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DISASTER MANAGEMENT IN INDIA

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DISASTER MANAGEMENT IN INDIA

1) Overview

India has been traditionally vulnerable to natural disasters on account of its unique geo-climatic conditions. Floods, droughts, cyclones, earthquakes and landslides have been recurrent phenomena. About 60% of the landmass is prone to earthquakes of various intensities; over 40 million hectares is prone to floods; about 8% of the total area is prone to cyclones and 68% of the area is susceptible to drought. Along with China, Indonesia and Bangladesh in 2009, India occupied the fourth position in ranking of regular occurrence of natural disasters. Since 1900 to 2011, India has faced 590 natural disasters. In 2009, 1806 people were killed, 9.0 million people were affected by 15 natural disasters that occurred in India. Economic losses due to disasters in the year 2009 in India were estimated to be 2.7 billion USD (Social Work Chronicle, 2012). According to Disaster Mitigation Institute (DMI), India suffers considerably due to disasters, as about two per cent of its gross domestic product (GDP) is lost due to natural disaster. Of the 35 States and Union Territories in India, 27 are disaster prone areas (Govt of India, Natural Disasters in India, 1900 to 2011). The unique geo-climatic conditions have made India highly vulnerable to natural disasters. Floods, droughts, cyclones, earthquakes and landslides have been recurrent hazardous phenomena in India. Rajasthan is the most drought prone state of India. Cyclones are other hazards in India that generally strike the East Coast. However, some of the Arabian Sea Cyclones strike the west coast of India, mainly the Gujarat and North Maharashtra coast. Out of the storms that develop in the Bay of Bengal, more than half approach or cross the east coast in October and November. The Himalayan and sub-Himalayan
regions, Kutch and the Andaman and Nicobar Islands are particularly earthquake hazard prone (Gupta, K, 2009).

Apart from natural disasters, human made disasters like conflicts, communal riots and refugee situations, road accidents and other disasters like fire, epidemics, industrial and transport disasters leave a long trail of mortality and morbidity (Dutt B, 2007). Nevertheless, more recently urban India is facing major crisis with the increasing incidences of manmade disasters. Horrifying events like blasts that shattered Delhi, the capital city in 2005 leading to 62 casualties, series of bomb blasts in local trains in Mumbai in 2006 killing 209 lives and the terrorist attacks in 2008 have caused an economic loss of nearly Rs 40,000 millions (Social Work Chronicle, 2012).

2) Natural Disasters in India (1900-2011) Statistical Analysis

The occurrence of natural disasters increased after 2002, as out of 590 disasters 27% (159) disasters struck post 2002 (The International Disaster Database (EMDAT, 2010, India)). Climate change, increasing urbanization, including growing concentrations of people in unplanned and unsafe urban settlements and exposed coastal areas, poverty, HIV prevalence, and inadequate attention to changing risk patterns, are placing more and more people in disaster-prone locations. In addition to this absence of disaster preparedness is seen as a major reason for larger number and greater impact of natural disasters.
Table 1: Disaster Statistic

<table>
<thead>
<tr>
<th>Disasters</th>
<th>Number of Events</th>
<th>Number of people killed</th>
<th>Total Affected</th>
<th>Damage in (000 US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drought</td>
<td>14</td>
<td>42, 50, 320</td>
<td>106,18,41,000</td>
<td>24,41,122</td>
</tr>
<tr>
<td>Earthquake (seismic activity)</td>
<td>26</td>
<td>78,094</td>
<td>2,79,19,695</td>
<td>51,02,700</td>
</tr>
<tr>
<td>Epidemic</td>
<td>68</td>
<td>45,43,874</td>
<td>4,21,473</td>
<td>NA</td>
</tr>
<tr>
<td>Extreme temperature</td>
<td>47</td>
<td>13.801</td>
<td>250</td>
<td>5,44,000</td>
</tr>
<tr>
<td>Insect infestation</td>
<td>235</td>
<td>60,188</td>
<td>79,86,54,220</td>
<td>3,41,45,188</td>
</tr>
<tr>
<td>Mass movement dry</td>
<td>1</td>
<td>45</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Mass Movement wet</td>
<td>42</td>
<td>4762</td>
<td>38,39,116</td>
<td>54,500</td>
</tr>
<tr>
<td>Storm</td>
<td>154</td>
<td>1,64,179</td>
<td>9,32,94,512</td>
<td>1,10,51,900</td>
</tr>
<tr>
<td>Wildfire</td>
<td>2</td>
<td>6</td>
<td>0</td>
<td>2000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>590</strong></td>
<td><strong>91,15,269</strong></td>
<td><strong>198,59,70,266</strong></td>
<td><strong>5,33,41,410</strong></td>
</tr>
</tbody>
</table>

Table 1: Source: EM-DAT: The OFDA/CRED International Disaster Database, 2011

**Situation in Maharashtra**

According to Vulnerability Atlas of India, in Maharashtra, 14 districts and 7 cities have been identified as disaster prone. The State is prone to various natural disasters such as drought, floods, cyclones, earthquake and accidents. While low rainfall areas of the state are under the constant risk of droughts, high rainfall zones of eastern and western Maharashtra are prone to flash floods and landslides. Many areas of the State have faced droughts for consecutive years, which damaged agriculture and caused water shortage in more than 20,000 villages. Floods, though, are not a regular phenomenon, took 180 lives in 1996 and, more recently, in July 2005, about
900 people died in the Konkan Region due heavy rainfall of about 37 inches.

Mumbai is India’s most populous conurbation and the third most populous agglomeration in the world (UNFPA, 2006). The population has increased from 11.9 million (Census 2001) to 18.84 million in 2006 (UNFPA). Though Mumbai contributes the largest share of GDP (6.16%) 31, more than half of its inhabitants (54.5%) live in slums (Singh, D.P., 2009). Certain regions in Mumbai are identified for high fire risk due to old timber framed buildings and also because establishment of oil refineries in the area. Chembur-Trombay belt of almost 10 kms has concentration of hazardous industries which is highly prone to industrial accidents (33Relief and Rehabilitation, Government of Maharashtra, 2007). Hence, geographic conditions, industrial growth, increasing population density and squatter settlements have increased Mumbai’s vulnerability to disasters. Fire and industrial accidents, floods, chemical (transport and handling), biological, and nuclear hazards, earthquake, cyclones, landslides, bomb blasts, terrorism, riots and tidal surge have been identified as major hazards in Mumbai (Social Work Chronicle, 2012).

The United Nations Intergovernmental Panel on Climate Change (IPCC) recently announced Mumbai being at the risk zone for disasters. According to Shaw (2009), the overall climate-disaster resilience is relatively low for Mumbai City. Gaps in the early warning system and evacuation, internal road network, solid waste disposal and water supply will have tremendous effects on the city’s resilience to disasters. Being the commercial capital of the country, Mumbai faces major challenges of manmade disasters. The city has witnessed a couple of terrorist attacks since 1993, which have led to serious social and economic disruptions in addition to loss of life and
property. It can be surmised from the above discussion that disasters undermine development achievements, impoverishing people and nations. Destruction of social and economic assets, loss of production capacity, livelihood, damage to transport, communications, erosion of physical as well as social capital, limit the development process. Recurrent occurrence of disasters in underdeveloped countries forces diversion of development funds and investment to handle the emergencies. In the absence of concerned efforts to address root causes, disasters represent an increasingly serious obstacle to the achievement of the Millennium Development Goals (MDGs). For instance, displacement of population further interrupts schooling which can be seen as direct impact of disasters. Reduction in household assets could also lead to less affordability to avail educational facilities. This creates hindrance in attaining MDG of achieving universal primary education (Social Work Chronicle, 2012).

In the decade 1990-2000, an average of about 4344 people lost their lives and about 30 million people were affected by disasters every year. The loss in terms of private, community and public assets has been astronomical (Ministry of Home Affairs, Government of India, 2004) In contrast, between 1988 and 1997, disasters killed 5,116 people and affected 24.79 million every year. In 1988, 11.2% of total land area was flood prone, but in 1998 floods inundated 37% geographical area (Reports, GOI, 2004).

The Indian subcontinent is highly prone to natural disasters. Floods, droughts, cyclones and earthquakes are a recurrent phenomenon in India. Susceptibility to disasters is compounded by frequent occurrences of manmade disasters such as fire and epidemics. Frequent disasters lead to erosion of development gains and restricted options for the disaster victims. Physical safety—especially that of the vulnerable groups—is routinely
threatened by hazards. The super cyclone in Orissa in October, 1999 and the Bhuj earthquake in Gujarat in January, 2001 underscored the need to adopt a multi-dimensional endeavour involving diverse scientific, engineering, financial and social processes; the need to adopt multi-disciplinary and multi-sectoral approach and incorporation of risk reduction in the developmental plans and strategies. These two major disasters have very clearly illustrated that we need multi-hazard prevention, response and recovery plans for natural hazards so that threat to human life and property is minimized (Reports, GOI, 2004).

