

# **National Policy on Disaster Management(NPDM)**

## **1. Preamble**

### **The Context**

**1.1.1** Disasters disrupt progress and destroy the hard-earned fruits of painstaking developmental efforts, often pushing nations, in quest for progress, back by several decades. Thus, efficient management of disasters, rather than mere response to their occurrence has, in recent times, received increased attention both within India and abroad. This is as much a result of the recognition of the increasing frequency and intensity of disasters as it is an acknowledgement that good governance, in a caring and civilised society, needs to deal effectively with the devastating impact of disasters.

### **Disaster Risks in India**

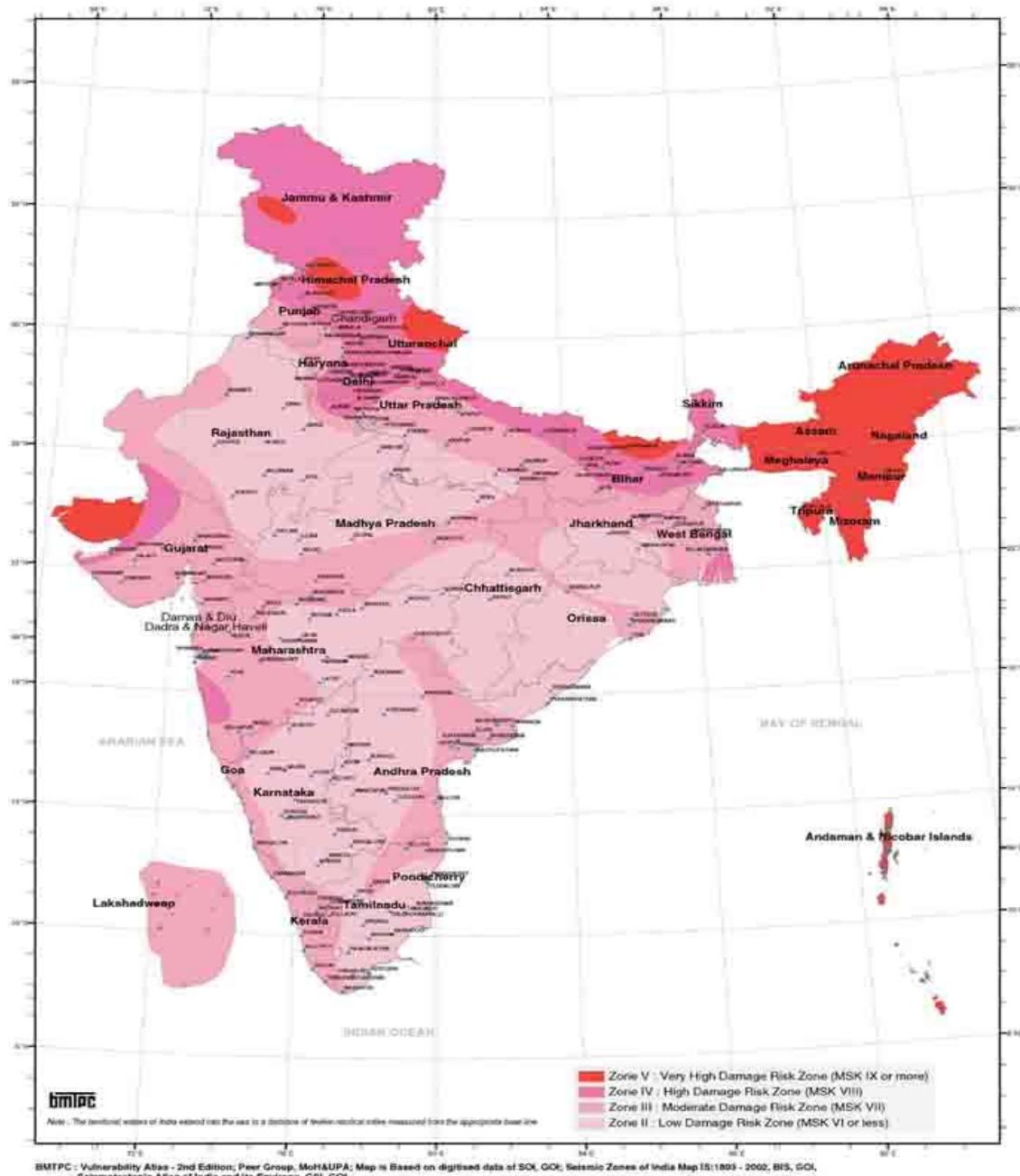
**1.2.1** India is vulnerable, in varying degrees, to a large number of natural as well as man-made disasters. 58.6 per cent of the landmass is prone to earthquakes of moderate to very high intensity; over 40 million hectares (12 per cent of land) is prone to floods and river erosion; of the 7,516 km long coastline, close to 5,700 km is prone to cyclones and tsunamis; 68 per cent of the cultivable area is vulnerable to drought and hilly areas are at risk from landslides and avalanches. Vulnerability to disasters/ emergencies of Chemical, Biological, Radiological and Nuclear (CBRN) origin also exists. Heightened vulnerabilities to disaster risks can be related to expanding population, urbanization and industrialization, development within high-risk zones, environmental degradation and climate change (Maps 1-4).

**1.2.2** In the context of human vulnerability to disasters, the economically and socially weaker segments of the population are the ones that are most seriously affected. Within the vulnerable groups, elderly persons, women, children - especially women rendered destitute and children orphaned on account of disasters and the differently abled persons are exposed to higher risks.

## **Paradigm shift in Disaster Management (DM)**

**1.3.1** On 23 December, 2005, the Government of India (GoI) took a defining step by enacting the Disaster Management Act, 2005, (hereinafter referred to as the Act) which envisaged the creation of the National Disaster Management Authority (NDMA), headed by the Prime Minister, State Disaster Management Authorities (SDMAs) headed by the Chief Ministers, and District Disaster Management Authorities (DDMAs) headed by the Collector or District Magistrate or Deputy Commissioner as the case may be, to spearhead and adopt a holistic and integrated approach to DM. There will be a paradigm shift, from the erstwhile relief-centric response to a proactive prevention, mitigation and preparedness-driven approach for conserving developmental gains and also to minimise losses of life, livelihoods and property.

