

## Prevention and Mitigation Measures

### 3.1 Strategy

- ◆ Policy framework on disaster management reflecting the holistic approach involving prevention, mitigation and preparedness in pre-disaster phase.
- ◆ Creation of State Mitigation Fund on the lines of National Mitigation Fund.
- ◆ Creation of awareness and mainstreaming Disaster Risk Reduction at all level
- ◆ Creating awareness for improving preparedness amongst the communities, using various media / medium, schools, other stakeholders etc.
- ◆ Appropriate amendments in the legislative and regulatory instruments along with strengthening of the enforcement mechanisms at different levels.
- ◆ Capacity building at local and regional levels for undertaking rapid-assessment surveys and investigations of the nature and extent of damage in post disaster situations
- ◆ Conducting macro/ micro-zonation surveys.
- ◆ To ensure use of disaster resistant construction techniques
- ◆ The use of disaster resistant codes and guidelines related to disaster resistant construction in all sectors of the society Bye Law and through various incentives and disincentives
- ◆ To incorporate the study of disaster engineering subjects in architecture and engineering curricula
- ◆ Psychosocial support into DRR activities, printing / development of IES materials on psychosocial support to create awareness, disaster management capacity building and trainings.
- ◆ To create a research oriented database on disasters and its impacts.
- ◆ To promote and encourage Research & Development activities.

### 3.2 Prevention and Mitigation measures

- ◆ In the face of increasing menace of hazards, mitigation would remain the key and the most effective strategy to reduce the risks of these hazards. State has to decide its own mitigation strategy according to its own risks, resources and capabilities. **Broadly such strategies would be twofold: structural and non-structural**
  - i. Structural mitigation measures generally refer to capital investment on physical constructions or other development works, which include engineering measures and construction of hazard resistant and protective structures and other protective infrastructure
  - ii. Non-structural measures refer to awareness and education, policies techno-legal systems and practices, training, capacity development etc.

### 3.3 Manmade Disaster

Manmade disasters are unpredictable and can spread across geographical boundaries. Some disasters in this class are entirely manmade while other may occur because of natural disasters, equipment failures, or workers are under trained, ill equipped, less qualified or over worked resulting into technical errors/ accidents.

Technological disasters include a broad range of incidents. Routes of exposure through water and food, airborne releases, fires and explosions, and hazardous materials or waste (e.g., chemical, biological, or radioactive) released into the environment from a fixed facility or during transport. Fires, explosions, building or bridge collapses, transportation crashes, dam or levee failures, nuclear reactor accidents, and breaks in water, gas, or sewer lines are other examples of technological disasters

### 3.4 Natural Disasters

- ◆ The State approach for disaster prevention and mitigation will be multi-hazard as it is vulnerable to all-major natural hazards such as Earthquake, Landslide/rockfall/mudslide/Flood/flashflood, Cyclone/high speed wind/thunderstorm/hailstorm/heavy snow/ fire /forest fire etc
- ◆ There are several prevention/mitigation activities which will be common for natural hazards. The same are describe below. Hazard specific measures are mentioned thereafter in the chapter.

**Table 9 : All Hazard structural & non structural measures**

S. No.	Task	Activities	Responsibility
<b>Structural Measure</b>			
1	Land use planning	1. Land use planning of the State in view of hazard, risk and vulnerability of the State	<ul style="list-style-type: none"> <li>◆ Dept. of Land Management</li> <li>◆ Dept. of Town Planning</li> <li>◆ SRSAC</li> <li>◆ Line Dept.</li> <li>◆ District Admn.</li> </ul>
		1. To ensure development schemes of the State are undertaken in view of hazard, risk, vulnerability and micro-zonation	<ul style="list-style-type: none"> <li>◆ Dept. of State Planning.</li> <li>◆ Dept. of Land management</li> <li>◆ Dept. of Town Planning</li> <li>◆ Line Dept.</li> <li>◆ District Admn.</li> </ul>

2	Mainstreaming Disaster Management in development programmes	1. Ensure that each development programme /scheme in the State should be sanctioned/undertaken only if it meets the requirement of disaster management	<ul style="list-style-type: none"> <li>◆ Dept. of State Planning</li> <li>◆ Dept. of Finance</li> <li>◆ All Dept.</li> <li>◆ SDMA and District Administration.</li> </ul>
		2. Ensure the programme/ scheme/ project is facilitated with the provision for adequate funds of disaster management	
3	Adoption of new technology	1. Application of Science and technology and engineering inputs to improve infrastructures including dams and reservoirs, building design, construction , etc.	<ul style="list-style-type: none"> <li>◆ Dept. of Science and Technology.</li> <li>◆ SRSAC</li> <li>◆ SDMA</li> <li>◆ CWC</li> <li>◆ IMD</li> <li>◆ IT &amp; E-governance</li> <li>◆ GSI</li> <li>◆ All Line Dept./Agencies.</li> <li>◆ District Admn.</li> </ul>
4	Techno-legal Regime	1. Review and revision of building by laws	<ul style="list-style-type: none"> <li>◆ Dept. of Town Planning.</li> <li>◆ Dept. of UD &amp; Housing</li> <li>◆ RD &amp; Panchayat.</li> <li>◆ ULBs&amp; PRIs.</li> <li>◆ SDMA</li> <li>◆ Line Deptt.</li> <li>◆ District Admn.</li> </ul>
		1. Review and revision of GDCR/CRZ etc.	
		2. Review and revision of town planning Act & Rules	
		3. Ensure strict implementation of Code and Rules	
		4. Monitoring of quality construction	
5	Safety Audit	1. Carrying out structural safety audit of all critical lifeline structures	<ul style="list-style-type: none"> <li>◆ SDMA</li> <li>◆ Dept. of Town Planning.</li> <li>◆ Dept. of UD &amp; Housing</li> <li>◆ All Line Dept.</li> <li>◆ District Admn.</li> </ul>
6	Capacity Building	1. Construction/Strengthening of SEOC/ DEOC.	<ul style="list-style-type: none"> <li>◆ SDMA</li> <li>◆ Dept. of DM</li> <li>◆ DDMA</li> <li>◆ District Admn</li> <li>◆ ATI/ SIRD/ Dept./Agencies</li> </ul>