The natural and man-made disasters and crises create hardships for the poor, who are chronically vulnerable in terms of their access to resources, entitlements and livelihood support. In fact, the lives of people in the hazard-prone regions, particularly the poor, are almost completely insecure (Dreze & Sen, 1988). Irrespective of the type of disaster, it is mostly the poor who are the worst sufferers. According to a study (Sudhir, 2001) conducted in the 2001 earthquake-affected areas in Gujarat, most of the victims of the quake were the poor, comprising the landless households, rural artisans, and SC and ST people. Therefore, the poor should be the focal target group for disaster management. Effective disaster management requires a multi-sectoral, multi-disciplinary, and holistic approach, encompassing pre-disaster preparedness initiatives, disaster response, and post-disaster rehabilitation, all with active participation of local people living in hazard-prone regions (Singh & Ballabh, 2004).

It is an irony that in many parts of India, we have droughts and in many others, we have floods occurring almost concurrently every year. Yet, this kind of risk is not even recognized in India’s policies and plans, not to speak of the absence of any national policy for disaster management. It is a
sad commentary that despite several programmes launched by the Government of India (GOI) from time to time for minimizing their adverse impacts, natural disasters such as droughts, floods, and cyclones continue to haunt almost every year affecting millions of people living in disaster-prone areas of India and unfortunately, there is no national policy on disaster management. Irrespective of the type of disaster, it is mostly the poor who are the worst sufferers (Reports, Government of India, 2004). Disaster risk management is essentially a developmental problem and thus any preparedness and mitigation planning will have to be taken up in tandem with environmental concerns that the country is facing today.

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 civilized society, needs to deal effectively with the devastating impact of disasters (NPDM, 2005).

The Government of India has set up a National Committee on Disaster Management (NCDM) under the Chairmanship of the Prime Minister. The recommendations of this National Committee would form the basis of national disaster risk management programme and strengthening the natural disaster management and response mechanisms. The High Powered Committee [HPC] on Disaster Management was earlier constituted in August 1999. The mandate of the HPC was to prepare Disaster Management Plans at National, State and District level and also suggest strengthening of existing arrangements. The recommendations of the HPC
relating to the distribution of relief and human resource development that primarily concerns the States have been communicated to the States for appropriate action (*Reports, GOI, 2004*).

The Ministry of Home Affairs in the National Government is the new nodal ministry for disaster management. In addition, disaster management is deemed to be a ‘state subject’ and different states have initiated efforts to strengthen their agencies responsible for disaster management. Orissa State Disaster Mitigation Authority (OSDMA) ³ and Gujarat State Disaster Management Authority (GSDMA) ⁴ were constituted after two major disasters that the respective states experienced. At present, the majority of states and union territories have set up their own disaster management authority to manage and monitor disasters in their respective regions. The programmes formulated by the disaster management authority essentially aims at strengthening community, local self-governments and district administrations’ response, preparedness and mitigation measures in some of the most vulnerable districts (*Vulnerability Atlas, Govt of India, 2007*) along with states’ and national response. The key element of this programme is establishing linkages between the Government and civil society response plans and capacity building of government institutions and the local self-governments in disaster mitigation, preparedness and recovery (*Vulnerability Atlas, Govt of India, 2007*) ⁵.

Over the past couple of years, the Government of India has brought about a paradigm shift in the approach to disaster management. The new approach proceeds from the conviction that development cannot be sustainable unless disaster mitigation is built into the development process. Another cornerstone of the approach is that mitigation has to be multi-disciplinary spanning across all sectors of development. The new policy also emanates
from the belief that investments in mitigation are much more cost effective than expenditure on relief and rehabilitation. The present disaster management program envisioned by the government of India reflects this paradigm shift. Panchayati Raj and Urban Planning Institutions at all levels in the selected districts would be directly involved in the planning process to ensure sustainability of these initiatives. A wide representation of women is envisaged in this project during the planning process. Self help groups of women in the programme areas would be directly involved in the disaster risk management programme. This project will work closely with the relevant Government departments and institutions at the national and State levels. Learning from this programme will feed into the national capacity building programmes of the Government of India, and the global knowledge base on disaster risk management (Disaster Information’s, GOI, 2007).

Disaster management occupies an important place in this country’s policy framework as it is the poor and the under-privileged who are the worst affected on account of calamities/disasters. The steps being taken by the Government emanate from the approach outlined above. The approach has been translated into a National Disaster Framework [a roadmap] covering institutional mechanisms, disaster prevention strategy, early warning system, disaster mitigation, preparedness and response and human resource development. The expected inputs, areas of intervention and agencies to be involved at the National, State and district levels have been identified and listed in the roadmap. This roadmap has been shared with all the State Governments and Union Territory Administrations. Ministries and Departments of Government of India, and the State Governments/UT Administrations have been advised to develop their respective roadmaps taking the national roadmap as a broad guideline. There is, therefore, now a
common strategy underpinning the action being taken by all the participating organizations/stakeholders (*Disaster Reports, GOI, 2007*). However, critics (*Muricken & Kumar, 2007*) of India’s disaster management plan argues that lessons are learnt at great cost in India, as the knowledge attained from previous disasters is seldom reflected in the overall policy framework or in planning.

The lessons learnt from the Orissa Super cyclone of 1999, the Latur and Gujarat earthquakes of 1993 and 2001, respectively, and other similar disasters have failed to induce a paradigm shift in our approach to disaster mitigation. Nor have we learnt lessons as to how to cope well with the disaster demands- of regulating communities for safety, protecting the vulnerable people especially in the areas exposed to disaster, empowering people’s organizations for transparency and decision- making, and the right of the affected communities to necessary information (*Reports, GOI, 2007*).

3) Paradigm Shift in Disaster Management in India

India was, until recently, reactive and only responded to disasters and provided relief from calamity. The recurrent occurrences of different types of disasters compelled Government of India to take cognizance of the objectives of International Decade for Natural Disaster Reduction (1990-2000), Yokohama Strategy for safer world (1994)⁶ and the Plan of Action for Safer World (Istanbul, 1996)⁷, and set up a High Power Committee on Disaster Management (HPC) in 1999 to recommend strategies for preparation of Disaster Management plans. The High Power Committee gave its recommendations in October 2001 including a draft of the Disaster Management Act, a National Response Plan, and establishment of National Disaster Management Authority. Following one of the HPC
recommendations, the Disaster Management function was transferred from Ministry of Agriculture to Ministry of Home Affairs.

The occurrence of tsunami in the Indian Ocean in 2004 and its consequential impact heightened the level of awareness of the Government about the importance of integrating disaster risk reduction into national development planning and the need for aligning and coordinating with UN agencies and other UN Member States to respond to the threat of disasters. Based on the recommendations of HPC, UN agencies and Hyogo Framework of Action 39, the Government of India has brought about a paradigm shift in its relief centric to responsive and preparedness approach to disaster management.

The new approach proceeds from the conviction that development cannot be sustainable unless disaster mitigation is built into the development process. The focus is now more on disaster risk assessment, preparedness and mitigation. This paradigm shift reinforces that disasters can be managed through adequate planning and preparedness for response (Guzman, 2005).

**Disaster, Risk and Crisis Management Cycle**

![Disaster, Risk and Crisis Management Cycle](source: Adapted from Wilhite (1999). FAO Corporate Document Repository)
The new approach also emanates from the belief that investments in mitigation are much more cost effective than expenditure on relief and rehabilitation. The most noteworthy step in this direction has been the passage of the National Disaster Management Act. The National Disaster Management Authority (NDMA) instituted under the Act works in accordance with all other institutions spread across the country to anticipate the disaster and prevent it from causing huge damage. In keeping with this shift, new institutional mechanisms are being put in place at the State and District levels as well. The changed approach is being put into effect through:

- Institutional changes
- Enunciation of policy
- Legal and techno-legal framework
- Mainstreaming Mitigation into Development process
- Funding mechanism
- Specific schemes addressing mitigation
- Preparedness measures
- Capacity building
- Human Resource Development
- Community participation

The lessons learnt from the past clearly bring out the fact that no State/Central Government can meet the disaster management challenges alone. The Governments’ efforts have to be strengthened by a host of private sector organizations and communities themselves getting involved in the emergency response system (*Social Work Chronicle, 2012*).
4) Institutional and Policy Framework / Mechanisms

The Historical Backdrop

Government intervention in the form of relief measures in the years of droughts and famines are a long history in India going back to the late 19th century, when the then British Government of India formulated a Famine Code specifying what is to be done by whom and under what circumstances. Following the Famine Code, every State (then Provincial) government formulated its own relief manual. The relief manuals of the states provide for provision of employment or relief only on a spasmodic basis. Yet even the colonial rulers recognised that there was a continuum of agricultural distress and that the timing of such intervention could not be accurately determined. They specified that this distress directly related to the fact that the wages offered did not command the purchasing power necessary for the sustenance of the affected people. They acknowledged that the present system of relief could only be looked upon as a temporary measure, which would have to be set aside later and replaced by more systematic measures. However, the ad hoc nature of relief has persisted. Since the Indian state provides no social security or unemployment relief, the official declaration of drought or flood continues to be the sole means of mitigating their harmful effects.

Current Policies and Strategies

However, despite its importance, the subject of disaster management does not find any mention in any of the three lists included in the 7th Schedule of the Constitution of India, i.e., List I: the Union List, List II: the State List, and List III: the Concurrent List. As per Entry 97 of the Union List, the Union government should deal with this subject. However, in practice, it is a state subject. In view of this dichotomy, a lot of confusion exists when it comes to pinpointing specific responsibilities for dealing with various
problems. Recently, the Constitutional Review Committee has recommended that disaster management be included in the Concurrent List of the Constitution (List III). Besides, there is no specific legislation to provide an appropriate legal framework for disaster management, and the existing codes/regulations are not enforced strictly and the adoption of various standards and guidelines is not mandatory. In view of this, it is necessary to review the existing laws/codes/regulations relating to various aspects of disaster management and evolve a suitable mechanism for their strict enforcement preferably through a Central Act and State Acts as recommended by the High Powered Committee on Disaster Management.

Furthermore, there is no integrated programme for disaster management. What we have is an assortment of several projects and programmes that aim at reducing the vulnerability of people to disasters. Some of those programmes are: Integrated Rural Development Programme (IADP), Drought Prone Area programme (DPAP), Integrated Wastelands Development Programme (IWDP), Desert Development Programme (DDP), Flood Control Programmes, National Afforestation and Eco-development Programme (NA&ED), Accelerated Rural Water Supply Programme (ARWSP), Indira Awas Yojana (IAY), National Agricultural Insurance Scheme, Crop Insurance Scheme, Sampoorna Grameen Rozgar Yojana (SGRY), and Disaster Risk Management Programme. Most of these programmes have the rural poor as their main target group and hence they may be called pro-poor. Until recently, disaster management was not conceptually linked with developmental planning in India. It was only in the 10th Five Year Plan that it was mainstreamed into the planning process and a separate chapter on Disaster Management was included in it. But even now, there is no long-term strategy for mitigation and development of hazard prone areas for disaster reduction. The Eleventh Finance
Commission has suggested that this task needs to be addressed by the Planning Commission, which in consultation with the state governments, and the concerned ministries of Government of India should identify works of capital nature to prevent the recurrence of specific calamities, to be financed under planned funds (Reports, Govt of India, 2009).

Institutional and policy mechanisms for carrying out response, relief and rehabilitation have been well-established since Independence. These mechanisms have proved to be robust and effective as response, relief and rehabilitation are concerned. At the national level, the Ministry of Home Affairs is the nodal Ministry for all matters concerning disaster management. The Central Relief Commissioner (CRC) in the Ministry of Home Affairs is the nodal officer to coordinate relief operations for natural disasters. The CRC receives information relating to forecasting/warning of a natural calamity from India Meteorological Department (IMD) or from Central Water Commission of Ministry of Water Resources on a continuing basis. The Ministries/Departments/ Organizations concerned with the primary and secondary functions relating to the management of disasters include: India Meteorological Department, Central Water Commission, Ministry of Home Affairs, Ministry of Defense, Ministry of Finance, Ministry of Rural Development, Ministry of Urban Development, Department of Communications, Ministry of Health, Ministry of Water Resources, Ministry of Petroleum, Department of Agriculture & Cooperation, Ministry of Power, Department of Civil Supplies, Ministry of Railways, Ministry of Information and Broadcasting, Planning Commission, Cabinet Secretariat, Department of Surface Transport, Ministry of Social Justice, Department of Women and Child Development, Ministry of Environment and Forest, Department of Food. Each Ministry/Department/Organization nominates their nodal officer to the
Crisis Management Group chaired by Central Relief Commissioner. The nodal officer is responsible for preparing sectoral Action Plan/Emergency Support Function Plan for managing disasters (*Reports, Govt of India, 2009*).

### Disaster Management Framework in India

![Diagram of Disaster Management Framework in India]

*Source: Kumar, S.(2007). Disaster Management Framework, India*

The National Institute of Disaster Management (NIDM) is set up by GOI in order to develop specially trained personnel to develop capacities of communities and organizations to build a culture of disaster preparedness through training programmes and research. In this context the Eleventh Five Year Plan gives impetus on addressing disaster risk reduction through education at various levels as one of the priority of all development programmes. An allocation of Rs 2,13,880/- million towards disaster management has been incorporated in the Eleventh Plan.
National Crisis Management Committee (NCMC): Cabinet Secretary, who is the highest executive officer, heads the NCMC. Secretaries of all the concerned Ministries/Departments as well as organizations are the members of the Committee. The NCMC gives direction to the Crisis Management Group as deemed necessary. The Secretary, Ministry of Home Affairs is responsible for ensuring that all developments are brought to the notice of the NCMC promptly. The NCMC can give directions to any Ministry/Department/Organization for specific action needed for meeting the crisis situation (Disaster Management in India, 2004).

Crisis Management Group (CMG): The Central Relief Commissioner in the Ministry of Home Affairs is the Chairman of the CMG, consisting of senior officers (called nodal officer’s) from various concerned Ministries. The CMG’s functions are to review every year contingency plans formulated by various Ministries/Departments/Organizations in their respective sectors, measures required for dealing with natural disasters, coordinate the activities of the Central Ministries and the State Governments in relation to disaster preparedness and relief and to obtain information from the nodal officers on measures relating to above. The CMG, in the event of a natural disaster, meets frequently to review the relief operations and extend all possible assistance required by the affected States to overcome the situation effectively. The Resident Commissioner of the affected State is also associated with such meetings.

Control Room (Emergency Operation Room): An Emergency Operations Center (Control Room) exists in the nodal Ministry of Home Affairs, which functions round the clock, to assist the Central Relief Commissioner in the discharge of his duties. The activities of the Control Room include collection and transmission of information concerning natural calamity and relief, keeping close contact with governments of the
affected States, interaction with other Central Ministries/Departments/Organisations in connection with disaster relief, maintaining records containing all relevant information relating to action points and contact points in Central Ministries etc, and keeping up-to-date details of all concerned officers at the Central and State levels (Status Reports, 2004).

**Contingency Action Plan:** A National Contingency Action Plan (CAP) for dealing with contingencies arising in the wake of natural disasters has been formulated by the Government of India and it had been periodically updated. It facilitates the launching of relief operations without delay. The CAP identifies the initiatives required to be taken by various Central Ministries/Departments in the wake of natural calamities, sets down the procedure and determines the focal points in the administrative machinery.

**State Relief Manuals:** Each State Government has relief manuals/codes which identify that role of each officer in the State for managing the natural disasters. These are reviewed and updated periodically based on the experience of managing the disasters and the need of the State (Disaster Management in India, 2004).

**Funding Mechanisms:** The policy and the funding mechanism for provision of relief assistance to those affected by natural calamities are clearly laid down. These are reviewed by the Finance Commission appointed by the Government of India every five years. The Finance Commission makes recommendation regarding the division of tax and non-tax revenues between the Central and the State Governments and also regarding policy for provision of relief assistance and their share of expenditure thereon. A Calamity Relief Fund (CRF) has been set up in each State as per the recommendations of the Eleventh Finance Commission.
The size of the Calamity Relief Fund has been fixed by the Finance Commission after taking into account the expenditure on relief and rehabilitation over the past 10 years. The Government of India contributes 75% of the corpus of the Calamity Relief Fund in each State. Twenty five percent is contributed to by the State. Relief assistance to those affected by natural calamities is granted from the CRF. Overall norms for relief assistance are laid down by a national committee with representatives of States as members. Different States can have State specific norms to be recommended by State level committee under the Chief Secretary. Where the calamity is of such proportion that the funds available in the CRF will not be sufficient for provision of relief, the State seeks assistance from the National Calamity Contingency Fund (NCCF) - a fund created at the Central Government level. When such requests are received, the requirements are assessed by a team from the Central Government and thereafter the assessed requirements are cleared by a High Level Committee chaired by the Deputy Prime Minister. In brief, the institutional arrangements for response and relief are well established and have proved to be robust and effective (Disaster Management in India, 2004).

