of India; ○ Renovation of traditional water bodies including desilting of tanks; ○ Land developments works; ○ Flood control and protection works including drainage in water logged areas; ○ Rural connectivity to provide all-weather access; and ○ Any other work which may be notified by the Government of India in consultation with the State Government. 	<p>disaster risk reduction is propagated by the department than it has the capacity to reach the community in the best ways.</p>
2	Integrated Watershed Management Program (IWMP)	<ul style="list-style-type: none"> ● Under this programme total, 163 new watershed projects have been sanctioned by GOI with a total cost of Rs 1259.958 Crore for the development of the 839972-hectare rain-fed area in all the districts of the state. ● These projects are being funded on 90:10 basis between Central & State Governments respectively. ● Drought Prone Area Programme- This programme is basically an area development programme and aims at the integrated development of natural resources like land, water, vegetation etc. by taking up watershed development projects. ● Desert Development Programme (DDP): Under DDP 420 Micro watersheds has been taken up for the development in the district of Lahual & Spiti and Pooh Block of district Kinnaur. The Govt. of India has sanctioned 38 new micro watershed 	<ul style="list-style-type: none"> ● If we introspect the watershed management programme, it already is risk sensitized. The program works to improve the condition of the places where drought exists. ● The scheme could also include risk assessment of certain areas which are more prone to disaster and then the implementation of the schemes can be done at those places.

		<p>projects under this programme during the current financial year.</p> <ul style="list-style-type: none"> • Integrated Wastelands Development Programme: It is being implemented in all the districts of the state except Bilaspur, Una and Lahaul & Spiti. 	
3	Pradhan Mantri Gram Awas Yojana	<ul style="list-style-type: none"> • The scheme helps in providing financial assistance to the rural poor living Below the Poverty Line (BPL) for construction of a house. And the funds are shared in the ratio of 75:25 between Centre and State Government. 	<ul style="list-style-type: none"> • If the construction of houses is done keeping in mind the risk which arises in the State of Himachal, then this housing scheme can help the community in a better way. The construction of these houses should be hazard resistant.
4	Rajiv Awas Yojana (RAY)	<ul style="list-style-type: none"> • This scheme is being implemented on the analogy of IAY. But here, 100% funds are sanctioned by the State Government. 	<ul style="list-style-type: none"> • If the construction of houses is done keeping in mind the risk which arises in the State of Himachal, then this housing scheme can help the community in a better way. The construction of these houses should be hazard resistant.
5	Swachbharat mission	<ul style="list-style-type: none"> • The scheme targets to work for community sanitary complex, individual household toilets and solid and liquid waste management. 	<ul style="list-style-type: none"> • The idea of cleanliness if seen through a lens of DRR will be very helpful in a post-disaster situation because a lot many epidemics arise in such situation because of improper management of waste and unavailability of toilets.
6	Himachal Pradesh State Rural Livelihood Mission	<ul style="list-style-type: none"> • The National Rural Livelihoods Mission's aim is to reach out to all poor families, mobilize them into Self-Help-Groups and thereafter in federation at Village and Block level and to link them to sustainable livelihoods opportunities and nurture 	<ul style="list-style-type: none"> • The scheme helps in building the coping capacity of the people which will further help the community in the situation of disaster.

		<p>them till they come out of poverty and enjoy a decent quality of life.</p> <ul style="list-style-type: none"> • The State Rural livelihood mission would be covering all the BPL families initially and later on all the poor and poorest of the poor and also families which are marginally above poverty line to be selected through the process of Participatory Identification of Poor, (PIP) by organizing them into SHGs and their Federated Institutions and linking them with Banks and for repeat micro-financing. 	<ul style="list-style-type: none"> • The targeted SHG's can be used to disseminate information about disaster management to the marginalized community.
7	Matri Shakti Bima Yojana	<ul style="list-style-type: none"> • 'Matri Shakti Bima Yojana' scheme covers all women living below the poverty line within the age group of 10-75 years. • The scheme provides relief to family members / insured women in case of their death or disability arising due to any kind of accident, surgical operations like sterilization, a mishap at time of childbirth / delivery, drowning washing away in floods, landslide, insect bite & snakebite etc. • The scheme also gives benefit to a married woman in case of accidental death of her husband. 	<ul style="list-style-type: none"> • During a disaster, there are certain vulnerable sections which are affected most. This scheme target the women which are living below poverty line. The insurance will help to cope up with a disaster in a slightly better way.