Non-Structural Measures			
1.	Planning	<p>1 Prepare Multi hazard disaster management plan</p> <ul style="list-style-type: none"> <li>◆ Prepare hazard wise contingency planning</li> <li>◆ Ensure hazard wise Departmental Disaster Management Plan and SOP.</li> <li>◆ Conduct mock drills at regular intervals</li> <li>◆ Update the plan as per the requirement</li> <li>◆ Monitor similar activities at district &amp; block level</li> </ul>	<ul style="list-style-type: none"> <li>◆ SDMA/ SEC</li> <li>◆ Dept. of Home</li> <li>◆ Dept. of DM</li> <li>◆ All Dept.</li> <li>◆ ULBs/PRI</li> <li>◆ DDMA / District Admn.</li> </ul>
2	Capacity Building	<ol style="list-style-type: none"> <li>1. Develop multi-hazard IEC material for Publication &amp; Distribution</li> <li>2. Media campaign for awareness generation in general public</li> <li>3. Organize training programmes, seminars and workshops</li> <li>4. Include disaster related topics in curriculum</li> <li>5. Encourage disaster insurance</li> <li>6. Encourage favorable taxation/ incentive</li> </ol>	<ul style="list-style-type: none"> <li>◆ SDMA/SEC</li> <li>◆ Dept. of DM</li> <li>◆ All Dept.</li> <li>◆ DDMA/ District Admn.</li> </ul>
3	Community based Disaster Management	<ol style="list-style-type: none"> <li>1. Strengthening capacity of local self government entities to understand local vulnerability and risk, disaster prevention needs, preparedness and response capabilities through participatory approach</li> </ol>	<ul style="list-style-type: none"> <li>◆ SDMA</li> <li>◆ Dept. of DM</li> <li>◆ DDMA/District Admn.</li> <li>◆ PRI/ ULBs</li> </ul>

### 3.4.1 Earthquake

In most earthquakes, the collapse of structures like houses, schools, hospitals and public buildings results in the widespread loss of lives and damage. Past earthquakes show that over 95 per cent of the lives lost were due to the collapse of buildings which were not earthquake-resistant. In such situation, the losses can be reduced if all structures in earthquake-prone areas are built in accordance with earthquake-resistant construction techniques and by following the Building Bye Laws. The earthquake specific mitigation activities are described below;

**Table 10 : : Structural & Non-Structural Measures**

S. No.	Task	Activities	Responsibility
<b>Structural Measures</b>			
1	Micro- zonation	<ol style="list-style-type: none"> <li>1. To undertake micro zonation study according to priority area</li> <li>2. To provide or make available seismic micro-zonation map</li> <li>3. Provide vulnerability and risk assessment map</li> </ol>	<ul style="list-style-type: none"> <li>◆ SDMA</li> <li>◆ SRSAC</li> <li>◆ Dept of S &amp; T.</li> <li>◆ Dept. of Land Management</li> <li>◆ Dept. of Town Planning</li> <li>◆ Dept. of UD &amp; Housing</li> <li>◆ Dept. of Environment and Forests</li> <li>◆ NERIST/RGU</li> <li>◆ District Admn.</li> </ul>
2	Earthquake Resistance Design for different earthquake zones	<ol style="list-style-type: none"> <li>1. To develop earthquake resistant design features for the construction of public utility structures</li> <li>1 To develop earthquake resistant design features for the construction of residential structures</li> <li>2 To provide earthquake resistant design for incorporating in different types of structures to the line departments</li> </ol>	<ul style="list-style-type: none"> <li>◆ SDMA /SEC</li> <li>◆ Dept. of Town Planning</li> <li>◆ Dept. of UD &amp; Housing</li> <li>◆ All Line Depts.</li> <li>◆ NERIST</li> <li>◆ DDMA/District Admn.</li> </ul>
3	Retrofitting of existing structure	<ol style="list-style-type: none"> <li>1. Create a database of existing structure in the State               <ol style="list-style-type: none"> <li>A. Public</li> <li>B. Private</li> </ol> </li> <li>2. Identify the available resources</li> <li>3. Identify structures that require retrofitting</li> <li>4. Prepare a scheme/programme for retrofitting</li> <li>5. Identification and removal of unsafe buildings/structure</li> </ol>	<ul style="list-style-type: none"> <li>◆ SDMA /SEC</li> <li>◆ Dept. of Town Planning</li> <li>◆ Dept. of UD &amp; Housing</li> <li>◆ All Engg Depts.</li> <li>◆ NERIST</li> <li>◆ DDMA/District Admn</li> </ul>
4	Monitoring of seismic activities	<ol style="list-style-type: none"> <li>1. Establish seismological network and round the clock monitoring</li> <li>2. Dissemination of information and reporting</li> <li>3. Conduct seismological research</li> </ol>	<ul style="list-style-type: none"> <li>◆ SEOC/DEOC</li> <li>◆ Dept. of IPR</li> <li>◆ Dept of S &amp; T</li> <li>◆ Police Control Room</li> <li>◆ All Deptt</li> <li>◆ GSI</li> <li>◆ GB Pant Institute of Himalayan Studies</li> </ul>

Non Structural Measures			
1	Capacity Building	<ol style="list-style-type: none"> <li>1. Departmental earthquake contingency plan</li> <li>2. Ensure earthquake related departmental action plan and SOP</li> <li>3. Include earthquake engineering topics in curriculum</li> <li>4. Provide professional training about earthquake resistance construction to engineers and architects</li> <li>5. Provide training to masons.</li> <li>6. Encourage soil and material testing in laboratories</li> </ol>	<ul style="list-style-type: none"> <li>◆ SDMA/ SEC</li> <li>◆ Dept. of DM</li> <li>◆ Education &amp; Technical Dept</li> <li>◆ ATI/ SIRD</li> <li>◆ DDMA/District Admn.</li> <li>◆ SDRF/ Police</li> <li>◆ All Deptt</li> </ul>
2	Awareness	<ol style="list-style-type: none"> <li>1 To disseminate earthquake risk to general public residing in earthquake prone zones</li> <li>2 Campaign for Earthquake safety tips</li> </ol>	<ul style="list-style-type: none"> <li>◆ SDMA/ DDMA</li> <li>◆ Dept of DM</li> <li>◆ Dept of IPR</li> <li>◆ District Administration</li> <li>◆ ATI/ SIRD</li> </ul>

### 3.4.2 Flood / Flash Flood

Flood/ Flash flood being the most common natural disaster, people have, out of experience, devised many ways of coping with them. However, encroachments into the flood plains over the years have aggravated the flood problem and a need to take effective and sustained mitigation measures. Various measures, structural and non-structural, have been described below;

**Table 11 : Structural & Non-Structural Measures**

S. No.	Task	Activities	Responsibility
Structural Measures			
1	Construction	<ol style="list-style-type: none"> <li>1. Improvement of design for irrigation and flood protective structures</li> <li>2. Construction of dams, flood protection wall, flood diverting channels etc.</li> <li>3. Strengthening/repair of existing roads and bridges and other critical infrastructure in flood plains.</li> <li>4. Strengthening of dams and canals.</li> </ol>	<ul style="list-style-type: none"> <li>◆ WRD</li> <li>◆ District Administration</li> <li>◆ Hydro-power</li> <li>◆ UD &amp; Housing</li> <li>◆ Forest</li> <li>◆ All other Works Dept.</li> </ul>

2	Development of catchment area	<p>1. Development of catchment area of the flood plain</p> <ul style="list-style-type: none"> <li>◆ Forestation</li> <li>◆ Land sloping</li> <li>◆ Small reservoirs/Check dams/ponds etc.</li> </ul>	<ul style="list-style-type: none"> <li>◆ All Engineering Deptt</li> <li>◆ WRD</li> <li>◆ Dept. of Forest &amp; Environment/ SFRI</li> <li>◆ Agriculture/ Horticulture</li> <li>◆ PRIs/ ULBs</li> <li>◆ Distt Administration</li> </ul>
3	Flood Proofing	<p>1. Specific building by laws for flood plains</p>	<ul style="list-style-type: none"> <li>◆ WRD</li> <li>◆ Dept. of Town Planning.</li> <li>◆ All Line Dept.</li> </ul>
4	Techno-legal regime	<p>1. Enactment and enforcement of laws regulating developmental activities in flood plain</p>	<ul style="list-style-type: none"> <li>◆ SDMA/DDMA.</li> <li>◆ WRD</li> <li>◆ Dept. of Town Planning.</li> <li>◆ Dept. of Environment and Forests</li> <li>◆ Dept. of Rural Development</li> <li>◆ All Line Depts.</li> <li>◆ District Admn</li> </ul>
5	Forecasting and Warning	<p>1. Strengthening and Upgradation of existing Flood forecasting system</p> <p>2. Establish infrastructure for flood warning and dissemination.</p>	<ul style="list-style-type: none"> <li>◆ SDMA/DDMA</li> <li>◆ WRD</li> <li>◆ CWC</li> <li>◆ IMD</li> <li>◆ District Admn.</li> </ul>
<b>Non-Structural Measures</b>			
1	Capacity building	<p>1. Departmental flood contingency plan</p> <p>2. Flood related departmental action plan and SOP</p> <p>3. Imparting training to the stakeholders involved in flood mitigation and management.</p>	<ul style="list-style-type: none"> <li>◆ WRD</li> <li>◆ All Line Deptt</li> <li>◆ Dept. of DM</li> <li>◆ District. Admn.</li> </ul>

2	Awareness	<ol style="list-style-type: none"> <li>Disseminate flood risk to general public residing in flood prone zones</li> <li>Campaign for Flood safety tips</li> </ol>	<ul style="list-style-type: none"> <li>◆ SDMA/DDMA</li> <li>◆ WRD</li> <li>◆ IPR</li> <li>◆ CWC/IMD/ PHED</li> <li>◆ District Admn.</li> </ul>
3	Review of rules	Review of operational rules for reservoirs	<ul style="list-style-type: none"> <li>◆ SDMA/DDMA</li> <li>◆ Hydro-Power</li> <li>◆ WRD</li> <li>◆ Dept.of Environment and Forests</li> <li>◆ Dept. of Planning.</li> <li>◆ All Line Dept.</li> <li>◆ District Admn.</li> </ul>

### 3.4.3 Landslide

Landslide also known as mud flows, debris flows, earth failures, slope failures etc can be triggered by rains, floods, earthquakes and other natural causes as well as human made causes leads to massive destruction in state, need to take effective and sustained mitigation measures. Various measures, structural and non-structural, have been described below;

**Table 12 : Structural & Non-Structural Measures**

S. No.	Task	Activities	Responsibility
<b>Structural Measures</b>			
1	Hazard zonation	<ol style="list-style-type: none"> <li>To undertake micro zonation study according to priority area</li> <li>To provide or make available landslide micro-zonation map</li> <li>Provide vulnerability and risk assessment map</li> </ol>	<ul style="list-style-type: none"> <li>◆ SDMA</li> <li>◆ SRSAC</li> <li>◆ Dept of Sc &amp; T.</li> <li>◆ GSI</li> <li>◆ Dept.of UD &amp; Housing</li> <li>◆ Dept.of Town Planning</li> <li>◆ PRIs/ ULBs</li> <li>◆ District Admn.</li> </ul>



2	Geological & Geotechnical Investigation	1. To carry out detailed geological & geo-technical investigation on major landslide	<ul style="list-style-type: none"> <li>◆ SDMA/SEC</li> <li>◆ GSI</li> <li>◆ Line Depts./ agencies</li> <li>◆ DDMA/District Admn.</li> </ul>
4	Landslide risk treatment, monitoring & forecasting	<ol style="list-style-type: none"> <li>1. Landslide remedial &amp; improvement techniques</li> <li>2. Strengthening of buildings &amp; safety of critical facilities</li> <li>3. Monitoring &amp; early warning system</li> </ol>	<ul style="list-style-type: none"> <li>◆ GSI</li> <li>◆ Dept of Sc &amp; T</li> <li>◆ SRSAC</li> <li>◆ All Line Deptt/ Agencies</li> <li>◆ SEOC/ DEOC/Police</li> <li>◆ Control Room</li> <li>◆ District Admn.</li> </ul>
<b>Non Structural Measures</b>			
1	Capacity Building	<ol style="list-style-type: none"> <li>1. Departmental Landslide contingency plan</li> <li>2. Ensure landslide related departmental action plan and SOP</li> <li>3. Provide training.</li> </ol>	<ul style="list-style-type: none"> <li>◆ SDMA/SEC</li> <li>◆ GSI</li> <li>◆ All Line Dept/ agencies</li> <li>◆ ATI/ SIRD</li> <li>◆ District Admn.</li> </ul>
2	Awareness	<ol style="list-style-type: none"> <li>1. Awareness on landslide risk reduction</li> <li>2. Community awareness and preparedness on landslide</li> </ol>	<ul style="list-style-type: none"> <li>◆ SDMA/ DDMA</li> <li>◆ GSI</li> <li>◆ Resource Institutes</li> <li>◆ All Line deptt/ agencies</li> <li>◆ ATI/ SIRD</li> <li>◆ District Admn.</li> </ul>

#### 3.4.4 Urban Flooding

Urban flooding is significantly different from rural flooding as urbanization leads to developed catchments, which increases the flood peaks from 1.8 to 8 times and flood volumes by upto 6 times. Consequently, flooding occurs very quickly due to faster flow times (in a matter of minutes). Urban areas are densely populated and people living in vulnerable areas suffer due to flooding, sometimes resulting in loss of life. It is not only the event of flooding but the secondary effect of exposure to infection also has its toll in terms of human suffering, loss of livelihood and, in extreme cases, loss of life.

Urban areas are also centres of economic activities with vital infrastructure which needs to be protected 24x7. Therefore, management of urban flooding has to be accorded top priority.

Increasing trend of urban flooding is a universal phenomenon and poses a great challenge to urban planners. Problems associated with urban floods range from relatively localized incidents to major incidents, resulting in cities being inundated from hours to several days. Therefore, the impact can also be widespread, including temporary relocation of people, damage to civic amenities, deterioration of water quality and risk of epidemics.

The Department of Urban Development & Housing and Town Planning should plan & prepare and mitigate urban flooding alongwith District Administration and othe line Deptt. like PWD, PHED etc

**Table 13: Urban Flooding**

S. No.	Task	Activities	Responsibility
<b>Structural Measures</b>			
1	Urban Design	<ol style="list-style-type: none"> <li>All future roads and rail bridges in cities crossing drains to be designed such that they do not block the flows resulting in backwater effect</li> <li>All road re-leveling works or strengthening/ overlay works to be carried out by milling the existing layers of the road so that the road levels will not be allowed to increase</li> <li>Ensure protecting of Water Bodies and its restoration/ revival</li> <li>Remove encroachments and take strict action against the encroachers as per the bye-laws/ regulations</li> </ol>	<ul style="list-style-type: none"> <li>◆ SDMA</li> <li>◆ Dept. of UD &amp; Housing</li> <li>◆ Dept. of Town Planning</li> <li>◆ PRIs/ ULBs</li> <li>◆ District Admn.</li> </ul>
2	Establishment of Emergency Operation Centre	<ol style="list-style-type: none"> <li>Ensure round the clock operations of EOCs during the flood season with adequate manpower/ resources to respond urban flood</li> </ol>	<ul style="list-style-type: none"> <li>◆ SDMA/SEC</li> <li>◆ Dept. of UD &amp; Housing</li> <li>◆ PRIs/ ULBs</li> <li>◆ DDMA/District Admn.</li> </ul>
3	Hazard resistant construction, strengthening, and retro-fitting of all lifeline structures and critical infrastructure	<ol style="list-style-type: none"> <li>Collaboration with technical agencies and implementation</li> </ol>	<ul style="list-style-type: none"> <li>◆ Dept.of UD &amp; Housing</li> <li>◆ PRIs/ ULBs</li> <li>◆ All Line Deptt/ Agencies Room</li> <li>◆ District Admn.</li> <li>◆ Dept. of Town Planning</li> </ul>

Non Structural Measures			
1	Preparation of comprehensive Urban Storm Drainage Desing Manual (USDDM)	1. Take initiatives and collaborate with central agencies	<ul style="list-style-type: none"> <li>◆ SDMA/SEC</li> <li>◆ Dept. of UD &amp; Housing</li> <li>◆ PRIs/ ULBs</li> <li>◆ Dept. of Town Planning</li> </ul>
2	Preparation of Storm Water Drainage System Inventory	1. Coordinate with MoUD in preparing the inventory through ULBs	<ul style="list-style-type: none"> <li>◆ SDMA/ DDMA</li> <li>◆ Dept. of UD &amp; Housing</li> <li>◆ PRIs/ ULBs</li> <li>◆ Dept. of Town Planning</li> <li>◆ District Admn.</li> </ul>
3	Operation and Maintenance of Drainage Systems	1. Adequate budget to be provided to take care of the men, material, equipment and machinery for operation and maintenance of drainage systems on a periodic basis	<ul style="list-style-type: none"> <li>◆ Deptt. of Finance/ Planning</li> <li>◆ Dept. of UD &amp; Housing</li> <li>◆ PRIs/ ULBs</li> <li>◆ Dept. of Town Planning</li> </ul>
4	Environment Impact Assessment	1. To ensure strict compliance with the guidelines	<ul style="list-style-type: none"> <li>◆ Dept. of UD &amp; Housing</li> <li>◆ PRIs/ ULBs</li> <li>◆ Dept. of Town Planning</li> </ul>
5	Compliance of Techno-Legal Regime	1. To ensure strict compliance of Techno-Legal Regime through ULBs	<ul style="list-style-type: none"> <li>◆ Dept. of UD &amp; Housing</li> <li>◆ PRIs/ ULBs</li> <li>◆ Dept. of Town Planning</li> </ul>
6	Constitution of Urban Flooding Cell for Integrated UFDM	1. Nodal Department to constitute Urban Flooding Cell at State level and a DM Cell to be constituted at ULB level for managing urban flooding at local level	<ul style="list-style-type: none"> <li>◆ Dept. of UD &amp; Housing</li> <li>◆ PRIs/ ULBs</li> <li>◆ Dept. of Town Planning</li> </ul>
7	Public Private Partnerships	1. Promote Public Private Partnership in disaster management facilities	<ul style="list-style-type: none"> <li>◆ Dept. of UD &amp; Housing</li> <li>◆ PRIs/ ULBs</li> <li>◆ Dept. of Town Planning</li> </ul>

### 3.5 Training Needs Analysis

- ◆ Training Analysis is most often used as part of the system development process. Due to the close tie between the design of the system and the training required, in most cases it runs alongside the development to capture the training requirements.
- ◆ The training need analysis is done considering variable factors of intensity, affected population and severity of damage need to be quickly assessed based on which government and non-government agencies can allocate and deploy relief. The training requirements would be based on emergency response functions. Each Emergency Response Function [ERF] consists of sub functions. The ERFs are:
  - Coordination and Command
  - Source and Impact Control
  - Population Care
  - Medical Care
  - Maintaining law and order
- ◆ Capacity development of stakeholders shall be built across all mission streams and across all stakeholders. It involves development of a cadre of individuals across SDMA and State Departments, DDMA and agencies working/supporting the District Administration and the Local Authority (including the PRIs, Urban Local Bodies).
- ◆ Standardization of training is important and for this there is a need to develop target oriented curriculum, conduct Training of Trainers (ToT), evaluation and certification (for select groups say, Certification of masons in disaster resistant construction practices, Certification of Volunteers in Search & Rescue/First-Aid). Reporting of training across the State should be made available through the form of annual report.
- ◆ Following key areas have been identified (for design and development of modules, implement training):
  - ◆ Earthquake resistant design for engineers and architects
  - ◆ Seismic strengthening and Retrofitting of buildings and infrastructure
  - ◆ Construction technology training for construction workers (masons, bar benders among others)
  - ◆ Assessment of seismic safety of buildings and infrastructure
  - ◆ Damage and Needs Assessment
  - ◆ Search and Rescue & First Aid
  - ◆ Flood Rescue
  - ◆ Mass Casualty Management
  - ◆ Trauma Management
  - ◆ Hospital preparedness and Mass Casualty Management
  - ◆ Collapsed Structure Search and Rescue and Medical First Response

- ◆ Public Health in Emergencies (Safe drinking water and sanitation, Alternate water resources identification during emergency conditions, Supply management)
- ◆ Procurement procedures for goods and services in emergency situations
- ◆ Shelter and Camp Management
- ◆ Climate Change and cross cutting themes
- ◆ Gender issues in Disaster Management
- ◆ Role of PRIs and ULBs in DM (mainstreaming efforts in development planning)
- ◆ Preparation of DM Plan (Sector, Department, Administration, Unit Level - School, Hospital, Business establishment etc)
- ◆ Community Based Disaster Preparedness
- ◆ Role of Volunteers in Disaster Management

All the government line departments who have a stake in different phases of the disaster management will have to identify their roles and carry out training need analysis of their personnel. The list of the Government Depts. is as under;

**Table 14 : Training Needs Analysis**

Task	Activity	Responsibility
Training Need Analysis	Identification of roles and responsibilities of the department in disaster management	<ul style="list-style-type: none"> <li>◆ SDMA/SEC</li> <li>◆ DDMA</li> </ul>
	Identification of stakeholders to carry out department's roles and responsibilities	<ul style="list-style-type: none"> <li>◆ Dept. of DM</li> <li>◆ All line Dept.</li> </ul>
	To carry out training need analysis	<ul style="list-style-type: none"> <li>◆ General Administration</li> </ul>
	Development of training design as per the training need analysis	<ul style="list-style-type: none"> <li>◆ NGOs &amp; other organizations.</li> <li>◆ Public &amp; Private sector.</li> </ul>
	Arrangement for resources	<ul style="list-style-type: none"> <li>◆ ATI/SIRD/ PTC/ BHQ, Chimpu</li> </ul>
	Imparting training	<ul style="list-style-type: none"> <li>◆ District Admn.</li> </ul>

### **3.6 Incident Response System(IRS)**

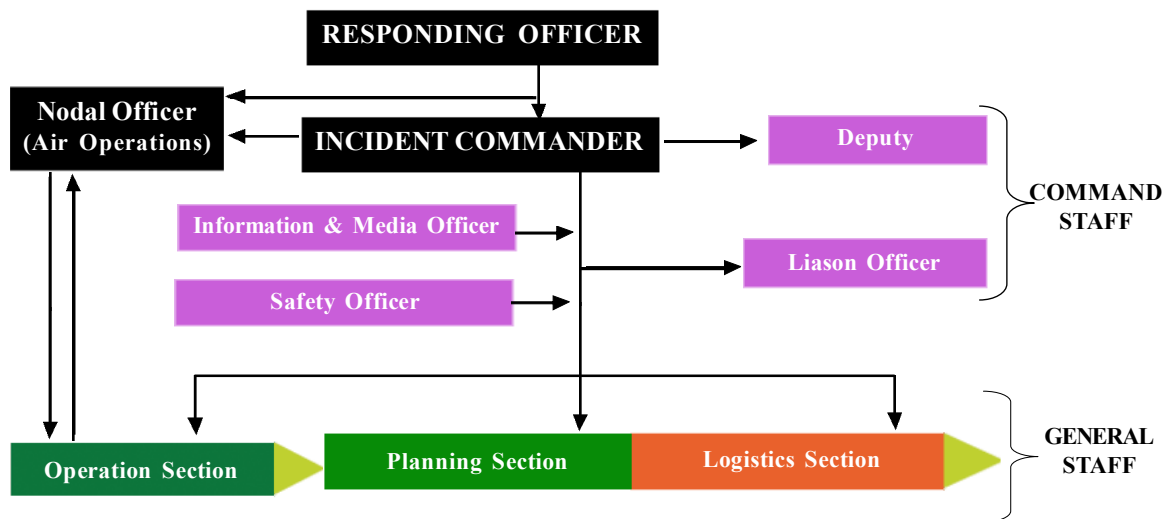
The Incident Response System (IRS) is an effective mechanism for reducing the scope for ad-hoc measures in response. It incorporates all the tasks that may be performed during DM irrespective of their level of complexity. It envisages a composite team with various Sections to attend to all the possible response requirements. The IRS identifies and designates officers to perform various duties and get them trained in their respective roles. If IRS is put in place and stakeholders trained and made aware of their roles, it will greatly help in reducing chaos and confusion during the response phase. Everyone will know what needs to be done, who will do it and who is in command, etc.

IRS is a flexible system and all the Sections, Branches and Units need not be activated at the same time. Various Sections, Branches and Units need to be activated only as and when they are required.

### 3.6.1 IRS Organisation

The IRS organisation functions through Incident Response Teams (IRTs) in the field. In line with our administrative structure and DM Act 2005, Responsible Officers (ROs) have been designated at the State and District level as overall in charge of the incident response management. The RO may however delegate responsibilities to the Incident Commander (IC), who in turn will manage the incident through IRTs. The IRTs will be pre-designated at all levels; State, District, Sub-Division and Tehsil/Block. On receipt of Early Warning, the RO will activate them. In case a disaster occurs without any warning, the local IRT will respond and contact RO for further support, if required. A Nodal Officer (NO) has to be designated for proper coordination between the District, State and National level in activating air support for response.

Apart from the RO and Nodal Officer (NO), the IRS has two main components; a) Command Staff and b) General Staff. The structure is shown in Figure below :



### 3.6.2 Command Staff

The Command Staff consists of Incident Commander (IC), Information & Media Officer (IMO), Safety Officer (SO) and Liaison Officer (LO). They report directly to the IC and may have assistants. The Command Staff may or may not have supporting organizations under them. The main function of the Command Staff is to assist the IC in the discharge of his functions.

### **3.6.3 General Staff**

The General Staff has three components which are as follows;

#### **3.6.3.1 Operations Section (OS)**

The OS is responsible for directing the required tactical actions to meet incident objectives. Management of disaster may not immediately require activation of Branch, Division and Group. Expansion of the OS depends on the enormity of the situation and number of different types and kinds of functional Groups required in the response management.

#### **3.6.3.2 Planning Section (PS)**

The PS is responsible for collection, evaluation and display of incident information, maintaining and tracking resources, preparing the Incident Action Plan (IAP) and other necessary incident related documentation. They will assess the requirement of additional resources, propose from where it can be mobilized and keep IC informed. This Section also prepares the demobilization plan.

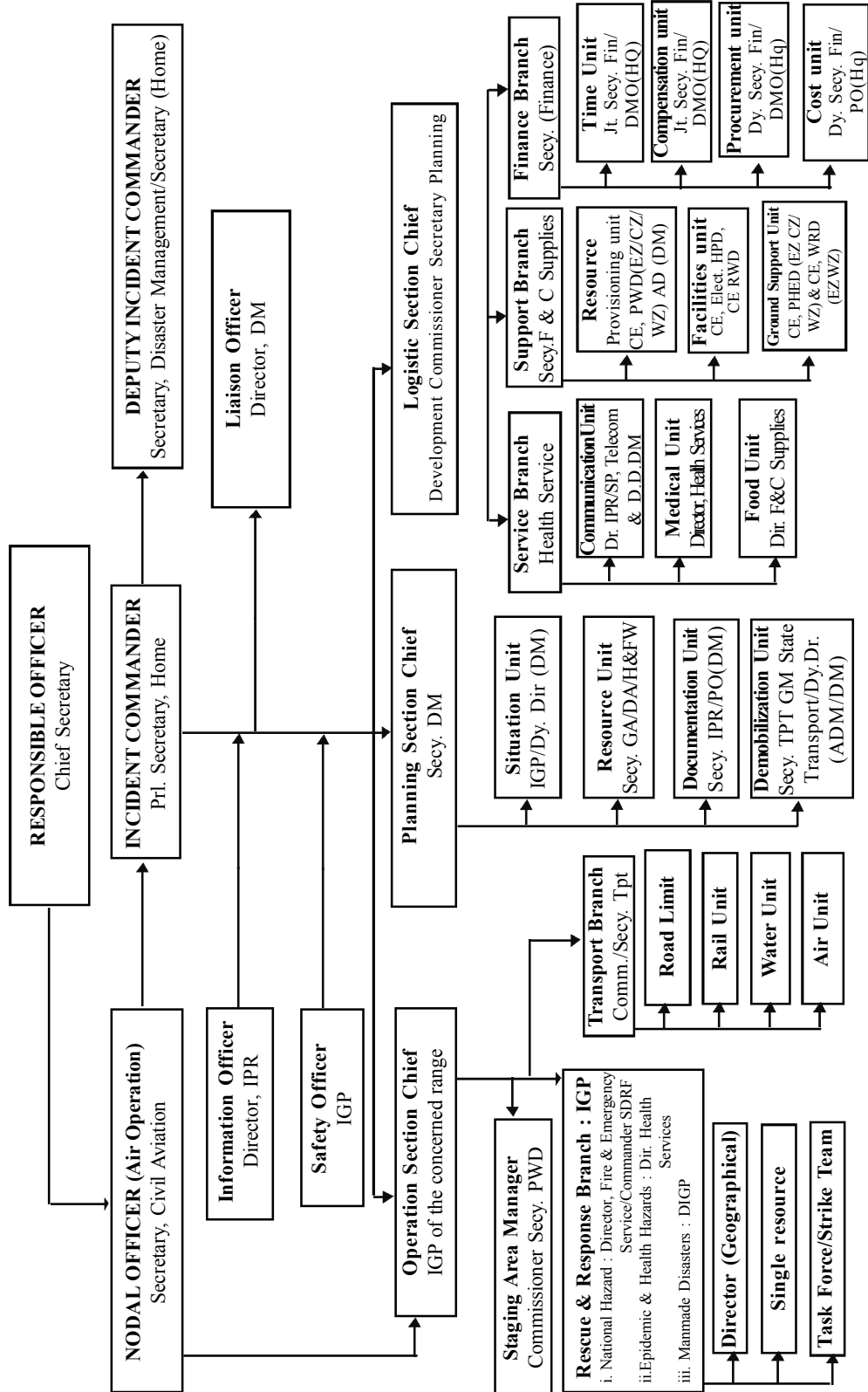
#### **3.6.3.3 Logistics Section (LS)**

The LS is responsible for providing facilities, services, materials, equipment and other resources in support of the incident response. The Section Chief participates in development and implementation of the IAP, activates and supervises Branches and Units of his section. In order to ensure prompt and smooth procurement and supply of resources as per financial rules, the Finance Branch has been included in the LS.

The Government of Arunachal Pradesh has notified Incident Response Teams at State level and District Level dated 5th Sept, 2014

3.6.3.3.i. Incident Response Team State

**INCIDENT RESPONSE TEAM-STATE LEVEL: ARUNACHAL PRADESH**





## State level Notification

GOVERNMENT OF ARUNACHAL PRADESH  
DEPTT. OF DISASTER MANAGEMENT  
ITANAGAR

### NOTIFICATION

NO. SEOC/DRR&DM-18/2009-10

Dated 5<sup>th</sup> Sept. 2014

The Governor of Arunachal Pradesh is pleased to notify incident Response System Team for the State of Arunachal Pradesh at the State Level to respond to any major disaster in the State. The implementation/response under incident Response System will be taken at the State Level by the incident Response Team notified as follows :-

1. Responsible Officer : Chief Secretary, Govt. of A.P.
2. Incident Commander : Prl. Secretary, Home
3. Deputy Incident Commander : Secretary Disaster Management/Secretary(Home)
4. Nodal Officer (Air Operation) : Secretary, Civil Aviation
5. Safety Officer : IGP
6. Liaison Officer : Director, DM
7. Information & Media Officer : Director, IPR
8. Operation Section Chief : IGP of the concerned range
  - a) Staging Area Manager : Commissioner / Secretary, PWD
  - b) Rescue & Response Branch : Inspector General of Police
    - i. National Disaster : Director Fire & Emergency Services/Commandant SDRF
    - ii. Epidemic & Health Hazard : Director, Health Services
    - iii. Manmade Disasters : DIGP
  - c) Transport Branch (Road) :
    - Rail, Water & Air Unit) : Commissioner/Secretary, Transport
9. Planning Section Chief : Secretary, Disaster Management
  - a) Situation Unit : IGP/DD (DM)
  - b) Resource Unit : Secretary, GA/DA/Health & Family Welfare
  - c) Documentation Unit : Secretary, IPR/Project Officer(DM)
  - d) Demobilization Unit : Secretary, TPT/GM State Transport/DD (Adm), Disaster Management
10. Logistic Section Chief : Development Commissioner/Secretary Planning
  - a) Service Branch : Secretary, Health Services & Family Welfare
    - i. Communication Unit : Director, IPR/SP, Telecom & DD, DM
    - ii. Medical Unit : Director, Health Services
    - iii. Food Unit : Director, Food & Civil Supplies
  - b) Support Branch : Secretary, Food & Civil Supplies
    - i. Resource Provisioning Unit : CE, PWD(EZ/CZ/WZ)/AD(DM)
    - ii. Facilities Unit : CE, Elect/HPD/CE RWD
    - iii. Ground Support Unit : CE, PHED(EZ/CZ/WZ) & CE, WRD
  - c) Finance Branch : Secretary, Finance
    - i. Time Unit : Joint Secretary, Finance/Disaster Management Officer(Hq)
    - ii. Compensation Unit : Joint Secretary, Finance/Disaster Management Officer(Hq)
    - iii. Procurement Unit : Dy. Secretary, Finance/Disaster Management Officer(Hq)
    - iv. Cost Unit : Dy. Secretary, Finance/Project Office (DM)

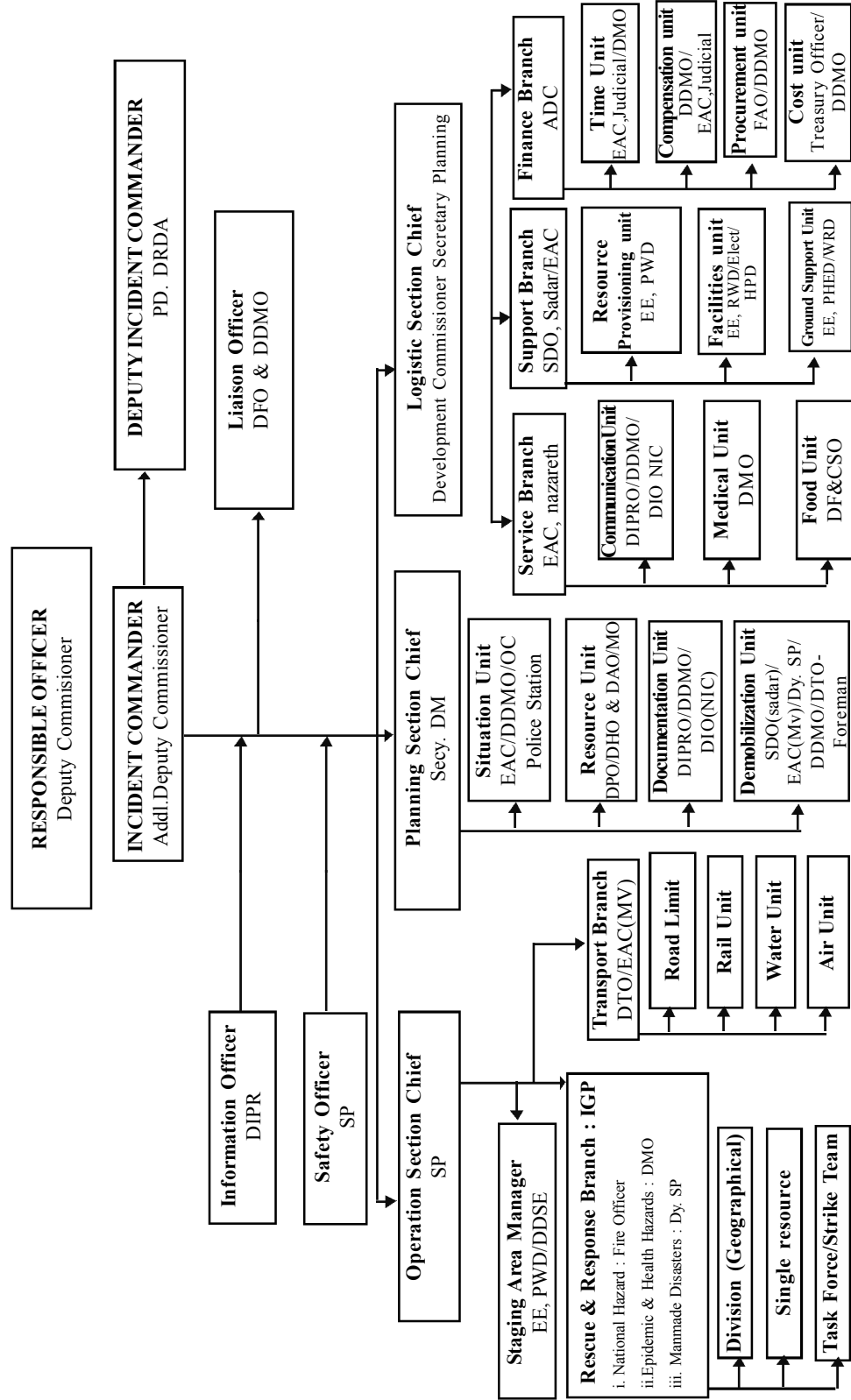
The State Level Incident Response Team (IRT) will be activated by the Responsible Officer in the event of any major disaster.

This will come into force with effect from the date of publication of this notification.

  
Chief Secretary  
Government of Arunachal Pradesh  
Itanagar

3.6.3.3. ii. Incident Response Team District Level

INCIDENT RESPONSE TEAM-DISTRICT LEVEL



## District level Notification

GOVERNMENT OF ARUNACHAL PRADESH  
DEPTT: OF DISATER MANAGEMENT  
ITANAGAR

### NOTIFICATION

N0.SEOC/DRR&DM-18/2009-10.

Dated 5<sup>th</sup> Sept, 2014

The Governor of Arunachal Pradesh is pleased to notify Incident Response System Team at the District level for all the districts in the state to respond to any major disaster in the District. The implementation/ response under Incident Response System will be taken at the District level by the Incident Response Team notified as follows:-

- |                                 |  |
|---------------------------------|--|
| 1. Responsible Officers:        | Deputy Commissioner  |
| 2. Incident Commander:          | Addl. Deputy Commissioner                                    |
| 3. Deputy Incident Commander:   | PD, DRDA   |
| 4. Safety Officers:             | Supdt. Of Police   |
| 5. Liaison Officer:             | DFO & District Disaster Management Officer                   |
| 6. Information & Media officer: | DIPRO  |
| 7. Operation Section Chief:     | Supdt. Of Police   |
| a) Staging Area Manager:        | EE, PWD/DDSE   |
| b) Rescue & Response Branch:    |  |
| i. Natural Disaster:            | Fire Officer   |
| ii. Epidemic & Health Hazard:   | District Medical Officer                                     |
| iii. Manmade Disasters:         | Dy. Supdt. Of Police   |
| c) Transport Branch (Road):     |  |
| Rail. Water & Air Unit):        | District Transport Officer/ EAC (Mv)                         |
| 8. Planning section Chief:      | Addl. Deputy Commissioner                                    |
| a) Situation Unit:              | EAC/ District Disaster Management Officer/OC Police station. |
| b) Resource Unit:               | District Planning Officer/DHO & DAO/MO                       |
| c) Documentation Unit:          | DIPRO/ DDMO/DIO(NIC)   |
| d) Demobilization Unit:         | SDO (sadar)/ EAC(MV)/ Dy.Supdt. Of Police/DDMO/DTO-Foreman   |
| 9. Logistic Section Chief:      | Addl. Deputy Commissioner (Nazareth)                         |
| a) Service Branch:              | EAC, Nazareth  |
| i. Communication Unit:          | DIPRO/DDMO/DIO NIC   |
| ii. Medical Unit:               | DMO  |
| iii. Food unit:                 | DF&CSO   |
| b) Support Branch:              | SDO, Sadar/EAC   |
| i. Resource Provisioning Unit:  | EE, PWD  |
| ii. Facilities Unit:            | EE, RWD/Elect/HPD  |
| iii. Ground Support Unit:       | EE, PHED/WRD   |
| c) Finance Branch:              | ADC  |
| i. Time Unit:                   | EAC, Judicial/DDMO   |
| ii. Compensation Unit:          | DDMO/ EAC Judicial   |
| iii. Procurement Unit:          | Finance & Accounts Officer/DDMO                              |
| iv. Cost Unit:                  | Treasury Officer/DDMO  |

The District Level Incident Response Team (IRT) will be activated by the Responsible Officer in the event of any major disaster.

This will come into force with effect from the date of publication of this notification.

  
Chief Secretary  
Government of Arunachal Pradesh  
Itanagar

### **3.7 Psychosocial Support and Mental Health Services (PSSMHS)**

Disasters causes devastating effect on the human life, usually leaving a trail of human agony including short and long term psychosocial trauma on the survivors. Generally in any response the physical effects of survivors get immediate attention and psychosocial needs often given less importance if not intervened may lead to dysfunction and disability. Timely psycho-social support will prevent development of long term psychosocial problems and hasten the recovery of survivors. Overall goal of psychosocial support intervention would be to enhance the coping and resiliency of the community towards improving overall well being. Psychosocial Support and Mental Health Services (PSSMHS) is one of the important cross cutting areas of DM intervention. The plan for PSSMHS shall be a component of overall planning for disaster management with an aim of providing Psychosocial Support and Mental Health Services integrated with preparedness, response, mitigation, relief and rehabilitation. The Ministry of Health and Family Welfare (MoH&FW) is the Nodal Ministry. The overall plan for the PSSMHS will be developed by the Nodal Ministry; other Line Ministries may prepare their plans based on the nodal ministries plans.

#### **3.7.1 Preparedness Plan for Psychosocial Support and Mental Health Services (PSSMHS)**

##### **A) Short term Plan:**

##### **Preparedness**

##### **Capacity development**

- i) Sensitising and training (Basic and advance) on PSSMHS across identified departments, sectors and levels.
- ii) Strengthening of the national, regional and nodal capacity building institutions and resource centres at district and state level.
- iii) Developing PSSMHS needs assessment indicators and templates.
- iv) Strengthening of District Counselling Centres under Dept of Social welfare/ Women and Child Development (WCD).
- v) Map vulnerable groups and accord priority in preparedness activities.
- vi) Strengthening the resource base and data management/documentation in PSSMHS.

##### **Education & Training**

- i) Inclusion of Disaster PSSMHS in Post-Graduate Curriculum of Psychiatry, Psychology, Social Work, Disaster Management, Emergency Medicine and Health Education.
- ii) Inclusion of PSSMHS in Under Graduate medical studies.
- iii) Integrating with all training programmes in the area of Psychology, Social Work, Mental Health, Emergency Medical Response, Hospital Administration, Nursing and Paramedics.
- iv) Involve and train local community volunteers in basic psychosocial support.
- v) Mobilize trained psychosocial response teams national and state level.
- vi) Map vulnerable groups and accord priority in preparedness activities

### **Community Based Disaster Management**

- i) Inclusion in the CBDM Plan and training of Panchat Raj (PRI) team members.
- ii) Developing awareness materials for the community.
- iii) Evolve a mechanism for community outreach education programmes on PSSMHS

### **Networking, Awareness other Measures**

- i) Enhance the network of institutions working in the field of mental health, give focus for creating PPP to augment the community resources.
- ii) Take measures to increase public awareness about psychosocial care in disasters.
- iii) Integrating with all training programmes in the area of Psychology, Social Work, Mental Health, Emergency Medical Response, Hospital Administration, Nursing and Paramedics.
- iv) Involve and train local community volunteers in basic psychosocial support.
- v) Mobilize trained psychosocial response teams national and state level.
- vi) Map vulnerable groups and accord priority in preparedness activities

### **B) Midterm Plan:**

- i) Creation of core group of master trainers at district level
- ii) Strengthening public-private partnership in research & development
- iii) Formation of National PSSMHS resource Inventory under national Health Resource Inventory Initiation of distance learning courses for sensitization across various categories of disaster management stakeholders.
- iv) Development and standardization of uniform training packages for different designated target groups.
- v) Initiation of distance learning courses for sensitization across different categories of disaster management stakeholders.
- vi) Incorporation of PSSMHS trainings in DMHP, district health and hospital plans

### **C) Long term Plan:**

- i) Intensive Post Graduate / Post Graduate Diploma courses in PSSMHS.
- ii) Streamlining of institutions and their activities