In the federal set up of India, the basic responsibility for undertaking rescue, relief and rehabilitation measures in the event of a disaster is that of the State Government concerned. At the State level, response, relief and rehabilitation are handled by Departments of Relief & Rehabilitation. The State Crisis Management Committee set up under the Chairmanship of Chief Secretary who is the highest executive functionary in the State. All the concerned Departments and organizations of the State and Central Government Departments located in the State are represented in this Committee. This Committee reviews the action taken for response and relief and gives guidelines/directions as necessary. A control room is
established under the Relief Commissioner. The control room is in constant
touch with the climate monitoring/forecasting agencies and monitors the
action being taken by various agencies in performing their responsibilities.
The district level is the key level for disaster management and relief
activities. The Collector/Dy. Commissioner is the chief administrator in the
district. He is the focal point in the preparation of district plans and in
directing, supervising and monitoring calamities for relief. A District Level
Coordination and Relief Committee is constituted and is headed by the
Collector as Chairman with participation of all other related government
and non governmental agencies and departments in addition to the elected
representatives (Disaster Management in India, 2004).

The Collector is required to maintain close liaison with the district and the
State Governments as well as the nearest units of Armed Forces/Central
police organisations and other relevant Central Government organisations
like Ministries of Communications, Water Resources, Drinking Water, and
Surface Transport, who could supplement the efforts of the district
administration in the rescue and relief operations. The efforts of the
Government and non-governmental organisations for response and relief
and coordinated by the Collector/Dy. Commissioner. The District
Magistrate/Collector and Coordination Committee under him reviews
preparedness measures prior to an impending hazard and coordinate
response when the hazard strikes. As all the Departments of the State
Government and district level report to the Collector, there is an effective
coordination mechanism ensuring holistic response (National Disaster
Management Division, 2004).
New Institutional Mechanisms

As has been made clear above, the existing mechanisms are based on post-disaster relief and rehabilitation and have proved to be robust and effective mechanisms in addressing these requirements. The changed policy/approach, however, mandates a priority to full disaster aspects of mitigation, prevention and preparedness and new institutional and policy mechanisms are being put in place to address the policy change. The importance of establishing a National Emergency Management Authority at the National level was the need of the hour. Therefore, the High Powered Committee on Disaster Management which was set up in August, 1999 and submitted its Report in October, 2001, had inter alia recommended that a separate Department of Disaster Management be set up in the Government of India. It was, however, felt that conventional Ministries/Departments have the drawback of not being flexible enough especially in terms of the sanction procedures. The organisation at the Apex level will have to be multi-disciplinary with experts covering a large number of branches. The National Emergency Management Authority has, therefore, been proposed as a combined Secretariat/Directorate structure – a structure which will be an integral part of the Government and, therefore, will work with the full authority of the Government while, at the same time, retaining the flexibility of a field organization. The National Emergency Management Authority will be headed by an officer of the rank of Secretary/Special Secretary to the Government in the Ministry of Home Affairs with Special Secretaries/Additional Secretaries from the Ministries/Departments of Health, Water Resources, Environment & Forests, Agriculture, Railways, Atomic Energy, Defense, Chemicals, Science & Technology, Telecommunications, Urban Employment and Poverty Alleviation, Rural Development and India Meteorological Department as Members of the Authority. The Authority would meet as often as required and review the
status of warning systems, mitigation measures and disaster preparedness. When a disaster strikes, the Authority will coordinate disaster management activities. The Authority will be responsible for: (a) coordinating/mandating Government’s policies for disaster reduction/mitigation; (b) ensuring adequate preparedness at all levels in order to meet disasters; (c) coordinating response to a disaster when it strikes; and (d), coordination of post disaster relief and rehabilitation (*National Disaster Management Division, 2004*).

At the State level, disaster management is being handled by the Departments of Relief & Rehabilitation. As the name suggests, the focus was almost entirely on post-calamity relief. The Government of India is working with the State Governments to convert the Departments of Relief & Rehabilitation into Departments of Disaster Management with an enhanced area of responsibility to include mitigation and preparedness apart from their present responsibilities of relief and rehabilitation. The changeover has already happened in eight State Governments/Union Territory Administrations. The change could also be felt in other States. The States have also been asked to set up Disaster Management Authorities under the Chief Minister with Ministers of relevant Departments [Water Resources, Agriculture, Drinking Water Supply, Environment & Forests, Urban Development, Home, Rural Development etc.] as members. The objective of setting up an Authority is to ensure that mitigation and preparedness is seen as the joint responsibility of all the Departments concerned and disaster management concerns are mainstreamed into their programmes. This holistic and multidisciplinary approach is the key to effective mitigation. At the district level, the District Magistrate who is the chief coordinator will be the focal point for coordinating all activities relating to prevention, mitigation and preparedness apart from his existing
responsibilities pertaining to response and relief. The District Coordination and Relief Committee is being reconstituted/ re-designated into Disaster Management Committees with officers from relevant departments being added as members. Because of its enhanced mandate of mitigation and prevention, the district heads and departments engaged in development will now be added to the Committee so that mitigation and prevention is mainstreamed into the district plan. The existing system of drawing up preparedness and response plans will continue. There will, however, also be a long term mitigation plan. District Disaster Management Committees have already been constituted in several districts and are in the process of being constituted in the remaining multi-hazard prone districts (National Disaster Management Division, 2004).

Similarly, the government is in the process of creating Block/Taluk Disaster Management Committees in these 169 multi-hazard prone districts in 17 States. At the village level, in 169 multi-hazard prone districts, Disaster Management Committees and Disaster Management Teams are being constituted. Each village will have a Disaster Management Plan. The process of drafting the plan has already begun. The Disaster Management Committee which draws up the plans consists of elected representatives at the village level, local authorities, government functionaries including doctors/paramedics of primary health centers located in the village, and primary school teachers. The plan encompasses prevention, mitigation and preparedness measures. The Disaster Management Teams at the village level will consist of members of voluntary organisations such as Nehru Yuvak Kendra and other non-governmental organisations as well as able bodied volunteers from the village. The teams are provided basic training in evacuation, search, rescue, and various other aspects of disaster management. The Disaster Management Committee will review the disaster
management plan at least once in a year. It would also generate awareness among the people in the village about dos’ and don’ts for specific hazards depending on the vulnerability of the village. A large number of village level Disaster Management Committees and Disaster Management Teams have already been constituted. The States have been advised to enact Disaster Management Acts. These Acts provide for adequate powers for authorities coordinating mitigation, preparedness and response as well as for mitigation/prevention measures required to be undertaken. Two States [Gujarat & Madhya Pradesh] have already enacted such a law. Other States are in the process. The State Governments have also been advised to convert their Relief Codes into Disaster Management Codes by including aspects of prevention, mitigation and preparedness.

In order to further institutionalize the new approach, the Government of India have decided to enunciate a National Policy on Disaster Management. A draft policy has accordingly been formulated and is expected to be put in place shortly. The policy shall inform all spheres of Central Government activity and shall take precedence over all existing sectoral policies. The broad objectives of the policy are to minimize the loss of lives and social, private and community assets because of natural or manmade disasters and contribute to sustainable development and better standards of living for all, more specifically for the poor and vulnerable sections by ensuring that the development gains are not lost through natural calamities/disasters (National Disaster Management Division, 2004).

The policy notes that State Governments are primarily responsible for disaster management including prevention and mitigation, while the Government of India provides assistance where necessary as per the norms laid down from time to time and proposes that this overall framework may
continue. However, since response to a disaster requires coordination of resources available across all the Departments of the Government, the policy mandates that the Central Government will, in conjunction with the State Governments, seek to ensure that such a coordination mechanism is laid down through an appropriate chain of command so that mobilization of resources is facilitated. The broad features of the draft national policy on disaster management are enunciated below:

i) A holistic and pro-active approach for prevention, mitigation and preparedness will be adopted for disaster management.

ii) Each Ministry/Department of the Central/State Government will set apart an appropriate quantum of funds under the Plan for specific schemes/projects addressing vulnerability reduction and preparedness.

iii) Where there is a shelf of projects, projects addressing mitigation will be given priority. Mitigation measures shall be built into the on-going schemes/programmes.

iv) Each project in a hazard prone area will have mitigation as an essential term of reference. The project report will include a statement as to how the project addresses vulnerability reduction.

v) Community involvement and awareness generation, particularly that of the vulnerable segments of population and women has been emphasized as necessary for sustainable disaster risk reduction. This is a critical component of the policy since communities are the first responders to disasters and, therefore, unless they are empowered and made capable of managing disasters, any amount of external support cannot lead to optimal results.
vi) There will be close interaction with the corporate sector, nongovernmental organisations and the media in the national efforts for disaster prevention/vulnerability reduction.

vii) Institutional structures/appropriate chain of command will be built up and appropriate training imparted to disaster managers at various levels to ensure coordinated and quick response at all levels; and development of inter-State arrangements for sharing of resources during emergencies.

viii) A culture of planning and preparedness is to be inculcated at all levels for capacity building measures.

ix) Standard operating procedures and disaster management plans at state and district levels as well as by relevant central government departments for handling specific disasters will be laid down.

x) Construction designs must correspond to the requirements as laid down in relevant Indian Standards.

xi) All lifeline buildings in seismic zones III, IV & V – hospitals, railway stations, airports/airport control towers, fire station buildings, bus stands, major administrative centers will need to be evaluated and, if necessary, retro-fitted.

xii) The existing relief codes in the States will be revised to develop them into disaster management codes/manuals for institutionalizing the planning process with particular attention to mitigation and preparedness.

With the above mentioned institutional mechanism and policy framework in position and the actions taken to implement the policy guidelines, it is expected that the task of moving towards vulnerability reduction will be greatly facilitated (Status Reports, 2004).
Disaster Management Act

The Government decided to enact a law on disaster management to provide for requisite institutional mechanism for drawing up and monitoring the implementation of the disaster management plans, ensuring measures by various wings of Government for prevention and mitigating effects of disasters and for undertaking a holistic, coordinated and prompt response to any disaster situation. The Disaster Management Act, 2005 was enacted and notified on December 26, 2005. The salient features of the act include:

i) Setting up of a National Disaster Management Authority under the Chairmanship of the Prime Minister (PM) with such other Ministers not exceeding nine, as may be nominated by the PM. One of the Members may be designated as Vice-Chairpersons of NDMA by the Prime Minister. The Authority shall be assisted by an Executive Committee of Secretaries to be constituted by the Central Government. The National Authority may set up all Advisory Committee of Experts and The National Authority will have the responsibility for laying down the policies, plans and guidelines for disaster management.

ii) There shall be a State Disaster Management Authority in each State/UT under the Chairmanship of Chief Minister/Lt. Governor, Administrator, as the case may be the Vice-Chairperson and Members, of the State Disaster Management. Authority will be nominated by the Chief Minister/Lt. Governor/ Administrator, as the case may be the State Authority shall be responsible for laying down the policies and plans for disaster management in the State. It shall be assisted by a State Executive Committee. The State Authority may constitute an Advisory Committee of Experts as and when it is considered necessary. It will be mandatory for relevant Ministries/
Department to draw up department wise plans in accordance with the National Disaster Management Plan.

iii) The State Government shall constitute District Disaster Management Authority with District Magistrate as Chairperson and President, Zila Parishad or Chief Executive Member, District Autonomous Council as the case may be, as Co-Chairperson and the District Authority shall act as the District planning, coordinating and implementing body for disaster management. Appropriate provisions will be made for taking mitigation and preparedness measures in accordance with the National, State and District Plans at National, State and District levels (National Disaster Management Authority).

iv). The Central Government shall be responsible for coordinating action by Ministries/Departments of the Central Government, National Authority and State Authority, Governmental and nongovernmental organizations. The local authority shall ensure training of its officers and employees and maintaining all resources so as to be readily available for use in the event of a disaster. The local authority shall also ensure that construction projects under them conform to the standards and specifications laid down. The local authority shall carry out relief, rehabilitation and reconstruction activities in the affected area within its jurisdiction.

v). The Central Government shall constitute the National Institute of Disaster Management (NIDM). NIDM shall plan and promote training and research in disaster management, documentation and development of National level information base relating to disaster management policies, prevention mechanism and mitigation measures A National Disaster
Response Force shall be constituted for specialist response (*National Disaster Management Authority*).

vi). The Central Government shall constitute a National Disaster Response Fund for emergency response.

In addition, the Central Government may constitute a National Disaster Mitigation Fund for mitigation projects. The State Government shall establish Disaster Response Fund and Disaster Mitigation Fund at State and District Level. Every Ministry/Department of Central and State Governments shall make provision in its annual budget for funds to carry out the activities set out in its Disaster Management Plan. There is provision in the Bill for punishment for obstructing response, false claims, misappropriation of money or materials and issuing of false warning. No prosecution for offences shall be instituted except with the previous sanction of the Central Government or State Government. There shall be no discrimination on the grounds of sex, caste, community, descent or religion while providing compensation on relief to the victims. The Central Government has the power to issue directions to the Government Authorities/Organizations/statutory bodies to facilitate or assist in disaster management. Action taken in good faith by any officer or employee of the Central Government, National Authority, State Government, State Authority, District Authority and Local authority shall be protected and no prosecution or suit will lie in any Court. The Officers shall be immune from legal process in regard to any warning communicated or disseminated in their official capacity. The Central Government and the State Government may make rules to carry out the provision of the Act NIDM and may make regulations to carry out its objectives as laid down in the Act (*National Disaster Management Division, 2004*).
State Disaster Management Act

Respective States have made legislative provisions to enact the Disaster Management Act. The act provides for effective management of disaster, for mitigation of the effects of disaster, for administering, facilitating, coordinating and monitoring emergency relief during and after occurrence of disasters and for implementing, monitoring and coordinating measures for reconstruction and rehabilitation in the aftermath of disasters, in the State Governments for these purposes to establish the State Disaster Management Authority and to specify other agencies and for matters connected therewith or incidental thereto.

State Government of Gujarat was the first state to enact its State Disaster Management Act in 2003. While other States of Governments of Maharashtra, Uttarakhand, Bihar, Uttar Pradesh and Sikkim have enacted the DM act in subsequent years of 2004, 2005 and 2006. National Policies and Programmes which relate to Disaster Risk Reduction over the years have been instituted. The Government of India has initiated a wide array of programmes and activities for holistic disaster management by changing its orientation from a relief centric approach to a pro-active approach towards disaster management and by adopting a multi-disciplinary and cross-sectoral approach. A National Disaster Management Framework/Roadmap addressing institutional, legislative and policy frameworks, disaster prevention and mitigation, preparedness and response, networking of emergency operations centers, early warning systems, human resource development and capacity building and research and knowledge management has been formulated.
The National Disaster Management Authority (NDMA)
The NDMA has been set-up to lay down the policies, plans, and guidelines for disaster management and a complementary structure is also envisaged at the State and District level. The Authority aims to integrate disaster prevention and mitigation in development plans and projects and to formulate projects and schemes for mitigation and earmark funds. Enactment of Disaster Management Act, 2005 confers legislative sanction to the institutional and coordination mechanisms to ensure holistic and coordinated disaster management measures. In addition to providing for institutional framework to cater to mitigation and preparedness efforts, the Act mandates constitution of the Disaster Response Fund and Disaster Mitigation Fund at the national, state and district levels and assigns an important role to urban local bodies and Panchayati Raj institutions (National Disaster Management Division, 2004).

A national disaster management policy is being presently formulated. A large number of hazard-specific projects and programmes aimed at risk reduction have been initiated. Separate National Core Groups on Earthquake, Cyclone and Landslides have been constituted to assist in risk assessment and mitigation planning, developing a techno-legal regime, land-use zonation etc. Specific programmes for addressing earthquake and cyclone risk mitigation have been formulated along with training of engineers, architects and masons in hazard-resistant construction practices and inclusion of elements of earthquake engineering in undergraduate engineering and architectural courses. Simultaneous efforts at assessing and retrofitting the existing lifeline infrastructure and the critical establishments have also been initiated. The guidelines of various development schemes relating to construction of housing, community assets and other physical infrastructure have been reviewed to make them disaster-resilient. To
address the need for developing a trained cadre of human resource for DRM, the National Institute of Disaster Management (NIDM) has formulated a national HRD Plan for Disaster Management. It also undertakes training and capacity building programmes along with assisting the national and state level training institutions in developing training modules and curricula for various sectors and stakeholders (Status Reports, 2004).

The Government, in partnership with UN and other national and International agencies has launched community-based disaster preparedness (CBDP) and planning initiatives. The CBDP process is being institutionalized in the administrative structures especially the three-tier Panchayati Raj system in the most multi hazard prone areas. Alongside, earthquake vulnerabilities in urban cities lying in seismic zones III, IV and V are also being addressed. Disaster management has also been included in the school curricula to build a generation sensitive to disaster risk reduction concerns. This is accompanied by training of teachers for building aptitude and skills in the subject. As envisaged in the National Disaster Management Framework, a multi-stakeholder approach involving the corporate sector, the youth voluntary organizations, construction industry, professional and sectoral organizations for dissemination of disaster risk reduction is being implemented (National Disaster Management Division, 2004).

Specific work plans addressing the concerns and needs of each sector have been drawn up and are being operationalized through their respective nodal agencies/organizations. The UN agencies in India have constituted a UN Disaster Management Team which facilitates coordinated support to the national and state governments in various stages of DM cycle, as well as facilitate information sharing with other partners. For far too long, disaster
management in India was marginalized as an issue of providing relief and rehabilitation to the people affected by natural calamities. In the Central Government it occupied a place in the Ministry of Agriculture, in the States it was a concern of the Revenue or Relief Departments, while in the districts it was one of the many crisis management functions of the Collectors. There was hardly any attempt to look into the impact of disasters on the economy and development and to examine how at times development itself can lead to disasters as the recent urban floods in various parts of India has demonstrated. The significant issues of disaster risk reduction in the policies and programming of various plan schemes on poverty alleviation, environment, micro-credit, social and economic vulnerabilities, etc., have hardly been deliberated in the apex planning body of the country. The country's commitment to mainstream disaster risk reduction into the process of development planning at all levels for sustainable development, as stated in Hyogo Framework of Action 2005-15: Building the Resilience of Nations and Communities to Disasters have not been carried forward across sectors for actionable programmes for achieving the desired results (Status Reports, 2004).

### Tenth Plan Formulations

The Tenth Five Year Plan, prepared in the backdrop of Orissa super cyclone, Gujarat earthquake and end of International Decade of Natural Disaster Reduction (IDNDR), for the first time, recognized disaster management as a development issue. The Plan document not only included a separate chapter on Disaster Management, it made a number of important prescriptions to mainstream disaster risk reduction into the process of development.
The Tenth Plan prescriptions on disaster Management can broadly be divided into three categories: (a) policy guidelines at the macro level that would inform and guide the preparation and implementation of development plans across sectors, (b) operational guidelines of integrating disaster management practices into development, and (c) specific developmental schemes for prevention and mitigation of disasters. At the macro level, the Plan emphasized that “while hazards, both natural or otherwise, are inevitable, the disasters that follow need not be so and the society can be prepared to cope with them effectively whenever they occur” and called for a “multi-pronged strategy for total risk management, comprising prevention, preparedness, response and recovery, on the one hand, and for initiating development efforts aimed towards risk reduction and mitigation, on the other”. It stated that only then we can look forward to “sustainable development.” At the operational level, the Plan made a number of very important prescriptions as given below;

a) Institutional arrangements for disaster response should be streamlined by an integrated approach involving civilian and military resources, setting up a modern permanent national command centre or operations room with abundant communications and data links to all State capitals, establishing a quick response team particularly for search and rescue operations, developing standard operating system for dealing with humanitarian and relief assistance from non government sources and formulating a unified legislation for dealing with all types of disasters (*National Disaster Management Division, 2004*).

b) Disaster prevention and preparedness should be built into development planning by introducing a rigorous process of vulnerability analysis and risk assessment, maintaining comprehensive database and resource inventories
at all levels, developing state-of-the-art infrastructure for mitigation planning and establishing a Disaster Knowledge Network for the use of disaster managers, decision makers, and community (National Disaster Management Division, 2004).

c) A nationwide culture of prevention should be developed by introducing disaster management in school curriculum, including relevant aspects of disaster management in professional courses, enhancing the capacity of disaster managers by better training facilities and creating a massive awareness at all levels.

d) Community level initiatives for disaster preparedness should be encouraged by involving people at the grassroots, particularly those who are more vulnerable, for better preparedness and response.

e) Appropriate zonal regulations, design standards, building codes and performance specifications should be developed for safe constructions.

f) All development schemes in vulnerable areas should include a disaster mitigation analysis, whereby the feasibility of a project is assessed with respect to vulnerability of the area.

g) Disaster mitigation components should be built into all development projects, financed under the Plan, as part of approved project costs. Given the pervasive nature of disasters and the widespread havoc caused by some of them, the Tenth Plan felt that “planned expenditure on disaster mitigation and prevention measures, in addition to the Calamity Relief Fund (CRF), is required (Disaster Management in India - A Status Report, 2004).
Critical Reflections Toward’s Disaster Management Act

The disaster management act opens a lot of analysis especially in the areas of people’s participation. India needs a disaster response policy that puts people first. A major noted point is that the bill misses the point of mitigating effects of a disaster; that is the rehabilitation or relocation and reconstruction. There is no clear-cut definition of relief but general guidelines for minimum standards of relief. The bill does envisage the establishment of a National Disaster Management Authority along with state and district authorities but they are not accorded any well-defined legal status. The bill also states that the actions of the national, state and district authorities cannot be challenged except in the Supreme Court or the High Court’s having respective jurisdiction. Another major gap that was pointed out was the non-inclusion of community participation in the areas of disaster control. Recent disaster situations have effectively proved that it is only community participation that brings about effective implementation. Also the formation of district level authorities alone will not take care of the actions at the ground level. The officials in charge need to be given specific guidelines in terms of actions to be taken in cases of disasters. Also their emergency powers and duties need to be defined more clearly (Action Aid 2007). The bill has proposed to create series of funds but the authorities under the Bill do not have independent budgets. The various departments to be used in disasters will be providing the money. This again ties the hands of the authorities. The observations on the bill made here are not meant to take attention away from the positive steps taken. The wetting up of a national authority with a response force and a policy which covers all spheres of disaster response right from the centre to the district level is commendable.
5. Disaster Management in Kerala

The State’s geographical location, weather pattern and high population density makes it prone to severe natural as well as human-induced disasters which can be countered only through organised mitigative actions. Most of the districts of Kerala are multi-hazard prone. In Kerala lightning, landslides (debris flows) and floods are the most commonly occurring natural hazards. Droughts and minor earth tremors also occur occasionally. The recent Tsunami of 26 December 2004 added a new dimension to the disaster profile of the state. Kerala is prone to high incidence of lightning, especially during the months of April, May, October and November. It is estimated that about 70 people die every year due to lightning. About 14.8% of the state is prone to flooding (CESS, 2010). Apart from floods the mountain regions of the state experience several landslides during the monsoon season. It is known that a total of 65 fatal landslides occurred between 1961 and 2009 causing the death of 257 individuals (Kuriakose, 2010). Between 1871-2000, the state experienced 12 moderate drought years. The 570 km long coast line of Kerala is prone to erosion, monsoon storm surges and sea level rise. Land subsidence due to tunnel erosion or soil piping which is a slow hazard, is recently noticed to be affecting the hilly areas in the state. This often goes unnoticed and is a hazard with potential of causing landslides, infrastructural damages and crop loss covering vast areas in the high land regions of the state (Kuriakose, 2009). Kerala is also prone to several anthropogenic disasters such as road accidents, rail accidents, boat capsizing, industrial accidents, epidemics, pest infestation, stampedes, building collapses and fire accidents. As many of the dams in the state have exceeded their design life, they are potentially disastrous to people living in the downstream. Population pressure and unsustainable land use practices prevailing in the state are the main reason for many of the hazards to turn into disaster events. Lack of proper
infrastructure facilities and exceeding of carrying capacity are the cause of many of the anthropogenic hazards (State Disaster Management Authority, 2005).

The Kerala State Disaster Management Authority was formed as stipulated in the National Disaster Management Authority Act of 2005 with the Chief Minister as Chairman and the Revenue Minister as Vice-Chairman. It has a State Executive Committee. Formulation of a state policy, identification of disaster-prone areas and planning of disaster management programmes incorporating the services of various departments comes under the purview of the State Executive Committee. District Disaster Management Authority was constituted with the District Collector as Chairman in each district.

**Kerala State Disaster Management Policy**

The Disaster Management policy acts as the guiding principle of the State for disaster management and manifests the vision of the State. It aims to establish an optimal system for dealing with disasters, ensuring continuity in developmental activities without damaging the environment and avoiding disruption of economic activity. The policy framework is structured in such a way that Kerala State Disaster Management Authority provides the overall direction and guidance to various entities leveraging the resources and capability of existing entities and building new capabilities without treating disaster management as a separate sector or discipline (State Disaster Management Authority, 2005).

**Kerala State Disaster Management Act**

Kerala State Disaster Management Authority is the apex decision-making body to facilitate, co-ordinate, review and monitor all disaster management related activities in Kerala State Disaster Management Policy. The State
authority has drafted the State disaster management policy and guidelines to be followed by the State government departments and districts. The Authority prepared the State Disaster Management Plan and endorses departmental plans and district plans. The Authority is provided with statutory powers to facilitate, coordinate and monitor the activities related to disaster management utilizing the resources and expertise of relevant government departments, district administrations, local authorities, non-governmental organizations, public sector, international development agencies, donors and community. It exercises the powers and functions as laid down in the notification of Kerala State as per National Disaster Management Act, 2005.

The State government, by notification, has established and constituted District Disaster Management Authorities in all 14 districts as per the provisions of National Disaster Management Act, 2005. The district authority act as the district planning, coordinating and implementing body for disaster management and take all measures for the purposes of disaster management in the district in accordance with the guidelines laid down by the National Authority and the State Authority (State Disaster Management Authority, 2005). The State Government ensures an appropriate chain of command whereby the Kerala State Disaster Management Authority at the State level and District Disaster Management Authorities headed by District Collectors at the district level are empowered to coordinate disaster management activities and mobilize resources of all relevant Departments at their level. Similar institutional arrangements fixing responsibilities, administrative mechanism and procedures is made at Taluk and Village levels.
Kerala State Nodal Departments

The Department of Revenue and Disaster Management is the nodal department for management of all types of natural disasters that include water and climate related disasters and geological disasters. The scope of Department of Revenue has been enhanced to include prevention, mitigation and preparedness aspects of disaster management apart from its traditional responsibility of relief and rehabilitation and renamed as Department of Revenue and Disaster Management. The Principal Secretary to the government is the State Relief Commissioner. The organizational structure of the department dealing with disaster management is so tailored as to reflect the change in focus from post-disaster relief and rehabilitation to prevention, mitigation and preparedness in addition to relief and rehabilitation. The Department of Home is the nodal department for the management of manmade and human induced disasters including air and rail accidents. The Department of Public Health shall be the nodal department for chemical, biological (health related), radiological and nuclear disasters.

Framework for Mainstreaming Disaster Management

Government of Kerala ensures that State Government, district administration, local authorities and departments take into account disaster risks and provide for suitable preventive, mitigation and preparedness measures in their regular development planning activities. The State Disaster Management Authority has formed a framework for mainstreaming disaster management integrating performance indicators for key elements for ensuring translation of policy goals into outcome and for enhanced accountability towards critical parameters like integration of disaster management framework into development framework of the State and medium term expenditure framework (MTEF) that indicate budgetary
commitment of the State Government to the policy (SDMA, 2005). Disaster management is included as an integral part of development plans of the State and Disaster Risk or Environment Impact Analysis is introduced as a binding requirement for development and infrastructure programmes. As part of mainstreaming, Course Curriculum in disaster management is included in the school curriculum of State Education Department, in the high school syllabus. School disaster management programmes and formation of Safety Clubs is promoted by the State. Universities and self financing colleges shall be encouraged to conduct postgraduate and diploma courses in disaster management.

**Stakeholders in State Disaster Management**

The State Government acknowledges the following set of institutional stakeholders that play key roles in disaster management and calls for systematization of a frame work of operation under the leadership of Kerala State Disaster Management Authority (SDMA, 2005).

- State and Central Government Departments
- District Disaster Management Authorities
- Local authorities such as Municipal Corporations/Municipalities, District/Block/Grama Panchayats.
- Voluntary and civil society organisations
- Red Cross, multilateral aid agencies and UN agencies
- Community – village disaster management committees/task forces
- Public/Private sector undertakings
- Army, Navy, Air Force, Coast Guard, Airport Authority, National Disaster Response Force etc.
Roles of Key Stakeholders

I. The Kerala State Disaster Management Authority

The Kerala State Disaster Management Authority act as the nodal agency for prevention, mitigation and preparedness and facilitate and monitor the same as the capabilities developed in this phase would play a critical role in subsequent phases of disaster management.

II. Departments of State

Under the overall direction of Kerala State Disaster Management Authority, the departments at State and district levels is responsible for preparing ‘Departmental Disaster Management Plans’ that involve programmes within the routine departmental works for disaster prevention, mitigation and preparedness and strategies for its successful implementation, description of departmental responsibilities during disaster situations and preparation of contingency plans for different types of hazards and formulation of department-level capacity building policy. Further, the State departments formulate ‘Disaster Management Cells’ within the departments at State and District levels and deploys a senior officer as ‘Nodal Officer for Disaster Management’. ‘Control Rooms’ has been established for effective coordination and speedy decision making. Details of the main departmental officials (name, designation, and contact details), inventory of departmental resources (resource, capacity, location etc.) and departmental standard operating procedures is prepared as part of departmental plans that keep integration with the functioning of Crisis Management Groups and State/district EOCs. Standard Operating Procedures that precisely define how operations are to be carried out, explain what is expected and required of the department personnel and procedures for evacuation, procurement of essentials, deployment of resources and such other activities is prepared and
simplified by relevant departments to ensure effective functioning in the event of disasters (State Disaster Management Authority, 2005).

III. District Collector / District Disaster Management Authority:
The District Collector who also acts as chairman of the District Disaster Management Authority plays a vital and coordinating role in ensuring that disaster risk management activities in this phase are effectively carried out by the District Disaster Management Authority, district administration, government departments, local bodies and other stakeholders at the district level. The District Collector ensures that there is a plan for disaster management for the district which promotes a culture of prevention, mitigation and preparedness. The District Disaster Management Authority ensure that the ‘District Disaster Management Plans’ are operational and regularly updated. The District Collector facilitate and coordinate with local bodies to ensure that pre-disaster activities in the district are carried out successfully and ensure appropriate linkage between disaster management activities and regular development activities. The District Collector facilitates training and awareness programmes for communities and ensures that relevant officials in the district are properly trained in handling possible disasters in the district.

IV. Local Authorities
Local self governments work in close harmony with various government departments under the supervision of District Disaster Management Authority. They are responsible for ensuring compliance to various disaster management specifications and codes stipulated by relevant agencies based on hazard zonation and risk and vulnerability assessments. The local authorities shall coordinate community based disaster preparedness activities of the district.
V. Non-Governmental Organisations and Community Groups

The entire process of disaster risk management will centre stage the community and will be provided momentum and sustenance through the collective efforts of government agencies and non-governmental organizations. Civil society organizations, voluntary agencies and local community groups would actively participate in prevention, mitigation and preparedness activities of the district under the overall direction and supervision of District Disaster Management Authority. They would assist the district administration and local bodies in the identification of hazards and assessment of vulnerability and risks and actively participate in the training activities in the pre-disaster stage familiarizing themselves with their role in community based disaster risk management. Non-governmental organizations and community groups under the supervision of District Disaster Management Authority and local bodies would be encouraged to develop mechanisms to mitigate disasters at the grass root level through participation of communities.

Crisis Management Groups

Crisis Management refers to the organization and management of resources and responsibilities for dealing with response and immediate restoration of essential services. It involves plans, structures and arrangements established to coordinate the response of State Government. A well coordinated and unified response of various State departments and agencies appropriate to the proportion and demand of the crisis situation is ensured by the State government to improve the process of relief and recovery through rapid dissemination of information, quick response and effective decision making.
An institutional mechanism distinguished as ‘Crisis Management Group’ under the chairmanship of Chief Secretary with representatives of Department of Home, Department of Revenue and Disaster Management and Department of Health function at the State level as a nerve centre to support, coordinate and monitor crisis management activities related to natural disasters, manmade/accident related disasters, industrial/chemical disasters, biological disasters and radiological/nuclear disasters. Accordingly, ‘Crisis Management Plans’ that clearly define response roles and responsibilities of government agencies, facilitate communication across agencies, specify protocols and procedures, and detail actions to be taken by government departments shall be prepared and made operational by the State Government (State Disaster Management Authority, 2005). ‘District Crisis Management Group’ headed by District Collector would flash the ‘first information’ to the ‘State Crisis Management Group’ and activate crisis management plan under the guidance of State Crisis Management Group, as and when a crisis situation is developed. ‘State Crisis Management Group’ would be updated by District Collector with subsequent Post Disaster Assessments on Damages and Needs. The unprecedented crises left over by 2004 Tsunami urged the state machineries to robustly plan for disaster management and mitigation activities on a long term basis. Policies and Acts were drafted in lieu with the same.

6) Conclusion

There is need for professionalization of disaster management to cope with the rapidly changing environment. This could be achieved only slowly over a period of time by inducting professionally-trained disaster managers at all levels in the hierarchy of development administration. Reorientation of the
existing staff through short-term training programmes in disaster management in NIDM, ATIs, and other reputed institutes is also necessary. Unfortunately, at present, supply of professional disaster managers and facilities for in-service training are both extremely limited in our country.

The HPC has advocated that a Trigger Mechanism is necessary to minimize response time when disaster strikes. Establishment of Civil Defense Warden System involving Panchayat members as wardens and providing communication network through wireless stations and HAM (Help All Mankind) radio systems seems to be promising development in this context (GOI, 2001). The HPC has also made a strong case for ushering a new culture of disaster management which will stand on the four pillars of culture of preparedness, culture of quick response, culture of strategic thinking, and culture of prevention.

Until recently, in India, disaster management was normally viewed as a post-disaster function. It comprised of such activities as rescue, relief and rehabilitation after the occurrence of a disaster. Such an approach was short-sighted, extravagant, and prone to unnecessary interference of politicians, and others having vested interests. However, in the recent past, there has been a paradigmatic shift in India’s approach to disaster management. The new approach is multi-sectoral, multi-disciplinary, holistic and proactive, and disaster management is now sought to be built into the development planning process itself. Currently, India has a well defined institutional framework at the national and sub-national levels, and a funding mechanism for providing relief assistance to the victims of disasters. As it is not possible to prevent the occurrence of natural disasters and measures altogether, there is need for taking appropriate measures for reducing their impacts.
Disaster management is an important issue that cannot be addressed by any one agency, technology or institution alone. It calls for convergence of technologies and institutions with the goal of fulfilling the various dimensions, timeliness, accuracy, scope and coverage, formats and standards to match the user needs and finally assimilation of information for decision-making. A holistic approach encompassing a suitable mix of policy reforms, institutional changes and technology options. Without this, it will not be possible to achieve longer term immunity against natural and man-made disasters.

It is quite evident that economic development may not be sustainable under conditions of vulnerability to natural disasters. Recognizing the fact that hazard mitigation pays high social and economic dividends, especially in a country like India such measures must be seen as investment and not a luxury that may or may not be affordable. Development and disaster management should go hand in hand. Disaster management must be mainstreamed into the development planning process at all levels and development models must have in-built components of disaster reduction, mitigation and preparedness. As per the HPC’s recommendations, at least 10% of the Plan Funds at the national, state, and district levels be earmarked and apportioned for schemes which specifically address prevention, reduction, preparedness, and mitigation of disasters (GOI, 2004).

There is a pressing need for a focused, professional approach at all levels of government. But at the same time government must realize that disaster management to be effective has to be a community based response system with disaster driven strategic planning. As advocated by the HPC a Trigger Mechanism is necessary to minimize response time when disaster strikes.
Establishment of Civil Defense Warden System involving Panchayat members as wardens and providing communication network through wireless stations and HAM (Help All Mankind) radio systems seems to be a promising development in this context.
NOTES

1. Social Work Chronicle, as the name of the journal denotes – this peer reviewed bi-annual will always have a prime focus to explore the emerging issues and challenges in the sphere social work education and practices across the globe with an aim to strengthen the base of Social Work literature and to enrich the scope of social work research and practice. Editor: Anupam Hazra ISSN: 2277-1395, Chapter 1, Volume 1 Issue 1 May 2012, Disaster Management and Role of Academic Institutions written by Meena Galliara and Ananya Prabhawalkar, Page no 1-29.

2. Since 1988, the WHO Collaborating Centre for Research on the Epidemiology of Disasters (CRED) has been maintaining an Emergency Events Database EM-DAT. EM-DAT was created with the initial support of the WHO and the Belgian Government. The main objective of the database is to serve the purposes of humanitarian action at national and international levels. It is an initiative aimed to rationalize decision making for disaster preparedness, as well as providing an objective base for vulnerability assessment and priority setting. EM-DAT contains essential core data on the occurrence and effects of over 18,000 mass disasters in the world from 1900 to present. The database is compiled from various sources, including UN agencies, non-governmental organisations, insurance companies, research institutes and press agencies.

3. Orissa State Disaster Mitigation Authority (OSDMA) was set up by the Government of Orissa as autonomous organizations vide Finance Department Resolution No. IFC- 74/99-51779/F dated the 28th December 1999 (in the intermediate aftermath of the Super-cyclone in 1999). It was registered under the Societies Registration Act, 1860 on 29.12.1999 as a non-profit making & charitable institution for the interest of the people of Orissa, with its headquarters at Bhubaneswar and jurisdiction over the whole State. The Department of Revenue is the administrative department of OSDMA vides Revenue Department Resolution No.39373/R dated 26th August 2000. Subsequently, the name of the Authority was changed from Orissa State Disaster Mitigation Authority to Orissa State Disaster Management Authority vide Revenue & Disaster Management Department Resolution No. 42317/R&DM dated 27th September, 2008.

4. The GSDMA has been constituted by the Government of Gujarat by the GAD’s Resolution dated 8th February 2001. The Authority has been
created as a permanent arrangement to handle the natural calamities. The objectives for constitution of this authority have been clearly spelt out and precisely defined in para (2) of the said Resolution.


6. UNISDR is part of the United Nations Secretariat and its functions span the development and humanitarian fields. Its core areas of work includes ensuring disaster risk reduction (DRR) is applied to climate change adaptation, increasing investments for DRR, building disaster-resilient cities, schools and hospitals, and strengthening the international system for DRR. UNISDR's vision is based on the three strategic goals of the Hyogo Framework for Action: integrating DRR into sustainable development policies and planning, developing and strengthening institutions, mechanisms and capacities to build resilience to hazards, and incorporating risk reduction approaches into emergency preparedness, response, and recovery programmes.

7. Habitat Global Forum's ‘Plan of Action for a Safer World’ that emerged from the 1996 City Summit in Istanbul have noted the challenge to reduce urban risks. The Yokohama Strategy emphasized the manner in which high urban densities contributed to vulnerability. ‘Disasters contribute to social, economic, cultural and political disruption in urban and rural contexts, each in its specific way. Large-scale urban concentrations are particularly fragile because of their complexity and the accumulation of population and infrastructures in limited areas.’ The Habitat Plan of Action spoke of the basic un-naturalness of urban disasters.
8. A Status Report on Disaster Management in India was prepared in February, 2004 for presentation and circulation in the World Congress on Natural Disaster Mitigation. The Report summarizes various initiatives taken by the Ministry.

9. The Disaster Management Act, 2005: (As Passed By The Houses Of Parliament), Bill No. LV-F of 2005, NO. 53 passed on 23rd December, 2005. An Act to provide for the effective management of disasters and for matters connected therewith or incidental thereto. BE it enacted by Parliament in the Fifty-sixth Year of the Republic of India as follows Short title, extent and commencement. It clearly indicates the establishment of National Disaster Management Authority and its allied activities.

10. The National Disaster Management Authority (NDMA), headed by the Prime Minister of India, is the Apex Body for Disaster Management in India. The setting up of the NDMA and the creation of an enabling environment for institutional mechanisms at the State and District levels is mandated by the Disaster Management Act, 2005.

11. The National Institute of Disaster Management constituted under the Disaster Management Act 2005 has been entrusted with the nodal national responsibility for human resource development, capacity building, training, research, documentation and policy advocacy in the field of disaster management. Upgraded from the National Centre for Disaster Management of the Indian Institute of Public Administration on 16th October, 2003, NIDM is steadily marching forward to fulfill its mission to make a disaster resilient India by developing and promoting a culture of prevention and preparedness at all levels.

12. Action Aid International works with poor people in over 40 countries across the world. The major goal of the agency is to end poverty. Action Aid India is an anti-poverty agency, working in India since 1972 with the poor people to end poverty and injustice together. Action Aid working in partnership with formations of excluded people, mass movements, knowledge institutions and civil society organisations, Action Aid Standing with people in their struggle towards a world free of poverty, exclusion, patriarchy and injustice. The agency greatly involved in disaster management activities including disaster preparedness to disaster response.
13. The Kerala State Disaster Management Authority was formed as stipulated in the National Disaster Management Authority Act of 2005 with the Chief Minister as Chairman and the Revenue Minister as Vice-Chairman. It has a State Executive Committee. Formulation of a state policy, identification of disaster-prone areas and planning of disaster management programmes incorporating the services of various departments comes under the purview of the State Executive Committee. District Disaster Management Authority was constituted with the District Collector as Chairman in each district.