5. DISASTER PREPAREDNESS

Disaster preparedness has been defined as “the state of readiness to deal with a threatening disaster situation or disaster and the effects thereof”. The Department may review their “state of readiness” and prepare a strategic action plan to deal with possible disaster situations. The department already has maintained a certain level of preparedness, for example, most of the panchayat ghar is being renovated to make them withstand a hazardous situation. At the same time, the watershed harvesting generally results in the basement of the houses / buildings decreasing the strength of the building which might have a disastrous effect.

Department of Rural development can take the following measure to make the department as well as the sector disaster ready:

Department preparedness:

- Designate one Liaison Officer in the department and the district as the Disaster Management Focal Point.
- Develop a state disaster management plan for the department.
- Encourage disaster resistant technological practices in buildings and infrastructure.
- Geotagging of all the assets can be done to assess the post-disaster losses if any.
- Formation of EOC and incident response team should be done beforehand.
- All valuable equipment's and instruments should be packed in protective coverings and stored in the room the most damage-proof.
- Secondary database management plan for important documents.
- Fire hydrants to be installed near the most important assets identified by the department.
- Evacuation plan for the building to be made.
- Awareness about the preparedness of the disaster should be given to all the employees of the department not only the nodal officer.
- Report activities in periodic meetings of the State Executive Committee.
- Analyse past experiences of the Department to know what went well and what could have been done better for risk reduction and emergency response by the department. Document it as lessons learnt annually and after every disaster
- Carrying out the mock drill at least twice a year.
- Create a mechanism for regular Inspection and maintenance of equipment and acquisition of new equipment as per your minimum inventory list for disaster risk reduction.
- In coordination with PWD conduct regular training to the engineers of the department.
- All electrical equipments should be unplugged when disaster warning is received and especially in flood-prone areas.
- To maintain an inventory of all related guidelines, procedures, action plans, district maps and contact numbers.
- Review and update preventive measures and procedures.
- Emergency numbers can be displayed on the notice board.

Sector Preparedness:

- Prepare maps showing population concentration and distribution of resources.
- Procure HRV analysis for the State and Identify most vulnerable areas.

- Identify areas likely to be affected.
- Encourage the people in earthquake-prone areas to adopt earthquake-resistant technologies.
- Create a mechanism for regular Inspection and maintenance of equipment and acquisition of new equipment as per your minimum inventory list for disaster risk reduction.
- Use of hooter or warning sign can be given while releasing water from a dam.
- A response team should be notified by the department at the district / block level.
- MP land fund, MLA land fund and local planning fund can be utilised to make the sector prepared for different hazards.

6. DISASTER RESPONSE AND RELIEF

6.1 RESPONSE PLAN

The response plan of the Department includes the design of actions based on Standard Operating Procedures and tested through mock drills and exercises that would be initiated on a trigger mechanism based upon the impending or actual occurrence of an event of a disaster. Many Departments and agencies of the State Governments will be required to perform important functions relating to relief and rehabilitation. The response plan of the Department should provide detail with the logistic, financial and administrative support necessary for discharging these functions and the manner in which these functions shall be discharged. The role and responsibilities of the Rural Development department are as follows:

Trigger Mechanism for Response:

- The nodal officer for disaster management in the department shall be responsible for coordination with EOC, ESF nodal and support agencies and other departments. Appoint additional staff to support him as required for the situation.
- Develop periodic situation report and share with EOC and SDMA.
- If EOC at district level declares it as an emergency situation and Response plan is activated, disseminate the information to all staff, key stakeholders etc.
- Call for a coordination meeting of the key officer to take stock of the situation, the impact of the disaster on department capacity, immediate actions for a response like need and damage assessments, coordination with ESF and Incident response system /EOC, coordination with community-level committees and other key stakeholders.
- Divide work among the current staff to take care of normal time work and emergency work. In particular, do not compromise preventive and preparedness actions in non-emergency areas.
- Organise initial assessment for damages and immediate, short term and long term needs as per the format enclosed and share it with EOC and other key stakeholders.
- In consultation with EOC and ESF nodal and support agencies, plan response actions as per immediate, short term and long term needs.
- Ensure information flow from the affected district and maintain regular contact with EOC (24 hours).
- Ensure availability of drinking water at times of need.
- Provide necessary infrastructure to carry out relief works.
- Ensure formation of a committee for rescue, relief and rehabilitation work and local volunteer teams.
- Ensure that adequate conditions for cleaning operations are maintained to avoid water-logging and salinity.
- Recall important functionaries from leave: communicate to the staff to man their places of duties like the ward and divisional offices and respective departments.

Response Plan for Receipt of Early Warning:

Activities required are:

- To direct the officers of all levels in the department, for high-level preparedness to ensure the safety of buildings of all govt. departments and other assets.

- To appoint one communication officer to coordinate with the emergency control room of the disaster management department.
- To direct the officers of all level in the department to provide support and regular help to the subdivision officers, district magistrate, disaster management agencies and other local administration.
- Informing the relevant offices and people about dos and don'ts in case the disaster happens.
- Support in the dissemination of Early Warning information once approved by SDMA.

Role and Responsibility of the Institutional Incident Response Team:

- Preparation of the disaster management plan.
- Evaluation of the Disaster Management Plan.
- Carrying out the mock drill twice a year.
- Updating of the plans at regular intervals (at least once a year and after any significant disaster) to ensure that the plan is workable.
- Look into the structural safety requirements of the institution for various hazards (earthquake, fire, floods, cyclone, etc.)
- During a disaster, the Quick Response Team shall coordinate with District Control Room / Emergency Operating Centers.
- To help and monitor the working of different teams engaged in relief operation during an emergency in the Institution.
- Media management to be carried out by the Quick Response Team.
- Mobilizing relief and external support in case necessary Identify separate shelter places for the victims in case necessary.
- Formation of Institutional safety teams.

Roles, Responsibilities and Coordination:

The role of Response Team is crucial and need to be performed sincerely and within the shortest possible time of occurrence of a disaster (Table 5).

Table 5: Role of Response Team

Item	Response System			
	Preparedness	Pre- Disaster	During Disaster	Post Disaster
District Control Room	<ul style="list-style-type: none"> • Setting up control room and ensure round the clock functioning • Assigning responsibilities to district Incidence Response Team members • Vehicle arrangement 	<ul style="list-style-type: none"> • Ensure Mock Drill Monitor functioning of District Control Room • Coordination with officials of Block Control Room and District Administration • Assigning duties to Non-Governmental Organizations 	Dissemination of information regarding status of the disaster and submission of report to Deputy Commissioner	Report to State Control Room

	<ul style="list-style-type: none"> • Coordination with Non-Governmental Organizations • Ensure functioning of warning and communication systems • Ensure Mock Drill 	<ul style="list-style-type: none"> • Holding District Disaster Management Committee meetings 		
Block Control Room	<ul style="list-style-type: none"> • Setting up control room and ensure round the clock functioning • Assigning responsibilities to block Response team members • Vehicle arrangement • Coordination with Non-Governmental Organizations 	<ul style="list-style-type: none"> • Ensure Mock Drill Monitor functioning of Block Control Room • Coordination with officials of District Control Room • Assigning duties to Non-Governmental Organizations • Holding Block Disaster Management Committee meetings 	Dissemination of information regarding status of the disaster and submission of report to District Control Room	Report to District Control Room
DDMC	<ul style="list-style-type: none"> • Assigning responsibilities to all concerned officials at Block/ Panchayat level 	<ul style="list-style-type: none"> • Arrangement of all important telephone numbers 	<ul style="list-style-type: none"> • Coordinate with district administration on regular interval 	<ul style="list-style-type: none"> • Report to State Control Room

6.2 EMERGENCY SUPPORT FUNCTIONS

As mentioned in the SDMP, the Department of Rural Development is the primary agency along with the urban Development department to work for Sanitation / Sewerage Disposal.