## MAP 1 EARTHQUAKE ZONES IN INDIA

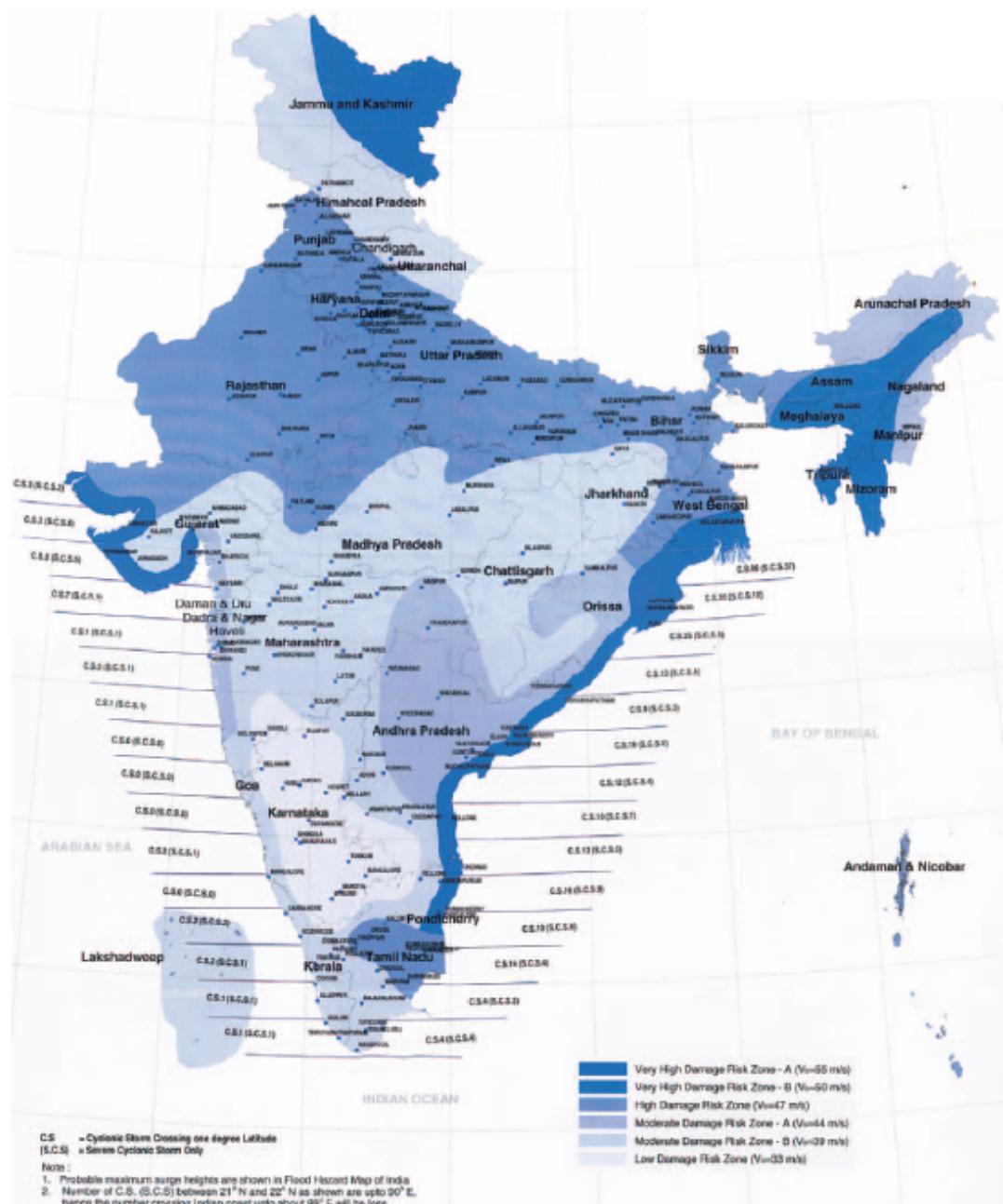


## Map 2 **FLOOD ZONES IN INDIA**



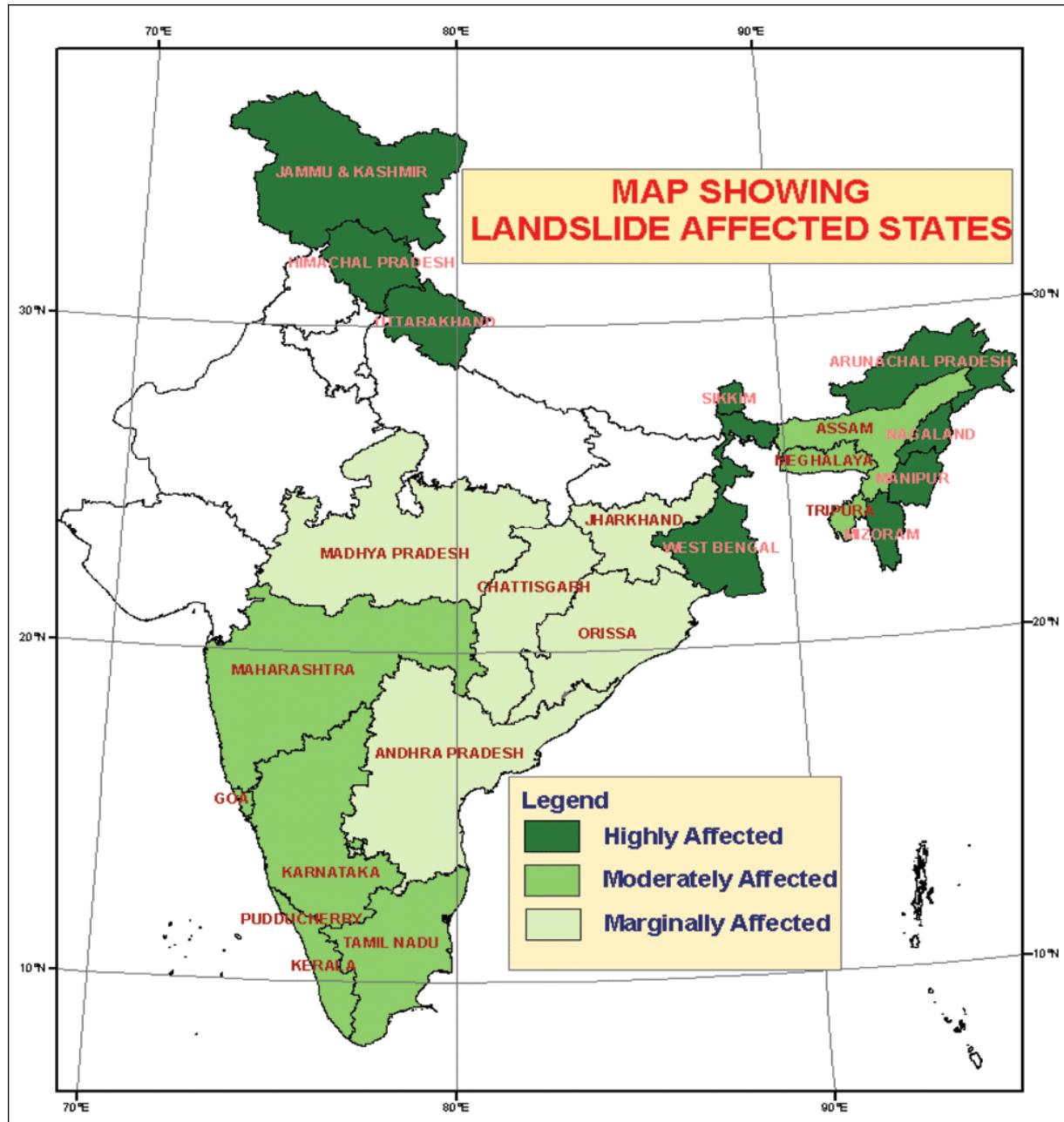
Source: BMTPC Vulnerability Atlas

**Map 3**  
**WIND AND CYCLONE ZONES IN INDIA**



Source: BMTPC Vulnerability Atlas

**MAP 4**



## 2.Approach and Objectives

### Vision

2.1.1 To build a safe and disaster resilient India by developing a holistic, proactive, multi-disaster oriented and technology driven strategy through a culture of prevention, mitigation, preparedness and response.

### Disaster Management

**2.2.1** A disaster<sup>1</sup> refers to a catastrophe, mishap, calamity or grave occurrence from natural or man-made causes, which is beyond the coping capacity of the affected community. DM involves a continuous and integrated process of planning, organising, coordinating and implementing measures which are necessary or expedient for:

Prevention of danger or threat of any disaster.

Mitigation or reduction of risk of any disaster or its severity or consequences.

Capacity building including research and knowledge management.

Preparedness to deal with any disaster.

Prompt response to any threatening disaster situation or disaster.

Assessing the severity or magnitude of effects of any disaster.

Evacuation, rescue and relief.

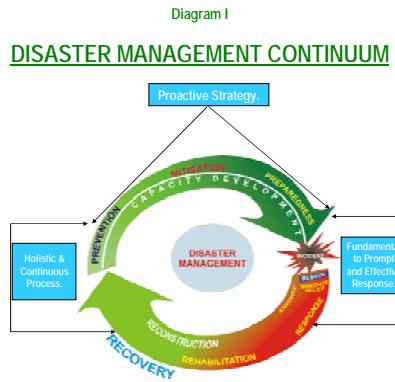
Rehabilitation and reconstruction.

**2.2.2** A typical DM continuum comprises six elements; the pre-disaster phase includes prevention, mitigation and preparedness, while the post-disaster phase includes response, rehabilitation, reconstruction and recovery.

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<sup>1</sup> Source: Sections 2(d) and (e) of DM Act, 2005.

A legal and institutional framework binds all these elements together (Diagram I).



## Approach

**2.3.1** A **holistic** and **integrated** approach will be evolved toward disaster management with emphasis on building strategic partnerships at various levels. The themes underpinning the policy are:

- Community based DM, including last mile integration of the policy, plans and execution.
- Capacity development in all spheres.
- Consolidation of past initiatives and best practices.
- Cooperation with agencies at national and international levels.
- Multi-sectoral synergy.

## Objectives

**2.4.1** The objectives of the national policy on disaster management are:

Promoting a culture of prevention, preparedness and resilience at all levels through knowledge, innovation and education.

Encouraging mitigation measures based on technology, traditional wisdom and environmental sustainability.

Mainstreaming disaster management into the developmental planning process.

Establishing institutional and techno-legal frameworks to create an enabling regulatory environment and a compliance regime.

Ensuring efficient mechanism for identification, assessment and monitoring of disaster risks.

Developing contemporary forecasting and early warning systems backed by responsive and failsafe communication with information technology support.

Promoting a productive partnership with the media to create awareness and contributing towards capacity development.

Ensuring efficient response and relief with a caring approach towards the needs of the vulnerable sections of the society.

Undertaking reconstruction as an opportunity to build disaster resilient structures and habitat for ensuring safer living.

Promoting productive and proactive partnership with media in disaster management.

### **3. Institutional and Legal Arrangements**

#### **Disaster Management Act, 2005**

**3.1.1** The Act lays down institutional, legal, financial and coordination mechanisms at the national, state, district and local levels. These institutions are not parallel structures and will work in close harmony. The new institutional framework is expected to usher in a paradigm shift in DM from relief-centric approach to a proactive regime that lays greater emphasis on preparedness, prevention and mitigation.

#### **Institutional Framework under the DM Act**

##### **National Disaster Management Authority (NDMA)**

**3.2.1** The NDMA, as the apex body for disaster management, is headed by the Prime Minister and has the responsibility for laying down policies, plans and guidelines for DM (and coordinating their enforcement and implementation for ensuring timely and effective response to disasters). The guidelines will assist the Central Ministries, Departments and States to formulate their respective DM plans. It will approve the National Disaster Management and DM plans of the Central Ministries/Departments. It will take such other measures as it may consider necessary, for the prevention of disasters, or mitigation, or preparedness and capacity building, for dealing with a threatening disaster situation or disaster. Central ministries/departments and State Governments will extend necessary cooperation and assistance to NDMA for carrying out its mandate. It will oversee the provision and application of funds for mitigation and preparedness measures. NDMA has the power to authorize the Departments or authorities concerned, to make emergency procurement of provisions or materials for rescue and relief in a threatening disaster situation or disaster. The general superintendence, direction and control of National Disaster Response Force (NDRF) are vested in and will be exercised by the NDMA. The National Institute of Disaster Management (NIDM) works within the framework of broad policies and guidelines laid down by NDMA.

**3.2.2.** The NDMA is mandated to deal with all types of disasters, natural or man-made. Whereas, such other emergencies including those requiring close involvement of the security forces and/or intelligence agencies such as terrorism (counter-insurgency), law and order situation, serial bomb blasts, hijacking, air accidents, Chemical, Biological, Radiological and Nuclear (CBRN) weapon systems, mine disasters, ports and harbour emergencies, forest fires, oil field fires, and oil spills will continue to be handled by the extant mechanism i.e., National Crisis Management Committee.

**3.2.3** NDMA may, however, formulate guidelines and facilitate training and preparedness activities in respect of Chemical, Biological, Radiological and Nuclear (CBRN) emergencies. Cross cutting themes like medical preparedness, psycho-social care and trauma, community based disaster preparedness, information & communication technology, training, preparedness, awareness generation etc. for natural and manmade disasters will also engage the attention of NDMA in partnership with the stakeholders concerned. Resources available with the disaster management authorities at all level, which are capable of discharging emergency support functions, will be made available to the nodal Ministries/Agencies dealing with the emergencies at times of impending disasters/disasters.

## The National Executive Committee

**3.2.4** The National Executive Committee (NEC) comprises the Union Home Secretary as the Chairperson, and the Secretaries to the GOI in the Ministries/Departments of Agriculture, Atomic Energy, Defence, Drinking Water Supply, Environment and Forests, Finance (Expenditure), Health, Power, Rural Development, Science and Technology, Space, Telecommunications, Urban Development, Water Resources and the Chief of the Integrated Defence Staff of the Chiefs of Staff Committee as members. Secretaries in the Ministry of External Affairs, Earth Sciences, Human Resource Development, Mines, Shipping, Road Transport & Highways and Secretary, NDMA will be special invitees to the meetings of the NEC.

**3.2.5** The NEC is the executive committee of the NDMA, and is mandated to assist the NDMA in the discharge of its functions and also ensure compliance of the directions issued by the Central Government. NEC is to coordinate the response in the event of any threatening disaster situation or disaster. NEC will prepare the National Plan for Disaster Management based on the National Policy on Disaster Management. NEC will monitor the implementation of guidelines issued by NDMA. It will also perform such other functions as may be prescribed by the Central Government in consultation with the NDMA.

## State Disaster Management Authority (SDMA)

**3.2.6** At the State level, the SDMA, headed by the Chief Minister, will lay down policies and plans for DM in the State. It will, inter alia approve the State Plan in accordance with the guidelines laid down by the NDMA, coordinate the implementation of the State Plan, recommend provision of funds for mitigation and preparedness measures and review the developmental plans of the different departments of the State to ensure integration of prevention, preparedness and mitigation measures.

**3.2.7** The State Government shall constitute a State Executive Committee (SEC) to assist the SDMA in the performance of its functions. The SEC will be headed by the Chief Secretary to the State Government and coordinate and monitor the implementation of the National Policy, the National Plan and the State Plan. The SEC will also provide information to the NDMA relating to different aspects of DM.

## District Disaster Management Authority (DDMA)

**3.2.8** The DDMA will be headed by the District Collector, Deputy Commissioner or District Magistrate as the case may be, with the elected representative of the local authority as the Co-Chairperson. DDMA will act as the planning, coordinating and implementing body for DM at District

level and take all necessary measures for the purposes of DM in accordance with the guidelines laid down by the NDMA and SDMA. It will, inter alia prepare the District DM plan for the district and monitor the implementation of the National Policy, the State Policy, the National Plan, the State Plan and the District Plan. DDMA will also ensure that the guidelines for prevention, mitigation, preparedness and response measures laid down by the NDMA and the SDMA are followed by all Departments of the State Government at the District level and the local authorities in the district.

## Local Authorities

**3.2.9** For the purpose of this policy, local authorities would include Panchayati Raj Institutions (PRI), Municipalities, District and Cantonment Boards and Town Planning Authorities which control and manage civic services. These bodies will ensure capacity building of their officers and employees for managing disasters, carry out relief, rehabilitation and reconstruction activities in the affected areas and will prepare DM Plans in consonance with guidelines of the NDMA, SDMAs and DDMAs. Specific institutional framework for dealing with disaster management issues in mega cities will be put in place.

## National Institute of Disaster Management (NIDM)

**3.2.10** The NIDM, in partnership with other research institutions has capacity development as one of its major responsibilities, along with training, research, documentation and development of a national level information base. It will network with other knowledge-based institutions. and function within the broad policies and guidelines laid down by the NDMA. It will organize training of trainers, DM officials and other stakeholders. The NIDM will strive to emerge as a ‘Centre of Excellence’ in the field of Disaster Management.

## National Disaster Response Force (NDRF)

**3.2.11** For the purpose of specialised response to a threatening disaster situation or disasters/emergencies both natural and man-made such as those of Chemical, Biological, Radiological and Nuclear origin, the Act has mandated the constitution of a National Disaster Response Force (NDRF). The general superintendence, direction and control of this force shall be vested in and exercised by the NDMA and the command and supervision of the Force shall vest in an officer to be appointed by the Central Government as the Director General of Civil Defence and National Disaster Response Force. Presently, the NDRF comprises eight battalions and further expansion may be considered in due course. These battalions will be positioned at different locations as may be required. NDRF units will maintain close liaison with the designated State Governments and will be available to them in the event of any serious threatening disaster situation. While the handling of natural disasters rests with all the NDRF battalions, four battalions will also be equipped and trained to respond to situations arising out of Chemical, Biological, Radiological and Nuclear emergencies. Training centres will be set up by respective para-military forces to train personnel from NDRF battalions of respective Forces and will also meet the training requirement of State/UT Disaster Response Forces. The NDRF units will also impart basic training to all the stakeholders identified by the State Governments in their respective locations. Further, a National Academy will be set up to provide training for trainers in disaster management and to meet related national and international commitments.

Experience in major disasters in the last decade has clearly established the need for pre-positioning of some essential reserves at crucial locations, including some for the high altitude areas. These reserves are intended to augment the resources at the State level. Mitigation reserves will be placed at the disposal of National Disaster Response Force for enhancing their emergency responding capabilities for assisting the State Governments during a disaster or disaster like situation.

## Existing Institutional Arrangements

### Cabinet Committee on Management of Natural Calamities (CCMNC) and the Cabinet Committee on Security (CCS)

**3.3.1** CCMNC had been constituted to oversee all aspects relating to the management of natural calamities including assessment of the situation and identification of measures and programmes considered necessary to reduce its impact, monitor and suggest long term measures for prevention of such calamities, formulate and recommend programmes for public awareness for building up society's resilience to them. The Cabinet Committee on Security (CCS) deals with issues related to defence of the country, law & order and internal security, policy matters concerning foreign affairs that have internal or external security implications and economic and political issues impinging on national security.

### High Level Committee (HLC)

**3.3.2** In the case of calamities of severe nature, Inter-Ministerial Central Teams are deputed to the affected states for assessment of damage caused by the calamity and the amount of relief assistance required. The IMG, headed by the Union Home Secretary, scrutinises the assessment made by the Central Teams and recommends the quantum of assistance to be provided to the States from the National Calamity Contingency Fund (NCCF). However, assessment of damages by IMG in respect of drought, hail-storm, and pest attack will continue to be headed by the Secretary, M/o Agriculture & Cooperation. The HLC comprising Finance Minister, as Chairman and the Home Minister, Agriculture Minister & Deputy Chairman, Planning Commission as members approves the central assistance to be provided to the affected States based on the recommendations of the IMG. The constitution and composition of HLC may vary from time to time. The Vice Chairman, NDMA will be a special invitee to the HLC.

## Central Government

**3.3.3** In accordance with the provisions of the Act, the Central Government will take all such measures, as it deems necessary or expedient, for the purpose of DM and will coordinate actions of all agencies. The Central Ministries and Departments will take into consideration the recommendations of the State Government departments while deciding upon the various pre-disaster requirements and for deciding upon the measures for prevention and mitigation of disaster. It will ensure that Central Ministries and Departments integrate measures for the prevention and mitigation of disasters into their developmental plans and projects, make appropriate allocation of funds for pre-disaster requirements and take necessary measures for preparedness and to effectively respond to any disaster situation or disaster. It will have the power to issue directions to NEC, State Governments/SDMAs, SECs or any of their officers or employees, to facilitate or assist in DM, and these bodies and officials shall be bound to comply with such directions. The Central Government will extend cooperation and assistance to State Governments as required by them or otherwise deemed appropriate by it. It will take measures for the deployment of the Armed Forces for disaster management. The Central Government will also facilitate coordination with the UN Agencies, international organisations and Governments of foreign countries in the field of disaster management. Ministry of External Affairs in coordination with MHA will facilitate external coordination/ cooperation.

## Role of Central Ministries and Departments

**3.3.4** As disaster management is a multi-disciplinary process, all Central Ministries and Departments will have a key role in the field of disaster management. The nodal Ministries and Departments of Government of India (i.e. the Ministries of Agriculture, Atomic Energy, Civil Aviation, Earth Sciences, Environment and Forests, Home Affairs, Health, Mines, Railways, Space, Water Resources etc.) will continue to address specific disasters as assigned to them.

## National Crisis Management Committee (NCMC)

**3.3.5** The NCMC, comprising high level officials of the GoI headed by the Cabinet Secretary, will continue to deal with major crises which have serious or national ramifications. It will be supported by the Crisis Management Groups (CMG) of the Central nodal Ministries and assisted by NEC as may be necessary. The Secretary, NDMA may be a member of this Committee.

## State Governments

**3.3.6** The primary responsibility for disaster management rests with the States. The institutional mechanism put in place at the Centre, State and District levels will help the States manage disasters in an effective manner.

**3.3.7** The Act mandates the State Governments inter alia to take measures for preparation of Disaster Management Plans, integration of measures for prevention of disasters or mitigation into development plans, allocation of funds, establishment of early warning systems, assist the Central Government and other agencies in various aspects of Disaster Management.

## District Administration

**3.3.8** At the district level, District Disaster Management Authorities (DDMAs), will act as the district planning, coordinating and implementing body for disaster management and will take all measures for the purposes of disaster management in the district in accordance with the guidelines laid by NDMA and SDMA.

## Management of Disasters impacting more than one State

**3.3.9** At times, the impact of disasters occurring in one State may spread over to the areas of other States. Similarly, preventive measures in respect of

certain disasters, such as floods, etc may be required to be taken in one State, as the impact of their occurrence may affect another. The administrative hierarchy of the country is organized into the national, state and district level administrations. This presents some difficulties in respect of disasters impacting more than one State. Management of such situations calls for a coordinated approach, which can respond to a range of issues quite different from those that normally present themselves – before, during and after the event. NDMA will encourage identification of such situations and promote the establishment of mechanisms on the lines of Mutual Aid Agreement for coordinated strategies for dealing with them by the states and central ministries, departments and other agencies concerned.

## **Other Important Institutional Arrangements**

### **Armed Forces**

**3.4.1** Conceptually, the Armed Forces are called upon to assist the civil administration only when the situation is beyond their coping capability. In practice, however, the armed forces form an important part of the Government's response capacity and are immediate responders in all serious disaster situations. On account of their vast potential to meet any adverse challenge, speed of operational response and the resources and capabilities at their disposal, the armed forces have historically played a major role in emergency support functions. These include communication, search and rescue operations, health and medical facilities, and transportation, especially in the immediate aftermath of a disaster. The air and heli-lift and movement of assistance to neighbouring countries primarily fall within the expertise and domain of the armed forces. The armed forces will participate in imparting training to trainers and DM managers, especially in CBRN aspects, heli-insertion, high altitude rescue, watermanship and training of paramedics. At the national level, the Chief of the Integrated Defence Staff and the Chairman Chiefs of Staff Committee has already been included in the NEC. Similarly, at the State and District levels, the local representatives of the armed forces may be included in their executive committees to ensure closer coordination and cohesion.

## **Central Para Military Forces**

**3.4.2** The Central Paramilitary forces, which are also the armed forces of the Union, play a key role at the time of immediate response to disasters. Besides contributing to the NDRF, they will develop adequate disaster management capability within their own forces and respond to disasters which may occur in the areas where they are posted. The local representatives of the CPMFs may be co-opted/invited in the executive committee at the State level.

## **State Police Forces and Fire Services**

**3.4.3** The State Police forces and the Fire Services are crucial immediate responders to disasters. The police force will be trained and the Fire Services upgraded to acquire multi-hazard rescue capability.

## **Civil Defence and Home Guards**

**3.4.4** The mandate of the Civil Defence and the Home Guards will be redefined to assign an effective role in the field of disaster management. They will be deployed for community preparedness and public awareness. A culture of voluntary reporting to duty stations in the event of any disasters will be promoted.

## **State Disaster Response Force (SDRF)**

**3.4.5** States will be encouraged to create response capabilities from within their existing resources. To start with, each state may aim at equipping and training one battalion equivalent force. They will also include women members for looking after the needs of women and children. NDRF battalions and their training institutions will assist the States/UTs in this effort. The States/UTs will also be encouraged to include DM training in

their respective Police Training Colleges and basic and in-service courses, for gazetted and non-gazetted officers.

### **Role of National Cadet Corps (NCC), National Service Scheme (NSS) and Nehru Yuva Kendra Sangathan (NYKS)**

**3.4.6** Potential of these youth based organisations will be optimised to support all community based initiatives and DM training would be included in their programmes.

### **International Cooperation**

**3.5.1** Disasters do not recognise geographical boundaries. Major disasters may often simultaneously affect several countries. It will be the national endeavour to develop close cooperation and coordination at the international level in all spheres of DM.

## 4. Financial Arrangements

### Approach

**4.1.1** In order to bring about a paradigm shift from the relief-centric approach to the one covering prevention, preparedness and mitigation, efforts would be made to mainstream prevention and mitigation measures into the developmental plans and programmes by enlisting cooperation from all stakeholders.

### DM to be inbuilt in Developmental Plans

**4.2.1** NDMA will ensure mainstreaming of disaster risk reduction in developmental agenda in all existing and new developmental programmes and projects shall incorporate disaster resilient specifications in the design and construction. The Planning Commission will give due weightage to these factors while allocating resources.

### National Disaster Response and Mitigation Funds

**4.3.1.** A National Disaster Response Fund may be constituted as mandated in the Act. The National Disaster Response Fund will be applied by the National Executive Committee (NEC) towards meeting the expenses for emergency response, relief and rehabilitation, in accordance with the guidelines laid down by the Central Government in consultation with the NDMA. The proposal of merger of National Calamity Contingency Fund (NCCF) with National Disaster Response Fund shall be as recommended by the Finance Commission from time to time.

**4.3.2.** Similarly, as mandated by the Act, the National Disaster Mitigation Fund (NDMF) may be created for projects exclusively for the purpose of mitigation. NDMF shall be applied by the NDMA and shall be as recommended by the Finance Commission from time to time.

## **Responsibilities of the Central Ministries and Departments**

**4.4.1** All Central Ministries and Departments will prepare their DM plans including the financial projections to support these plans. The necessary budgetary allocations will be made as part of the Five Year and Annual Plans.

## **State and District Level Arrangements**

**4.4.2** It shall be the responsibility of the States to constitute the Disaster Mitigation and Response Funds at the State as well as District levels. The modalities for the application of these funds will be worked out in accordance with the provisions of the Act.

## **Mitigation Projects**

**4.4.3** The guidelines on various disasters will form the basis for the formulation of plans for mitigation projects at the national, state and district level. Central Ministries and Departments as well as the State Governments will identify the Mitigation Projects for implementation. The national level mitigation projects will be duly prioritised and approved in consultation with the NDMA.

## **Techno-Financial Regime**

**4.5.1** Considering that the assistance provided by the Government for rescue, relief and rehabilitation and reconstruction needs, cannot compensate for massive losses on account of disasters, new financial tools such as catastrophic risk financing, risk insurance, catastrophe bonds, micro-finance and insurance etc will be promoted with innovative fiscal incentives to cover such losses of individuals, communities and the corporate sector. In this regard, Environmental Relief Fund under Public Liability Insurance Act, 1991, enacted for providing relief to chemical accident victims is worth mentioning. Some financial practices such as disaster risk insurance, micro-finance and micro-insurance, warranty of newly constructed houses and structures and linking safe construction with home loans will be considered for adoption.

## 5. Disaster Prevention, Mitigation and Preparedness

### Disaster Prevention and Mitigation

**5.1.1** Unlike man-made disasters, natural hazards like floods, earthquakes, and cyclones cannot be avoided. However, with mitigation measures along with proper planning of developmental work in the risk prone area, these hazards can be prevented from turning into disasters. A three-pronged approach needs to be adopted to undertake mitigation measures:

Building mitigation measures into all development projects.

Initiating of national level mitigation projects by the NDMA, in high priority areas, with the help of the Central Ministries and Departments concerned and the States.

Encouraging and assisting State level mitigation projects in accordance with the guidelines.

Indigenous knowledge on disaster and coping mechanisms adopted by various States will be given due weightage with special focus on protection of heritage structures.

### Risk Assessment and Vulnerability Mapping

**5.1.2** Hazard zonation, mapping and vulnerability analysis in a multi-hazard framework will be carried out utilising Geographic Information System (GIS) based databases such as the National Database for Emergency Management (NDEM) and National Spatial Data Infrastructure (NSDI). As a first step towards addressing disaster vulnerabilities, Central Ministries and Departments, national agencies, knowledge-based institutions and DM authorities at the State and District levels need to carry out risk and vulnerability assessment of all disaster prone areas. Hazard zonation

mapping and vulnerability analysis based on GIS and remote sensing data, needs to mandatorily include a ground check component. Hazard and Consequence Mapping on GIS platforms prepared for chemical accident prone districts.

**5.1.3** The increasing use of GIS, remote sensing and applications of Global Positioning Systems (GPS) in DM, has made it imperative to set up a mechanism for sharing thematic and spatial data through a designated electronic clearing house. The NSDI has been set up by the Survey of India, to collect, compile, analyse and prepare value-added maps for use by various agencies in the field of DM; for management of natural resources, industrial applications etc. The NSDI need to work towards interoperability of data and information sharing protocols to facilitate effective policy analysis. A two-way interoperable link will be established between NSDI and the National Disaster Emergency Communication network proposed in the Policy for easy and quick sharing. The programme designed to have spatial and non-spatial databases in a secure environment under the NDEM will derive the data sets through NSDI for addressing the information needs for disaster management.

### **Increasing Trend of Disasters in Urban Areas**

**5.1.4** Disasters in urban areas are distinct in many ways and the intensity of damage is usually very high, warranting effective DM plans. Of late, there has been an alarming increase in this types of disasters. Search and rescue efforts in the urban areas also require specialized training. Action plans for checking unplanned urbanization and ensuring safer human habitat against all forms of disasters will be recognized as priority areas. State Governments/UTs concerned should accord priority for improving urban drainage systems with special focus on non-obstruction of natural drainage system. Urban mapping of infrastructure of spatial resolution will be taken up for development of Decision Support System (DSS) for management of urban risks.

### **Critical Infrastructure**

**5.1.5** It is of utmost importance that critical infrastructure like dams, roads, bridges, flyovers, railway lines, power stations, water storage towers, irrigation canals, delta water distributor network, river and coastal

embankments, ports and other civic utilities are constantly monitored for safety standards in consonance with worldwide safety benchmarks and strengthened where deficient. The building standards for these infrastructures need to be aligned to the safety norms and concerned Departments/Authorities would ensure the requisite actions and measures to ensure this.

## Environmentally Sustainable Development

**5.1.6** Environmental considerations and developmental efforts, need to go hand in hand for ensuring sustainability. Restoration of ecological balance in the Himalayan regions and raising coastal shelter belt plantations need to be incorporated wherever necessary in DM plans. Eco Systems of forests, islands, coastal areas, rivers, agricultural urban environment and industrial environment are also to be considered for restoration of ecological balances and sustainable development. Zonal regulation must ensure the preservation of natural habitats.

## Climate Change Adaptation

**5.1.7** Climate change is impacting on our glacial reserves, water balance, agriculture, forestry, coastal ecology, bio- diversity and human and animal health. There are definite indications that climate change would increase the frequency and intensity of natural disasters like cyclone, flood and drought in the coming years. In order to meet these challenges in a sustained and effective manner, synergies in our approach and strategies for climate change adaptation and disaster risk reduction shall be encouraged and promoted.

## Preparedness

### Role of Central Ministries and Departments and States

**5.2.1** States/UTs have to accord highest priority to building up their own DM capabilities. Plans at all levels will be made in consonance with the

guidelines and provisions in the DM Act, 2005. While the national plan will be prepared by the NEC, the disaster and domain-specific plans will be made by the respective central ministries and departments. State and District plans will be prepared for their specific disaster related vulnerabilities in accordance with the guidelines issued by NDMA. New institutional mechanism may have to be built specifically in those sectors of DM where none of the existing agencies are working towards the building of required capacities.

**5.2.2** The plans prepared by Central Ministries and Departments, States and Districts will incorporate the inputs of all stakeholders for integration into the planning process. The participation of all stakeholders, communities and institutions will inculcate a culture of preparedness. A bottom-up approach needs to be adopted for better understanding and operationalisation of these plans.

**5.2.3** The subject of DM will be included as a ‘standing item’ in the agenda of the Inter State Council and Zonal Council and as a ‘reporting item’ in the National Development Council.

## Forecasting and Early Warning Systems

**5.2.4** It is most essential to establish, upgrade and modernise the forecasting and early-warning systems for all types of disasters. The nodal agencies responsible for monitoring and carrying out surveillance, for specific natural disasters, will identify technological gaps and formulate projects for their upgradation, in a time bound manner. All States should provide to India Meteorological Department the required infrastructure for upgradation/establishment of meteorological observation systems. Partnership with the World Meteorological Organisation (WMO), Pacific Tsunami Warning System and other regional and global institutions may also be considered. ICT tools need to be used for data receptions, forecasting and timely dissemination.

## Communications and Information Technology (IT) Support

**5.2.5** The basic communications and IT support requirements for disaster management correspond to the following three levels:

Decision makers and disaster managers at all levels.

Real time dissemination of advance warnings and information to the concerned authorities at various levels and threatened community. For dissemination of advance warning and information through broadcasting mediums such as television and radio shall be used significantly as it has higher geographical reach. For coastal and hilly regions, network of meteorological department may be used.

Last mile connectivity at the disaster site for control and conduct of rescue and relief operations.

**5.2.6** Communication and sharing of upto-date information using state-of-the art IT infrastructure remain at the heart of effective implementation of the disaster management strategy. Reliable, up-to-date and faster sharing of geo-spatial information acquired from the field or the affected areas is a pre-requisite for effective implementation of disaster management strategies. Efforts should be made for setting up IT infrastructures consisting of required IT processes, architecture and skills for quick up-gradation and updation of data sets from the Panchayati Raj Institutions or the Urban Local Bodies. A National Emergency Communication Network, involving the contemporary space and terrestrial-based technologies in a highly synergistic configuration and with considerable redundancy, will be developed. This Network will ensure real time dissemination of warnings and information up to the affected community and local authorities.

## Strengthening of the Emergency Operations Centres

**5.2.7** The establishment of Emergency Operations Centres at the national, state, metros and district level and equipping them with the contemporary

technologies and communication facilities and their periodic upgradation, will be accorded priority. For the last mile connectivity and control of the operations at the disaster hit areas, availability of portable platforms will be catered for. The integration of Ham radios and such other innovative facilities, into the DM communication system, will be advantageous.

## Medical Preparedness and Mass Casualty Management

**5.2.8** Medical preparedness is a crucial component for any DM Plan. The NDMA, in close coordination with the Ministry of Health and Family Welfare, states and premier medical research institutes will formulate policy guidelines to enhance our capacity in emergency medical response and mass casualty management. DM plans for hospitals will include developing and training of medical teams and paramedics, capacity building, trauma and psycho-social care, mass casualty management and triage. The surge and casualty handling capacity of all hospitals, at the time of disasters, will be worked out and recorded through a consultative process, by all the states/UTs in the pre-disaster phase. The State and District authorities will be encouraged to formulate appropriate procedures for treatment of casualties by the private hospitals during the disasters. These plans will also address post-disaster disease surveillance systems, networking with hospitals, referral institutions and accessing services and facilities such as availability of ambulances and blood banks.

**5.2.9** Creation of mobile surgical teams, mobile hospitals and heli-ambulances for evacuation of patients is a crucial component of DM efforts. The Accident Relief Medical Vans (ARMVs) of the Ministry of Railways, stabled at stations every 100 km, will be utilised for emergency medical response by the State and District authorities in consultation with the Railways. The creation of additional bio-safety laboratories of level IV will be addressed by the nodal ministry. There is a need to focus on creating adequate mortuary facilities. Proper and speedy disposal of the dead bodies and animal carcasses deserves due weightage.

## Training, Simulation and Mock Drills

**5.2.10** Efficacy of plans and Standard Operating Procedures (SOPs) is tested and refined through training, seminars and mock drills. The NDMA will assist the states/UTs in these areas and will also conduct mock drills in different parts of the country. State and district authorities will be encouraged to generate a culture of preparedness and quick response. Gradually State Governments will be encouraged to plan a series of exercises for various types of disasters in collaboration with NDMA to enhance the response level of various stakeholders.

## Partnerships for Mitigation and Preparedness

### Community Based Disaster Preparedness

**5.3.1** During any disaster, communities are always not only the first to be affected but also the first responders. Community participation ensures local ownership, addresses local needs, and promotes volunteerism and mutual help to prevent and minimise damage. Therefore, the efforts of the states/UTs, in this regard need to be encouraged.

**5.3.2** The needs of the elderly, women, children and differently abled persons require special attention. Women and youth will be encouraged to participate in decision making committees and action groups for management of disasters. As first responders to any disaster, communities will be trained in the various aspects of response such as first-aid, search and rescue, management of community shelters, psycho-social counselling, distribution of relief and accessing support from government/agencies etc. Community plans will be dovetailed into the panchayat, block and district plans.

## **Stakeholders' Participation**

**5.3.3** The participation of civil society stakeholders will be coordinated by the SDMAs and DDMAs. Civil Defence, NCC, NYKS, NSS and local NGOs will be encouraged to empower the community and generate awareness through their respective institutional mechanisms. Efforts to promote voluntary involvement will be actively encouraged.

## **Corporate Social Responsibility (CSR) and Public Private Partnership (PPP)**

5.3.4 Historically, corporate sectors have been supporting the disaster relief and rehabilitation activities. However, the involvement of corporate entities in disaster risk reduction activities is not significant. Corporate entities should redefine their business community plan to factor in hazards, risks and vulnerabilities. They should also create value in innovative social investments in the community. Public Private Partnership between the Government and private sector would also be encouraged to leverage the strengths of the latter in disaster management. The NDMA and SDMAs need to network with the corporate entities to strengthen and formalise their role in the DM process for ensuring safety of the communities.

## **Media Partnership**

**5.3.5** The media plays a critical role in information and knowledge dissemination in all phases of DM. The versatile potential of both electronic and print media needs to be fully utilised. Effective partnership with the media will be worked out in the field of community awareness, early warning and dissemination and education regarding various disasters.

## **6.Techno-Legal Regime**

### **Techno-Legal Regime**

**6.1.1** The DM Act, 2005, lays down the institutional and coordination mechanisms at the national, state, district and local level. The relevant acts, rules and regulations warranting amendments need to be identified and brought in conformity with the DM Act in a phased manner by the central and state governments and other agencies concerned.

### **Revision of Municipal Regulations**

**6.2.1** In view of the construction boom and rapid urbanisation, municipal regulations such as development control regulations, building bye-laws and structural safety features need to be revisited. These regulations will be reviewed periodically to identify safety gaps from seismic, flood, landslide and other disasters and suitable modifications will be made to align them to revised building codes of the Bureau of Indian Standards (BIS). Undesirable practices compromising safety during disasters, that tend to crop up from time to time, will need to be addressed in the regulations. The utilisation of unsuitable areas for construction, without necessary safeguards further enhances vulnerability and needs to be guarded against through appropriate compliance mechanisms. Similarly, the introduction of suitable regulations for rural areas will also be emphasised. Where required, local bodies will be provided with suitable financial incentives for the preparation of appropriate regulations. This process will involve an all inclusive exercise involving due sensitisation of governmental organisations at all levels, local authorities and the community at large to accrue maximum results thereof.

### **Land Use Planning**

**6.3.1** Central Ministries and Departments concerned in consultation with scientific institutions will carry out analysis of environmental and hazard data for formulation of alternative land use plans for different geographical and administrative areas with a holistic approach. This is more relevant to

mega cities, metros and high-density urban settlements for safer location of habitat and other critical facilities. A review of master plans and their compliance, on priority, will be essential and regarded as the paramount responsibility of the states/UTs. At macro-level, there is a need for preparation of land use planning based on the inventory database of various uses. As far as urban settlements are concerned, the future land use is to be assessed keeping in view the anticipated intensity of development.

## **Safe Construction Practices**

**6.4.1** Hazards like earthquakes and cyclones do not kill people but inadequately designed and badly constructed buildings do. Ensuring safe construction of new buildings and retrofitting of selected lifeline buildings, as given in the Earthquake Guidelines, is a critical step to be taken towards earthquake mitigation. The design and specification of houses being constructed, under the Indira Awas Yojana (IAY) and other government welfare and development schemes, will also be re-examined to ensure hazard safety. Building codes will be updated every five years as a mandatory requirement and also put in the public domain. Observance of National Building Code should be made mandatory in all the State/Municipal building bye-laws.

Training of engineers, architects, small builders, construction managers and artisans has already been started and need to be intensified at the state and district level. Safe schools and hospitals (with large capacity) and national monuments besides other critical lifeline buildings will be regarded as a national priority. Enabling provision shall be made in all the Centrally Sponsored Schemes and design the school buildings/hostels with earthquake resilient features and to equip them with appropriate fire safety measures.

## **Compliance Regime**

**6.5.1** There is a need for putting in place a sound compliance regime, with binding consequences, to ensure the effectiveness of techno-legal and techno-financial provisions. It is important to ensure that monitoring, verification and compliance arrangements are in place both at the national

and state level. It will be the responsibility of all stakeholders concerned, to implement these provisions. Adoption of best management practices like self certification, social audit, and an external compliance regime including audit by professional agencies, need to be encouraged through development and design of tools such as IT-enabled monitoring software to suit the DM systems in India, in consultation with various stakeholders and knowledge institutions for adoption after due trial and validation.

## Enforcement

**6.6.1** After having put the techno-legal and compliance system in place, the states/UTs will also ensure their enforcement by establishing an effective mechanism, under the provisions of the Act .

## 7. Response

**7.1.1** Prompt and effective response minimises loss of life and property. A caring approach for the special needs of vulnerable sections is also important. The existing and the new institutional arrangements need to ensure an integrated, synergised and proactive approach in dealing with any disaster. This is possible through contemporary forecasting and early warning systems, fail-safe communication and anticipatory deployment of the specialised response forces. A well informed and prepared community can mitigate the impact of disasters.

### Role of National Executive Committee (NEC)

**7.2.1** NEC will coordinate response in the event of any threatening disaster situation or disaster. While disaster specific guidelines will be formulated by NDMA, NEC may give directions to the concerned Ministries/Departments of the Govt. of India, the State Governments and the State Authorities regarding measures to be taken by them in response to any specific threatening disaster situation or disaster.

### Role of the Nodal and Other Central Ministries and Departments

**7.3.1** For various types of disasters, the nodal Ministry concerned will chart out detailed Response Plans which will be integrated into the National Response Plan. The NEC may coordinate response in the event of any threatening disaster situation or disaster.

### Role of State, District and Local Authorities

**7.4.1** It is the primary responsibility of the State Governments/SDMAs to monitor and assess any developing situation and keep NDMA and NEC apprised of the same. They will also be responsible to constantly evaluate

their own capabilities to handle that situation and project the anticipated requirements for the central resources well in time. Inter-State assistance and cooperation will be encouraged. The States/UTs will also be responsible to develop their own response potential progressively and complete the process at the earliest. This will comprise training and equipping of state response forces, community preparedness, training and creation of response caches at the district level. District level preparations will provide the cutting edge to all response activities. Local authorities, Panchayati Raj Institutions (PRIs) and Urban Local Bodies (ULBs) will play a significant role in the entire process, particularly in response and rescue operation, relief and rehabilitation, awareness generation and disaster preparedness, restoration of livelihood options and coordination with Non-Governmental Organisations and civil society.

## Standard Operating Procedures (SOPs)

**7.5.1** All Central Ministries, State Governments, District Authorities and other stakeholders will prepare SOPs in consonance with the National and State Plans. The SOPs will be prescribed for activities like search and rescue, medical assistance and casualty management, evacuation, restoration of essential services and communication at disaster sites, etc. The other important activities are provision of food, drinking water, sanitation, clothing and management of relief camps. Detailed SOPs will also be devised by all concerned for despatch, receipt and deployment of central resources.

## Levels of Disasters

**7.6.1** The Standard Operating Procedures (SOPs) for determining the levels of disasters and for issuing alerts to electronic messaging systems to various agencies about disasters have been formulated by Ministry of Home Affairs. These SOPs will be reviewed periodically for disaster response management in case of natural and manmade disasters.

## Incident Command System (ICS)

**7.7.1** A traditional command structure exists in the administrative hierarchy which manages disasters in India. It has been planned to strengthen and

professionalise the same by drawing upon the principles of the ICS with suitable modifications. The ICS is essentially a management system to organise various emergency functions in a standardised manner while responding to any disaster. It will provide for specialist incident management teams with an incident commander and officers trained in different aspects of incident management, such as logistics, operations, planning, safety, media management, etc. It also aims to put in place such teams in each district by imparting training in different facets of incident management to district level functionaries. The emphasis will be on the use of technologies and contemporary systems of planning and execution with connectivity to the joint operations room at all levels.

## First and other Key Responders

**7.8.1** The role and importance of community, under the leadership of the local authorities, Panchayati Raj Institutions (PRIs) and Urban Local Bodies (ULBs), being the bedrock of the process of disaster response, is well recognised. For their immediate support, there are other important first responders like the police, State Disaster Response Force (SDRFs), Fire and Medical Services. The NDRF will provide specialist response training whenever required. In serious situations, the resources of all NDRF battalions (18 teams per battalion), on an as required basis, will be concentrated in the shortest possible time in the disaster affected areas. Other important responders will be the Civil Defence, Home Guards and youth organisations such as NCC, NSS and NYKS. The deployment of the armed forces will also be organised on as required basis. Establishment/raising of NDRF should progressively reduce deployment of the Armed Forces. However, Armed Forces would be deployed only when the situation is beyond the coping capacity of State Government and NDRF.

## Medical Response

**7.9.1** Medical response has to be quick and effective. The execution of medical response plans and deployment of medical resources warrant special attention at the State and District level in most of the situations. The

voluntary deployment of the nearest medical resources to the disaster site, irrespective of the administrative boundaries, will be emphasised. Mobile medical hospitals and other resources available with the centre will also be provided to the states/UTs in a proactive manner. Post-disaster management of health, sanitation and hygiene services is crucial to prevent an outbreak of epidemics. Therefore a constant monitoring of any such possibilities will be necessary.

## Animal Care

**7.10.1** Animals both domestic as well as wild are exposed to the effects of natural and man-made disasters. It is necessary to devise appropriate measures to protect animals and find means to shelter and feed them during disasters and their aftermath, through a community effort, to the extent possible. It is pertinent to note that many communities have shown compassion to animals during disasters, and these efforts need to be formalized in the preparedness plans. The Departments/Ministries of the GoI such as Animal Husbandry and Dairy Department, Social Justice & Empowerment and the States concerned should devise such measures at all levels.

## Information and Media Partnership

**7.11.1** During disaster situations, the dissemination of accurate information through electronic and print media is very important. Regular press briefings by trained disaster management officials is essential. Training in information management and accurate reporting will be undertaken at all levels.

## **8. Relief and Rehabilitation**

### **Approach**

**8.1.1** Relief is no longer perceived only as gratuitous assistance or provision of emergency relief supplies on time. It is on the contrary, viewed as an overarching system of facilitation of assistance to the victims of disaster for their rehabilitation in States and ensuring social safety and security of the affected persons. The relief needs to be prompt, adequate and of approved standards. Guidelines defining minimum standards of relief will be prepared by the NDMA.

### **Setting up of Temporary Relief Camps**

**8.2.1** DDMAs, especially in recurring disaster prone areas, may identify locations for setting up temporary camps. Agencies to supply the necessary stores will be identified in the pre-disaster phase. The use of premises of educational institutions for setting up relief camps need to be discouraged.

**8.2.2** The temporary relief camps will have adequate provision of drinking water and bathing, sanitation and essential health-care facilities. Wherever feasible, special task forces from amongst the disaster affected families will be set up to explore the possibility of provision of food through community kitchens, provision of education through the restoration of schools and anganwadis. Efficient governance systems like entitlement cards, laminated identification cards etc., will be developed as a part of a uniform humanitarian governance practices through the respective DDMAs.

### **Management of Relief Supplies**

**8.3.1** Ensuring minimum standards of relief and speedy management of supplies are important features of relief operations. SOPs will be put in place for ensuring the procurement, packaging, transportation, storage and

distribution of relief items, which need to be carried out in an organised manner. The affected community and local authorities need to work in tandem in managing the relief camps. Guidelines will be evolved to manage the donations received in cash or kind to ensure transparency and accountability.

## Review of Standards of Relief

**8.4.1** In most States, existing standards of relief need to be reviewed to address the contemporary needs of communities affected by disasters. The SDMAs may review the Relief Codes/manuals and prepare DM Codes for prescribing the norms, standards and criteria for the provision of relief in conformity with the guidelines of NDMA.

## Temporary Livelihood Options and Socio-Economic Rehabilitation

**8.5.1** In the aftermath of any major disaster, generally a demand always arises to generate temporary livelihood options for the affected community and the State Governments should recognise this aspect in their DM planning process. Any such option must ensure that assets, infrastructure and the amenities created are hazard resistant, durable, sustainable, and cost-efficient.

## Provision of Intermediate Shelters

**8.6.1** In the case of devastating disasters, where extreme weather conditions can be life-threatening or when the period of stay in temporary shelters is likely to be long and uncertain, the construction of intermediate shelters with suitable sanitary facilities will be undertaken to ensure a reasonable quality of life to the affected people. The design of such shelters will be eco-friendly and in consonance with local culture. It would be desirable for SDMAs to plan during period of normalcy, the layout of intermediate shelters which is cost effective and as per local needs with multi-use potential.

## **9. Reconstruction and Recovery**

### **Approach**

**9.1.1** The approach to the reconstruction process has to be comprehensive so as to convert adversity into opportunity. Incorporating disaster resilient features to ‘build back better’ will be the guiding principle. This phase requires the most patient and painstaking effort by all concerned. The administration, the stakeholders and the communities need to stay focused on the needs of this phase as, with the passage of time, the sense of urgency gets diluted. The appropriate choice of technology and project impact assessment needs to be carried out to establish that the projects contemplated do not create any side effects on the physical, socio-cultural or economic environment of the communities in the affected areas or in their neighbourhood. Systems for providing psycho-social support and trauma counselling need to be developed for implementation during reconstruction and recovery phase.

### **Owner Driven Reconstruction**

**9.2.1** Reconstruction plans and designing of houses need to be a participatory process involving the government, affected community, NGOs and the corporate sector. After the planning process is over, while owner driven construction is a preferred option, contribution of the NGOs and corporate sector will be encouraged. Reconstruction programme will be within the confines and the qualitative specifications laid down by the Government.

### **Speedy Reconstruction**

**9.3.1** Essential services, social infrastructure and intermediate shelters/camps will be established in the shortest possible time. For permanent reconstruction, ideally, the work including the construction of houses must be completed within two to three years. Concerned Central

Ministries/Departments and the State Governments should create dedicated project teams to speed up the reconstruction process.

**9.3.2** Contingency plans for reconstruction in highly disaster prone areas need to be drawn out during the period of normalcy, which may include architectural and structural designs in consultation with the various stakeholders.

## Linking Recovery with Safe Development

**9.4.1** Emphasis will be laid on plugging the gaps in the social and economic infrastructure and infirmities in the backward and forward linkages. Efforts will be made to support and enhance the viability of the livelihood systems, education, health-care facilities, care of the elderly, women and children, etc. Other aspects warranting attention will be roads, housing, drinking water sources, provision for sanitary facilities, availability of credit, supply of agricultural inputs, upgradation of technologies in the on-farm and off-farm activities, storage, processing, marketing, etc.

## Livelihood Restoration

**9.5.1** State governments will have to lay emphasis on the restoration of permanent livelihood of those affected by disasters and special attention to the needs of women-headed households, artisans, farmers and people belonging to marginalised and vulnerable sections.

# 10. Capacity Development

## Approach

**10.1.1** A strategic approach to capacity development can be addressed effectively only with the active and enthusiastic participation of the stakeholders. This process comprises awareness generation, education, training, Research and Development (R&D) etc. It further addresses putting in place appropriate institutional framework, management systems and allocation of resources for efficient prevention and handling of disasters.

**10.1.2** As some of these aspects have been discussed in other chapters, this part elaborates only awareness, disaster education and training. The approach to capacity development will include:

According priority to training for developing community based DM systems for their specific needs in view of the regional diversities and multi-hazard vulnerabilities.

Conceptualisation of community based DM systems at the national level through a consultative process involving the states and other stakeholders with the state and local level authorities in charge of implementation.

Identification of knowledge-based institutions with proven performance.

Promotion of international and regional cooperation.

Adoption of traditional and global best practices and technologies.

Laying emphasis on table-top exercises, simulations, mock drills and development of skills to test the plans.

Capacity analysis of different disaster response groups at State/ District/ Local levels.

## National Priorities

**10.2.1** In the field of capacity development, priority will be given to training of DM officials, functionaries, trainers and elected representatives and communities.

**10.2.2** DM training and orientation of professionals like doctors, engineers, and architects will be given due importance. Further, expansion of DM training in educational institutions at all levels including schools, with orientation towards practical requirements will be given due weightage.

## Institutional Capacity Development

**10.3.1** The NIDM will play an important role in developing and facilitating the implementation of the national training schedule for DM. It will also be the nodal institution for regional and international cooperation for training. There are a number of renowned institutes in various states, which are imparting training in DM. These will be strengthened with financial assistance and such efforts will be replicated by States/UTs. Also, the DM cells in all administrative training institutes, police academies, states institutes of rural development, the four paramilitary training centres of the NDRF and the National Training Academy will contribute most significantly in developing DM related skills. The capacity of existing institutes needs to be upgraded in accordance with regional and local requirements.

## Training of Communities

**10.4.1** Building the capacity of communities, as they are the first responders to disasters, is a significant part of the capacity development process. It will include awareness, sensitisation, orientation and developing skills of communities and community leaders. Assistance from NDRF, Civil Defence and NGOs/ other voluntary organisations such as the Red Cross and Self-Help Groups will be encouraged. The overall responsibility to give impetus to leadership and motivation will rest with local authorities, PRIs and ULBs under the overall guidance of State and District authorities.

## Professional Technical Education

**10.5.1** The curricula of graduate and postgraduate level courses in architecture, engineering, earth sciences and medicine will be reviewed by the competent authorities to include the contemporary knowledge related to DM in their respective specialised fields. The role of NCC and Boys Scout may also be included in schools and colleges for disaster management related work. At the national level, the Ministry of Human Resource Development will encourage the development of DM as a distinct academic discipline, in the universities and institutes of technical excellence.

## DM Education in Schools

**10.6.1** The introduction of the subject of DM, by the Ministry of Human Resource Development, in the curriculum through the Central Board of Secondary Education, will be extended to all schools through their Secondary Education Boards. State Government will also ensure the inclusion of Disaster Management curriculum through State School Boards. The education content will inculcate skill based training, psychological resilience and qualities of leadership. The role of NCC and Boys Scout may also be included in schools and colleges for disaster management related work. Disaster education will aim at developing a culture of preparedness and safety, besides implementing school DM plans.

## Training of Artisans

**10.7.1** The upgradation of the skills of artisans is another crucial component of Capacity building process. The Central Ministries and Departments concerned will ensure the availability of resources for sustainable programmes to train artisans. The States will be encouraged to promote this activity vigorously. The guidance of Indian Institutes of Technology (IITs) and National Institutes of Technology (NITs) will be sought to plan these programmes. The implementation will be assisted by Industrial Training Institutes (ITIs) and other Central, Regional and State Vocational Training

Institutes. To ensure widespread participation, these programmes will be made available. Private builders, contractors and NGOs are expected to play a significant role in utilising trained artisans.

## Training of other Groups

**10.8.1** Other professional groups such as paramedics, social workers, plumbers, sanitary fitters and safety auditors also play a very important role in community based DM. These groups will also be provided training through suitable programmes.

## Licensing and Certification

**10.9.1** Testing the skills of professionals becomes important to ensure disaster resilient construction in the built environment. BIS will be requested to develop uniform codes and specifications with the help of professional bodies. The State Governments will develop a scheme to ensure that only adequately qualified professionals practise within its territory. The State Governments will also enforce their own registration benchmarks to uphold desirable standards commensurate with their risk profile.

# 11. Knowledge Management

## Approach

**11.1.1** Knowledge management will synthesise the techno-centric organisational and ecological practices to strengthen the process of informed decision making. There is a need to create a network of knowledge institutions, in the field of DM, to share their experiences and knowledge. While knowledge creation will be primarily carried out in specialised domains by nodal institutions, the NIDM and other similar institutions will play an important role in knowledge synthesis, data management and dissemination amongst its clientele groups, especially other training institutions.

## Synergetic Application of Science and Technology

**11.2.1** The Ministries of Science and Technology and Earth Sciences and the other concerned Departments of the GoI, in consultation with NDMA, will identify the specific needs and disciplines for research and also designate domain-specific institutions depending on their expertise and knowledge base.

## Knowledge Institutions

**11.3.1** The NIDM and other institutions will collaborate and bring together academic and training institutions at the national, regional and international levels. These institutions will form the knowledge repository in DM, and also strive to enhance the knowledge base.

## **Knowledge Dissemination through Information and Communication Technologies (ICT)**

### **Indigenous Technical Knowledge (ITK)**

**11.4.1** A rich legacy of technical knowledge and experience has been handed down right from ancient times by way of tried and tested practices in facing disasters in different parts of India. A concerted effort will be made to catalogue this precious heritage, validate the products through contemporary systems and disseminate the results to appropriate destinations and affected communities with a view to adding value to their DM effort.

### **India Disaster Resource Network (IDRN)**

**11.5.1** The existing framework of IDRN needs to be further expanded to include the resources of various agencies, domains and disciplines at the national level. The relevant information will be placed in the public domain for easy retrieval, usage and on-line updation.

### **India Disaster Knowledge Network (IDKN)**

**11.6.1** In acknowledgment of the need for a knowledge sharing platform on DM, and to facilitate interaction and dialogue with related areas of expertise, the India Disaster Knowledge Network Portal has been set up. The portal will serve as a tool to collect, collate and disseminate information related to DM. It will connect all Government Departments, statutory agencies, research organisations/institutions and humanitarian organisations to share collectively and individually their knowledge and technical expertise.

### **Documentation of Best Practices and Research**

**11.7.1** In the immediate aftermath of any disaster, field studies will be carried out, with the help of experts, as an institutional measure. These

studies will concentrate on identifying gaps in the existing prevention and mitigation measures and also evaluate the status of preparedness and response. Similarly, the lessons of past disasters will also be compiled and documented. The recovery and reconstruction process will also be analysed for further refining the DM processes and training needs. With the help of experts, NIDM will develop a reference book for the development of case studies and documentation of best practices in a professional manner. This knowledge will be disseminated to all concerned within the country and also shared with international organisations.

# 12. Research and Development

## Approach

**12.1.1** Hitherto, a relief-centric approach has confined the research and development effort to restricted domains. A primary concern of future effort in these areas will be the identification of broad research needs in respect of different hazards in various parts of India and intensifying demand driven research programmes. Regional and international collaboration need to be encouraged.

## Institutional Arrangements

**12.2.1** The entire DM architecture needs to be supported by a solid foundation of frontline R&D efforts, offering sound and state-of-the-art science and technology options in a user friendly manner. A proactive strategy to enhance mutual reinforcement and synergy amongst the various groups and institutions working in the field of DM will be recognised. Pooling and sharing of perspectives, information and expertise will be promoted by encouraging such efforts. The identification of trans-disciplinary concerns through a process of ‘integration’ of the talent pool groups will be facilitated and addressed by a standing mechanism at the national and state level. Close interaction with Central Ministries and Departments of Agriculture, Atomic Energy, Earth Science, Environment and Forests, Health, Industry, Science and Technology , Space and with academic institutions such as the IITs, NITs and universities, etc., will be maintained.

## Identification of Needs and Promotion of Research

**12.3.1** A core group of experts from scientific and technical institutions has already been set up by the NDMA to identify broad research needs in disaster risk reduction. They will also identify research partners/ agencies/

groups depending on their knowledge base and expertise. Emphasis will be laid on climate change and global warming with specific relevance to India.

**12.3.2** The research on cross cutting themes including on technological and man-made disasters will be promoted in addition to natural disasters. Research and Development in areas such as micro-zonation and scenario development based on simulation studies will also be encouraged to assess the short-term and long-term consequences of these disasters.

## 13. Road Ahead

**13.1.1** The enunciation of this policy represents merely the first step in the new journey. It is an instrument that hopes to build the overarching edifice within which specific actions need to be taken by various institutions and individuals at all levels. A destination has been described and, hopefully, a direction shown. The stage has been set, and the roadmaps now need to be rolled out.

**13.1.2** This document has endeavoured to capture, in its essence, the vigorously enabling environment, which the body politic has put in place through an Act of Parliament that heralds the onset of a different approach in dealing with disasters that have, in the past taken a heavy toll of lives and properties and crippled the economic base of communities. It also illustrates realisation of the fact that disasters not only cause a setback to economic and developmental growth, but also seriously affect the national security environment.

**13.1.3** The central theme is the belief that a disaster intelligent and resilient community, duly empowered by a newly created DM Structure, working in cohesion multi-sectorally, will help realise the national vision.

**13.1.4** This is also an expression of the firm conviction of the national leadership to make necessary financial allocations for Prevention, Preparedness and Mitigation rather than fruitlessly incur post-disaster expenditure year after year.

**13.1.5** This policy will have served its purpose, if those that are charged with the responsibility of carrying the task forward, find that their hands have received from it, the strength and direction that they need.

# Abbreviations

<b>ARMVs</b>	–	Accident Relief Medical Vans
<b>BIS</b>	–	Bureau of Indian Standards
<b>CBOs</b>	–	Community Based Organizations
<b>CBRN</b>	-	Chemical, Biological, Radiological and Nuclear
<b>CCMNC</b>	–	Cabinet Committee on Management of Natural Calamities
<b>CCS</b>	–	Cabinet Committee on Security
<b>CSR</b>	–	Corporate Social Responsibility
<b>CRF</b>	–	Calamity Relief Fund
<b>DDMA</b>	–	District Disaster Management Authority
<b>DM</b>	–	Disaster Management
<b>GIS</b>	–	Geographic Information System
<b>GoI</b>	–	Government of India
<b>GPS</b>	–	Global Positioning System
<b>HLC</b>	–	High Level Committee
<b>HPC</b>	–	High Powered Committee
<b>IAY</b>	–	Indira Awas Yojana
<b>ICS</b>	–	Incident Command System
<b>ICT</b>	–	Information and Communication Technology
<b>IDRN</b>	–	India Disaster Resource Network
<b>IITs</b>	–	Indian Institutes of Technology
<b>IMC</b>	–	Inter-Ministerial Committee
<b>IMG</b>	–	Inter-Ministerial Group
<b>IT</b>	–	Information Technology
<b>ITIs</b>	–	Industrial Training Institutes
<b>ITK</b>	–	Indigenous Technical Knowledge
<b>MHA</b>	–	Ministry of Home Affairs
<b>NBC</b>	–	Nuclear, Biological and Chemical
<b>NCC</b>	–	National Cadet Corps
<b>NCCF</b>	–	National Calamity Contingency Fund
<b>NCMC</b>	–	National Crisis Management Committee
<b>NDEM</b>	–	National Database for Emergency Management
<b>NDMA</b>	–	National Disaster Management Authority
<b>NDMRCs</b>	–	National Disaster Mitigation Resource Centres

<b>NDRF</b>	-	National Disaster Response Force
<b>NEC</b>	-	National Executive Committee
<b>NGOs</b>	-	Non Governmental Organizations
<b>NIDM</b>	-	National Institute of Disaster Management
<b>NITs</b>	-	National Institutes of Technology
<b>NSDI</b>	-	National Spatial Data Infrastructure
<b>NSS</b>	-	National Service Scheme
<b>NYKS</b>	-	Nehru Yuva Kendra Sangathan
<b>PPP</b>	-	Public Private Partnership
<b>PRIs</b>	-	Panchayati Raj Institutions
<b>R &amp; D</b>	-	Research and Development
<b>SAARC</b>	-	South Asian Association for Regional Co-operation
<b>SDMA</b>	-	State Disaster Management Authority
<b>SDRF</b>	-	State Disaster Response Force
<b>SEC</b>	-	State Executive Committee
<b>SOPs</b>	-	Standard Operating Procedures
<b>ULBs</b>	-	Urban Local Bodies
<b>UN</b>	-	United Nations
<b>UTs</b>	-	Union Territories