Primary agency: Urban Development and Rural Development

Secondary agency: Irrigation and Public Health

Responsibilities of Primary Agency

- Make arrangement for proposal disposal of waste in their respective areas;
- Arrange adequate material and manpower to maintain cleanliness and hygiene.

Activities for Response

- Ensure cleanliness and hygiene in their respective areas;
- To arrange for the disposal of unclaimed bodies and keeping record thereof;
- Hygiene promotion with the availability of mobile toilets;

Role of Secondary Agency

- Repair the sewer leakages immediately;
- Provide bleaching powder to the primary agencies to check maintain sanitation.

6.3 DISASTER RELIEF AND REHABILITATION

Relief measures will vary with the nature and degree of natural calamity. Information on the amount of damage done will help in deciding the extent of relief, reconstruction or rehabilitation. Following steps can be taken by the Department of Rural Development in a post-disaster situation:

- Quantify the loss and damage within the quickest possible time and finalizes planning of rural rehabilitation;
- Provide information to NGOs and other organization about the initiative and resources of the department;
- Organize reconstruction of damaged houses on self-help basis with local assets and materials received from the government;
- To prepare a status report regarding the disaster.
- To develop the media messages so as to update the status of disaster and response work.
- Take up repair / reconstruction work of infrastructure damaged by the disaster.

7. DISASTER RECOVERY AND RECONSTRUCTION

The process of recovery from small-scale disasters is usually simple. Recovery operations get completed almost simultaneously with the response, relief and rehabilitation. However, in medium and large disasters involving widespread damages to lives, livelihoods, houses and infrastructure, the process of recovery may take considerable time as the relief camps continue till houses are reconstructed. Often intermediary shelters have to be arranged before the permanent settlements are developed. Therefore, some of the Emergency Support Functions of recovery of the sector may continue for months. Departmental DM Plans should anticipate eventualities of longer duration recovery operations. The strategy adopted for this as per the emergency functions assigned to the department at the district level and nodal departments will be as below:

- 1) **Short Term Reconstruction Activities:** This should further include immediate restoration activities like the restoration of the basic infrastructure of the department assets, providing compensation to the farmers under various schemes available within the department mandate.
- 2) **Long Term Reconstruction Planning:** Once the minimum basic reconstruction is being done the department should take immediate action for long-term recovery of its own sector.

8. FINANCIAL ARRANGEMENTS

Section 40(2) of the Disaster Management Act stipulates that every department of the State Department while preparing the DM Plan, shall make provisions for financing the activities proposed therein.

Normally the funds required for risk assessment and disaster preparedness must be provided in the budgets of every concerned department. Such funds are not very sizeable and departments should be able to allocate such funds within their normal budgetary allocations. **Here the idea is to come up with a separate disaster management budget head within the budget allocation of the department.** This budget can be used to work upon the already suggested mitigation and preparedness measures, as response and relief are already being taken care of by the SDRF and NDRF.

This budget head can work with a very basic amount initially as the marginal costs involved in mainstreaming DRR in existing programme is not very sizable. Also, the funds required for risk assessments and disaster preparedness are also not very large. This budget will help in institutionalizing the entire process. And once the department starts having a separate budget for prevention and mitigation, at least some measures will start automatically. The department agreed to have an initial budget head of 10 lac which can be utilized in various activities related to Disaster management. The list of activities can include the following:

#	Activities	Budget
1	Training on Basics of Disaster Management	300000
2	Specialised training like earthquake resistant building, retrofitting etc.	300000
3	Earthquake Safety week	100000
4	Mock drills	100000
5	S&R training for IRTs	200000
	Total	1000000

I. Standard Operating Procedure (SOP)

The department will organize proper training of officers and staff so that they can help in rescue, evacuation and relief work at a different stage of the disaster. The disaster management committees at different levels will be kept ready so that they can move to disaster site/affected the area on short notice. The Standard operating procedure shall be followed during normal times, warning stage, disaster stage and post-disaster stage. Standard Operating. Procedures for the Department of Rural Development are listed below:

Action before Disaster:

- Formation of DM Cell and manning the same with senior personnel drawn from key sections of the department.
- Advising elected representatives Zila Parishad, Panchayat Samiti, Gram Panchayat level to provide support in the implementation of Disaster Management related programme and activities
- Getting them oriented in supervision and monitoring of programme implementation.
- Advising them to make use of Gram Sabha to spread awareness about the hazard and the need to get prepared and remain alert:
- Orientation of the elected representatives in galvanizing larger community participation in disaster management

Action during Disaster:

- Advise Representatives to provide support to search & rescue team, persuade people to evacuate and help in identification of victims & relief distribution.

Action after Disaster

- Advise Representatives to provide support in the resettlement of the people in a planned manner.

II. Mock Drill Reporting Format

Emergency Mock Drill Reporting Format		
Person Completing the Format/ Designation		Date
Time Alarm Sounded:	Time Drill Concluded:	Time to Evacuate
Type of Drill	Notification / Alert Method	Weather Conditions
<input type="checkbox"/> Fire / Evacuation <input type="checkbox"/> Bomb Blast <input type="checkbox"/> Shelter-in-Place <input type="checkbox"/> Earthquake <input type="checkbox"/> Medical Emergency <input type="checkbox"/> Other:	<input type="checkbox"/> Bell or Buzzer <input type="checkbox"/> Enhanced Alert System <input type="checkbox"/> Phone <input type="checkbox"/> Voice Notification <input type="checkbox"/> Siren	<input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Rain and wind <input type="checkbox"/> Hot/Cold
Participants		The situation at Start of Drill:
<input type="checkbox"/> Authorities <input type="checkbox"/> Safety Personnel <input type="checkbox"/> Employees/Staff <input type="checkbox"/> HOD <input type="checkbox"/> Fire Department <input type="checkbox"/> Emergency Medical Services <input type="checkbox"/> Police <input type="checkbox"/> Red Cross <input type="checkbox"/> Other		<input type="checkbox"/> Before Lunch Hours <input type="checkbox"/> During Lunch Hours <input type="checkbox"/> After Lunch Hours <input type="checkbox"/> Peak working Hours
Participants have previously trained on emergency procedures.		Employees previously trained on emergency procedures this year?
<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No
Incident Command System as per IRS used?		Incident Commander / Designation

<input type="checkbox"/> Yes <input type="checkbox"/> No	
Problems Encountered	
<input type="checkbox"/> Congestion in hallways <input type="checkbox"/> Alarm not heard <input type="checkbox"/> Employees unsure of what to do/doesn't <input type="checkbox"/> Staff unsure of responsibilities/response <input type="checkbox"/> Unable to lock doors <input type="checkbox"/> Windows left open <input type="checkbox"/> Doors left open <input type="checkbox"/> Lights left on <input type="checkbox"/> Personnel not accounted <input type="checkbox"/> Personnel run towards lifts <input type="checkbox"/> Lifts are shut down. <input type="checkbox"/> Difficulties with the evacuation of disabled personnel.	<input type="checkbox"/> Communication problems <input type="checkbox"/> Phone problems <input type="checkbox"/> Chaos <input type="checkbox"/> Long time to evacuate building <input type="checkbox"/> Personnel not serious about drill <input type="checkbox"/> Improper or unavailable supplies <input type="checkbox"/> Confusion <input type="checkbox"/> Doors or Exits blocked <input type="checkbox"/> Delay in Medical response <input type="checkbox"/> Delay in Fire service response <input type="checkbox"/> Delay in Security response <input type="checkbox"/> Interagency miscommunications <input type="checkbox"/> Command, Control & Coordination problems <input type="checkbox"/> Other:
Mitigation / Plans for Improvement	
<input type="checkbox"/> Additional training for emergency response teams members. <input type="checkbox"/> Additional staff training <input type="checkbox"/> Address need for additional equipment/resources <input type="checkbox"/> Improved emergency supplies	<input type="checkbox"/> Cooperative planning with responders <input type="checkbox"/> Revised emergency response procedures <input type="checkbox"/> Other:

