

# Template for A Model State Human Resource and Capacity Development Plan

Part Deliverable 16

Preparing Long Term Training and Capacity Building Strategy for Disaster Risk Reduction in India, under NCRMP



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Submitted to



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## EXECUTIVE SUMMARY

This report on “A Model State Human Resource and Capacity Development Plan and State Human Resource and Capacity Development Plan Template” has been produced as part of the study for preparing long term training and capacity building strategy for disaster risk reduction in India under NCRMP. The Human Resource and Capacity Development Plan take into consideration all variables to facilitate development of adequate capacity within the state, keeping in view the institutional mechanism in place. This report will facilitate state in mapping of needed capacity for different specific functions in all phases of disaster management.

The report has been divided into 12 sections portraying different aspects that need to be included in the plan. The first section looks into detailed information about the legal mandates at national and state level, if put in place for formulating and implementing a comprehensive human resource development plan covering all aspects of disaster management. The Plan has to be prepared under the provisions made in the legal mandates like State Disaster Management Act, National Disaster Management Act, etc.

The second section describes about the provisions in draft Human Resource and Capacity Development Plan for Disaster Management and Risk Reduction in India formulated by National Institute of Disaster Management.

The third section presents the vulnerability profile of the state. This section describes the regional vulnerabilities in the state at macro level and specific vulnerable locations within the state.

The fourth section establishes the contextual scope of the report. The scope covers laying down a strategic framework for training and capacity development for each state. Under this section, the report seeks to find solutions to the following basic questions:

- How to make training a more systematic exercise in organised learning than an activity undertaken in an ad hoc manner?
- How to make a shift from a completely supply driven training approach to a balanced approach which is more need based and demand responsive?
- How to link training to the larger capacity development agenda and goal?
- How to use training as a means to achieve some agreed capacity benchmarks and not take it as an end in itself?

Specific assessment of the following is also done along with other relevant aspects related to the state:

- Institutional Setup for DM
- Addressing hazards and vulnerability
- Prevention and mitigation
- Preparedness
- Early warning
- Relief and recovery

The assessment covers a holistic approach to assess the above comparing with competent professionals, educators, trainers and field practitioners.

This fifth section includes a brief description about the framework for determining the overall capacity of the stakeholders involved covering non-training factors such as policy, strategy, planning, infrastructure, finance, work culture and enabling environment. The framework covers all concerned stakeholders broadly falling in following categories (i) Stakeholders with reference to the Government sector or Government supported entities that have the formal responsibilities to address disaster management; (ii) Non Government Organizations including INGOs, CBOs, SHGs etc., working on disaster management and allied issues; (iii) Academic institutions, private bodies, research based academies and corporate supported bodies and associations; and (iv) Community

representatives, volunteers, resident welfare associations, individual professionals; ward, village and GP members.

This sixth section includes a brief description of the institutions involved in disaster management in the state. The capacity in terms of resource persons and their qualification, trainings done and imparted at various levels and engagement with civil societies and other stakeholders is clearly portrayed. The capacity gaps are identified and portrayed and remedial measures are indicated to bridge such gaps for efficient implementation of Human Resource and Capacity Development Plan.

The seventh section includes a brief description of the available capacities at micro level in the state. The capacity in terms of risk and vulnerability analysis, participatory exercises, trainings and mock drills, disaster management planning, integration of climate change aspect in planning, etc. up to block/village level is portrayed. Other specific initiatives for capacity development at micro level are also presented in the section.

The eighth section present the quantified sample of personnel to be trained in specific sectors identified for capacity development. A model template for quantification exercise has been developed for health, education, PRIs/ULBs and rural development sectors, besides government officials and NGOs.

The ninth section includes strategy to motivate people to carry forward the agenda for disaster risk reduction by providing incentives in different forms like financial, identity/designation, rewards, certificates, etc. Some of the illustrative examples of measures that can be taken are portrayed in the chapter.

The tenth section presents prioritized training themes and the intended level of training out of the identified training needs in previous sections. This section also include information about the approach adopted for training purpose, mode of training, language of training, platform of training and target trainees.

The eleventh section describes the organizational framework for imparting trainings at State/District level. Sector specific training institutes in respect of their area of specialization are identified in the section. This also includes framework for coordinating and monitoring the identified institutes for training for avoiding overlaps. The roles and responsibilities of the identified post/personnel responsible for disaster management at various levels are also included in the section along with a detailed list of major functions to be carried.

The twelfth section includes information about the existing financial mechanisms for disaster management and how the financial resources will be met in the planned strategy for disaster management.

This report will serve as a tool to develop Human Resource and Capacity Development Plans at state level. The proposed structure of the plan can be modified based on the contextual need and priorities of the state.

## 1. The Legal Mandate

The Disaster Management Act, 2005 has mandated that the National Institute of Disaster Management may formulate and implement a comprehensive human resource development plan covering all aspects of disaster management. Although there is no such direct mandate for State Disaster Management Authorities, one of the functions assigned to them is to review the measures being taken for mitigation, capacity building and preparedness by the departments of the government of the state and issue such guidelines as may be necessary. Further, the State Executive Committees have been inter alia assigned the function to promote general education, awareness and community training in regard to the forms of disasters to which different parts of the state are vulnerable and the measures which may be taken by such community to prevent the disaster; mitigate and respond to such disasters.

The National Institute of Disaster Management has brought out a comprehensive draft National Human Resource and Capacity Development Plan in 2013. Most of the State Governments have not taken any such proactive measure. However, as per the DM Act, SDMA has to take measures for capacity building and SEC has to promote community training to ensure the community has the capacity to prevent, mitigate and respond to disasters, based on their vulnerability at micro level. Now awareness generation and community training can be promoted by the state governments through an appropriate mechanism put in place. The Act has therefore cast this responsibility on SDMA and SEC, leaving the modalities of community training and capacity building to different states. This would obviously be based on micro level vulnerabilities and to empower the community to deal with such situations. Therefore, a training and capacity development plan, by whatever name it is called, has to be put in place and implemented, by the SDMA/SEC.

**Explanatory Note:** *This section may also include detailed information about the legal mandate in The State Disaster Management Acts, if put in place for formulating and implementing a comprehensive human resource development plan covering all aspects of disaster management. No State, of the six States visited, namely, Andhra Pradesh, Bihar, Gujarat, Odisha, Uttarakhand and West Bengal, has a comprehensive Human Resource and Capacity Development Plan in place. However, the Gujarat State Disaster Management Act, 2003 does make a reference to training and capacity building as below:*

- (i) Under functions of the State Government, in section 4(2)(f), it states as one of the functions as “ensuring that disaster management plans are prepared and training for managing disasters is given;*
- (ii) Under section 16(1)(c), one of the functions assigned to State Disaster Management Authority is “promoting disaster management capacity building and training programmes among communities and other stakeholders”*
- (iii) Under section 24(1) (f), one of the functions to be carried out by the Collector is “facilitate community training, awareness programmes and the installation of emergency facilities with the support of local administration, non-governmental organisations and the private sector.*

*It is therefore noted that training and capacity development plan is indirectly referred to in the Gujarat Act through functions to be performed at various levels; since the Act also stresses the link between planning and activities.*

*Bihar had also enacted its own Act but has since adopted the national DM Act. Therefore, even if there is no separate statute in a state, but administrative instructions have been issued directly or indirectly referring to training and capacity building of stakeholders, the State Human Resource and Capacity Development Plan may be prepared under such administrative mandate, or, If any State Government has made an effort for training and capacity development, the mandate under which it has been done may be mentioned under this section. Failing both these options, the State HR & CD*

*Plan may be prepared under the National Disaster Management Act, taking a cue from the functions assigned to NIDM. The National HR and CD Plan developed by the National Institute of Disaster Management may be taken as a guideline and relevant information included in the State HR and CD Plans. The section should also talk about the responsibilities of State Disaster Management Authority (SDMA) and State Executive Committee (SEC) for capacity building and community training in the state, keeping in view the National Disaster Management Act, 2005 or State Acts, if any, put in place to cover the legal mandate.*

*For instance, State Executive Committee has been assigned a function, under section 22(2)(j), "to promote general education, awareness and community training in regard to the forms of disasters to which different parts of the state are vulnerable and the measures that may be taken by such community to prevent the disaster, mitigate and respond to such disaster". Further State Authority, under section 18(2)(h), has been assigned the function to "review the measures being taken for mitigation, capacity building and preparedness by the departments of the Government of the State and issue such guidelines as may be necessary".*

*Therefore, legal mandate for preparation of a State HR & CD Plan does exist indirectly, through the provisions referred to above, which may be brought out under the "Legal Mandate".*

## 2. Draft National Human Resource and Capacity Development Plan

The National Institute of Disaster Management has recently formulated draft Human Resource and Capacity Development Plan for Disaster Management and Risk Reduction in India. The Plan puts disaster risk mitigation at centre-stage with inter-linkages with different approaches such as community based disaster risk reduction, engineering based disaster risk mitigation, environmental approach to risk mitigation and incident command system approach which have to be adapted together to ensure an inclusive disaster risk mitigation strategy. The HR & CD Plan assesses the present status, sector-wise and stakeholder-wise, status of training institutes and analyzes institutional network. It discusses capacity gaps and advocates creation of a cadre of DM professionals. The plan also identifies disaster-specific issues being faced during pre-disaster, during-disaster and post-disaster stages. Further it discusses training and education network with possible areas of intervention, broadly on the lines of national Disaster Management Framework. The Plan culminates with implementation strategy, time frame and budget and also identifies activities/ sub-activities which may be undertaken for training, education, public awareness and organisation and institutional development, the main components of the current study.

The draft national HR & CD Plan in a way lays down guidelines for national, state and district governments. It does not attempt to prescribe benchmarks or quantify numbers to be trained and very rightly too, since training and infrastructure needs should appropriately be identified at micro level based on micro level vulnerabilities, population, socially and economically disadvantaged segments, gender empowerment and special needs of children and elderly with a bottom up approach. The National HR & CD Plan needs to be shared with all state and district governments so as to facilitate the task of development of their respective plans together with an integrated Action Plan with a participatory approach at respective levels.

***Explanatory Note:*** This section should include the information about the provisions in draft Human Resource and Capacity Development Plan for Disaster Management and Risk Reduction in India formulated by National Institute of Disaster Management. Since the draft Human Resource and Capacity Development Plan for Disaster Management and Risk Reduction in India is still under consideration of the Ministry of Home Affairs, it is not available on NIDM website. However, NIDM may send a soft copy to State Governments, when requested. It should at least be put on the website of MHA or NIDM or NDMA for comments so that the State Governments have the advantage of going through it and taking it as broad guidelines.

### 3. Vulnerability Profile of [name of the State]

There is dispersal of vulnerabilities, not only among the states, but also within a state and even within a district. There are variations in a district from block to block and even within a block from village to village. In the six states visited for the Study, droughts and floods are common to all states. While Bihar, Gujarat, Uttarakhand and West Bengal are seismically vulnerable, Andhra Pradesh, Odisha, Gujarat and West Bengal are vulnerable to cyclones; Uttarakhand and some districts in West Bengal are also vulnerable to landslides. Fire is a common hazard for all states/districts. However, macro-level vulnerability profile is of minimal help unless micro-level vulnerabilities are analysed and remedial measures put in place to ensure that existing vulnerabilities are reduced further; and in situations where it is not feasible in short term, to put in place necessary measures so that vulnerabilities at micro level, if these cannot be reduced, are not enhanced further. Besides physical vulnerabilities, the socio-economic vulnerabilities further escalate the vulnerability profile, particularly at community level, both in rural and urban areas, inhabited by socially and /or economically disadvantaged segments of population.

Therefore, vulnerability profile of a state should broadly cover the risks of each *region* outlining specific vulnerabilities of different regions in the state covering natural and man-made disasters. It is a micro-level activity and may commence from village to block to district and state level. However, to kick-start the activity, states may put in place broadly the vulnerability profile of the state. Most of the states have already undertaken this exercise under their respective State Disaster Management Plans. Briefly, based on the consultants' visit to six states, the vulnerability profile, as observed, is given below.

#### **ANDHRA PRADESH**

Andhra Pradesh is exposed to cyclones, storm surges, floods and droughts. A moderate to severe intensity cyclone can be expected to make landfall every two to three years. About 44 percent of the state is vulnerable to tropical storms and related hazards. In India, the cyclones develop in the pre-monsoon (April to May) and post-monsoon seasons (October to December), but most of them tend to form in the month of November. Cyclones on the east coast originate in the Bay of Bengal, the Andaman Sea or the South China Sea, and usually reach the coastline of Tamil Nadu, Andhra Pradesh, Orissa and West Bengal, which are the most vulnerable to these types of hazards. Two of the deadliest cyclones of this century, with fatalities of about 10,000 people in each case, took place in Orissa and Andhra Pradesh during October 1971 and November 1977 respectively. The super cyclone of Orissa in 1999 caused large scale damage to life and property. Along the Andhra coast, the section between Nizampatnam and Machilipatnam is the most prone to storm surges. Vulnerability to storm surges is not uniform along Indian coasts.

Despite this relatively low percentage, the level of human and property loss that cyclones cause around the Bay is very high. Once the cyclones enter the mainland, they give way to heavy rains which often translate into floods, as it was the case with the damaging cyclone-induced floods in the Godavari delta, in August of 1986. Many drought prone areas adjacent to coastal districts in eastern maritime states are thus vulnerable to flash floods originated by the torrential rains induced by the cyclonic depression. In addition to cyclones and its related hazards, monsoon depressions over the north and central areas of the Bay of Bengal move until reaching north and central India, including portions of Andhra Pradesh, bringing heavy to very heavy rains and causing floods in the inland rivers between June and September.

The regular occurrence of disasters, both natural and manmade, in coastal Andhra Pradesh has had a series of repercussions on the state economy, its development policies and political equilibrium and daily life of people living in the most vulnerable zones. Andhra Pradesh is battered by every kind of natural disaster: cyclones, floods, earthquakes and drought. The coastal region suffers repeated

cyclones and floods. The 1977 cyclone and tidal wave, which resulted in great loss of life, attracted the attention of the central and state Governments of India, as did those of 1979, 1990 and 1996. The floods in the Godavari and Krishna Rivers caused havoc in the East and West Godavari and Krishna districts.

Earthquakes in the recent past have occurred along and off the Andhra Pradesh coast and in regions in the Godavari river valley. Mild tremors have also hit the capital city of Hyderabad, for example in September 2000.

Social and economic life of AP's population is characterized by recurring natural disasters. The state is exposed to cyclones, storm surges, floods, and droughts. According to the available disaster inventories, AP is a state that has suffered the most from the adverse effects of severe cyclones. It has been estimated that about 44 percent of AP's total territory is vulnerable to tropical storms and related hazards, while its coastal belt is likely to be the most vulnerable region in India to these natural phenomena. Khamman district, in the Telengana region, is affected by monsoon floods, along with five districts in coastal AP. Four districts in Rayalaseema and five in Telengana experience drought. The fertile Delta areas of the Godavari and the Krishna rivers, which contribute substantially to the state's economic prosperity, face flood and drainage problems, and more so in the aftermath of cyclones.

More than sixty cyclones have affected AP in the past century. The incidence of cyclones seems to have increased in the past decades, to the extent that severe cyclones have become a common event occurring every two to three years, repeatedly and severely affecting the state's economy while challenging its financial and institutional resources. Almost 9 million people are vulnerable to cyclones and their effects in coastal AP, 3.3 million of those belong to communities located within five km of the seashore. The deadliest cyclone in the last twenty years took place in November 1977 killing over 10,000 people. The May 1990 cyclone had a death toll close to 1,000 people. Between 1977 and 1992, about 13,000 lives and 338,000 cattle were lost due to cyclones and floods, and nearly 3.3 million houses damaged.

May cyclones are relatively rare in the region, and only about 13 have affected AP in last century. However, when they badly hit the Delta areas, as it happened in 1977 in the Krishna district - where 80 percent of the casualties occurred - the population in danger may be higher than usual. May is rice harvesting season, and a good number of migrant laborers come to the delta from less fertile areas of AP in search of work. Since they lack awareness of the area's most prevalent hazards, this migrant population is more vulnerable than the permanent delta residents. Similarly, entire families have come to the delta districts to engage in activities related to shrimp farming, which has taken off recently in the area. They are involved in the collection of fingerlings, living for several months a year in makeshift shelters along the marshes. The warnings may not reach them on time, and even when they do, their inexperience renders them highly vulnerable.

The Godavari and the Krishna rivers have well-defined stable courses, and their natural and man-made banks have usually been capable of carrying flood discharges, with the exception of their delta areas. Traditionally, the flood problem in AP had been confined to the spilling of smaller rivers and the submersion of marginal areas surrounding Kolleru Lake. However, the drainage problem in the delta zones of the coastal districts has worsened, thereby multiplying the destructive potential of cyclones and increasing flood hazards. Moreover, when a storm surge develops, as it was the case during the severe November 1977, May 1990 and November 1996 cyclones, threats to humans and property multiply as the sea water may inundate coastal areas which are already being subjected to torrential rains. Finally, a critical additional factor affecting the flood management and the irrigation systems is the lack of maintenance. On several occasions, such as the May 1979 cyclone, most of the deaths were occasioned by breaches to the chains of tanks and canals, and over-flooding due in part to the choking of drains by silting and growth of weeds.

## **BIHAR**

Bihar is highly prone to various natural disasters. Due to its geographical and topographical location, Bihar is prone to floods, droughts, fires and earthquakes. According to seismic zoning, some parts of the state are in Zone-IV and Zone-V, which can cause devastation as faced in the Bihar-Nepal earthquake of 1934. More than 14 districts of the state are vulnerable to natural hazards such as cyclones, floods, droughts, earthquake, cold wave, heat wave etc. The combination of poor socio-economic conditions, lack of awareness and inadequate preparedness at community level for disaster risk reduction as well as the impact from frequent disaster events have led to recurrent economic losses, thereby slowing down progress on human development.

Recent major disasters in the state include the Kosi Floods of 2008. Bihar is India's most flood-prone State, with 76 percent of the population in north Bihar living under the recurring threat of flood devastation. About 68,800 sq. km out of total geographical area of 94,160 sq. km (comprising 73.06 %) is flood affected. Bihar has been taking active steps to improve disaster management planning and has established significant institutional systems and taken legislative steps in this regard in recent years. The vulnerability profile of four districts visited is briefly discussed below.

### *Patna City*

Patna is surrounded on three sides by rivers—the Ganga, Sone, and Poonpun. It is vulnerable to different kinds of disasters due to its geographical and topographical location. It is mainly prone to floods, water stresses, fires and earthquake. According to seismic zoning, it lies in Zone-IV and also falls in the risk zone of floods. A series of bunds/embankments have been constructed to control the floodwaters. The low income areas, which are primarily on low-lying land, and the old city with its old and dilapidated buildings and congested lanes are particularly vulnerable.

### *Darbhanga District*

Darbhanga is one of the most flood prone districts of North Bihar. The district is bounded on the north by Madhubani district, on the south by Samastipur district, on the east by Saharsa district and on the west by Sitamarhi and Muzaffarpur districts. The District of Darbhanga can be segmented into four natural divisions. The eastern portion consisting of Ghanshyampur, Biraoul and Kusheshwarsthan blocks contains fresh silt deposited by the Kosi River. This region was under the influence of Kosi floods till the construction of Kosi embankment in the Second Five Year Plan. It contains large tracts of sandy land covered with wild marsh. The second division comprised of the anchals lying south of the Boorhi Gandak river and is the most fertile area in the district. The third natural region is the doab between the Burhi Gandak and Baghmati and consists of the low-lying areas dotted over by chaur and marshes. It gets floods every year. The fourth division covers the Sadar sub-division of the district. This tract is watered by numerous streams and contains some up-lands.

Numerous rivers originating in Himalayas actually water this district. Out of these rivers Kamla, Baghmati, Kosi and Kareh are of most importance. Average rainfall is 1142.3 mm, which is an indication of good precipitation across the district, which also makes it vulnerable to floods.

### *Gaya District*

Gaya is one of the most drought prone districts of the state of Bihar. It is located in the southern part of Bihar. Gaya is 100km south of Patna, the capital city of Bihar. Situated on the banks of Falgu River, it is a place sanctified by both the Hindu and the Buddhist religions. It is surrounded by small rocky hills on three sides and the river flowing on the fourth (western) side. The temperature of Gaya rises to above 45 degree C in the summer and comes down to 02 degree C in the winter, making it highly vulnerable to both heat and cold waves.

Almost 90% area of the district is affected by naxal extremism. Factors responsible for breeding of naxal problem in this area are mainly extremely poor level of literacy, inadequate implementation of land reforms policies, and perceived negligence of the most marginalised communities. To counter the growing threat of naxals and to effectively keep a check on naxal activities, security has been strengthened and developmental activities are also being promoted in these areas in parallel. However, it has to be ensured that development itself does not contribute to enhancing the vulnerabilities and therefore necessary risk mitigation measures need to be integrated with development, making it sustainable and inclusive.

#### *Supaul District*

Supaul is another flood prone district of Bihar. The area has been referred to as the fishery area (Matsya Kshetra) in the Hindu mythology. Supaul district is a part of the Kosi division. The river Kosi flows through the district which is considered the sorrow of the area. Tilyuga, Chhaimra, Kali, Tilawe, Bhenga, Mirchaiya, Sursar are its tributaries. The state capital Patna is about 300 kms away. The nearest airport is also at Patna. The district is bounded by Nepal in the north, Saharsa district in the south, Araria district in the East and Madhubani district on the west.

In 2008, at the time of Kosi flood, Supaul was one of the most affected districts of the state. The area was unexpectedly affected due to change of course of the river after a breach of river embankments in upstream Nepal. The type of soil is sandy in this region. The areas of wasteland full of kans and pater (Jungles) lying mostly in Supaul subdivision have been largely reclaimed and are yielding crops. Here, it is pertinent to note that Supaul receives the earliest and highest rainfall in the state.

### **GUJARAT**

Gujarat is vulnerable to earthquakes, cyclones, floods, storm surges and salinity of river water due to egress of sea water during high tides in coastal areas. The Bhuj earthquake in January, 2001 resulted in massive loss of lives and property triggering constitution of Gujarat SDMA followed by various actions taken by the State Authority for rehabilitation, re-construction, recovery as also preparedness and mitigation. Although, the vulnerability profile of the State is well known at macro level, it needs to be identified at district and sub-district level also with involvement of District Planning Boards so as to facilitate mitigation projects for DRR.

#### *Ahmedabad (Rural Areas)*

Ahmedabad falls in seismic zone III. However, in case of earthquakes of high magnitude in areas falling in seismic zone V and IV, the impact, though at comparatively modest level, has been felt in Ahmedabad also such as damage during Bhuj earthquake of 2001. The Fire incidents are quite common in Ahmedabad; the Fire Services, which attend to both fire fighting and rescue work, reported that there were about 10-12 incidents every day. In rural areas of Ahmedabad, the main vulnerability was stated to be flash floods and salinity of river water due to high tides.

#### *Jamnagar*

Jam Nagar is in seismic zone IV and therefore it is vulnerable to earthquakes. It is also cyclone and flood prone. There are 52 villages which are flood-prone and 57 villages are cyclone-prone; these villages have experienced disasters recurrently. Besides, since there are several petro-chemical industries, there is always risk of man-made disasters. It is even otherwise a sensitive district since it is a border district. It was stated that Gorinja is the most disaster prone GP. The rainfall pattern varies significantly; if the rainfall is 700-800 mm, it results in floods, if it is around 300 mm or less, it results in drought. Cyclones used to be frequent earlier (about 10-15 years back); it has reduced in frequency as also intensity; there is however no reason to be complacent since there is no scientific study to establish that it is based on climate change or other established factors; it may recur again

with devastating impact. It was also mentioned that It is true that, post 2001 earthquake, attention is primarily focused on earthquakes and other disasters, though recurrent, are not receiving adequate attention. The community and GP members at Gorinja GP mentioned that Cyclone normally occurs once in 3-4 years; has hit the coastal belt about 2-3 times in last 10 years. The last major cyclone occurred in 1998. 2001 earthquake had also affected the village; about 10-15 houses were destroyed and about 100 were damaged; these were all kutcha houses; there were only 20-25 pucca houses before 2001; there were no deaths but 13-14 persons got injured. The low lying areas (village extension) have water logging problem; people have to be evacuated to village school. There is also damage to crops in extended parts of village due to wild animals; hence several villagers live there to protect their crops; there is need for a boundary wall to safeguard it from animals. Sea water also seeps in during high tide. It was further mentioned that floods affect in June-July due to heavy rainfall but the rains are dispersed now over 4 months so the problem is negligible. The reason for dispersal of rains was not known; it could be due to climate change.

#### *Kutchh*

Kutchh is seismic zone V and is extremely vulnerable to earthquakes and cyclones. The 2001 earthquake had resulted in massive loss of lives and property. The last major cyclone occurred in 1998. Since then, no major cyclone has occurred. Some of the villages in the area are highly vulnerable to flashfloods. Every year, when rainfall occurs, water logs in their houses for 2 to 3 days. Besides, Narmada River water, which is otherwise clean and potable, becomes saline during high tides which have posed a major problem for the community.

#### *Bhuj (Urban Areas)*

Bhuj is in seismic zone V and has suffered several recurrent earthquakes. The Bhuj earthquake of 2001 was massive resulting in substantial loss of lives, property and livestock. It badly affected the means of livelihood. The infrastructure including hospital, schools and roads suffered heavy damage. It is also affected by cyclones and salinity of water particularly in villages in coastal belt. Bhuj City falls under very high damage risk zone for wind and cyclones, besides earthquakes. There are major earthquake faults near Bhuj. Slippage is believed to have occurred on the south dipping North Wagad reverse fault in the failed rift. This has been further confirmed by aftershock studies following the earthquake. Initial speculation held the Kutchh Mainland Fault (KMF) responsible for seismicity of Bhuj town. However, further studies and field observations show that it might have been caused on the previously unknown NWF lying in the vicinity of the KMF. Slip is believed to have been between 1 to 4 meters.

The buildings most badly damaged in the earthquake were earthen buildings, old masonry buildings and simple reinforced concrete frame buildings. The statistics of damage from the earthquake identified the vulnerability of a range of building type characteristics to earthquakes of different strength likely to occur in the future. It is desirable to identify buildings with high vulnerability factors, through RVA and other techniques, and where these buildings also have large numbers of residents; these may be declared uninhabitable, until engineering solutions for retrofitting of such buildings are worked out and implemented. The buildings with highest projected future earthquake losses, based on RVA, may be graded for suitable priority for detailed evaluation and retrofitting.

Bhuj also suffers from the problems of urban flooding and water-logging besides fire. In the slum areas, the vulnerability gets further accentuated due to lack of civic amenities, dense population, lack of hygiene, poor drainage, water and sanitation.

#### **ODISHA**

The unique geo-climatic conditions of Odisha make the state vulnerable to various natural disasters. Odisha has a history of recurring natural disasters including floods, droughts and cyclones. On the

east, the state is surrounded by Bay of Bengal and has a coast length of 482 kms. Though the coast line is about 17% of the east coast, Odisha has been affected by nearly 35% of all the cyclonic storms that have inundated large tracts of coastal districts.

Similarly, Mahanadi and Subarnarekha are the major rivers flowing through the state and their tributaries have the potential to cause major floods. The problem is further accentuated when floods coincide with high tide. The silt deposited constantly by these rivers in the delta region raises the bed levels and the rivers often overflow their banks or break through new channels causing heavy damages. The entire coastal belt is prone to storm surges, which are usually accompanied by heavy rainfall, thus making the region vulnerable to both storm surges and river flooding.

The frequent intensity of droughts in the state, especially in the KBK region, is another major concern. This is leading to crop failures, decline in surface and groundwater levels, increasing unemployment and migration. A portion of state is prone to moderate earthquakes. In addition, the state is also affected by disasters like heat waves, epidemics, forest fire and is prone to industrial hazards and major accidents.

Despite being rich in minerals, Odisha is one of the poorest states in India. Its poverty and backwardness coupled with recurring natural disasters make the state and its people one of the most vulnerable in the country. Agriculture continues to be the mainstay of the state's economy and a large percentage of people are dependent on this sector. Due to lack of adequate irrigation facilities, agriculture is particularly dependent upon the monsoon.

As a matter of fact, nearly 80% of rainfall in the state occurs within 3 months, which also coincide with the main cropping season. Further there is very little or no forest covers in the flood prone and coastal areas, which also increases the vulnerability of the people living in and around this area.

Odisha has a unique history of a series of natural disasters. In 1831, a major cyclone claimed 22,000 lives in Balasore. In 1855, Mahanadi rose to a height of 127.13 feet at Cuttack and breached the embankments at 1365 places and affected thousands of people. It was described as the most devastating flood. Later in 2001, and in later years of the decade, the state of Odisha faced widespread floods in various districts, and at the same time KBK region also got affected due to drought, epidemic and allied problems.

#### *Puri City*

Considered to be one of the four holy 'Dhamas' of India, the historic town of Puri is located on the Bay of Bengal coast, along a distinctive stretch of sandy beaches. Geographically Puri town is bound by the sea on the south east, Musa river in the north, Sunamuhin River in the west and Balukhanda reserve forest on the east. The city is vulnerable to multiple disasters. Due to its location, the city is prone to tropical cyclones, storm surges and tsunamis. The city lies under Zone III of the seismic zoning map of India, which is a moderate risk zone. The rivers in the nearby areas with heavy load of silt have very little carrying capacity, resulting in frequent floods. The city also lies in very high damage risk zone for cyclones, though it escaped major damage in the 1999 Super cyclone. It gets a very heavy load of pilgrims, particularly during festive seasons, and faces challenges of crowd control. The poorer areas of the city, which are in the form of coastal fisher slums and inland colonies, are the most vulnerable. There are also frequent incidents of drowning, mainly involving tourists at the beach.

#### *Kalahandi District*

This district has been in the news since the middle of 1980s when a story of the sale of a child by the parents due to poverty came into light. The incident led to the then Prime Minister to visit the district and as a result brought attention of the entire nation to its acute poverty, severe drought

and famine issues. In later years this entire region of Kalahandi – Bolangir – Koraput (KBK) got a special package to uplift the standard of living although the basic infrastructure is still in dismal state and development progress is very slow.

Kalahandi is known for repeated droughts. Droughts had occurred in Kalahandi in 1868, 1884 and 1897. The famine of 1899, also known as Chhapan Salar Durbhikshya, left a terrible socio-economic impact in this area. A series of droughts, in 1922, 1923, 1925-1926, 1929-1930, 1954-1955 and 1955-56 occurred in Kalahandi. The terrible drought of 1965-66, which occurred in Kalahandi, had a severe impact. Due to lack of rain, three fourth of the total crop production was lost. The effect of the drought continued to be felt in the following years. Besides a long history of drought, the socio-economic traditions are also seen as a cause of suffering of the poor behind the class distinction among the people of Kalahandi. Caste plays an important role in the socio economic life of the district.

Interestingly, on one hand this district is notorious for drought and starvation deaths, and on the other hand, the same district also boasts of the highest number of rice mills in Odisha; it stood 2nd in the state in paddy production in 2012, which actually needs more water. The climatic conditions and geography of this district is very unique, with an annual rainfall of a high 1330 mm. Actually, one part of this district receives excess rainfall, however the behaviour of monsoon is quite erratic in terms of time and space, which also results in a perennial drought like situation in the district almost every year. Along with the drought, problems such as rural unemployment, non industrialization, growth of population and rapid deforestation are some of the major problems of Kalahandi, which point to potential disasters.

#### *Balasore District*

This coastal district is highly prone to severe floods and cyclones. Especially during the rainy season all the major rivers in the district carry huge amounts of water and pose potential threat of flood. River Subarna Rekha is the main source of flooding in recent years, and has led to devastation in a number of blocks of Balasore. It may be noted that not only has the district been at the receiving end of floods a number of times in recent years, it suffers from multiple waves of flooding in a single season.

As the district lies in the coastal belt of Bay of Bengal, it is highly vulnerable to cyclones and the tidal surges. Cyclones bring in their trail heavy rains causing severe floods and saline inundation. Balasore, Baliapal, Jaleshwar, Bhograi, Basta and Soro blocks have been identified as the severe cyclone prone blocks.

Parts of the district are also prone to droughts, tsunamis, fire accidents, and earthquakes. Though the district has not faced any severe earthquake so far, but some part of the district comes under Zone III, hence the possibility of earthquake cannot be ruled out.

#### *Khordha District*

This district was carved out from Puri district in 1993, taking Khordha and Bhubaneswar sub divisions. The major hazards of this district are floods, cyclones and droughts. Especially floods and heavy rainfall have occurred almost every alternate year in this region in recent times. The district is also prone to fires, heat strokes and earthquakes. The district comprises 10 blocks with 8 rivers, mainly tributaries of Mahanadi. Baliaanta and Balipatna, and therefore are the most affected and vulnerable blocks as per the recent records. The climate is typically tropical and the blocks which fall in the low lying areas, get affected most of the time. Unsafe impact of recent developments and unsafe construction are additional major concerns in this region.

The district includes the state capital of Bhubaneswar, and the issue of urban risk is among the major concerns. Notably, Bhubaneswar and its adjoining city Cuttack are now being seen as an urban agglomeration with dedicated planning and development plans and authorities, and the district administration does not consider Bhubaneswar urban risk as a major concern in its work.

### **UTTARAKHAND**

Uttarakhand was carved out of Himalayan and adjoining districts of Uttar Pradesh on 9 November 2000 to become the 27th state of the Republic of India. It is one of the most beautiful states in India and attracts lot of tourists; however, due to its geographical setting it is prone to landslides, earthquakes, forest fires, cloudbursts and flashfloods. So far, in about last two decades (since 1990), Uttarakhand has experienced two major earthquakes (magnitude >6) in Uttarkashi (1991) and Chamoli (1999) and a series of landslides/cloud bursts such as Malpa (1998), Okhimath (1998), Fata (2001), Gona (2001), Khet Gaon (2002), Budhakedar (2002), Bhatwari (2002), Uttarkashi (2003), Amparav (2004), Lambagar (2004), Govindghat (2005), Agastyamuni (2005) Ramolsari (2005), Pithoragarh (2009), Almora (2010), Ukhimath (2012) and Chamoli, Rudraprayag and Uttarkashi (2013) (Incidents occurred after the visit of the team before the heavy rainfall and landslides, in early part of 2013).

#### *Chamoli*

Chamoli occupies the north-eastern corner of the Garhwal tract. It is vulnerable to earthquakes, landslides and forest fires. Chamoli was badly hit by a moderate earthquake in 1999 which caused loss of about 100 human lives and rendered around 100,000 people homeless. Landslides in Chamoli are recurrent phenomenon in monsoons for past few years. The two GPs selected were Chinka and Ganai Darmi.

In Chinka, a GP with a population of 1090, Alaknanda River flowing in the valley is continuously cutting the bottom of the hill and thus the village is sinking due to which most of the houses have huge cracks in the walls. People have to get it repaired almost every year. Chinka presents a classic example of how climate change and developmental activities induce vulnerabilities. According to the villagers, Border Road Organisation (BRO) during major road building operations dumped the debris in the Alaknanda River which changed its course towards the village. The impact of the change was not felt until 3 years back when it rained heavily and almost continuously for around 10-12 days and the River started cutting the bottom of the hill and from then on, the village started sinking. Out of 518 households, 158 houses are highly vulnerable and have been identified for relocation.

Ganai Darmi too, which has a population of 706, has similar hazards. An additional handicap is that it is located 3 km uphill and the only way to reach the pucca road, the highway, is by walking on kutchha road which is severely damaged and becomes inoperable during rains. It becomes arduous especially for children as they have to walk through forest and it takes them around one hour to reach the school; children narrated that they feel scared as they have seen wild animals and in monsoon they cannot go to school at all as the road collapses. In case of any emergency, a patient has to be carried on a chair to the main road and the steep climb makes it even more dangerous.

#### *Rudraprayag*

In Rudraprayag the GPs covered were Chunni Mongoli and Bhatwari. The population of Chunni Mongoli is around 571 and Bhatwari has a population of around 365. Both the GPs belong to the Ukhimath block and were severely hit by the recent landslide on September 14th, 2012 and during the visit the work of rehabilitation was still going on.

On September 14, 2012, Ukhimath block in Rudraprayag district was the worst hit as a cloudburst in the early hours of morning (just past mid-night) occurred, resulting in a major landslide and

flattened large number of houses in eight villages. Chunni Mongoli was one the worst affected GPs in Ukhimath block. Bhatwari village did not face any loss of life but there was huge loss of agricultural land which has a direct impact on the livelihood of the people living there. Bhatwari turned into a shelter for all the relatives and acquaintances from the affected villages and all its supplies were cut off due to the damage of roads and since there was no damage to life and property, the relief materials were also not supplied. The community faced major issues of sustenance without food and other supplies.

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#### **Massive landslide on 14th September, 2012 at around 1:00 A.M.**

*“It was raining heavily from 6 pm in the evening, around 1:00 am Mongoli people informed us that landslide is taking place and people started moving to the upper areas. “It was raining, there were no lights and we were walking uphill in the dark with no road. There was a constant fear that what would happen if the landslide occurs on the route we are climbing and also in this dark, if we fall, we will die as no one is going to be able to rescue us. My kids fell ill with high fever but got good treatment as there were doctors in the Inter College, the critical patients were airlifted, overall the camp in the village was well organised. We lived in the Inter College for about one week and got food from other villages. While we were living in the Inter College we thought that we were never going to find our house back as we were hearing different stories from people living with us in the camp. But luckily in our village houses on the side where I live were not damaged.*

*Now we are scared as monsoons are approaching and nothing has been done. When we pass from Mongoli, we can still see the debris and boulders in the village. Nobody ever told us before that mountains are so fragile and we did not know what to do as such an incident had never happened before.”*

*Shashi Devi, Chunni Village*

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For Rudraprayag this was the first instance of cloudburst resulting in landslide and probably that is why there were so many losses as the district administration as well as the community could not anticipate a disaster of this magnitude. It rained around 134 mm in the time span of 2 hours on 13th September which was an exceptional case, even during previous year, the average rainfall for the month of September was 112.11 mm. So looking at these figures, one can imagine the havoc these rains must have caused.

#### *Nainital*

Nainital was the first district which was surveyed to pre-test the tools for the study. The pre-test was conducted in Pandegoan village and the GPs for the study sample were Bhumiadhar and Padli. Bhumiadhar has a population of 2277 with 415 households. It has two villages, Bhavanipur with one hamlet Jokhia and Bhumiadhar with four hamlets Bhumiadhar, Khupi, Aksoda and Kafilgair. The population predominantly belongs to scheduled caste and the village is popularly known as an Ambedkar village. About 240 of the total 415 households belong to BPL category.

Padli has a population of about 1500 out of which about 60% of the village residents' fall under the category of Scheduled Castes and 40% fall under the general category. 5% to 10% families have moved to Nainital or bigger towns.

Nainital, which is known as 'Lake District', is vulnerable to multiple hazards like earthquakes, landslides, forest fire and cloudburst. In Bhumiadar GP, landslides are a recurrent phenomenon especially in Khupi hamlet. There are a number of seasonal springs flowing through the village which are creating erosion. Many hamlets of the village were affected during the 2010-11 landslides and

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<sup>1</sup><http://www.imd.gov.in>

path tracks were washed away; road towards Haldwani was also affected. Checkdams are built under MNREGA but are of no use and get washed away every time.

Padli village has been identified as being especially vulnerable to landslides. In 2010-11 the area was hit by a cloud burst which caused major devastation in the village. Farmlands got eroded and cracks developed in houses due to the land subsidence caused by the cloudburst. Another observed risk to the village is the approach road of 4 km to the main road from the village which is on a difficult mountain terrain and is in a bad condition since it lacks any maintenance.

### *Uttarkashi*

Uttarkashi city is vulnerable to earthquakes, flashfloods, landslides and forest fires. During the earthquake of 1991, about 2000 people died in Gangori Ward alone. Besides, the city has suffered a huge loss in 2012 due to flash floods following heavy rainfall (cloud burst). Earthquake of small intensities are felt quite regularly in the area. According to the community, they had felt the tremors of earthquake a week before the interview. The residents apprehend that a major earthquake is now due and can occur any time.

The upper part of mountains (above the settlement area) is dotted with pine trees. Pine forests are very vulnerable to forest fires. The residents stated that every year, 2 to 3 incidents of fire during the period April to June had been experienced. However, there have been no casualties and forest department is handling it properly. However, it cannot be guaranteed for the future also. About ten years ago (2003), the city had experienced a major landslide. It was mentioned by few respondents that sometimes fire incidents are deliberate to burn the fallen pine leaves since people as also livestock slip on the leaves lying in the path used by people/livestock. Once the leaves are burnt, fresh grass grows which is grazed by animals. However, it is not possible to control outbreak of fire and sometimes it spreads to other trees also. Keeping in view the nature of pine trees, particularly leaves, the State Government has now banned plantation of fresh pine trees, which had been started earlier to ensure quick forestation since pine trees grow quickly.

Cloudburst and Flashfloods 2012: The incidence of cloudburst occurred during the night of 3- 4 August. It was around midnight when suddenly people noticed increasing water level with debris in the seasonal streams known as Khala. People immediately started shifting from their houses and tried to move to the safer locations. The bridges collapsed, homes, shops, village path, electricity and water facilities were damaged and hundreds of hectares of agriculture land was destroyed. There has been no damage estimation for livestock population. The River changed its course by about 30-40 meters and also rose by about 6 meters due to deposit of heavy stones in the river bed. The apprehension of the community is that if the debris from river bed is not cleared before the onset of monsoons, any similar incident of very heavy rainfall may result in floods which would be more damaging since the river level has already risen by 6 meters. This reaction of the community was well before the 2013 heavy rainfall, floods and landslides.

The major damage occurred around Uttarkashi Township. The national highway from Uttarkashi to Gangotri was completely blocked. The bridge connecting Uttarkashi town and Bhatwari block at Gangori village collapsed and almost 80 villages were totally cut off. There was no way to communicate with the people in those areas.

### **WEST BENGAL**

West Bengal presents a range of vulnerability situations on the ground across the state. Though the state is vulnerable to earthquakes, cyclones, landslides, floods and drought, the vulnerability to specific hazards is dispersed in different regions.

As for earthquakes, zone II is in the south-western part of West Bengal (Purulia), while zone IV covers the north & southeast of Kolkata, Darjeeling, North and South Dinajpur, parts of Jalpaiguri and Coochbehar, North and South 24-Parganas and Malda. Zone V is delineated on the eastern parts of Jalpaiguri and Coochbehar. The districts of Kolkata, Murshidabad, Birbhum, Bardhaman, Hooghly, Howrah, Nadia, Bankura and East and West Midnapur fall in zone III. The region has considerable area close to river basins and deltas that are characterized by Holocene alluvium deposits, which are likely to soften and hence are susceptible to liquefaction during an earthquake.

The landslide hazard in West Bengal has been observed mostly in the hilly terrains of Darjeeling District. Urbanization, especially in the hilly terrains, involving construction activities often causes perturbations in the hill slopes triggering landslides. The main causes of landslides are unstable geological structure, tectonic disturbances, parallel subsidence of Himalayan slopes, soil erosion due to heavy deforestation and excessive cultivation of root crops like ginger, potatoes, onions, cardamoms etc. The Ministry of Agriculture, Govt. of India had carried out studies in some specified watershed areas through the All India Soil and Land Use Survey. Otherwise, no systematic soil mapping has been carried out in the region. As such, there is no database of how much soil cover has been destroyed. The forest cover is in a precarious condition due to the rapid increase in cultivated land (with the exception of tea gardens), expansion of settlements and construction of roads. The rapid depletion of forest cover is also noticeable in the tea plantation area. In most of the tea gardens in the hills, any type of shade tree or trees along the fringe line of the garden for the protection of the soil is more or less insignificant. Besides, rapid expansion of settlements and towns, especially along the roads, is one of the important causes of frequent landslides in the hills. Demand for fuel in the rural and inaccessible high hills, unscientific mining of low energetic coal seams, illegal felling of trees to meet the demand of firewood, unprecedented growth of population in the hill areas, especially in the towns, the rapid increase in vehicular movements which destabilizes the already unstable slopes and geological formations are the major causes for landslides in the area. The Geological Survey of India has identified 12 zones in the area which are highly vulnerable to landslides.

About 55.8% of the state is susceptible to floods. The issue becomes more complex since major flood producing rivers are beyond the state jurisdiction limits. Teesta, Torsa, Joldhaka and Kaljani Rivers from Sikkim and Bhutan are mainly responsible for flash floods in North Bengal; also heavy rainfall in the catchment area of river Ganga in U.P. results in heavy on-rush of water in the downstream of Bhagirathi causing floods in its adjacent districts. The heavy rainfall in Western plateau [Ranchi] results in large inflow into the reservoirs of Maithon, Panchet, Messanjore etc, which causes release of large volume of water from reservoirs. The heavy discharge from the DVC system and Mayurakshi system within a short span of time with on-rush of water through the rivers causes inundation and water logging in vast areas. In addition, many of the rivers flowing through the State originate from northern Bangladesh causing floods at times of heavy rainfall. The pattern of rainfall and discharge of water through the drainage basins are the two main parameters generally studied for assessing the flood vulnerability in the state. About 78% of the total rainfall occurs during the period June-September which is also uneven in different areas resulting in variation in surface discharge. Based on these parameters, the vulnerability to floods has been mapped in the state disaster management plan on block-wise basis in three categories- very high, high and medium.

The districts of Bankura, Purulia, Birbhum and parts of Paschim Midnapore have been affected by drought at regular intervals, mainly due to deficient rainfall and adverse soil conditions.

Cyclones have become almost regular feature in West Bengal in the coastal areas and their occurrences cause damage to the life and property every year in the affected areas. The districts more prone to tropical cyclones are East Midnapore (Medinipur), 24 Parganas-South, 24 Parganas-North, Howrah, Hooghly and Kolkata. Cyclone occurs frequently on both the coasts i.e. The West

Coast (Arabian Sea) and East Coast (Bay of Bengal) but the East Coast is considered to be one of the most cyclone prone areas. An analysis of the frequencies of cyclones on the East and West coasts of India during 1891- 1990 shows that nearly 262 cyclones occurred (92 severe) in a 50 km wide strip on the East Coast and Less severe cyclonic activity on West Coast amounting to 33 cyclones in the same period. The frequency of cyclones in the Bay of Bengal is about 5 to 6 times the frequency of those in the Arabian Sea. The analysis of sea surface temperatures (SST) over 28°C, which is one of the conditions for generating cyclones, during 1951-1999, shows that the frequency of cyclones in the Bay of Bengal has been increasing due to increasing SSTs. Over the South Bengal Delta (SBD) storm surges are generated by the winds and the atmospheric pressure changes associated with cyclones. The storm surge is primarily piling up of water due to the strong storm winds. This raises the mean water level in the coastal zone, whose magnitude is dependent on the strength of the winds. It is not unusual for this rise to be a meter for many cyclones, and 2-3 meters for major cyclones. With mean water levels being elevated, and with strong winds generating high waves, storm surges lead to considerable loss of life and property. Of the 34 reported storm surges with loss of life of 5000 or more around the world, 26 have occurred in the Bay of Bengal. Over the South Bengal Delta (SBD) storm surges are generated by the winds and the atmospheric pressure changes associated with cyclones. The rather flat topography of SBD makes it particularly vulnerable to storm surges .

The regions of West Bengal that may suffer the possible impact of tropical cyclones belong to the districts of East Midnapore (Purba Medinipur), 24 Parganas-South, 24 Parganas-North, Howrah, Hooghly, and parts of PaschimMedinipore.

The process of urbanization has accelerated in West Bengal with the movement of people from rural to urban areas as also migrant population from other states and neighbouring countries. At present the state has 375 towns. West Bengal is one of the most urbanized states with 31.89% (Provisional) of urban population. Problematic issues arising out of urbanization include lack of proper place and area for waste disposal systems, grossly inadequate sewage systems, lack of infrastructural facilities etc., all of which together are creating a situation which is heading towards man-made disasters right from health related diseases to loss of natural drainage basin areas, which further increase the flood vulnerability in the urban areas.

There has been population explosion in West Bengal, not only due to more births and less deaths, but also due to migration of people from neighbouring countries/ states. The population of West Bengal has increased from 23.2 million in 1941 to 91.3 million (Provisional) in 2011, almost four time increase. As per state government's estimates, about 4.45 million refugees migrated to West Bengal from East Pakistan during 1946-1970. The trend has continued subsequently also.

Global warming is the increase in the average temperature of the Earth's near-surface air and oceans since the mid-20th century and its projected continuation. The Inter-governmental Panel on Climate Change (IPCC) has concluded that increasing greenhouse gas concentrations resulting from human activity such as fossil fuel burning and deforestation caused most of the observed temperature increase since the middle of the 20th century. The IPCC also concluded that variations in natural phenomena such as solar radiation and volcanoes produced most of the warming from pre-industrial times to 1950 and had a modest cooling effect afterward. Climate model projections summarized in the latest IPCC report indicate that the global surface temperature will rise further. The extent to which the temperatures will rise is somewhat uncertain due to different models adopted by different scientific communities. There is, however, no difference of opinion that the temperatures will rise at a much faster pace during the 21st century. An increase in global temperature will cause sea levels to rise and will change the quantum and pattern of precipitation, probably including expansion of sub-tropical deserts. This may result in continuing retreat of glaciers and sea ice, increase in the intensity of extreme weather events, species' extinction and changes in agricultural

yields. Global warming and climate change could affect India's growth unless a range of steps are taken to address the effects of increased surface temperature and its impact on monsoon pattern and river flows. It is likely to have impact in India through increased rainfall, increase in intensity of drought and flood, lower agricultural yield, particularly in rabi crops, economic and GDP losses, coastal or environmental refugees due to increase in sea temperatures, eroding land in coastal areas, increase in the frequencies and intensities of tropical cyclones in Bay of Bengal and increase and spread of malaria in current malaria-prone states (Orissa, West Bengal and southern parts of Assam north of West Bengal) and its spread to the south-western coastal states of Maharashtra, Karnataka, Kerala. New regions (Himachal Pradesh, Arunachal Pradesh, Nagaland, Manipur and Mizoram) may also become malaria prone.

#### *Kolkata City*

Kolkata city, being in seismic zone III is vulnerable to earthquakes. The recurrent vulnerabilities observed during the last one decade are primarily fire incidents, particularly in jhuggis in densely populated areas and heavy rains resulting in water logging due to lack of adequate drainage facilities. The vulnerability is further accentuated due to social disabilities such as poverty, lack of hygiene, water and sanitation, as also lack of civic amenities, dense population and inadequate health facilities.

#### *South 24 Paragnas District*

In South 24 Paragnas district (Sundarbans area), the recurrent vulnerabilities can be observed due to cyclones and floods. The Aila cyclone that hit the sundarbans on 25th May 2009 caused loss of life and injuries and also damage to property and livestock. There was a series of high and low tides accompanied with high velocity winds over 36 days following Aila. In some villages almost 95% of the houses were partially or fully damaged; 80% of the harvest was lost, besides severe loss of livestock.

#### *Darjeeling District*

Darjeeling district is vulnerable to earthquakes, landslides and floods. In 1968 there was heavy rainfall of about 1500 mm in a short span which resulted in widespread damage due to collapse of various buildings. There was recurrence of similar incident in 2007. The main cause of recurrent landslides is that Eastern Himalayas are now densely populated. Darjeeling is in seismic zone IV/V. Before 1986, some measures had been taken for landslide prevention, social forestry etc. which ceased due to political agitation. There is no perceptible change in rainfall pattern and soil conditions but vulnerability has increased due to human influx. During AILA cyclone in 2009, Darjeeling including Kalimpong was severely affected; 32 people died due to landslides. One major reason for recurrent landslides and enhanced vulnerability, particularly in Kalimpong is that foothills are being dug up for construction of roads which has weakened the foundation and resulted in cracks in buildings at crest (hill top); even the trees can be seen which have bent. Lack of mitigation measures despite GSI survey in 1990s has further accentuated the vulnerability.

#### *Jalpaiguri District*

Jalpaiguri district is primarily vulnerable to landslides, floods and earthquakes besides the area is prone to high wind velocity which detaches the roofs of kutcha houses. Also some of the pockets such as village Mundaline have an additional problem of wild elephants passing through village every evening from a nearby forest area in search of food. They have damaged Kutcha houses and killed/injured few people. About 70-90% of the population in several marginalized villages of the district belongs to the BPL category. Few other villages like Motiachar have become vulnerable since they are located in the river bed which is very close to Teesta river tributary. The village is not easily accessible since one has to walk about 2-3 kms and in between cross a river tributary to reach the

village. It is affected by flash floods 3-4 times every year since it is not protected by an embankment and lies between the river and the embankment.

***Explanatory Note:*** *It would be observed that the vulnerability profile of six states visited has been discussed with different approach for each state. In some cases few districts visited by the team have been covered. In few cases, even GPs and villages have been covered. In one case, even a quote has been given about a disaster. The different approaches are all illustrative. Each state government may adopt any of the approaches or a mix of different approaches or devise their own approach. The vulnerability profile of a state would also be basically a macro-level exercise. However, if feasible, brief district-wise vulnerability profile may be covered. The detailed vulnerability profile of each district may appropriately be covered in the District Disaster Management Plan. However, in order to assist the districts, guidelines may be laid down by state governments, only for illustrative purposes, about the components to be covered. Preferably, a District level vulnerability profile may discuss the vulnerability of each block or club together the blocks in 4-5 categories, based on similar vulnerabilities. The Block level Disaster Management Plan may similarly cover villages on the same lines. The village level vulnerability profile has also to be developed and included in the village disaster management plans. This should also include, besides physical vulnerability, social, economic and environment vulnerabilities. Eventually, villages' profile should feed into blocks' profile and blocks vulnerability profile should feed into District's vulnerability profile. The State's vulnerability profile may be re-visited to ensure that micro level vulnerabilities are briefly highlighted.*

*The main concern is that development of vulnerability profile should result in an Action Plan for remedial measures required to be taken with the objective to ensure that vulnerabilities are reduced or, at least, not enhanced due to developmental and other activities. The programmes being implemented in districts/ blocks/ villages would be more useful if disaster risk reduction is mainstreamed in these programmes. Besides, in developing the vulnerability profile, the impacts of climate change need to be built in and integrated with DRR.*

## 4. Context

The context, including different types of disasters, disaster risk reduction and management in India, classification of hazards by HPC, approaches to disaster risk reduction and management in India, paradigm shifts, DM Cycle etc. are not being covered in this plan for the sake of brevity since these aspects have been covered at length in the draft National HR & CD Plan by NIDM. The assessment made therein is equally true in case of different states also.

*[This section should include the context of the National Human Resource and Capacity Development Plan defining the aspects covered in the plan. It will, therefore, be necessary to go through the National Human Resource and Capacity Development Plan and adopt it with such changes as each state government may consider desirable.]*

### **Needs and Capacity Assessment**

As stated in the draft National HR & CD Plan, “achieving the goal of a holistic approach to disaster management needs a framework of a capable institutional setup with competent professionals, educators, trainers and field practitioners in different aspects of the disaster management, starting from addressing hazards and vulnerability, prevention and mitigation, preparedness, early warning, relief and recovery to be planned and their deliveries organized in a systematic fashion. It is also required to have the capacities to ensure the disaster mitigation and management actions do not create future risks or jeopardize the sustainability of the natural resource of the livelihood systems. It is, therefore, necessary to identify the existing deficiencies in the system, based on experience with respect to previous disasters as well as the emerging needs of changing disaster risk scenarios, for example, the growing challenges due to climate-change impacts, urban agglomeration, migration, environmental degradation, and industrial development.”

### **ANDHRA PRADESH**

Andhra Pradesh has a large number of training institutes but a lack of cross sectoral linkages was noticed in the training programs being conducted by them. An admirable feature of the training system in the state is that each district of the state is linked to MCRHRD and ETC (extension) training institutions, which can be used effectively as training platforms. But unfortunately these institutes lack necessary capacities for the same and hence it has not been possible to exploit the full potential of these organizations. There is also a need to establishing cross-sectoral linkages between various departments and then identifying the needs of training. State Disaster Management Authority can serve as the platform where exchange between departments could be useful and mechanisms to enable the same should be put in place for more effective capacity building efforts.

In addition to lack of cross sectoral linkages a major shortcoming of the existing training programmes is that they are theoretical and irregular and do not help to develop adequate capacities amongst trainees to deal with disaster situations and save lives. In order to address these needs a review of the existing training programs is needed to ensure that they have adequate practical training components. The training programs also need to be held more frequently or at more regular intervals to ensure that the skills developed amongst the trainees are not lost. The capacities of personnel, especially in the urban development and administration department, also need to be enhanced further to perform under difficult circumstances during disasters. The quality of training at the district level, especially to the core officials also needs to be upgraded. The Municipal Commissioner receives a brief training of 3 days on DM at APARD. District Magistrates also receive an introductory training on Disaster management. However, such short training programs are inadequate to meet the capacity building needs of the officials. There is also a need to improve the training modules by contextualizing them for different geographical conditions. Thus an improvement in the content and duration of the courses is required.

There are no master trainers with district administration, currently managing with external faculties, state level training institutions. The irony is that nodal district level officials have not received any specific training on the disaster preparedness and emergency management. They are overloaded due to handling of multi profiles at a time. At the ground level, some of the personnel have been trained but it was a one-time affair. Women are very active in the Self Help groups but these platforms are not exploited for the Disaster Management Training or awareness generation. There is lack of trust between the government and the NGOs. Although some interventions have been made by the NGOs but they are completely based on availability of funding and were by and large one time intervention. There is general lack of awareness amongst the masses on Disaster Management issues.

### **BIHAR**

The concerned departments are conducting the specific trainings as per their scheduled calendar but these trainings need to be properly aligned with disaster mitigations aspects, and to be looked at from the DRR lens, which is currently not happening.

Only few entities have conducted these trainings according to the needs, such as PRI Department that developed specific training modules for the concerned stakeholders who are in their direct touch. Further, Education Department has also come out with a robust long term planning linked to the Bihar State Educational Development Corporation, for the safe design of schools, hostels and allied infrastructure. However there is no formal State HR Plan in place and the trainings are being provided on an ad hoc basis. Although BIPARD CDM cell organizes different programmes on Emergency health, CBDM, IRS, Drought, Earthquake mitigation etc., these trainings are being managed with very limited human resources and insufficient planning support.

It was observed that past capacity building efforts have not had significant long term impact on the community. Though there has been some understanding about issues such as search & rescue and first aid, sustained efforts have been lacking and the knowledge gained by a group of people has, over time, diminished and no new groups are created. There are capacity and resource limitations to conduct intense and long term programmes on subjects deeply related to long term risk mitigation, such as safe construction, secure livelihoods and resilient habitat.

Being an agricultural state at the forefront of climate change related risks, the farmers of Bihar need to be adequately trained on water management issues – both of floods and droughts. This is an evidence based need as major parts of Bihar have suffered increasingly from such hazards in recent years. In this region the farmers and agricultural officers need to be trained on the sound land use practices, sustained land conservation, appropriate adaptation in cropping in relation to shift in rainfall patterns, and to generally deal with floods and water stresses.

Central and State Governments initiatives such as Integrated Watershed Development Project (IWDP), Drought Prone Area Programme (DPAP), Hariyali, Rural Land Resource Management Programmes (RLRMP) and JEEVIKA have been taken up with substantial resource allocations, but the concerted linkages with the long term disaster risk mitigation theme need to be established more strongly.

It was also found that the community capacity building efforts need to focus on mitigation measures, rather than response ones such as search and rescue and first aid. There are huge capacity gaps (in terms of knowledge, skill and attitude) at almost all the levels from the mitigation point of view, and there is need to work collectively through multi-dimensional channels combining the efforts, resources and expertise of the Government, NGOs/ CBOs, academic institutions, and community groups.

### **GUJARAT**

Training is a key but not the entire component of capacity development. The other components are education, research and awareness, human resource development, organizational development, financial competencies, IT and infrastructure requirements, and institutional and legal framework development. In order to look at it in a comprehensive manner, there is need to develop a strategic framework involving all stakeholders for capacity development. Despite being the first state to put in place a comprehensive legal, institutional and policy framework and having organisations like GSDMA and GIDM, the State Government of Gujarat has not developed a Strategic Framework for Capacity Development. GSDMA has not undertaken Training Needs Assessment or developed a holistic Human Resource and Capacity Development Plan. GSDMA feels that if such a plan would involve working out the numbers to be trained at different level from community to state level, it could translate into a definite commitment over a specified period of say 5 to 10 years and may not be politically acceptable.

It is true that for the purpose of achievement of this difficult task of holistic capacity development, it would be necessary to generate political will and acceptability. On the other hand, without capacity needs assessment, the approach to be adopted would at best be an ad hoc approach, without linkage to the actual needs and therefore it may even be more difficult to justify and obtain requisite financial support needed. A Strategic Framework therefore needs to be put in place for capacity development. While actual numbers to be trained need not be worked out, if the state government so feels, since these in itself would be presumptive, broad bench marks, based on past experience, implementation of DRM Programme in the state and assumptions based on it, a minimum sector-wise quantification could be undertaken, taking the basic minimum training and capacity building needs. The exercise has to be undertaken in a disaggregated manner from local (villages/ ULBs) to state level.

If the Strategic Framework is in place, the training and capacity building gaps can be worked out and future programmes planned accordingly. At present there are some major gaps which have not been addressed. For instance, while the framework for techno legal regime is in place, it has not been possible to implement it comprehensively since adequate number of trained engineers, architects, town planners and masons are not available, either in government or outside. Similarly, there is acute shortage of doctors in Gujarat, particularly in rural areas. It would only be realistic to accept that doctors would not be available in adequate numbers at least for rural areas, even if compensation package is improved considerably. Therefore, an alternate strategy has to be worked out and put in place to ensure that, despite this handicap, the health service package is delivered to community.

Besides, not much attention has been paid in Gujarat to the capacity development of non-government stakeholders, which are active and presently working with the community. Even the government stakeholders are handicapped since their capacity has not been built, based on their needs assessment and the responsibilities assigned to them. As of now, data is not available as to how many District Magistrates are trained in the State in specially designed training modules based on the specific needs, both for response as also DRR related functions.

Training as also other components of capacity building have a cost. A good financial management would advocate incurring the cost on need based assessment and not in an ad hoc manner. The capacity needs assessment including training needs assessment in Gujarat is therefore long overdue and sooner a beginning is made in this direction, better it would be in terms of benefits to community and optimum returns.

### **ODISHA**

The key sectoral departments concerned with disaster risk reduction are following their own policies and programmes and conducting the specific trainings as per their regular training calendars.

However these trainings need to be properly aligned with an agreed state disaster risk mitigation approach, and need to be interlinked with sectoral efforts in the same direction.

OSDMA, being the nodal disaster management agency of the state has enough capacity to conduct various trainings in order to meet the different requirements on the basis of the levels and sectors. In recent years, OSDMA has conducted a number of training programmes and hence is already in the process that can be further built upon. Gopabandhu Academy of Administration (GAA) has also conducted a series of trainings on disaster management aspects. It has generally been reported that there are ample financial resources available with the state government for disaster management work. There seems to be no special need for external financial support. The main concern is related to human resources, as there is no adequate capacity in the institutions to deliver outputs on disaster management capacity building. The general sentiment in this regard is that first the capacity building efforts need to focus on those who are responsible to build capacity at the state level.

Some departments who have taken special initiatives such as Rural Development Department's concept of Self Employed Mechanics (SEM) to carry out the repair of water works, maintain the tube wells and to extend miscellaneous support. They have proved to be very handy at the time of disasters, establishing the fact that developing the capacities of developmental and maintenance support mechanisms are directly linked to disaster management.

The PRI Department has empanelled trainers at district and block level. Further there are GP level and Cluster level forums for interface with the community, but unfortunately as of now no specific training has been imparted on disaster management aspects.

In the Health sector, the Institute of Health & Family Welfare is the nodal agency, also known for being centre for excellence in health communication. The institute has conducted a number of training programmes on the subject, particularly initiated after the 1999 Super cyclone.

In relation to the youth and education department, there are achievements and potential areas of quick returns on investment such as NYKS, NSS, NCC, Rovers and Rangers. The young, motivated and partially trained volunteers are available through these platforms. They need to be properly guided in order to become valuable assets for disaster risk mitigation actions at the community level and for linking community actions with state approaches.

NGOs are widely present in the Odisha context and are carrying out exemplary work at the community level. However they need to be further sensitized on mainstreaming DRR components in various ongoing initiatives and also for linking the civil society work effectively and aligning it with the programmes of the various government departments.

### **UTTARAKHAND**

Capacity development in Uttarakhand, as in other states visited, is not looked at as an integrated exercise and the thrust, whatever little bit is visible, is primarily on training component only. It is therefore necessary to put in place a strategic framework for capacity building from state to local level in the first instance. No such exercise has been undertaken so far. DMMC may be entrusted to develop the strategic framework in this regard, if necessary, with the support of outside professional agencies. It is also necessary to eliminate the mismatch between authority, responsibility, accountability and capacity, particularly in government, to ensure adoption of an inclusive approach.

Since capacity development including training has a cost, it is necessary that, based on the strategic framework, capacity needs assessment is carried out from state to local level. Capacity needs of different stakeholders at various levels have yet to be assessed and used as the basis for designing

and conducting the training and capacity building activities for disaster management in general and disaster risk reduction (DRR) initiatives in particular.

At state level, the concerned departments are conducting specific trainings as per their scheduled calendar in their respective sectors such as health, education, rural development, urban development and local governments. These trainings need to be properly aligned with disaster mitigations aspects. Few departments have adopted an integrated approach for capacity development based on needs assessment. These departments are at a disadvantage in developing an integrated approach which includes disaster risk mitigation and encompasses all stakeholders due to lack of not only a strategic framework but also a human resource and capacity development plan. In the absence of capacity needs assessment, isolated and ad hoc approach is being adopted due to which trainings imparted are supply driven and not demand driven. These trainings are being managed with very limited human resources and insufficient planning and financial support, despite the fact that, by and large, finance is not a major constraint provided a well prepared capacity development plan is in place clearly indicating financial outlays needed over a period of, say, five years or ten years or so.

It was observed that past capacity building efforts have not had significant long term impact on the community. Though there has been some understanding about issues such as search & rescue and first aid, sustained efforts have been lacking and the knowledge gained by a group of people has, over time, diminished and no new groups are created. There are capacity and resource limitations to conduct intense and long term programmes on subjects deeply related to long term risk mitigation, such as safe construction, secure livelihoods and resilient habitat and their convergence with climate change needs. Disaster Risk Reduction (DRR) and climate change adaptation (CCA) are closely inter-linked. What would happen if no attention is paid to CCA? It will eventually result in mega-disasters which it would not be possible to control at that time with short term mitigation measures. What is needed is a common and integrated strategy for DRR and CCA. Adequate attention has not been paid to this aspect in Uttarakhand, as in most of the other states.

It is true that for the purpose of achievement of this difficult task of holistic capacity development, it would be necessary to generate political will and acceptability. On the other hand, without capacity needs assessment, the approach to be adopted would at best be an ad hoc approach, without linkage to the actual needs and therefore it may even be more difficult to justify and obtain requisite financial support needed. With a Strategic Framework in place for capacity development, while actual numbers to be trained need not be worked out since these in itself would be presumptive, if the state government is not in favour of it, broad bench marks, based on past experience, implementation of DRM Programme in the state and assumptions based on it, can be worked out, taking into account the basic minimum training and capacity building needs. The exercise has to be undertaken in a disaggregated manner from local (villages/ ULBs) to state level.

Within the overall Strategic Framework, capacity needs assessment exercise has to be undertaken at micro level. For instance, at state and district level, it has to be for each sector to facilitate identification of training needs and the related infrastructure needs; at local level it has to be undertaken for each category of stakeholders such as PRI members, ICDS and ANM workers, Primary Health Centres and Sub-Centres, teachers, NGOs, SHGs and other role players. The common denominator of the efforts of all the stakeholders is to reach the most crucial and the ultimate stakeholder, the community. Once the community needs are identified, the needs of each stakeholder may be assessed to assign tasks to each to bridge the gaps in community needs. It is true there will be overlapping in the roles assigned to different stakeholders; in fact it is desirable that there is such overlapping so that dependency on a single agency is avoided. It would be better to look at a multi-stakeholder approach for optimum outcomes.

At present there are some major gaps which have not been addressed. For instance, while the framework for techno legal regime is in place, it has not been possible to implement it comprehensively since adequate number of trained engineers, architects, town planners and masons are not available, either in government or outside. Besides, with pucca constructions coming up in Uttarakhand in difficult terrain and with most of the state being in seismic zone V and vulnerable to landslides and flash floods, masons' training in safe constructions, extension of techno legal regime to rural areas and implementation modalities would bring out major additional gaps which have to be addressed over a pre-determined time frame. Similarly, there is acute shortage of doctors in Uttarakhand, particularly in rural areas. It would only be realistic to accept that doctors would not be available in adequate numbers at least in short term for rural areas. Therefore, an alternate strategy has to be worked out and put in place to ensure that, despite this handicap, the health service package is delivered to community.

Training as also other components of capacity building have a cost. A good financial management would advocate incurring the cost on need based assessment and not in an ad hoc manner. The capacity needs assessment including training needs assessment in Uttarakhand too is therefore long overdue, as in case of almost all other states.

### **WEST BENGAL**

West Bengal, despite good institutional system in place in the form of a Directorate for Disaster Management, training activities have not made much headway. Training needs or capacity needs assessment has not been carried out and the approach is by and large ad-hoc. While training has been imparted to some of the officials at state and district level, it is almost non-existent at community level. Few training programs had been organised in some of the districts during the years 2005-2007 when the DRM program was being implemented. However, there has been no follow up on this initiative post-2007. Due to lack of refresher training and mock drills, its impact is now virtually non-existent. The community is willing to be trained provided training is imparted in their respective areas and it does not result in loss of wages/livelihood for the duration of training.

In West Bengal, disaster management in general and training aspect in particular is still perceived as the function of Disaster Management Department. There are no focused training programmes based on training needs. The DM Centre at ATI, Kolkata organizes training programmes of three to five days duration. The BDOs, BDMOs and NGO representatives are being trained in the same training module. On the concluding day of the training, none of the participants was aware of the Disaster Management Act, 2005, except a trainee from an NGO (*Test-checked*). The DM Centre has no professionals for imparting training and the two faculty members in position (two posts were vacant) belonged to WBCS, though trained as Master Trainers. Therefore, the faculty is neither adequate nor professional. Trainees are not deputed based on their needs assessment. The DM Centre has no control over selection of trainees or feedback on utilization of training afterwards based on their posting. Since no capacity or needs assessment has been carried out, training is imparted in standard training modules, which either do not have a practical component or it is very insignificant. At the community level, hardly any training is being imparted. This is a major gap which needs to be bridged.

The ratio of women officers/ other women stakeholders being trained ranges from 5% to 10%. Gender issues are therefore not receiving the attention they deserve. The PRI members have a brief capsule on DM included in their induction training which imparts only theoretical knowledge which is not directly linked to the vulnerability of their respective constituencies.

Despite having a full-fledged DM Directorate, there is no strategic planning for imparting training nor is there any human resource development plan or even a framework. Similarly, technical training for

engineers, architects, town planners, masons, doctors, paramedics etc. is marginal. The teachers and students have not been adequately trained except that some awareness had been generated.

Although the State Government is the key responder, most of the Disaster Managers, Block Disaster Management Officers have not been imparted training based on their training needs. It is not as if the state and district governments are waiting for a disaster to hit the community. Of the 105 respondents in Rural Household Surveys, 96.2% stated that they have been impacted by disasters and went on to explain which type of disaster had affected them and what type of damage they had suffered. Only 33% of respondents had heard about a government organization and the rest were not even aware of any government agency dealing with disaster management at community level. As against this, 62.5% were aware of local NGOs or SHG active in their respective villages. Further, only 10.5% had been imparted training of which 75% were imparted training in preparedness. Not a single respondent had been trained in mitigation or disaster risk reduction, evacuation or communication.

This would clearly bring out that even basic training in standard training modules had not been imparted. The question of carrying out a training or capacity gap assessment is a far cry. Similarly training based on knowledge, skills and attitude (KSA) is an aspect not even considered at any level, at least for the community training programmes. The concept of DMRR, as discussed in the draft National HR & CD Plan has not been taken into consideration for organizing or imparting training at any stage. One reason may be that NIDM, embroiled in the bureaucratic set up, does not have the flexibility to share its draft National Training and Capacity Building Plan.

***Explanatory Note:*** *The six states discussed above have not been picked up by Consultants but were included specifically in the Study. It is observed that, despite limitations, almost all States have taken the initial steps for imparting training to different stakeholders although there are several problems as brought out above. The problems in other states, so far as training and capacity development is concerned, are also likely to be similar. The six states discussed above may be taken as illustrations to develop the strategy for training and capacity development in other states also. Besides, it would be beneficial to study various problems of different states as brought out above, before attempting to contextualize it for each state.*

*It is desirable to make a beginning by laying down a strategic framework for training and capacity development for each state. In doing so, the basic principles enunciated in the draft National Human Resource and Capacity Development Plan as also in the Strategic Framework for Implementation of Training (SFIT), developed as deliverable 6 as a part of this Study, may be taken into consideration, besides the rationale given while analyzing the present status in six states above. Unless Training Needs Assessment is carried out by each state, the gaps are identified and, based on it, training and Capacity Development Plan is developed, the training being imparted at present would continue to be ad hoc in nature and is not likely to give optimum results. It is true that there are challenges, as brought out in SFIT, which could be taken care of if each state, in their own context, seeks to find solutions to the following basic questions:*

- I. How to make training a more systematic exercise in organised learning than an activity undertaken in an ad hoc manner?*
- II. How to make a shift from a completely supply driven training approach to a balanced approach which is more need based and demand responsive?*
- III. How to link training to the larger capacity development agenda and goal?*
- IV. How to use training as a means to achieve some agreed capacity benchmarks and not take it as an end in itself?*

*Starting from a Strategic or Conceptual Framework, each state may develop an Operational Framework and an Implementation Framework<sup>2</sup>. This Section should also include the needs and capacity assessment of the state identifying existing deficiencies in the system based on experience with respect to previous disasters as well as the emerging needs of changing disaster risk scenarios. Specific assessment of the following should be done along with other relevant aspects related to the state:*

- *Institutional Setup for DM*
- *Addressing hazards and vulnerability*
- *Prevention and mitigation*
- *Preparedness*
- *Early warning*
- *Relief and recovery*

*The assessment should cover a holistic approach to assess the above comparing with competent professionals, educators, trainers and field practitioners.*

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<sup>2</sup> Strategic Framework for Implementation of Training (SFIT) may be accessed at [www.nidm.gov.in](http://www.nidm.gov.in) Click Projects and access relevant documents under NCRMP.

## 5. Capacity Development Framework:

As brought out in the “Strategic Framework for Implementation of Training”, capacity development includes, but is not limited to, training. Non-training factors such as policy, strategy, planning, infrastructure, finance, work culture and enabling environment are critical factors in determining the overall capacity of the actors involved. Capacity for the purpose of this framework is defined as the overall capability of an actor (individual or institution) to perform and produce results. Training as a tool to build capacity seeks to upgrade knowledge, skills and attitude (KSA) of the people being trained”.

The draft National HR & CD Plan further elucidates capacity building as “the creation of an enabling environment with appropriate policy and legal frameworks, institutional development, including community participation (of women, in particular), human resources development and strengthening of managerial systems. Therefore, capacity building is a long term, continuous process, in which all stakeholders participate. It is much more than training and hence involves human resource development, organisational development and development of an institutional and legal framework”.

Capacity development is a multi-hazard, multi-sector, multi-level and multi-stakeholder concept in the background of disaster risk reduction and climate change adaptation. It is therefore necessary that there is convergence among different role players so as to ensure optimization of outcomes in different phases of disaster management. A good working environment should ensure that there is compatibility and integration of four basic levels, authority, responsibility, accountability and capacity. Even if a good match between authority, responsibility and accountability is achieved, the issue would be whether stakeholders accountable to achieve a particular objective assigned to each, have the requisite capacity to deliver and if not, efforts have to be made to build their capacity in all three elements of KSA (Knowledge, Skills, and Attitude). This concept has been further explained in the “Strategic Framework for Implementation of Training”.

The capacity needs assessment is based on training, education, research and awareness components. Taking into consideration the training and non training aspects, it is also related to the factors such as the human resource development, organizational development, financial competencies, IT and infrastructure requirements, and institutional and legal framework development. Capacity needs assessment aims at highlighting the capacity needs of various stakeholders, across the identified key sectors and potentially applicable disaster types.

In planning and action across sectors and levels, capacity building activities are mainly considered to be training activities. Capacity is narrowly conceived and addressed as an issue that can be addressed mainly through training. Factors related to policy, planning, strategy and enabling environment that have a major bearing on the eventual capacities of various stakeholders to perform and produce results are generally not considered as part of capacity building activities. This limited understanding of capacity building seems to be stemming essentially from a comprehensive lack of agreed capacity benchmarks and indicators for planning and organising capacity development initiatives in the sector.

Capacity needs of different stakeholders within government, non-government and communities at risk vary across levels and regions. Capacities are invariably linked with the assigned or expected roles and responsibilities of different stakeholders and hence vary considerably across levels and regions. Hence, a uniform model of capacity development is not likely to address specific capacity needs of different stakeholders and institutions. Moreover, the capacity needs of specific groups in specific regions in the state such as Sunderbans need to be clearly identified and addressed.

As training is an instrument of capacity development and seeks to upgrade the knowledge, skills and competencies of the actors involved, assessment of training needs is the key to designing and conducting relevant and responsive training activities. This is currently not happening. Most of the training on disaster management is limited to general orientation training on disaster management and response related training on search, rescue and first aid.

Most of the sectoral training in education, health, rural development, and PRIs/ULBs are focused on central and state level programmes in their respective sectors, but with practically no reference to disaster management aspects.

There is a need to focus both on training and non-training aspects of capacity development by integrating them within a strategic framework for training and capacity development for disaster risk reduction (DRR) in the state.

***Explanatory Note:*** This section should include a brief description about the framework for determining the overall capacity of the stakeholders involved covering non-training factors such as policy, strategy, planning, infrastructure, finance, work culture and enabling environment. The Framework should cover all concerned stakeholders broadly falling in following categories (i) Stakeholders with reference to the Government sector or Government supported entities that have the formal responsibilities to address disaster management; (ii) Non Government Organizations including INGOs, CBOs, SHGs etc., working on disaster management and allied issues; (iii) Academic institutions, private bodies, research based academies and corporate supported bodies and associations; and (iv) Community representatives, volunteers, resident welfare associations, individual professionals; ward, village and GP members

***Explanatory Note:*** The need and concept of Strategic Framework has been referred to in the Section on "Context".

## 6. Institutional Analysis of Capacity Building Institutes

There is well established institutional system in place at state level in most of the states, including the six states covered in the Study. SDMAs in Bihar, Gujarat and Odisha are functional and have taken several proactive measures. However the SDMA in West Bengal meets once in 3 to 6 months primarily because all members are holding their position on *ex officio* basis and it does not have exclusive secretariat to support it. On the other hand, West Bengal has a full-fledged Directorate for Disaster Management with the strength of about 300 officers and employees. It can be entrusted with the responsibility of functioning as the Secretariat of SDMA. In Uttarakhand, although SDMA was constituted in 2007, it had not met even once in the next five years. In Andhra Pradesh too, SDMA is so far only on paper. It is parked within the DM department and it meets infrequently.

The weak link at the state level is Training Institutes. The DM Cells at these Institutes are understaffed and needs to be strengthened. Besides, the focus of DM Departments, SDMAs and DM Cells is primarily on response related training. Very little effort has gone into measures required to be taken for disaster risk mitigation.

At district level, DDMA's have become virtual organisations since all members hold their respective positions on *ex officio* bases and regular meetings are not held. Most of the District Collectors/ ADMs in charge of DM felt that unless a dedicated small but compact secretariat with professional support is provided for DDMA's, these bodies would not be in a position to discharge the functions assigned to it under the DM Act. According to District Collectors, they hold regular meetings of their officers including BDOs and disaster management is also one of the items on its agenda. However, it was conceded that most of the actions taken relate to response related functions. It was observed they have neither time nor inclination to address disaster risk mitigation issues.

Below district level, there is no institutional system in place. It is true that DM is given as an additional charge to Tahsildars/ Malmatdars but these officers become active only in response related situations and in normal times they are busy with several other duties.

At village level, it was observed that there are by and large no VDMCs and Task Forces in place. The system was in existence during the implementation of DRM Programme but after its conclusion, it has gone into disuse.

Therefore the institutional mechanism, though quite good at state level, becomes considerably diluted at district level and is almost non-existent at grass roots level. In the process disaster risk mitigation has become a major casualty.

The State-wise position is briefly as follows.

### **ANDHRA PRADESH**

In view of the paradigm shift in the relief centric approach to overall Disaster Management involving preparedness, mitigation, relief & rehabilitation, the department has been renamed as Revenue (Disaster Management) Department. AP State disaster management plan has been prepared. A few districts have district disaster management plans. Gujarat model is being followed for a number of things. SDMA is not active. DDMA's have been formed in all districts, though these mostly comprise of only government officials and they hold meetings, though the meetings are very infrequent and not very focused on risk management.

APARD and MCRHRD are two key institutions for training. A major challenge is that no specialists are available in the right places with needed qualifications for sectoral work within DM. In training institutions, faculty is not geared for giving training on DM. There is a need to make a resource directory, to make available state wide resource persons, institutions etc. In 1978 guidelines on DM

were prepared. There has been ad-hoc documents later, but no consolidated document which is regularly updated. Financial mechanisms are being refined. Relief and subsidies were earlier given in cash, then in cheque and now by direct bank transfer. It will be useful to have an annual DM report of the state. Data and trends are needed to keep tabs and to plan ahead. AP drought manual was also prepared long ago, and revised in 2000. An HR plan for DM/SDMA department has been prepared and approved by SEC, but is yet to be approved by finance department.

There are a very large number of institutions and organizations related to the subject in AP. A lot of work happened earlier, but now there are scattered activities and lack of coordination and information exchange. Developmental sectors and related organizations, including RD, have a key role to play. There have been initiatives on DM herein, but more needs to be done. For SDMA there is more of an institutional structuring and staffing plan. Other departments have no such thing.

Fire department is the best trained and equipped as compared to others. If NDRF responds, they are often not as equipped or trained on local context. The NDRF doesn't ask for help of local fire department and such major disasters are thus poorly managed. Police is on the front for visibility and will order the other departments. Fire and municipal authorities are best for responding. In each district, APARD trains and links volunteers but they need to be part of the institutional set up in a clearer way.

APARD, SERP and other agencies are institutionalizing development initiatives in an integrated manner. Considering the disaster risk reduction aspects as well (space) for holistic disaster risk reduction, it is important to integrate the component across various sectors. But mainstreaming so far has not made much headway. Strict regulatory mechanism is the key to robust DRR institutionalization; however it is not happening right now here. In the Health Sector, Hospital Disaster Management plans are not in place in most of the hospitals. Efficient utilization of human resource is a major concern in health sector. CHCs and PHCs are not adequately strengthened as required, these entities struggle a lot with insufficient staff to deal with emergency needs. There are lacunas in maintaining proper drainage system, especially in the urban areas. There are issues of structural instability, old buildings, low lying areas and slums, silted drains, which need to be addressed as part of risk reduction. Public facilities need to be secured through safety planning. In the education sector; there is a major lacuna, as no information or training is provided to schools on the subject. None of the schools have done disaster management planning or formation of task forces.

Despite a vibrant institutional base from state to block level, the thrust is primarily on response and relief measures and very little effort has gone into prevention and mitigation measures. At the district level, the nodal department for formulating, controlling, monitoring and directing measures for disaster preparedness and for organizing, rescue, relief and rehabilitation is the Revenue Department of the District. A High Power Standing Committee functions under the Chairmanship of the Chief Secretary, to deal with all matters and situations arising out of natural calamities including disaster preparedness. Though district disaster management plan and contingency action plans have been prepared, the institutionalizations of these DM plans are required in a real sense. Specialized/ dedicated task forces are not formalized as yet. District Disaster Management Plans are developed but the DDMA committee members do not meet regularly. The meeting takes place before the festivals or the flood seasons. At the sub district level, no plans exist. There are a number of civil society organizations and CBOs who are functional but are not included in Disaster Management activities in a participatory manner at any level. Media personnel and journalists could also be actively included in the District Committee to generate awareness and information dissemination. There are hardly any women included in District Committee of DM or in the DM planning processes. Women led SHGs are one of the most proactive platforms in the village and these must be involved and promoted in such kind of interventions. However, unless these are integrated with the

institutional structure, their efforts would not yield optimum results nor such organisations would be motivated.

A dedicated monitoring framework is required to strengthen the institutional and organizational development down the line. Hazard focused sound DM practices need to be adopted/adhered from top to bottom level. Partnership is the key, and if departments work along with the community, taking all local stakeholders into confidence first, then one can witness an effective institutional development cutting across the board, including in rural development.

At the district level a separate government unit is needed for disaster management. A task force should exist at the District level, with dedicated district level officials in the collectorate responsible for disaster mitigation and response coordination. Public warning system has to be strengthened at the district down to village level. Every Mandal should have designated boats for emergency response. Need of technical communication system like ham radio etc. emerged, and though these were introduced in the state many years ago they are now mostly out of function. Basic things and infrastructure are needed. Cyclone shelter maintenance is not adequate at all. Such shelters have been constructed in large numbers by NGOs, private agencies, and government, but the government has to play a vital role in their upkeep and maintenance, which is grossly lacking. Drinking water and sanitation problems are yet to be addressed. Sanitation facilities also need to be addressed, as many groups responded to the question of highest priority by naming drinking water and developmental needs rather than cyclone or disaster preparedness. Women are primarily involved these days in social and livelihood activities in the region; however they are not yet involved in disaster management as there is no provision to address the needs of women in the context of DM. There are no sufficient resources available for the people to use in times of disaster. The lack of awareness and preparedness is alarming and needs to be enhanced through all modes of communication available.

### **BIHAR**

In Bihar there is a well-established formal institutional system in place for disaster management across different levels. A cabinet rank Minister for Disaster Management, supported by the Disaster Management Department oversees all disaster management related functions at the state and sub-state level. The DM Department interacts with all concerned nodal entities, and institutionalizes all the required functions pertaining to disaster management. The department is managed by a Principal Secretary, an Additional Secretary, qualified and trained OSDs (Officers on Special Duty), and junior officers.

Under the DM Act, the Bihar State Disaster Management Authority (BSDMA) has been institutionalized and functioning on various issues including the management planning and review, public awareness and sensitization amongst all the stakeholders, and coordination with all concerned departments on disaster management related issues. There is a dedicated state level training institute BIPARD (Bihar Institute of Public Administration and Rural Development), which runs programme on various aspects of the disaster management through its Centre for Disaster Management (CDM). However, the number of training staff/ faculty members is not sufficient here, in relation to the requirement. At present the centre is unable to meet the expected level of performance to meet capacity building targets being set by the DM Department and BSDMA. BIPARD itself needs more institutional support and technical and financial capacity, for being able to put in place an effective state level training and capacity building mechanism.

Overall, there is a significant need for better linkage between the DM Department, BSDMA and BIPARD DM Cell, to ensure that all the three entities work in a more cohesive manner, for an efficient and robust disaster management system that includes capacity building. At present the DMC as part of the administrative training institute is accountable to the Department of Personnel

and Training, and has no direct accountability to either the DM Department or BSDMA. Another significant concern is that the capacity of the academy itself is insufficient to administer the nature and scale of trainings envisioned by the DM Department and BSDMA.

At District level, there is no secretariat as such to exclusively run the disaster management functions, as a whole. The districts covered under GoI-UNDP DRM Programme have done reasonably well in terms of disaster management institutionalization, including the preparation of DDMPs (District Disaster Management Plans), their updating, and functioning of disaster management committees at district level. There is a Deputy Commissioner responsible for disaster management, and has support staff, equipment and mandate to maintain and update DDMPs and to establish an Emergency Operations Centre at the district level when the need arises. The official, however, is holding this as one of multiple charges and is thus unable to give dedicated attention to disaster preparedness and risk reduction efforts in peace time.

At the sub district level, only very few selected people are part of disaster management initiative, which is an area of serious concern, as the community is not properly involved, informed or consulted while carrying out the disaster management planning. At the gram panchayat and village level there is no effective structure or DM Committees to address this issue. In the name of task force, only few volunteers are listed, and even they are also not adequately trained to handle emergency situations. It was suggested that measures at this level are required, such as more powers to be given to the Panchayat Secretaries, and they be made the custodians of local disaster management plans.

Some local institutions exist that can potentially play a significant role in disaster management and capacity building. Kisan Samitis have a strong constituency among the farmers and provide financial loan and other support systems. In 2004 agriculture insurance was also introduced. The issue of drought is addressed through irrigation and water harvesting initiatives including ponds, check dams and drip irrigation, but very few people are practicing these. MNREGA is another institutional structure that is directly and indirectly contributing to risk reduction, and can play a role in capacity building for disaster management. Various physical development activities are being taken up under the programmes linked to this Act, and a number of them can contribute to capacity building.

The Panchayat plays a most crucial role as the primary governance mechanism in the rural context. It has a role in receiving and relaying information on risk reduction as well as emergency response actions. PRI training programmes include a component of disaster management, and are one of the most evident areas of work in this sector in the state. Schools and primary health centres potentially have a role to play in local capacity building, but there is little evidence of this happening effectively on the ground.

## **GUJARAT**

The State Government of Gujarat has vibrant institutional and organisational arrangements in place. It was the first state to enact the Gujarat Disaster Management Act, 2003, soon after the Bhuj earthquake and even before the National DM Act was conceptualized. In fact, the state Act has contributed significantly in the enactment of the national Act. The Gujarat SDMA was constituted soon after Bhuj earthquake, in February, 2001 to provide relief to the people for the loss incurred due to natural calamity and to undertake rehabilitation and reconstruction as also social and economic activities for restoration of the situation; to make efforts to minimize the impact of natural calamities through precautionary programmes and schemes; to analyze and study the reasons of natural calamities and to suggest the remedies to avoid or minimize the effects of such natural calamities; and to make the best use of the funds, grants, donations, assistance received from Government of India and other foreign countries or from any other institutions/persons for

prevention of such natural calamities or for handling the after-effects; to obtain loans and make proper use of the funds received by the Authority.

GIDM was established in January, 2004. Prior to that, the Sardar Patel Institute of Public Administration had a DM Cell initially under the scheme of Ministry of Agriculture which was subsequently transferred to Ministry of Home Affairs, which was converted to GIDM under the Gujarat Earthquake Emergency Construction Programme. GIDM was commissioned in separate premises in 2012; it is still not fully functional. GIDM has at present a Deputy Director looking after hydro-meteorological disasters; other posts are in the process of being created/ filled up. In order to ensure that the institute has requisite autonomy and flexibility, it has been registered as a Society under the Societies Registration Act and its Governing Council is headed by the Chief Minister.

The State Act is not on all fours with the National Act. In place of DDMA, it has District Disaster Management Committees (DDMCs). Although there is a strong institutional base at State level, it gets diluted at district level since DDMCs have become virtual bodies. Unlike GSDMA, which has its own secretariat, DDMCs do not have dedicated secretariats. The District Magistrates therefore do not hold the meetings of DDMCs regularly and consider DM related issues in their normal meetings. Again the stress is mostly on response related functions and very little effort has gone into mitigation measures. Disaster risk reduction has therefore got relegated in the background. It is true there is a DPO in each district but it is not possible for him/her to take care of all functions related to DRR in all the villages, without support at district or for that matter, below district level. The DEOC exists and seems to be functional but owing to acute shortage of support staff, training, appropriate documentation in ready to use formats, it does not have adequate capacity to meet the emergency requirements in the event of a major disaster. Besides, the focus is not on DRR and its mainstreaming but preparedness for effective response in the event of a disaster. There is a Deputy Malmatdar at district level in charge of disaster management but he has several additional charges with the result that he comes into picture only when there is a disaster or possibility of an impending disaster. Following Quotes will bring out the perceptions of officers and others:

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*“A District Project Officer (DPO) alone is not adequate; there is need to have one project officer at taluka level and one at each municipality. There are 10 Talukas and 6 Municipalities in Kutch District; therefore there should be 16 Project Officers, besides DPO to ensure meaningful interaction with and adequate support to community”* KMNA members, Bhuj.

*“There is a felt need for an exclusive secretariat for DDMC to make it really functional, particularly for mitigation”* ADM in-charge DM, Bhuj

*“HUM disaster management ke nam par charity kartey hai.....Disaster management is a side subject or less important issue for govt”* Chetan B Dudiya, CEO, Nagar Palika, Bhuj

*“Irrespective of powers given under DM Act or any other statute, when emergency procurements for relief are made without following normal procurement procedures (which is just not feasible), the officers are invariably held responsible afterwards because Audit does not accept such arrangements”* Additional District Magistrate in-charge of Disaster Management, Bhuj, Kutchh.

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At community level, the advantages gained through DRR Programme have gradually withered away. There is virtually no institutional base at village level; neither VDMCs nor Task Forces. Similarly, there is no organised base for imparting training at community level. Whatever little is visible is on account of the efforts of NDRF and NGOs, which is not sufficient. Lack of sound institutional base as also mechanism for implementation of techno-legal regime has created additional vulnerabilities. For instance, it was brought out that in Bhuj there are 85 unsafe buildings; a fact known to District Administration. These are multi storied buildings but no one is clear what action has to be taken.

Besides, political Interference was stated to be a major constraint in decision making and mainstreaming of DRR into development.

Further, insecurity amongst govt. officers in relief procurement is yet another major issue. These matters can be handled if there is a sound institutional base at district level, which is at present lacking.

### **ODISHA**

In Odisha the DM Department interacts with all concerned nodal entities and institutionalizes all the required functions pertaining to disaster management. The Department is led by the Principal Secretary, Relief Commissioner, nodal officials and trained staff.

The Gopabandhu Academy of Administration (GAA) was established in 1986 to conduct in-service trainings, the refresher trainings, conferences and specific studies. However due to shortage of manpower GAA is struggling to manage the assigned responsibilities at scale, and is currently not in a position to take up additional assignments. The ATI is running grossly short of capacity itself. There are only 3 faculty members dealing with the subject, but that too not exclusively. A number of posts are also lying vacant. Recently the academy has introduced a course on Community Based Disaster Management. The training modules developed at the state level need to be updated and teaching methodologies too need to be upgraded. The faculty available is overloaded and hence they do not have time to do practical assignments that could otherwise keep the academy updated with field developments. For carrying out trainings at the district, block and GP level, there is a need of support for putting appropriate modules in place.

OSDMA is operating as the nodal agency for disaster risk reduction and reconstruction works; coordinating with the line departments involved in reconstruction; coordinating with bilateral and multi-lateral aid agencies, UN agencies, international, national and state-level NGOs; promoting disaster preparedness at all levels in the state, and networking with similar relevant organizations for disaster management. OSDMA has adopted the national act and does not intend to notify or develop a state act. As such there is an anomaly in the institution not being headed by the Chief Minister of the state, but this has not been identified as an area of immediate concern.

OSDMA has requested that it may be recognised as the SDMA under the Act but the issue has not yet been resolved. At the state level the State Natural Calamity Committee plays a role in disaster management and at district level District Natural Calamity Committee is involved in responding to disasters. District Natural Calamity Committee is parallel to DDMA. Though coordination with other departments is not a problem but awareness of disaster management issues is low amongst organizations and hence disaster management has not been mainstreamed into the work of other departments. So far disaster management plans of 23000 villages out of 53000 have been made. More awareness is needed to mainstream disaster management concerns into urban development. The district disaster management plan for Puri was not updated after 2007 although major changes have taken place since then. An effort is currently underway with external support to update this plan. Although ULBs were instructed to prepare city disaster management plans in 2008-09 they have not done so. ULBs and districts have contingency plans which are primarily response plans with rudimentary features.

At the District & Block Level, trainers have been empanelled by the DM Department but they need assistance from OSDMA for their training programs. The role of NGOs is very significant in disaster management in Odisha, and the civil society has traditionally played a very prominent role in development and disaster management. At the state level an Inter Agency Group exists and has been very active in disaster response and preparedness coordination among the NGOs. There are GP level forums and cluster level forums for interface with the community. Each community level

forum has a community resource person. For community awareness community volunteers need to be trained.

Disaster mitigation infrastructure is available in rural areas but adequate information is not available with the custodians. Village task forces are registered under BDO office at the Block level but are not adequately equipped to handle disasters.

On paper the OSDMA supported multipurpose shelters are managed by the identified social mobilizers of community based committees. However in reality the conditions of shelters are not very good as there are disputes in committees, vested interests take over, and the upkeep too is not of the desired level. Significant expenses have been incurred on the procurement of equipment to be placed in the cyclone shelters, but these are either not to be found, or are in disrepair, or packed and stored somewhere for want of resources and skills to operate them.

In other words, while there is an institutional system at state level, it is not so apparent at district level and is almost non-existent at sub-district and community level.

### **UTTARAKHAND**

The SDMA has been constituted but it has all ex-officio members and it has not met even once during 2007-2012. It has neither separate Secretariat nor any budget. Therefore, it has become more or less a virtual body. The same is true for SEC. The response related functions are handled by the State Crises Management Committee as before. Very little has been done at state level for disaster risk reduction in terms of mandate of the Disaster Management Act, 2005.

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*“SDMA is has become a virtual body since it has no secretariat. There is also no budget for secretariat”.....ED, DMMC*

*“There are so many different institutes of DM like SDMAs, DMMC, ATI DM Cell and there is no convergence. Instead of going for so many parallel structures there should be just one”...ED, DMMC*

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Besides, the existing institutional arrangements are skewed in Uttarakhand. For instance, ATI is under the Department of Personnel and DMMC is under the Department of Disaster Management; thus DMMC cannot interfere in the functioning of the ATI, which houses the DM Cell, which in turn is required to organise all training programmes including training of trainers at state and district level. DM cell of ATI should therefore be under the administrative control of either under SDMA or Disaster Management Department and the DMMC should also be under the control of same Authority or Department. Presently, it is under the administrative control of DM Department.

District Disaster Management Authorities were constituted in 2007 in all the districts in Uttarakhand. DDMA meetings are held twice a year and the agenda is most of the time about the financial activities. But it also acts as a forum for sharing the concerns and activities undertaken in the past. According to the CDO, the DDMA comes into action only during the rainy season or in the event of a disaster and called this kind of management as disastrous management rather than disaster management. She also raised the need of having exclusive professional staff in the DM cell at district level.

There is an emergency operation centre in the district and the seven desk system is followed. There is also an operational toll free number 1077 for reporting of disasters about which the community members did not mention.

### *At the community level*

At the village level, there is no administrative infrastructure present for disaster management. At the village level there is no coordinated planning to increase the overall capacity of the community to deal with disasters.

*“There is not much system established at the village level”...DM, Chamoli*

In the GPs visited, it was noted that no training programmes had been organised at the community level. The community has not been imparted training in the villages visited. Besides, there is no VDMC or function-specific Task Forces.

Therefore, the organisational and institutional arrangements from state to local level, though in place on paper, are either non-existent or non-functional.

### **WEST BENGAL**

West Bengal has an excellent institutional system in place. There is a separate Disaster Management Department with a Minister for Disaster Management, supported by a Directorate of Disaster Management which is the executive wing of DM Department, with strength of over 300 personnel and attends to implementation of all DM related programmes and also renders policy level support to the DM Department. It has a three tier exclusive DM Officers system. At sub divisional level there are Sub Divisional DM officers; at district level Senior DM officers and DM officers; and at block level there are Block DM Officers. Besides, the Directorate has about 15 Senior DM and DM Officers. This set up is functional since 1959. The Directorate procures relief materials like garments, tarpaulin, blankets etc. throughout the year. It has captive storage facilities for relief materials. It also lends support to SEC and in a way functions as its secretariat together with DM Department. The State has put in place an excellent State Disaster Management Plan, prepared by Jadavpur University, which is updated every year.

Despite a vibrant institutional base from state to block level, the thrust is primarily on response and relief measures and very little effort has gone into prevention and mitigation measures. The State Government has an ambitious plan covering all facets of DM, as brought out by the Minister of Disaster Management encompassing raising of SDRF, dissemination of early warnings, 24x7 control rooms during monsoon/ cyclone season up to block level, communication plan providing linkages up to village level, construction of cyclone/flood shelters, coastal shelter-belt plantation, revamping of civil defence set up etc.

Since members of SDMA and SEC as also DDMA's hold their positions on ex officio basis, these institutions have by and large become virtual entities. While the directorate renders support to SDMA/SEC, at district level the district magistrate normally holds district level meetings and meetings of DDMA's as such are almost non-existent. The plea advanced by them was that disaster management is invariably included as an agenda in the district level meetings.

The BDMOs are mainly attending to relief work. There are no VDMCs or village task forces in place. The elected members of Gram Panchayat are imparted some training but it is minimal so far as DM is concerned. The institutional system, though in place from State to Block level, is not visible below block level. The community has no confidence in gram panchayats which changes hands frequently.

In Darjeeling district it was observed that there is trust deficit among the local population, government functionaries on the one hand and the state and district governments on the other, on account of Gorkhaland agitation. With the enactment of the Gorkhaland Territorial Administration Act, 2011 (GTA) and transfer of 'disaster management' to GTA, the legal situation has become more complex since GTA has very senior level officers and it cannot be expected to function on "the

directions of the District Authority”. Besides, it has no funds to take landslide or earthquake mitigation measures. Since the matter is presently *sub judice*, there is no role clarity. On the other hand, it is alleged by local administration including the current MLA that District Authority is passive in terms of action since Disaster Management as a subject has been transferred to GTA. The BDMOs are mainly attending to relief work. There are no VDMCs or village task forces in place.

***Explanatory Note:*** *This section should include a brief description of the institutions involved in disaster management in the state. The capacity in terms of resource persons and their qualification, trainings done and imparted at various levels and engagement with civil societies and other stakeholders should be clearly portrayed. The institutional structure may be listed from state to local level and also the extent to which it is functional. If a part of institutional system is not adequately functional, what are the reasons therefore? Unless the gaps in the institutional system are identified and remedial measures indicated to bridge such gaps, the purpose of the HR Plan would be defeated.*

## 7. Analysis of capacities

Having discussed the vulnerability profile, capacity needs assessment, Capacity Development Framework, analysis of institutional structure from state to local level, the next stage would be to undertake analysis of capacities so as to work out gaps and thereafter an Action Plan to cover the gaps in a time bound manner, over the period of next five to ten years. This analysis may include brief description of the available capacities at micro level in the state; capacity in terms of risk and vulnerability analysis; participatory exercises; trainings and mock drills, DM plans; integration of climate change aspect in planning, etc.

The capacity needs assessment is based on training, education, research and awareness components. Taking into consideration the training and non training aspects, it is also related to the factors such as the human resource development, organizational development, financial competencies, IT and infrastructure requirements, and institutional and legal framework development. Capacity needs assessment aims at highlighting the capacity needs of various stakeholders, across the identified key sectors and potentially applicable disaster types.

In planning and developing action plan across sectors and levels, capacity building activities are mainly considered to be training activities. Capacity is narrowly conceived and addressed as an issue that can be addressed mainly through training. Factors related to policy, planning, strategy and enabling environment that have a major bearing on the eventual capacities of various stakeholders to perform and produce results are generally not considered as part of capacity building activities. It is necessary to analyse all aspects of capacities including training so as to develop a model based on capacity gaps. It is also necessary to analyse the capacities of different stakeholders within government, non-government and communities at risk across different levels and regions. Capacities are invariably linked with the assigned or expected roles and responsibilities of different stakeholders and hence vary considerably across levels and regions. Hence, a uniform model of capacity development is not likely to address specific capacity needs of different stakeholders and institutions.

As training is an instrument of capacity development and seeks to upgrade the knowledge, skills and competencies of the actors involved, assessment of training needs is the key to designing and conducting relevant and responsive training activities. This is currently not happening. Most of the training on disaster management is limited to general orientation training on disaster management and response related training on search, rescue and first aid.

Most of the sectoral training in education, health, rural development, and PRIs/ULBs are focused on central and state level programmes in their respective sectors, but with practically no reference to disaster management aspects.

There is a need to focus both on training and non-training aspects of capacity development by integrating them within a strategic framework for training and capacity development for disaster risk reduction (DRR) in the state. This aspect has already been stressed in Need and Capacity Assessment as also in the section on Context. In this section, the information already gathered and discussed above needs to be analysed to arrive at capacity gaps, without which it would not be possible to devise an Action Plan to take care of such gaps. For the sake of facility, this exercise is being carried out stakeholders-wise. It can, however, be carried out sector-wise also with due emphasis on all relevant stakeholders.

The analysis of capacities based on the stakeholder analysis would fall broadly in the following categories:

- Stakeholders with reference to the Government sector or Government supported entities that have the formal responsibilities to address disaster management
- Non Government Organizations including INGOs, CBOs, SHGs etc, working on disaster management and allied issues
- Academic institutions, private bodies, research based academies and corporate supported bodies and associations
- Community representatives, volunteers, resident welfare associations, individual professionals; ward, village and GP members

## **ANDHRA PRADESH**

### *Government Stakeholders*

Government officials undergo regular training on disaster management at various stages of their career but training of communities and NGOs is lacking. Coordination between various organizations in the state working on disaster management is also lacking resulting in duplication of efforts and wastage of resources. SDMA is virtually non-existent. DDMA exist in districts and some of them have formed district disaster management plans but most DDMA lack the capacity to prepare DM plans. The DDMA do hold meetings from time to time. At least two preparatory meetings are held every year and one of these is held before monsoons. Meetings are also organized on receipt of warnings. However, the officials posted in the disaster management department lack specialized knowledge of disaster management issues and officials from other departments like agriculture are often deputed for duties in disaster management department, making it difficult for them to effectively discharge their duties. The fire department is the best equipped to respond to disasters but when NDRF is involved in response activities; it does not take help from the fire department. Police department is at the forefront of response efforts and generally commands other departments involved in response. Even the fire and municipal departments, which are better equipped to respond, are put under the command of the police department but this arrangement often leads to conflicts and complications. An HR plan has been prepared for DM/SDMA and has been approved by SEC but is yet to be approved by the finance department. It is intended to appoint 6 sectoral managers.

### *Training Institutes*

There are two key training institutions, APARD and MCRHRD, in the state but the trainers lack the necessary expertise to train for disaster management related activities. As a result, despite training, desirable results are not obtained from trainees after the training. Grants have been given to various training institutions within the state to conduct the trainings. However, ad hoc training mechanisms wherein resource persons or resource institutions are invited to conduct the trainings affect the sustainability of capacity built within sectoral departments. Some admirable work has been done by training institutions. For example APSDPS has taken admirable research and capacity building initiatives but lacks the outreach to draw benefits from its work. MCRHRD is also linked to the districts and ETC institutions can be used as platforms for training. The state also intends to continue the practice of appointing DPOs as done under the UNDP DRM program, although Andhra Pradesh was not covered under the programme. Despite this, the initiative taken by the State Government on its own is praiseworthy.

### *Community level*

Bharat Nirman volunteers are present in every village. Volunteers are trained by APARD but for more effective use of volunteers they should be part of an institutional setup with clearly defined duties. However, there is a need for extensive public awareness initiatives since the people lack awareness on ways to deal with disasters and also do not know which department to call for assistance during

disasters. The awareness on disaster management issues and concerned agencies is the lowest amongst the poor in the state. Hence a mechanism for linking design of training programs with the needs of the poor is required. They are the worst affected during disasters but have the least interaction with the government and the government programs do not reach them adequately. Hence there is a need to design community managed programs where the plans of the community can be supported by the government.

Despite of large number of institutes working on the subject in the state, the cross interlinks between them is completely missing. There is need for proper coordination to avoid duplication and overlapping of effort. There is need to integrate DM with various sectors for better preparedness and response. There is lack of trust between the NGOs and the Government. The communities have very little understanding of the issue and are completely isolated from the process.

## **BIHAR**

### *Government Sector*

The Government sector officials and departments in Bihar are highly active in institutionalizing the disaster management systems, and have got sensitized especially after the experience of the Kosi Floods. Overall, there is a high level of energy and enthusiasm across the government sectors and allied entities on disaster management and development issues. There are evidences of systems of coordination that have been established. Individual officials in key positions are well informed and motivated.

The concerned officials and employees are however not adequately exposed to focussed training programmes on DRR issues related to their respective functional areas. As a result, there is a gap between the level of expected outcomes from concerned government officials and the actual deliverables from their end. This gap can be filled with appropriate trainings on the subject matter and the convergence in their functions. In addition, the sensitization on what a good and quality assured training and education approach can do to the sector is also absent, and there are misconceptions that certification can lead to problems and cross sectoral engagement will lead to loss of time. While in the short term these hindrances do exist, these must be overcome and measures introduced for long term gains. Officials need to be convinced on this. This would be feasible through intensive sensitization and training campaign for all government officers and employees from state to local level.

There is an acute scarcity of resources and lack of infrastructure at the grass root level due to which the community suffers at the time of disasters. At the district level there is no existing secretariat for disaster management, and as a result the issues are being managed on an ad-hoc basis. There are remnants of the GoI-UNDP DRM programme and the work carried out by Sphere India in some of the districts in the form of plans, but there are no proper emergency inventories, emergency operations centers, training programmes and coordination mechanisms for emergency response and disaster risk reduction.

The MPs, MLAs, elected PRI/ ULB members and other high officials also need to be sensitized and adequately oriented at their respective levels to take the disaster management approach forward. It is evident that the District Collectors are very motivated and active, but in the absence of a proper management system in their offices, a sensitized and supportive set of elected representatives and fellow officials, and an aware community, their actions remain ad-hoc. Most importantly, the absence of dedicated staff for carrying out disaster management functions was stated to be the largest constraint. While the responsibility of DDMP preparation and maintenance, establishment of EOC and coordination of actions rests therein; the DC office has no dedicated staff for these actions. DM is one of 5 to 6 charges that a deputy DM is handling.

Besides government officers and employees working from state down to village level, elected representatives from state to PRI/ULBs, government research and training institutes, the government stakeholders may also include civil defence and home guards, ICDS workers, technical cadres like engineers, architects, masons, doctors, paramedics and other support staff, health and education workers including ASHA/ANM workers, government school teachers etc. These are institutional strengths already available within the government set up in large numbers; but are not tapped fully. While these stakeholders do play a part in response related functions as and when called for, their support needs to be institutionalised not only for disaster response but also for disaster risk mitigation by imparting focused training to them; building master trainers among them and motivating them to sensitize and train the community.

#### *Non Government Organizations*

The NGOs including INGOs, CBOs, and SHGs are quite sensitized about disaster management and are carrying out various activities at their levels. These stakeholders have realized their social responsibilities pretty well and have come to the fore at the time of disasters such as Kosi flood and also smaller localized events such as storms and fires. Moreover they have come forward as a unit, and formed an effective network across the state, and helped the highly vulnerable and excluded people at the time of need. The Bihar Inter Agency Group has worked as an effective platform for the NGOs in the state, and also for external stakeholders including aid agencies and government departments to engage with the civil society actors. They have carried out rapid assessments, issued situation reports in emergencies, pooled resources to carry out joint exercises, taken up training and awareness programmes and operated as a think tank on finding ways of collaborative action on disaster risk reduction.

Bihar Inter Agency Group has been functioning as a regional coalition of humanitarian agencies working in Bihar since the 2002 Bihar Floods and has been promoting a Coordinated Response Strategy. However the capacities of the civil society sector are limited at present and funding is a major constraint given the facts that no major emergency grants have been available in recent times and very little exists in the aid sector on disaster mitigation funds.

There is significant scope for providing appropriate disaster management training to NGOs and allied groups, and there is an also a high level of interest in these groups. Further, the involvement of NGOs in disaster management committees and local platforms at district and sub district level has been initiated but needs to be strengthened substantially.

#### *Academic and research institutions, private bodies*

There is huge potential of academic institutions that can cover the subject of disaster management through their course curriculum, extracurricular activities, innovative projects and outreach interventions. The concern is that currently these institutions are not sensitized enough about disaster management research and education, have very low capacities of their own, and face a poor level of demand of courses dealing exclusively with disaster management.

#### *Private Sector*

Private bodies, including corporations and associations have done very little towards disaster management in the state. This is an untapped potential, which can be a source of support to the sector in coming times as the state progresses rapidly on an industrial and economic fast track. The industrial development is currently higher than it has ever been in Bihar, and given the current corporate environment and the new policies on corporate social responsibility; the potential is very significant and must be tapped.

Interest and actions of educational institutions and corporate bodies will help not only in the training and capacity building aspects but also in the education, research and documentation, and public awareness pertaining to disaster risk mitigation.

#### *Volunteers/ professionals/ workers/ committee members*

Community is the first responder everywhere and in a context like Bihar where state systems have been at very low levels of reach and performance in past decades, this system of local response has been the only recourse to the communities. Unfortunately poverty and lack of education have rendered the community rather helpless and very little capacity has been seen on organized response. Most of the DM programmes have not reached beyond the block office levels. Though there are disaster management plans and procedures on record, at the grass root level people are not clear even on basic issue as to whom they should contact in an emergency, or how they will be informed to deal with such situations.

This shows the real story of ground zero, where community volunteers/ workers/ RWAs/ Ward/ GP and Village members are still struggling with the disaster management issues. They hardly manage fire fighting; for them disaster risk mitigation is a long way to go. As they are not aware of the general procedures, safety guidelines, building safety codes to be followed at their level, there is little evidence of state programmes benefitting local communities on disaster risk mitigation.

On the positive side, there is abundance of local skills and manpower, such as that of bamboo artisans who are capable and willing to take up construction of safe houses using local materials and traditional skills along with new knowledge on enhanced climate and disaster resilience. The Owner Driven Reconstruction Collaborative (ODRC) has carried out work on these lines using local communities and artisans to construct about 30,000 houses in the Kosi flood affected areas as part of a government held and World Bank supported programme that links the Indira Awas Yojana of the government with post disaster reconstruction using appropriate technologies and community based processes.

### **GUJARAT**

#### *Government Sector*

There are good institutional mechanisms in place at state level. The government officers and employees have been exposed to training and sensitization at state level. However, necessary integration and coordination systems among different departments is still lacking to the desired level. Disaster Management is still perceived as the responsibility of DM Department and GSDMA. The convergence across sectors even among government departments has not materialized. Besides, DRR has not been accorded priority with the result that even where other government departments are coming forward, it is primarily for response related functions and not DRR related activities.

Another bottleneck is that, post Bhuj earthquake, the sensitization and training programmes are primarily earthquake oriented whereas other disasters like cyclones, floods, droughts and industrial emergencies are not receiving the attention they deserve. This complacent feeling has percolated among stakeholders in different departments, except officers working in DM Department, GSDMA and hopefully in GIDM, as and when the faculty positions are sanctioned and filled up. It is therefore inescapable to conclude that the concerned officers and employees have not been exposed to focused training programmes, particularly on DRR issues as also disasters other than earthquakes, even on response related issues. It would be appropriate to analyse the capacities for different disasters in various sectors and levels and develop a strategy for sensitization and training of government officers and employees, supported by focused training modules encompassing different sectors.

At district level, adequate institutional systems are not in place and the officers and employees are also not imparted specific training. Their approach continues to be response oriented with little knowledge or understanding about DRR aspects. The convergence among different government stakeholders has not been thought of and is almost non-existent. For instance, Chief District Education Officers were not even aware that they are concerned with structural and non-structural aspects of school safety.

At community level, no institutional mechanism is in place to bring together all stakeholders at one platform. It is necessary to sensitize Mamlatdars and Patwaris, if it is desired to develop convergence among different stakeholders at district, block and village level. The elected representatives do not even realize that they have a key role to play for implementation of measures related to DRR. Therefore, MLAs, PRI/ULB members also need to be sensitized and adequately oriented at their respective levels to take the disaster management approach forward.

Besides government officers/ employees and elected representatives, civil defence and home guards, SDRF, state police and extension workers like ICDS, ASHA, ANM workers are key stakeholders; more so when they have a presence at community level. While they are playing some role in response related functions, they are not proactively involved in DRR functions for the simple reason these functions have not been undertaken at community level so far. The strategic planning therefore should have a multi-stakeholder approach for training and capacity building of different stakeholders at all levels from state to community level.

#### *Stakeholders in non-government organisations*

At State level INGO like ADPC and NGOs like AIDMI are associated with GIDM. However, this association is restricted to solitary programme or project for which they have been engaged. Their presence at district or community level is non-existent. Gujarat has a fairly vibrant system of NGOs at state, district and local level but these organisations are not involved with government and normally function with community in isolated manner. Besides, a major handicap is that NGOs themselves do not have any coordination mechanism among themselves. It would be desirable if they could come together on one platform and work jointly including organisation of training programmes for their employees. The governments at state and district level could function as facilitators to bring them together and extend support by way of their training and capacity building. Once the organizational set up of NGOs is in place at state and district level, periodic meetings with government will help them to remain focused and optimize their outcomes. At district level, DM or ADM in charge of disaster management may take quarterly meetings with their representatives to ensure convergence of efforts, particularly to address DRR concerns. NGOs working at community level would be a good vehicle to carry forward the common agenda and reach the community. At present, government machinery and NGOs work separately at community level which negates the multi-stakeholder approach; though it is talked about at national and state workshops but in reality is not translated into action at local level.

#### *Academic, Research and Training Institutes*

There is good number of academic, research and training institutes in Gujarat but these have not been involved in undertaking or even facilitating actions on DRR related functions. These institutes can assist the government in developing course curricula, innovative projects and other interventions. However it would be necessary to sensitize them in the first instance. A DRR Framework may be developed in conjunction with such institutes and selected NGOs which could then be taken up for implementation by involving all stakeholders who are active at different levels.

### *Volunteers/ committee members*

The volunteers from the community, being the first responders, can play a pivotal role during any disaster and also generate awareness during normal times. The community members had been inducted as members of VDMCs and Task Forces under the DRM Programme. However, after the programme was concluded in 2009, very little effort has been made to sustain the VDMCs/ Task Forces. It would be necessary to revive these bodies and impart basic training to them in specific capsules; provide them basic inexpensive equipment such as first aid boxes, minimum SAR equipment etc. Such trained community members are not only needed in case of disasters but have found to be very useful in normal times also like saving people from drowning or in case of fire etc. In order to encourage them and give them a sense of ownership, some accreditation process may be introduced for them such as issue of volunteers' Identity Cards as First Aid Workers, Search and Rescue Workers etc. These volunteers and committee members should closely work together with the PRI/ ULB members and may be encouraged to make full use of traditional wisdom and practices.

In conclusion, the multi-stakeholder approach is still in infancy in Gujarat, like in most of the other states and needs to be put in place in an imaginative manner, without government stakeholders being too intrusive and yet working together with common objectives.

### **ODISHA**

#### *Government Sector*

The institutional set up for disaster management is well in place in Odisha, especially at the state and district levels, however at the sub district level it needs to be further institutionalized and monitored.

The DM Department is highly active and is responsible for all disaster management functions at state, district and sub district levels, with adequate support from OSDMA. Further, OSDMA is functioning as per its assigned mandate to take up disaster preparedness planning to meet any eventualities arising out of all kinds of disasters. OSDMA is playing a critical role in preparedness and mitigation capacity building initiatives in the state through designing, developing and implementing effective public policies, plans, and programmes.

Gopabandhu Academy of Administration (GAA), State Institute of Rural Development (SIRD) and Odisha Disaster Rapid Action Force (ODRAF) are also conducting various programmes on flood, earthquake, drought and cyclone management, school and hospital safety, safe construction training to engineers and masons, DRR and gender mainstreaming, and conducting mock drills. Extensive IEC material has also developed in English as well as Oriya.

In Odisha, the Odisha Relief Code (ORC) is being followed in conjunction with the National Disaster Management Act. The code is applicable for administration of relief measures in the entire state in respect of natural calamities. Under the code, the steps and provisions are clearly defined and being adhered by the concerned entities.

Despite all of the above initiatives, it was observed that convergence is required across the various stakeholders in order to deliver desired levels of benefits at the grass root level. Unfortunately it appears from evidence of past work that there was a good level of momentum in DM activities at all levels for a number of years after the 1999 Super Cyclone but this has over time given way to a much more passive environment pertaining to the sector.

The current approach in programmes, including the NCRMP, of constructing infrastructure such as multi-purpose cyclone shelters and involving the community in the management of the shelters and

the equipment therein has considerable number of practical concerns at the implementation level that seem to have been overlooked.

The subject of disaster risk mitigation is also addressed indirectly through the developmental works of a number of departments. The department of Rural Development primarily concerns itself with Water, Sanitation infrastructure, but does have standard operating procedures during floods e.g. provision of raised plinths and making available tankers. It was stated that training for officers on 'leadership in emergencies' is needed, especially for Junior Engineers and BLWs. These are the officers working in the villages and would be directly responsible for any response action at the time of an emergency.

#### *Non Government Organizations*

The NGOs, INGOs and CBOs are active in the state for functions related to disaster management, especially since the super cyclone of 1999. It was observed that NGOs are more active in the rural areas, and hence they can play a very vital role at the time of disasters. There is an active Inter Agency Group that is upward linked to the Sphere India platform of national humanitarian agencies, and is downward present in all parts of the state through its network partners. The Red Cross movement is very active in the state with not only the state and national societies but also a number of international societies having active programmes.

The state level NGOs are also very active and have long years of experience.

OSVSWA does capacity building work in rural areas on livelihood issues, and through this channel addresses disaster risk mitigation. They are working in the districts of Puri, Ganjam, Khorda, Nayagarh and build capacities of local community members to obtain infrastructure services under government schemes. They have established community governance committees at GP level. The committees have created block level plans and got them accepted through BDOs. The plans include risk reduction elements and there are linkages with the programmes of OSDMA. Practical Action works with communities to get their needs reflected in government plans. They also help the communities deal with government departments and provide the communities with appropriate technological solutions or interfaces in the form of intermediate technologies. The organization feels that there are gaps between provisions contained in government plans and those that are implemented on ground. They tried to tie up with OSDMA for training activities but were not successful in having the desired programmes.

RCDC was formed in 1993 to work on natural resource management and has initiated community forest management. The organization is helping communities develop flood resilient crops and better drainage systems. They have also helped communities prepare community contingency plans. They train communities in First Aid and Search and Rescue with help from St. John's ambulance and Civil Defence. Pencode is a community based organisation working in the urban slums of Puri. Self Help Groups have been formed for interventions in the areas of disaster risk reduction, HIV/AIDS and livelihood. They work through SHGs of women in the community, which is largely a fisher community.

Despite a large number of NGOs and extensive work being carried out by them, their capacities are limited and they also need to be trained and equipped further in order to take up long term disaster risk mitigation efforts efficiently and effectively. Some of the NGOs have been exposed to short term trainings in disaster response from Red Cross and St. Johns; however there is need to go for specific trainings pertaining to disaster risk reduction, school and hospital safety, conducting mock drills, train and sensitize community and construction workers, and volunteers. There is need for sustained efforts with trainings that are linked to plans, and the inclusion of refresher trainings and plan revisions in the long term.

### *Academic and research institutions*

Odisha has a large number of academic and research institutions that have huge potential to address the disaster risk reduction by various means such as course curriculum, innovative projects and other interventions. However the need of hour is to first sensitize them and then accordingly these entities can go ahead to the next level of creating new DRR managers. There are many new private universities and colleges that have come up in recent years, and are taking interest in the subject of disaster management though it is still only at the level of elective courses under subjects of rural management, engineering etc. There is however a very significant potential to develop this area and create new graduate and post graduate programmes on disaster management, with a strong focus on disaster risk mitigation.

Currently the research on risk considerations in development patterns, particularly so in the face of rapid development and urbanisation, is not included in comprehensive development planning. The comprehensive development planning is the only instrument currently in use in guiding development planning in the State of Odisha. Need for good practice guides on risk management planning and emergency considerations are felt by the academics, and they see a definite need for risk sensitive development planning.

### *Private Sector*

So far the role of the corporate sector has been limited to relief and reconstruction activities, but groups like TATA, SAIL, ONGC, NALCO and JINDAL are increasingly becoming sensitized and are engaging on safety issues. The potential to tap CSR resources for disaster risk mitigation is very significant, the only hindrance being the negative environment in some areas of the state against large corporations around issues of land acquisition. The security perception, given the naxal concerns, is hampering linkages between the civil society, corporations and government agencies.

### *Volunteers/ committee members*

Due to the super cyclone of 1999, and later through UNDP DRM programme, initial steps have been taken in the form of disaster management plans of districts, blocks and villages, and the creation of task forces at the community level. The creation of village level disaster management task forces was one of the largest initiatives on this front and extended to most villages in the most vulnerable belt. The sustenance of the initiative has however been an issue of concern as the task forces have lost momentum over the years as there have been no follow up programmes to consolidate, support, train and motivate them. The local groups are seen to be active where some NGOs have stepped in and taken up related developmental programmes or formation of SHGs for livelihood support. However, even in these cases, the subject of disaster management has pushed into background over time.

The committees formed/ proposed to be formed for the upkeep of the multi-purpose cyclone shelters are seen as the institutions present in a visible way. These too appear to be riddled with local politics and conflict of vested interests. There are instances where factions are in conflict over control of the shelter and in the process the shelter is not accessible to anybody, and also there are cases where strong political interests have taken control of the shelters. Comprehensive village level plans where the management of the cyclone shelters and other assets are included are yet to be prepared and implemented. There is thus a need to integrate community level planning, the local task forces, the committees for management of cyclone shelters and the overall training and capacity building initiatives on disaster risk mitigation into one comprehensive and well planned approach.

An interesting interface is where community volunteers have been identified, recruited, trained and deployed by the government for disaster management functions. One example is of life guards who

have been trained by the police department to save lives of the drowning people in the sea, which has emerged as an ongoing risk. On discussing with them it was found that they all belong to fishermen community and are excellent swimmers. The police department hired them and after joining they were provided intense training on rescue. The district emergency management officials acknowledge that this is an important area of work since the largest ongoing disaster in the area is of frequent loss of lives due to drowning.

## **UTTARAKHAND**

### *Government Sector*

At the state level, the main thrust is on government officers and employees and some of them are imparted training. There is no mechanism in place for sensitization, training or even involvement of other stakeholders. The actions taken or proposed by other non-government stakeholders are not considered jointly in inter-stakeholders' meetings. Besides, there is no coordination mechanism for all stakeholders taken together. Although institutional systems are in place, at least on paper, at state and district level through SDMA/ SEC at state level and DDMA at district level, these systems are not functional since SDMA/ DDMA do not meet frequently. This has given rise to a situation where disaster management is primarily perceived as the function of DM Department and other departments have not really assumed the ownership of DM related functions.

It is not as if other departments are totally indifferent to DM needs. These departments do come forward and work together in disaster situations in respect of the functions assigned to them. However, such association is mainly response oriented. At the same time, risk mitigation is not a priority and there is no strategic framework in place to ensure all concerned departments meet occasionally to delineate their respective roles in normal times for disaster risk reduction. Considering that DMMC is located, headed by an able officer, sensitization and training programmes can be organised for senior officers of all relevant departments to evolve an Action Plan for risk mitigation with responsibilities assigned to each department. The concerned officials and employees are not adequately exposed to focused training programmes on DRR issues related to their respective functional areas. As a result, there is a gap between the level of expected outcomes from concerned government officials and the actual deliverables from their end.

The lack of convergence among different departments at state level is also reflected at district level, where it could comparatively be integrated since all departments at district level function under the District Magistrate and all developmental aspects are coordinated by CDO at district level. A self-certified and forward looking DM Audit system can be put in place for mainstreaming DRR in development process. If DMMC and DM Cell at UAoA can jointly organise sensitization and training programme at district level for officers of different departments, this convergence can be brought in provided District Magistrates/ CDOs take initiative for organisation of such programmes. The DM Department at state level can probably take up advocacy for organisation of such programmes. Lack of adequate training to district level officers is a major bottleneck. Even half days' training programme organised over two days may show tangible results. Such a schedule will enable the officers to look after their day to day functions also.

At local level, there is neither any institutional system nor any effort to educate and motivate officials to address issues related to DRR and particularly the need to ensure that development does not result in enhanced vulnerabilities. The constitutionally mandated PRI system is already in place at local level. The constraint is that PRI members themselves are not fully sensitised and trained in DRR. Besides, they are not assigned adequate role in any aspect of disaster management. At community level, District Magistrates have shown their inability to do much except advocacy, as brought out by DM, Chamoli. One could say that so far as disaster risk mitigation is concerned, there is lack of both political and bureaucratic will, since DRR does not have the kind of visibility that

response related functions have. If governments at state and district level cannot bring in convergence among government stakeholders from state to local level, active involvement of non-government stakeholders in conjunction with government stakeholders would remain a far dream.

ITBP and Civil Defence and Home Guards are two key stakeholders who are discharging a pivotal role in response and relief in Uttarakhand. There are two ITBP Battalions in NDRF. If these battalions or coys stationed in Uttarakhand as also Civil Defence and Home Guards could be involved not only in preparedness but also in generating awareness and imparting training to community in disaster risk mitigation in normal times, it would give a fillip to the DRR agenda.

The involvement of PRIs in DM related functions is minimal. They have no authority and have hardly any say in normal as well as disaster related situations. They have not had adequate exposure to disaster management and particularly disaster risk mitigation during their induction training. PRI members represent the community and are constitutionally mandated to discharge functions entrusted to it as local authorities.

#### *Academic, Research and Training Institutes*

There are several academic, research and training institutes in Uttarakhand like IIT, Roorkee, CBRI, Roorkee, Universities etc. These institutes have done pioneering work on earthquake engineering. The erstwhile Roorkee Engineering College (presently IIT) was probably the first to undertake research in different facets of earthquake engineering. CBRI has assisted Ministry of Rural Development in developing earthquake safe structural designs for IAY housing. However, state government need to take their support on regular basis since these institutes are key stakeholders. IIT has the competence to undertake training of trainers for engineers, architects, town planners etc. and in fact were closely involved with the Ministry of Home Affairs in the implementation of two programmes for ToT of engineers and architects. Since the institutes in Uttarakhand are familiar with local vulnerabilities and terrain, their close association as key stakeholders would go a long way in developing and implementing the strategic framework for techno-legal regime as also its implementation.

These institutes can assist the government in developing course curricula, innovative projects and other interventions. A DRR Framework may be developed in conjunction with such institutes and selected NGOs which could then be taken up for implementation by involving all stakeholders who are active at different levels.

#### *Stakeholders in non-government organisations*

There is a good network of NGOs in Uttarakhand which is quite active at grass root level. Besides, there are a fairly good number of women SHGs active at village level. These organisations are quite familiar with the community as also the local problems and could function as a good vehicle to reach the community and even impart training at community level, given some orientation training. However, the state and district governments are not associating these key stakeholders. These organisations are not involved with government and normally function with community in segregated way; more so since these NGOs themselves do not have any coordination mechanism among themselves. It would be desirable if they could come together on one platform and work jointly including organisation of training programmes for their employees. The governments at state and district level could function as facilitators to bring them together and extend support by way of their training and capacity building.

Once the organizational set up of NGOs is in place at state and district level, periodic meetings with government will help them to carry forward sensitization and awareness at village level, as a partner of government. These NGOs have a good relationship with PRIs. However, since PRIs themselves have not been allowed to discharge a key role at local level, the availability of such a good human

resource is not being utilised by governments. At district level, DM or ADM in charge of disaster management may take quarterly meetings with their representatives to ensure convergence of efforts, particularly to address DRR concerns. At present, government machinery and NGOs work separately at community level which negates the multi-stakeholder approach; since in reality it is not translated into action at local level. Similarly, private organisations and business concerns can also be of assistance at district level, which resource has again not been tapped so far.

#### *Volunteers/ committee members*

During implementation of DRM Programme, VDMCs had been constituted in all programme villages; Village Task Forces developed and trained, awareness generated and village DMPs prepared in consultation with the community. The entire initiative at grass root level was primarily based on volunteers. With the conclusion of the programme, not only these institutional systems have gone into disuse, but volunteers have also gradually withdrawn since the programme lost momentum. The volunteers developed under DRM Programme have either moved out of village for employment/ higher education or have lost interest. However, new volunteers have not joined the initiative with the result the base is now completely eroded. It would be necessary to revive these bodies and impart basic training to them in specific capsules; provide them basic inexpensive equipment such as first aid boxes, minimum SAR equipment etc. Such trained community members are not only needed in case of disasters but are found to be very useful in normal times also like saving people from drowning or in case of fire etc. It has to be realized that volunteers from the community, being the first responders, can play crucial role during any disaster and also generate awareness during normal times. In order to encourage them and give them a sense of ownership, some accreditation process may be introduced for them such as issue of volunteers' Identity Cards as First Aid Workers, Search and Rescue Workers etc. These volunteers and committee members should closely work together with the PRI/ ULB members and may be encouraged to make full use of traditional wisdom and practices.

### **WEST BENGAL**

#### *Government Sector*

In West Bengal though the government officers and employees have the authority, responsibility and accountability though dispersed at different levels, their capacity building is still in infancy. While planners and disaster managers including implementers have by and large been sensitized, no specific training modules focused on their training based functions being discharged by them have been developed nor is any intensive training being provided. In particular the officers/employees entrusted with responsibility of implementing flagship developmental programs or engaged in supervising construction activity have not been exposed to focused training programs related to their respective functional areas with the result that there is no convergence in their functions so far as different phases of disaster management are concerned. It is for this reason that disaster management has not been mainstreamed into the developmental programs undertaken by the state government or the national programs being implemented through the state government such as NREGS, IAY, SSA, SGSY, NRHM, JNNURM etc. Due to lack of orientation and exposure to specific training programs, DRR has not been taken up in right earnest in the state and the functions of government officers and employees and other government stakeholders are primarily response-oriented.

There has been no effort to sensitize MLAs with the result very little, if any, funds are being made available for DRR under the MLA LAD scheme. There is routine exposure of elected representatives at local level (PRIs/ULBs) to disaster management and specific training programs of comprehending the vulnerability of their respective areas at micro level and short, medium and long-term mitigation measures that could possibly be undertaken with the advocacy by such elected representatives has

not taken off the ground. Even the awareness among such elected representatives from state to local levels is marginal.

There are very few government research institutes working on applied research for accelerated early warning, implication of climate change adaptation, development of focused training modules for different stakeholders and imparting training to them in such disciplines. The DM unit at ATI Kolkata neither has the infrastructure to cater to the needs of all stakeholders from state to local level nor has the professional faculty to support it. The district training centres are primarily administrative program oriented without due emphasis on DRR aspects; in few cases where such components have been added these are again response oriented. There is a network of training institutes imparting training in different sectors including health, education and rural development but these institutes have yet to take disaster management on board in a meaningful manner by adopting an aggressive strategy. The absence of a strategic framework was therefore acutely felt which could bring about convergence in the functioning of these institutes and mainstream DRR in development.

Training programs are lacking for training of government engineers, architects, town planners etc. commensurate with their comprehension level; more so when activities like inspection of building, approval of structural designs, issue of completion certificates etc. are undertaken comparatively at junior level (Assistant/junior engineers). Some of the ITIs do undertake training of masons but the minimum requirement of 8<sup>th</sup> pass tends to exclude most of the masons who have taken up this livelihood option based on tradition or ancestral occupation. Normally such new entrants in the profession are initially engaged as unskilled labours, thereafter take up semi-skilled work before graduating as skilled workers or mason in construction. There is therefore need to impart practical training with least emphasis on theoretical training, the training programs for such people have to be elementary, imaginative and based on hands on training. This can be achieved through master trainers selected from experienced skilled masons with adequate practical training to ensure their capacity building. Same strategy would need to be adopted for health workers with minimal theoretical training and mostly practical training.

The school teachers do not perceive disaster risk reduction as a common activity which is seen as the function entrusted to one or two teachers whose subject's syllabus includes disaster management. A training module needs to be developed for school teachers and training imparted through master trainers covering basic school safety precautions, generation of awareness among students, do's and don'ts for disasters relevant to the area where school is located, conduct of mock drills and outreach to parents/elders through students.

#### *Stakeholders in non- government organisations*

It is now an accepted fact that disaster management in general and disaster risk reduction in particular is not an activity which can be handled by the government stakeholders alone. The multi-stakeholder approach necessarily involves civil society organisations in private sector and corporate sector for taking up several activities under corporate social responsibility and the media, not only as a watch dog but also as a facilitator for awareness generation, documentation, development and publicizing good case studies. The only distinction between the government and non-government stakeholders is that while the government stakeholder are statutorily and mandatorily responsible to discharge their duties and can be held accountable for any action of commission or omission, the private sector, corporate sector, media and others have no such statutory responsibility.

Notwithstanding the above position it has been observed that a fair number of NGOs are working in a mission mode in West Bengal. The handicap they invariably face is the trust deficit between the government and non-government stakeholders, lack of coordination with government agencies, lack of accreditation which will give them a sense of ownership and lack of coordination both with government stakeholders as also within the civil society organisations. Despite these handicaps it

was observed that some of the key civil society organisations have been doing excellent work in different facets of disaster management in West Bengal.

The Inter Agency Group at Kolkata has been functioning in a dynamic way and providing technical and professional support to several other organisations. In Sundarbans (S24 Paragnas), Tagore Society for Rural Development has been working in Lahiripur GP on mangrove conservation and livelihood promotion. In Darjeeling district, Save The Hills, an NGO located in Kalimpong has been working for landslide mitigation particularly awareness generation (organised more than 80 community level workshops), dissemination of information related to rainfall data and early warning, new landslide vulnerabilities coming up due to digging at the foot hills making the entire habitation at hill crest unsteady, and applied research by bringing out papers and limited documentation for knowledge sharing as also dissemination of information. The Japaiguri Sewa Sadan is undertaking community preparedness before floods at the family level encouraging constitution of SHGs, formation of task teams for early warning, rescue, coordination, first aid and CBDP. CARITAS India is supporting Community Managed Disaster Risk Reduction in Jalpaiguri primarily focused on mitigation including Participatory Disaster Risk Assessment (PDRA) and Community Contingency Plan (CCP).

There is however no strategic framework for participatory training and capacity building of civil society organisations which has come in the way of these organisations optimising their outputs at community level. Due to lack of focused training modules for NGOs based on their functional areas some of their representatives are imparted training together with BDOs/BDMOs at state level in a common training module which really does not build their capacity in the fields in which it is needed to be built. Similarly the teachers from the private schools or the doctors/paramedics from the private hospitals are not being proactively involved in the government training programs and are not imparted any training through focused training programs.

The state government or the district administration has not proactively involved corporate sector through training and capacity building which has a direct impact on industrial disasters and environment degradation. Besides, the corporate sector can be an asset to the state government by taking up several initiatives related to DRR as a part of corporate social responsibility. The big corporate houses may even be willing to adopt vulnerable villages for holistic development, given the ownership and visibility.

The mutual mistrust between the government organisations and the media has become a handicap in making use of media as an effective tool for awareness generation and dissemination of information including early warnings. These handicaps can be mitigated by developing a strategy for training and capacity building for private stakeholders, formation of specific training modules, imparting training and developing master trainers among them. A coordination mechanism for SHGs would not only facilitate development of alternate means of livelihood but also encourage greater involvement of women in different facets of disaster management. Women, as a potential human resource for disaster management, have still not been tapped to the optimum level and are perceived more as vulnerability rather as a resource.

#### *Volunteers/professional/skilled/semi-skilled/unskilled workers*

With the improvement in educational level and awareness generation, more and more volunteers are willing to come forward particularly at the community level to function as responders. The DRM program had demonstrated that the younger generation can be proactively involved in different task forces in wards/ villages as part of VDMCs. Unfortunately, after the conclusion of this program, this initiative has not moved forward due to lack of support, refresher training and further capacity building. Besides, the community had brought out that only young boys and girls should not be picked up for VDMCs/ Task forces as they tend to move out for employment or due to marriages.

Therefore, a fair number of VDMCs/ Task Forces should be from amongst people who are already settled in villages. Since no training is being imparted or mock drills organised at the community level, a vast reserve of resources remains untapped or inadequately tapped. Similarly unskilled/ semi-skilled/skilled workers primarily engaged in construction activity can be motivated to ensure disaster resilient constructions at village level. The training programs for these stakeholders have to be imaginative and innovative and due compensation needs to be paid for the duration of training. In order to instill a sense of pride and confidence, accreditation of such volunteers through issue of identity cards as first aid workers volunteers, search and rescue volunteers, damage assessment volunteers, law and order volunteers etc. would mainstream their efforts which are presently being performed in an isolated manner and gradually are frittered away.

***Explanatory Note:*** *The stakeholder analysis brings out the need for development of strategic framework and comprehensive policy on training and capacity building which may inter alia include development of specific training modules imparting practical hands-on training and refresher training, organisation of mock drills and more effective and efficient coordination mechanism which encourages proactive participatory engagement of non-government stakeholders as also volunteers working as individuals in different phases of disaster management.*

*While undertaking analysis of capacities, one need to carefully go through vulnerability profile, need and capacity assessment, capacity development framework to determine what precisely are the available capacities needed for each disaster from state to local level. These would include institutional structure presently available, infrastructure, IT and communication facilities from state to local level and also whether trainings are supported by focused training modules with design briefs, training materials etc. for different stakeholders. Convergence of efforts by different stakeholders, coordination among them, mainstreaming of DRR with developmental programmes may also be taken into consideration. The exercise may be undertaken for each sector such as RD, Health, UD, Education, PRIs, ULBs and other relevant sectors. Once the available capacities have been analysed and capacity needs assessment has been undertaken, one could move forward to work out the capacity gaps. The states discussed above have their respective gaps. These may be taken as illustrations only to facilitate analysis of capacities by different states in different sectors, at different stages of disaster management and at different levels, based on their own vulnerability profile and other related factors already discussed above.*

*This section should include a brief description of the available capacities at micro level in the state. The capacity in terms of risk and vulnerability analysis, participatory exercises, trainings and mock drills, DM plans, integration of climate change aspect in planning, etc. up to block/village level should be portrayed. Other specific initiatives for capacity development at micro level should also be presented in the section.*

### **Capacity Gaps**

The draft National HR & CD Plan has identified the key capacities which need to be developed in the entire cycle of disaster management as follows:

- Risk Analysis and Vulnerability Assessment
- Mitigation Selection and Planning
- Climate-change Adaptation and Resilience Planning
- DRR and DM policies and legislation
- Safety Design, implementation and monitoring
- Mitigation Analysis and risk auditing Risk Communication and Spatial planning
- Residual risk and emergency risk analysts
- Emergency preparedness planning
- Emergency response management planning

- Emergency responders (search, rescue, first aid, critical care)
- Relief (shelter, water, sanitation, waste, food, rehab) management
- Impact (Damage & Loss), Needs Assessment
- Safe construction and retrofitting
- Recovery (livelihood, environment, sustainability) planning
- Mainstreaming DRR into development planning
- Knowledge support system to support planning and implementation
- Integrating DRR into sustainable development

It is neither desirable nor feasible to quantify the capacity gaps, particularly training gaps at macro level. This exercise has to be undertaken at micro level, from village to block/Taluka to District to State level with bottom-up approach. Even at village level, there can be no pre-determined standards to quantify gaps since it would depend on analysis of micro level vulnerabilities including geo-physical, social, economic and environmental vulnerabilities, population of each village, dispersal of population within a village and other related factors. For instance, in hilly terrain, population of a village is distributed in several hamlets; yet the total village population may be even less than 1000 as against some other villages in plain areas where the population may be even more than 5000 to 7000. Besides, training needs would also be different based on specific vulnerabilities, constitution of population in terms of men and women, children, elderly and disabled. Similarly, urban poor have different vulnerabilities like settlements in low lying areas, health, hygiene and sanitation needs, power needs, drainage systems, fire incidents etc.

It is envisaged that the state government would be able to develop their own respective HR & CD Plans with a bottom up approach and suitably enhance the capacities of their training institutes. Without such an exercise, even on macro basis, the training would continue to be undertaken in a largely supply driven mode using standard training modules, as at present, which are neither demand-driven nor need-based. Since the state government is likely to take at least a few years to develop the training modules based on micro level vulnerability and risk analysis from village to state level to build up the capacities of their training institutes, a quantification exercise may be carried out in this Plan. The quantification exercise that follows has been undertaken for health, education, PRIs/ULBs and rural development sectors, besides government officials and NGOs.

***Explanatory Note:*** This section should include a brief description of the capacity gaps at micro level in the state. The key capacities gaps which need to be addressed have already been covered in the National Human Resource and Capacity Development Plan and have also been brought out above in this section to facilitate the exercise.

*The capacity gaps should address the specific issues of different regions in the state including geo-physical, cultural, social, economic and environmental aspects.*

## 8. Training Needs and Plans

Training needs for stakeholders flow from the capacity gaps and analysis of capacities in the states as discussed above. The training modules need to be developed for specific training programmes for different levels and stakeholders. Also, it would be desirable to develop master resource persons at different levels so that they can provide training to subsequent batches.

***Explanatory Note:*** This section should include a brief description of the training needs based on capacities and gaps identified in previous section. The section will also identify the sectors which need to be addressed for capacity development. The planning approach for addressing the needs should also be included in this section.

### **Quantification of personnel to be trained in specific sectors**

A realistic State Human Resource and Capacity Development Programme needs to be designed to ensure effective disaster risk reduction at the state level from a multi-hazard, multi-sector and multi-level perspective. This has to be commensurate with the nature and extent of hazards in the state and need to be evolved and implemented in view of the existing capacities and resources available within the state or even at national level, which can easily be accessed by the respective states.

This programme of capacity and resource enhancement has to encompass all institutions, organisations and communities in the state that have a role to play in any part of the disaster management cycle. To mitigate the impact of disasters, there is a need to work collectively through multi-dimensional channels combining the efforts, resources and expertise of the government, non-governmental organisations and civil societies. Managing disasters holistically from a larger sustainable development perspective is a highly complex and specialised task which cannot be approached in an ad hoc manner. Disaster management brings multiple sectors into action and therefore calls for all the concerned sectors to develop their respective human resource capacities to deal with disaster related emergencies and exigencies.

The study suggests that there exists a wide gap in the knowledge, skill, and attitude of the disaster managers across sectors. Capacity risk ratio is the key: if capacity is not equal to the risk, the probability of damage and loss due to disasters are likely to be higher in proportion to the gap between the two. In order to efficiently manage emergency situations particularly at local and state level, capacity gaps and needs have to be identified and addressed. According to a study by NIDM, capacity-risk ratio in case of India is remarkably low. To bridge this gap, it is important to have specific capacity development plans and strategies<sup>3</sup>.

NIDM, an apex level training and capacity building institute, has been legally entrusted with the responsibility to formulate and implement a comprehensive national human resource development plan covering all aspects of disaster management. In this context, it is considered that the community based DRM Programme is one of the major components of the Disaster Risk Reduction (DRR) initiatives. The strategy to be adopted is one of holistic integration of DRR initiatives in the development process. However, a National HR and CD Plan at best could only be illustrative; the exercise has to be undertaken by each state keeping in view their vulnerability, available institutional structure, efforts made so far for training and capacity building, analysis of capacities and working out capacity gaps which need to be covered over a period of five to ten years.

The Hyogo Framework for Action 2005-2015 for Building the Resilience of Nations and Communities to Disasters has also identified as "strategic goals" the need for more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels,

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<sup>3</sup> Disaster Management in India, 2011, Ministry of Home Affairs

with special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction; development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards; and the systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of the affected communities.”

The NIDM has recently brought out the Human Resource and Capacity Development Plan for Disaster Management and Risk Reduction in India, 2013. The Plan puts disaster risk mitigation at centre-stage with inter-linkages with different approaches such as community based disaster risk reduction, engineering based disaster risk mitigation, environmental approach to risk mitigation and incident command system approach which have to be adapted together to ensure an inclusive disaster risk mitigation strategy.

The HR & CD Plan 2013 assesses the present status, sector-wise and stakeholder-wise, status of training institutes and analyses institutional network. It discusses capacity gaps and advocates creation of a cadre of DM professionals. The plan also identifies disaster-specific issues being faced during pre-disaster, during-disaster and post-disaster stages. Further it discusses training and education network with possible areas of intervention, broadly on the lines of National Disaster Management Framework. The Plan culminates with implementation strategy, time frame and budget and also identifies activities/ sub-activities which may be undertaken for training, education, public awareness and organisation and institutional development, the main components of the current study. This can be referred to by state governments to evolve their respective State Human Resource and Capacity Development Plans.

The quantification of number of stakeholders to be trained is a complex exercise. The National HR & CD does not quantify the number of functionaries to be trained. During interaction with the six State Governments, it was brought out that none of the State Governments have undertaken this exercise as yet. The national HR & CD Plan in a way lays down guidelines for national, state and district governments. It does not attempt to set capacity benchmarks or go into the logic of quantification and its underlying facts and assumptions.

This is based on the understanding that specific training and infrastructure needs can appropriately be identified at micro level based on a number of key factors that include: micro level vulnerabilities; characteristics of the population affected, particularly socially and economically disadvantaged segments; gender dimensions of vulnerability and capacity; women empowerment issues; and special needs of children and elderly. All this is supposed to be done following a participatory, consultative and bottom up approach. Quantification of personnel to be trained at state level therefore would necessarily be based on certain broad assumptions which may be as close to ground realities as possible across different multi-hazard prone regions of the state.

As for identification of capacity gaps on the ground, this exercise has to be undertaken at micro level, from village to block/Taluka to District to State level using a bottom-up approach. Even at village level, there can be no pre-determined standards to quantify gaps since it would depend on analysis of micro level vulnerabilities including: geo-physical, social, economic and environmental vulnerabilities; population of each village; dispersal of population within a village and other related factors. For instance, in hilly terrain, population of a village is distributed across different hamlets spread over a large area, often over 2-3 kilometres; yet the total village population may be even less than 1000 as against some other villages in plain areas where the population may be even more than 5000 to 7000 in a relatively very small geographical area. Besides, training needs would also differ on the basis of specific vulnerabilities, constitution of population in terms of men and women, children, elderly and disabled. Similarly, urban poor have different vulnerabilities like settlements in low lying areas, health, hygiene and sanitation needs, power needs, drainage systems, fire incidents etc.

Another limitation, as brought out during state level interactions, is that numbers to be trained over a period of 5 or 10 years would not be politically acceptable unless states have generated their own numbers which are both politically and financially convenient, though not necessarily need based. However, the strategic framework for implementation of training (SFIT) suggests the development of a perspective plan for 10 years divided into the following three phases: short term phase of 2 years; medium term phase of 3 years; and long term phase of 5 years.

The proposed 10 year perspective plan is envisaged to be developed at the national level and anchored by NIDM. Similar plans are proposed to be developed at the state level on the basis of a detailed exercise to be conducted by respective state governments using a bottom up approach. As it may not be prudent to engage in a quantification exercise for 10 years without active consultation with the concerned state governments, an exercise for quantification of number of personnel to be trained, Master Resource Persons and trainers to be developed, number of training programmes required to be organised at various levels has been undertaken only for next five years. This would cover the short term and medium phases of the proposed perspective plan at the national level.

It is envisaged that the state governments would be able to develop their own respective HR & CD Plans with a bottom up approach and suitably enhance the capacities of their training institutes. Without such an exercise, even on macro basis, the training would continue to be undertaken in a largely supply driven mode using standard training modules, as at present, which are neither demand-driven nor need-based. Since the state governments are likely to take at least a few years to develop the training modules based on micro level vulnerability and risk analysis from village to state level to build up the capacities of their training institutes, the quantification exercise carried out here could be used by the state governments to develop their own HR and CD Plans to kick-start the process of capacity building.

The quantification exercise that follows has been undertaken for health, education, PRIs/ULBs and rural development sectors. This exercise has been developed in detail in the Deliverable 5 of this Study related to SWOT Analysis. The report on SWOT Analysis may be accessed in NIDM website<sup>4</sup>. This exercise has been done for the entire country as an illustrative example. For each state, figures have to be taken for each sector and the strategy worked out i.e. number of stakeholders to be trained over five or ten years. Besides, the sectors taken Health, Education, Rural Development, PRIs and ULBs are illustrative only. Again, it is for the each state government to identify take additional sectors and undertake similar exercise about the numbers to be trained and the manner in which they are to be trained.

For facility of reference, copy of the national level exercise conducted is enclosed at Annexure. This may enable the state governments to comprehend the manner and process through which these numbers have been arrived at. Mostly, these figures would be available on concerned state departments' websites. In case of any problem NIDM may be contacted to facilitate the exercise.

***Explanatory Note:*** This section should present the quantified sample of personnel to be trained in specific sectors identified for capacity development. A template for quantification exercise is given below for health, education, PRIs/ULBs and rural development sectors, besides government officials and NGOs. The quantification exercise for other identified sectors can be undertaken on the same basis. The modalities of working out these numbers can be derived from the national level exercise included in the SWOT Analysis and attached at Annexure.

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<sup>4</sup> [www.nidm.gov.in](http://www.nidm.gov.in) Go to Projects, click NCRMP. It gives deliverables on the right side. Click SWOT Analysis (pages 134-156).

## **Health Sector**

The total number of health workers at PHCs, CHCs and sub centers in (*name of state*) is (*give numbers*) which include doctors at PHCs (*give numbers*), nursing staff at PHCs/ CHCs (*give numbers*) and ANMs at PHCs/ Sub-Centers (*give numbers*). These do not include doctors and other health workers in government hospitals at district, state and national level and doctors and paramedics in private sector including private hospitals.

As per the Medical Council of India, the total number of registered doctors in the state as on 31.07.2011 (*give latest date for which data is available*) was (*give numbers*) and total nursing staff was (*give numbers*). Although figures of paramedics in the country are not readily available, it would easily run into millions. The target of one Auxiliary Nurse Midwife (ANM-female) and one male Health worker for each village is far from being achieved. The above figures show the skewed distribution of doctors and nurses in urban and rural areas.

The total number of government hospitals in the state is (*give number*). To begin with, it is considered that 5 doctors and 10 nurses from each hospital may be trained in addition to all the government health workers in rural areas. The total number of personnel to be trained during the first five years would work out to be as follows:

**Table 1: No. of Medical Staffs *template***

Category	Numbers to be trained
Government hospitals' Doctors @ 5 from each hospital in [ <i>nos</i> ] hospitals	<i>Fill in numbers</i>
Total no. of doctors at PHCs	<i>Fill in numbers</i>
<b>Total Doctors</b>	<b><i>Fill in numbers</i></b>
Total no. of nursing staffs at PHCs and CHCs in [ <i>name of the State</i> ] plus nursing staff @ 10 in [ <i>nos</i> ] hospitals	<i>Fill in numbers</i>
ANMs at PHCs/ Sub Centers	<i>Fill in numbers</i>
Other Health Workers at PHCs/ CHCs/ Sub Centers	<i>Fill in numbers</i>
<b>Grand Total</b>	<b><i>Fill in numbers</i></b>

*Source: Please give source from which the data has been extracted.*

***Explanatory Note:*** This sub-section will include quantified sample for health sector. The following templates can be used along with brief description to present the number of required training programs, modules, frequency of training, master resource persons, trainers and persons to be trained, as indicated below. In case of doubt, please refer to Annexure for relevant sector.

**Table 2: Quantification of Training in Health *template***

Health	
Total no. of people to be trained	<i>Fill in numbers</i>
No. of trainers required:	<i>Fill in numbers</i>
No. of Master resource persons:	<i>Fill in numbers</i>
No. of training programmes for trainers	<i>Fill in numbers</i>
No. of Training Modules	<i>Fill in numbers</i>
No. of trainings required in five years:	<i>Fill in numbers</i>
No. of trainings annually:	<i>Fill in numbers</i>
No. of refresher trainings in five years:	<i>Fill in numbers</i>
No. of Aaganwadi workers	<i>Fill in numbers</i>
No. of trainings required in five years	<i>Fill in numbers</i>

No. of trainings in a year	<i>Fill in numbers</i>
No. of trainers required	<i>Fill in numbers</i>
No. of Master Resource Persons required	<i>Fill in numbers</i>
No. of TOT Modules	<i>Fill in numbers</i>

The training programmes and modules will be different for different categories with focus on health, hygiene, water and sanitation in general and medical first response in particular. There may be 4 training modules, one each for doctors, nurses, ANMs and other health workers, to be developed at state level by each state/UT.

Taking an average intake in each training programme at 25 participants, the number of training programmes required to be organised over a period of five years would work out to (give numbers)or (give numbers) annually.

If 4 trainers are needed for planning, developing training materials and organising training programme and assuming each group of trainers may organise 12 training programmes per year, each group may train 300 trainees. The number of trainers' groups needed would be about (give numbers) or (give numbers) trainers. These (give numbers) trainers may be trained in (give numbers) batches of 24 each by groups of 4 Master Resource Persons. Assuming that each group of 4 Master Resource Persons may organise 12 training programmes annually, (give number) groups of 4 Master Resource Persons would be needed making up a total of (give number) Master Resource Persons. In order to allow for flexibility to take care of different groups of trainees (doctors, nurses, ANMs, other health workers), as also the possibility that all trainers/ Master Resource persons may not always be available, the number of Trainers/ Master Resource Persons may be more, say about (give number) Trainers (allowing for 25% increase) and (give number) Master Resource Persons (allowing for 50% increase).

The number of Master Resource Persons and Trainers may have to be increased further by 25% from third year onwards so that these additional Master Resource Persons and Trainers can undertake shorter duration Refresher Programmes for trainees. It would be appropriate if refresher training programmes are organised after every two years.

The duration of the initial training programmes may be 5 working days and Refresher Training Programmes 3 working days.

The trainees at grass root level would generate awareness among the communities and also impart training in the basics of health, hygiene, safe drinking water and sanitation including first aid in normal times as also during and in the aftermath of a disaster.

A major constraint is that, at community level, the health workers, particularly ANMs, would be responsible for generating awareness and imparting training as also extending initial medical assistance during disasters. However, the number of ANMs is at present not adequate. At present, an ANM has to cover 2 or 3 villages. The situation becomes more difficult if the village has more population or it is located in hilly terrain with scattered hamlets. A support system is therefore needed to supplement the efforts of health workers discussed above.

The ICDS infrastructure is presently available in almost all villages in the state. There are at present (give number) sanctioned posts of Aaganwadi Workers and (give number) sanctioned posts of Aaganwadi Helpers. They are already engaged in child care including facilitating inoculation/ vaccination, personal hygiene and related health issues. They also educate women and adolescent girls in personal hygiene. Given some incentive, this Human Resource can be gainfully utilised to generate awareness among women and children in personal hygiene, water and sanitation and basic do's and don'ts on health related issues in normal as also disaster situations. The advantage is that

Anganwadi Workers and Helpers mostly belong to the same village and are already well known to women and children in the village. However, their total strength of (give number) cannot be imparted training over five years. *(This is an assumption. Each state has to see how many of the health workers it can train over five years)* To begin with, even if 20% *(or it can be a higher percentage depending on numbers to be trained)* of them are imparted training over five years, it would gradually create a focused village based force for creating awareness and imparting basic training on health related issues. There may be one training module for Anganwadi workers and helpers, to be developed under ICDS project with the support of national level health and DM institutes.

20% *(or an appropriate higher percentage)* of the total sanctioned strength of Anganwadi workers/ helpers would work out to (give number). Keeping in view that, at any time, there are about 10% vacancies, we can take (give number) Anganwadi workers/ helpers as a reasonable figure to be trained over five years, or say, (give number) annually. The training may be organised at their respective training centres or through ANMs for a cluster of villages. A short term two days' duration training programme through practical training may be sufficient. If the training is organised through trained ANMs, it may not be necessary to have separate trainers/ master resource persons. If the training is organised at ICDS Training Centres, the trainers at these centres would need to be given a brief exposure to related health, hygiene, water and sanitation issues in two days training programme. If a batch of two trainers is engaged exclusively for this purpose, they can organise 40 training programmes with 25 trainees in each training programme in a year, or say 1,000 trainees in a year with the assistance of two trainers. Therefore the number of trainers exclusively needed for this purpose would work out to (give number). (Give number) Master Resource Persons, working in (give number) batches of two each can train these trainers in (give number) training programmes of two days duration each, say (give number) training programmes for each batch of two Master Resource Persons. After the training of trainers, which can be completed over a period of 3 to 6 months, these master resource persons can act as observers for training programmes being organised by trainers, to ensure maintenance of quality of training being imparted.

While the training for the development of Master Resource Persons and trainers may be organised at State level, the training of doctors may also be organised at state level. The training of nurses may be dispersed at district level and the training of ANMs and other Health Workers may be organised at block level. The venue of training programmes could be the Conference Halls in hospitals or any other government institute which has the requisite facilities at block level. The number of training programmes required to be organised every year for different categories of medical persons may be worked out by respective state governments, based on the number of doctors/ nurses/ ANMs/ health workers in each state and the manner of calculation of number of training programmes indicated above.

As for ICDS workers, the training programmes may preferably be organised at ICDS Training Centers or any other institute which has the requisite facilities at district or block level. Since the number of training programmes to be organised are high at 40 for each group of trainers although each training programme would be of two days duration each, it would be better to have regular arrangements for venue. If necessary, the option of organising such training programmes over week-ends could also be considered.

The following table summarises the quantification for the health sector along with Anganwadi workers.

**Table 3: Quantification of Training in Health *template***

Health	
<b>Total no. of people to be trained*</b>	<i>Fill in numbers</i>
<b>No. of trainers required:</b>	<i>Fill in numbers</i>
<b>Master resource persons:</b>	<i>Fill in numbers</i>
<b>No. of training programmes for trainers</b>	<i>Fill in numbers</i>
<b>No. of Training Modules**</b>	<i>Fill in numbers</i>
<b>No. of trainings required in five years:</b>	<i>Fill in numbers</i>
<b>No. of trainings annually:</b>	<i>Fill in numbers</i>
<b>No. of refresher trainings in five years:</b>	<i>Fill in numbers</i>

\*This includes the number of doctors and nursing staff at the government hospital and PHCs/CHCs, ANMs at CHCs/ Sub Centres and other Health Workers at PHCs/ CHCs/ Sub Centres

\*\* One each for doctors, nurses, ANMs and other health workers

<b>No. of Aaganwadi workers</b>	<i>Fill in numbers</i>
<b>No. of trainings required in five years</b>	<i>Fill in numbers</i>
<b>No. of trainings in a year</b>	<i>Fill in numbers</i>
<b>No. of trainers required</b>	<i>Fill in numbers</i>
<b>No. of Master Resource Persons required</b>	<i>Fill in numbers</i>
<b>No. of TOT Modules (2 days duration)*</b>	<i>Fill in numbers</i>

\*This includes one TOT for each state/ UT

***Explanatory Note:*** This might look a complex exercise; however, if calculations made on All India basis are seen as in Annexure, it would look to be quite simple. Once the data has been downloaded, the rest of the calculations are merely arithmetical. For further clarity, please see the exercise conducted at Annexure for the country as a whole.

### **Education Sector**

Education sector is envisaged to be the key to creating awareness about disaster risks and sensitising the students in schools and colleges about their possible role in disaster risk reduction. An early awareness in this is likely to result in reduction of damage and losses due to disasters and help young girls and boys to respond effectively as disaster managers and volunteers. They need to know about the dos and don'ts during disaster related emergencies caused by hazards such as earthquake, landslides, cyclones, floods and drought. Young adults in college can also be trained to be members of search and rescue and other disaster task teams. The numbers involved are large and can be used as a massive resource for effective DM and DRR. The position of number of schools/ colleges and enrolment in the state is as follows:

**Table 4: Position of number of schools/colleges and enrolment in the state *template***

Category <sup>5</sup>	Sub-category	No. of institutions	Enrolment	No. of teachers to be trained for each institution	No. of teachers to be trained
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<sup>5</sup> The technical and professional institutes have not been taken into consideration since the students therein are required to be trained in respective areas of specialization such as engineers, architects, doctors, paramedics etc.

School Education	Pre-Primary School (Nur/ KG)	<i>Fill in numbers</i>	<i>Fill in numbers</i>	Nil	Nil
	Primary School (1-5)	<i>Fill in numbers</i>	<i>Fill in numbers</i>	1 (Average school strength= <i>Fill in numbers</i> )	<i>Fill in numbers</i>
	Middle School (6-8)	<i>Fill in numbers</i>	<i>Fill in numbers</i>	2 (Average school strength= <i>Fill in numbers</i> )	<i>Fill in numbers</i>
	High ( 9-10) and Higher Secondary (11-12)	<i>Fill in numbers</i>	<i>Fill in numbers</i>	2 (Average school strength= <i>Fill in numbers</i> )	<i>Fill in numbers</i>
<b>Sub Total</b>			<b><i>Fill in numbers</i></b>		<b><i>Fill in numbers</i></b>
Vocational Training	Government ITI/ Private ITC	<i>Fill in numbers</i>	<i>Fill in numbers</i>	1 (Average Institute's strength= <i>Fill in numbers</i> )	<i>Fill in numbers</i>
College Education	Central University	<i>Fill in numbers</i>	<i>Fill in numbers</i>	<i>Fill in numbers</i>	<i>Fill in numbers</i>
	State University	<i>Fill in numbers</i>	<i>Fill in numbers</i>	<i>Fill in numbers</i>	<i>Fill in numbers</i>
	Deemed University	<i>Fill in numbers</i>	<i>Fill in numbers</i>	<i>Fill in numbers</i>	<i>Fill in numbers</i>
	Institutions of National Importance	<i>Fill in numbers</i>	<i>Fill in numbers</i>	<i>Fill in numbers</i>	<i>Fill in numbers</i>
	Research Institutions	<i>Fill in numbers</i>	<i>Fill in numbers</i>	<i>Fill in numbers</i>	<i>Fill in numbers</i>
	Arts, Science and Commerce Colleges	<i>Fill in numbers</i>	<i>Fill in numbers</i>	<i>Fill in numbers</i>	<i>Fill in numbers</i>
<b>Sub total</b>					<b><i>Fill in numbers</i></b>
<b>Total</b>					<b><i>Fill in numbers</i></b>

Source: [www.ficci.com/SPdocument/20073/IMaCS.pdf](http://www.ficci.com/SPdocument/20073/IMaCS.pdf)<sup>6</sup> (Accessed in August, 2013)(If the figures are available on different state departments' website, these may be taken).

In calculating the above strength, the strength of BE/ Arch/ Medicine/ Dentistry/ Nursing/ B. Ed./ Polytechnics and enrolment in Open Universities has not been taken into account, on the assumption that in technical institutes, related DRR components would be part of syllabus. Besides, students in Open Universities would be difficult to cover since they are not regular students.

Therefore, in education sector, (Fill in numbers) teachers are required to be trained even when benchmarks determined are minimal. Even if the existing capacities and infrastructure are significantly improved, it may not be possible to undertake such an ambitious programme over the next five years, pending state governments working out detailed HR & CD Plans for their respective states based on bottom up micro level exercise. Therefore, to begin with, it may be appropriate to

<sup>6</sup> The source does not include benchmarks proposed for each category of schools/ colleges/Universities, which is proposed under the Study.

plan for training of one third of the teachers worked out above during the next five years, or say, (Fill in numbers) teachers.

Taking an average intake in each training programme of five days duration at 25 participants, the number of training programmes required to be organised over a period of five years would work out to (Fill in numbers) or (Fill in numbers) annually. If a group of 4 trainers organise 12 training programmes annually, we would need (Fill in numbers) groups of 4 trainers each, who are exclusively available for imparting training to teachers on DM related issues or (Fill in numbers) trainers. In order to train these trainers, in batches of 24 each, it would be necessary to organise (Fill in numbers) training programmes for trainers every year. If a group of four Master Resource Persons are entrusted to organise 10 training of trainers' programmes annually, we would need (Fill in numbers) groups of Master Resource Persons or say (Fill in numbers) Master Resource Persons. Further, in order to allow for flexibility to take care of different groups of trainees (teachers to impart training at university, college, higher secondary, secondary and primary level with different training modules for each category), as also the possibility that all trainers/ Master Resource persons may not always be available, the number of Trainers/ Master Resource Persons may be more, say about (Fill in numbers) Trainers (allowing for 25% increase) and (Fill in numbers) Master Resource Persons (allowing for 50% increase).

There may be five training modules, one each for primary, secondary, high school, higher secondary schools and university/college teachers.

Refresher training programme are considered essential to ensure that knowledge and skills are sustained. A refresher training programme of three days' duration may be organised two years after the initial training was imparted. In other words, teachers trained during the first year may be imparted refresher training during the third year and so on. It would therefore be desirable to increase the number of trainers and master resource persons by 25% from third year onwards to take care of refresher training programmes exclusively.

A summary of the quantification exercise for the education sector is as in the following table:

**Table 5: Quantification of Training in Education *template***

Education	
<b>No. of training programmes in five years</b>	<i>Fill in numbers</i>
<b>No. of training programmes annually</b>	<i>Fill in numbers</i>
<b>No. of training of trainers programmes</b>	<i>Fill in numbers</i>
<b>No. of training modules</b>	5*
<b>Master resource persons</b>	<i>Fill in numbers</i>
<b>No. of trainers</b>	<i>Fill in numbers</i>
<b>No. of refresher trainings in five years</b>	<i>Fill in numbers</i>

\* One each for primary, secondary, high school, higher secondary schools and university/co

While the training for the development of Master Resource Persons and trainers may be organised at State level, the training of teachers for university/ colleges etc may be organised at district level and the training of teachers for schools from primary to higher secondary schools may be organised at block level. The venue of training programmes could be the Assembly or Conference Halls in colleges and Higher Secondary schools. The number of training programmes required to be organised every year for different categories of teachers may be worked out by respective state governments, based on the number of teachers in different categories in each state and the manner of calculation of number of training programmes indicated above.

***Explanatory Note:*** Please see Annexure wherein all India figures have been worked out. Each state may change assumptions made therein based on capacities available, financial support needed, institutional structure etc within the state.

### **PRI Sector**

In view of the larger policy commitment of democratic decentralisation in delivery of development programmes, PRIs and ULBs have the most significant role to play in implementing a wide variety of these programmes on the ground. This offers a huge opportunity to try and mainstream DRR into development planning and administration closer to the people, where it matters the most.

There are around (fill numbers) elected representatives at the village, intermediate and district levels of Panchayati Raj Institutions (PRIs) in the state out of which more than (Fill numbers) are in Gram Panchayats itself.

Functions assigned to the Local Authority, as per the DM Act are to:

- Ensure that its officers and employees are trained for disaster management;
- Ensure that resources relating to disaster management are so managed as to be readily available for use in the event of any threatening disaster situation or disaster;
- Ensure all construction projects under it or within its jurisdiction conform to the standards and specifications laid down for prevention, of disasters and mitigation by the National Authority, State Authority and the District Authority;
- Carry out relief, rehabilitation and reconstruction activities in the affected area in accordance with the State Plan and the District Plan;
- Take such other measures as may be necessary for disaster management.

During interactions with village level elected representatives, it was brought out that very rudimentary training has been imparted to them during their induction training. The DM Capsule in five day training programme ranged from one lecture of one to one and half hours duration to half a day with theoretical training without any practical component. Considering the level of education of majority of elected representatives at village level, they could neither comprehend the purpose of training nor the actions required to be taken by them. Besides, the training was primarily response oriented without any component of risk reduction or climate change adaptation or mainstreaming of DRR in rural flagship programmes. They had no information about their legal responsibilities under the Disaster Management Act, 2005. There was a general sense of despondency that the revenue officials tend to ignore them in case of any calamity and elected representatives are not taken into confidence in response and relief as also damage and loss assessment related activities. GP employees had never been exposed to any training related to disaster management.

It would be desirable to give them exposure through a training programme of five days duration, which should have mostly practical component using a range of methods including video clips on various aspects of disasters. The training modules may be developed based on micro level vulnerabilities and ground situations. It would be necessary to train all elected representatives, keeping in view their statutory responsibilities.

Taking a batch of 25 participants, the number of training programmes to be organised, spread over a period of five years, would work out to (fill in numbers) or (fill in numbers) programmes every year. If 12 training programmes are organised by a group of four trainers annually, the number of such group of trainers would work out to (fill in numbers) groups or (fill in numbers) trainers. If the Master Resource Persons, in a group of 4 each, organise 10 training programmes annually, with 24 participants each, there would be need for (fill in numbers) groups of Master Resource Persons, or say, (fill in numbers) Master Resource Persons. In order to allow for flexibility to take care of different groups of trainees (elected members of Zila Parishad, intermediate level and village level

PRIs) as also the fact that the elected members would have to be trained in different training modules, keeping in view micro level needs, as also the possibility that all trainers/ Master Resource persons may not always be available, the number of Trainers/ Master Resource Persons may be more, say *(fill in numbers)* Trainers (allowing for 25% increase) and *(fill in numbers)* Master Resource Persons (allowing for 50% increase). Although these figures look too ambitious, the number of training programmes could be manageable, keeping in view that trainings would be dispersed in different districts and also that, in view of their statutory responsibilities, it may not be advisable to cover only a percentage of elected representatives over five years. There may be one training module for elected members of PRIs, to be developed by each state government.

The number of PRIs at village, intermediate and district level together with number of elected representatives at each level are as in the following table:

**Table 6: Quantification of Training in PRI sector *template***

PRI sector	
<b>No. of elected members to be trained</b>	<i>Fill in numbers</i>
<b>Training programme to be organised in five years</b>	<i>Fill in numbers</i>
<b>No. of annual training programmes</b>	<i>Fill in numbers</i>
<b>No. of trainers</b>	<i>Fill in numbers</i>
<b>Total no. of TOT's</b>	<i>Fill in numbers</i>
<b>No. of training modules (one for each state)</b>	1
<b>No. of master resource persons</b>	<i>Fill in numbers</i>
<b>No. of refresher trainings</b>	<i>Fill in numbers</i>

As in other cases, refresher training programmes of three days' duration would be necessary for elected representatives also. Therefore, the number of trainers and Master Resource Persons may be increased by 25% from third year to enable these additional trainers and Master Resource Persons to exclusively take care of refresher training programmes.

It has also to be kept in view that attrition level in case of elected representatives may be as high as 50% to 60% since elections are held after every five years, compared to other stakeholders where it may be between 10% -- 20% over a period of five years.

While the template for training of Master Resource Persons may be developed by NIDM, the training modules may be developed by DM Cells at state level with professional support from NIDM. The training for development of Master Resource Persons and trainers may be organised at state level. While the training of members of Zila Parishad and intermediate level may be organised at district level, the training of village gram panchayat members may be organised at block level. Since the training programmes may continue to be held regularly throughout the year, considering the vast numbers, it would be appropriate to make institutional arrangements with necessary infrastructure at block level.

The number of training programmes required to be organised every year for different categories of elected representatives may be worked out by respective state governments, based on the number of elected representatives in different categories in each state and the manner of calculation of number of training programmes indicated above.

### **ULBs**

There are about *(Fill in numbers)* towns/ cities with municipalities. The total number of elected representatives in the urban local bodies as on date is *(Fill in numbers)*. Therefore, on an average, there are about *(Fill in numbers)* elected representatives in each municipality. One training

programme for elected members of two municipalities could therefore be organised at state level. The total number of training programmes to be organised for (*Fill in numbers*) municipalities would therefore work out to (*Fill in numbers*), spread over the state/ UT or say about (*Fill in numbers*) training programmes, on an average, for each state/ UT over a period of five years or say about (*Fill in numbers*) programmes every year. The training programmes may be organised on the lines of training programmes for PRIs with duration of five days each. A batch of 4 trainers in state/ UT may be needed for this purpose. Allowing for 25% increase, as in other cases, the number of trainers needed would be 5 for each state/ UT.

The trainers may be trained by State Urban Development Department or its state level institute, if necessary with the support of Guest Faculty and Sector Specialists. The contents of the course would however cover urban risk mitigation measures based on hazard and vulnerability assessment in normal as also in disaster situations including the following sectors: power, water and sanitation, storm water drainage, solid waste management, education through municipal schools, health care through municipal hospitals, development plan for city/ town, estate and land management, garden management, road development, fire services if under the control of municipal body etc. Besides, there may be one training module for each state/ UT, keeping in view the specific urban vulnerabilities of each state. It has also to take up DM related actions in accordance with the provisions contained in section 41 of the DM Act. Sector specific training programmes may be developed with the support of specialists for the employees of municipality in each town and employees imparted training through DM Cell in the municipality, if there is adequate strength; otherwise may be organised with the assistance of guest faculty. The summary is given in the Table below:

**Table 7: Quantification of Training in ULB sector *template***

<b>ULB sector</b>	
<b>No. of elected members to be trained</b>	<i>Fill in numbers</i>
<b>Training programme to be organised in five years</b>	<i>Fill in numbers</i>
<b>No. of annual training programmes</b>	<i>Fill in numbers</i>
<b>No. of trainers</b>	<i>Fill in numbers*</i>
<b>No. of training modules (one for each state)</b>	1**
<b>No. of master resource persons</b>	NIL***
<b>No. of refresher trainings</b>	<i>Fill in numbers</i>

\*175 trainers are dispersed over 35 states/ UTs @ 5 trainers for each state/ UT.

\*\*One training module for each state/ UT

\*\*\*Since only 5 trainers are to be trained for each state/ UT, the State Urban Development Department/State Urban Development Institute can take care of it easily, if necessary by involving sector/ subject specialists.

***Explanatory Note:*** This sub-section will include quantified sample for PRI/ ULB sector. The source from which data has been culled out may invariably be given.

### **Rural Development Sector**

Under RD Sector, an attempt has been made to work out modalities for creating awareness through constitution of Village Disaster Management Committees (VDMCs) and Task Forces, imparting training to community through training of seven Task Forces in villages in India.

The seven Task Forces may be on First Aid; Search and Rescue; Early Warnings; Water and Sanitation; Evacuation, Shelter Management and Relief Distribution; Trauma Counselling and Damage and Loss Assessment. These task forces had been initially determined for training at grass root level under the DRM Programme. These task forces had been initially determined for training at grass root level under the DRM Programme. The numbers in each task force has to be decided based on vulnerability and risk profile of each village, experience of past disasters, population, whether the village is located at one or two places as a dense unit or is dispersed in different hamlets over a large area and other related considerations. This would be possible only when a micro level vulnerability and risk assessment is carried out for each village in participation with the community. The hazard, risk, vulnerability and capacity assessment (HRVCA) may be inclusive to cover geo-physical, social, economic and environment vulnerability.

Pending this exercise by the respective state governments to make the training needs assessment to work out the village level HR & CD Plan, a macro level exercise has been undertaken so that, based on it, community level training and capacity development programme can be initiated over the next five years during which period state governments may develop village level HR & CD Plans in participation with community, Gram Panchayat, government and non-government stakeholders in the village.

The following data may be extracted from Census 2011 for each state to work out the macro level training plan:

**Table 8: Training needs assessment exercise *template***

<b>Number of districts in the State</b>	Fill in numbers
<b>Number of Community Development Blocks</b>	Fill in numbers
<b>Number of villages (inhabited)</b>	Fill in numbers
<b>Number of villages (uninhabited)</b>	Fill in numbers
<b>Total Population</b>	Fill in numbers (In millions)
<b>Rural Population</b>	Fill in numbers (In millions) (Also give percentage of rural population to total population)
<b>Urban Population</b>	Fill in numbers (In millions) (Also give percentage of Urban population to total population)

Of the (Fill in numbers) villages, the population of (Fill in numbers)villages is less than 500 and the population of (Fill in numbers)villages is more than 10,000. The population of the remaining (Fill in numbers) villages is in the range of 500-10,000. However, the approximate average population of each village will work out to about (Fill in numbers).

The VDMC may consist of 10 members including Gram Pradhan, two members of Gram Panchayat, Village Development Officer and six other members to be decided in consultation with villagers subject to the following conditions:

- At least 50% of total members are women;
- SCs/STs/OBCs are represented in proportion to their population in the village
- Religious minorities are represented in proportion to their population in the village
- Gram Pradhan may be the Chairperson of the VDMC and Village Development Officer its Vice Chairperson

The functions of VDMC may include:

- Responsibilities assigned to it under Section 41 of the DM Act
- Preparation of Village Disaster Management Plan through a participatory exercise with the community;
- Action Plan for DRR and CCA interventions

- Ensure training of seven Task Forces through the assistance of Village Development Officer
- Oversee maintenance of identified village shelter(s) including shelter(s) for livestock in case of a calamity
- Supervise the working of Task Forces in case of a disaster or threatening disaster situation
- Facilitating organisation of mock drills
- Any other function related to disaster management, as may be assigned by the District Administration/District Authority/ Block Development Officer

It would be necessary to give an orientation training to VDMC members and training in the specific functions assigned to each Task Force. Each Task Force may have a minimum of 4 members, making up a total of 28 members in seven Task Forces. In addition, 5 members of NGO/ CBO/SHG active in the area may also be imparted training, which number may increase depending on the population of the village. Therefore, the total minimum number of personnel to be imparted training in a village may be 43 (10 VDMC members plus 28 Task Force members plus 5 NGO/SHG members). This would work out to about 3% of the average population of the village (around 1400 on All India basis). If the population of the village is significantly more, the number of personnel to be trained may also be correspondingly more on need-based basis. However, in such cases, the overall percentage of people to be trained is likely to be correspondingly less than 3% of the population of the village.

Although the number of villages in each block would vary, on an average, there may be around 93 villages in each block (All India average). It may not be feasible to cover all villages simultaneously during the first five years. Therefore, about 25% of the most multi-hazard prone villages may be selected for putting in place the above mentioned systems, which works out to (*Fill in Numbers*) villages in the state or say (*fill in numbers*) villages in each block. The number of personnel to be trained in each village would therefore work out to approximately (*fill in numbers*) persons over 5 years or say about (*fill in numbers*) persons every year. The training will have to be organised separately for different Task Forces which may be undertaken by taking members of each Task Force for five villages. The number of training programmes, each of five days' duration every year, would work out to 7 for seven Task Forces for a group of 20 each and 3 training programmes for VDMC Members plus representatives of NGO/CBO/ SHG in five villages ( $10+5=15 \times 5=75$ ). In other words, it will include 10 VDMC members plus 5 NGO/SHG members for each village, for 5 villages.

The total number of training programmes to be organised in each block would therefore be (*fill in numbers*) every year. The Block Disaster Management Officer (BDMO) or the officer entrusted with DM work at block level with three support staff may undergo intensive training for 10 working days at DM Cell at ATI or SIRD, to be trained as trainers. There may be 8 training modules, one each for seven task forces and one for VDMCs/ NGOs/CBOs to be developed at state level by each state/UT government.

The number of trainer groups to be trained in the State would work out to (*fill in numbers*) multiplied by 4 trainers each or say (*fill in numbers*) over a period of 5 years (25% of total blocks in the state= (*fill in numbers*)). However, since same trainers will impart training every year over the period of five years, the actual no. of trainers needed would be (*fill in numbers* only). If a group of 4 Master Resource Persons undertake 6 training programmes every year for a batch of 25 trainers each, the number of groups of 4 Master Resource Persons would work out to (*fill in numbers*) or (*fill in numbers*) Master Resource Persons. Allowing for flexibility and availability of Master Resource Persons, as in other sectors, the total requirement of Master Resource Persons may be around (*fill in numbers*). However, in effect, it will work out to one batch of 4 Master Resource Persons for each state. If these targets can be achieved during the first two years, the state governments may consider coverage of additional villages in the coming years. Besides, this group will also be able to undertake refresher programmes of 5 days duration for trainers from third year onwards.

Practically, since Master Resource Persons will be engaged by DM Cells at state level, it might be necessary to provide one batch of 4 Master Resource Persons to each state/ UT.

**Table 9: Quantification of Training in Health *template***

**Rural Development**

***At the community level***

<b>Total number of people to be covered over 5 years (25% of villages in each block)</b>	<i>Fill in Numbers</i>
<b>Number of blocks</b>	<i>fill in numbers</i>
<b>Total no. of villages to be covered in each block</b>	<i>fill in numbers</i>
<b>No. of people to be trained in each block in 5 years</b>	<i>fill in numbers</i>
<b>No. of people to be trained in each block annually</b>	<i>fill in numbers</i>
<b>Total no. of training programmes to be organised in each block</b>	<i>fill in numbers</i>
<b>No of training modules (7 for 7 Task Forces +1 for VDMC/NGOs Members)</b>	8
<b>No. of trainers to be trained on the State over five years</b>	<i>fill in numbers</i>
<b>No. of trainers to be trained the State annually</b>	<i>fill in numbers</i>
<b>No. of master resource person in each state</b>	4

The training of village level personnel may be organised at block level mostly with practical demonstration and video clips. The training material would therefore have to be developed quite imaginatively assuming that most of the villagers may not have been educated beyond primary level.

***Explanatory Note:*** *The figures will change from state to state. In states with hilly terrain, where there are several hamlets in one village which is spread over a large area, the numbers may be more, keeping in view developing smaller teams for each hamlet. The figures may therefore be worked out by each state, based on their geographical conditions and vulnerability profile. Please refer to annexure which works out figures on All India basis to facilitate the exercise. Each state is free to make such changes, as it deems necessary, in the numbers to be trained/ trainers/ master resource persons, number of training programmes to be organised, etc.*

**Government Officers and Employees**

While quantifying number of personnel to be trained for different sectors discussed above, the number of government officials to be trained, both at central and state level had not been taken into consideration as it was considered that since sector-wise figures are not readily available, we may take the entire government sector as one integrated unit for working out the number of personnel to be sensitised/oriented or trained. It may be clarified that figures of state government employees include officials at state, district, sub-district and local level.

The total number of state government employees would therefore work out to be (*fill in figures*). It is an approximate figure but more or less correct since variations in absolute numbers would be very insignificant. The group-wise break-down would work out as follows:

**Table 10: Gazetted and non-gazetted state government employees as on 31st march, 2009**

<b>Group of post</b>	<b>% age to total number of employees</b>	<b>No. of employees</b>
A	<i>Fill in figures</i>	<i>Fill in numbers</i>
B	<i>Fill in figures</i>	<i>Fill in numbers</i>
C	<i>Fill in figures</i>	<i>Fill in numbers</i>
Total	100.00	<i>Fill in numbers</i>

The following assumptions have been made:

- 1) About 10% of Group A Officers are primarily engaged in policy making
- 2) About 20% of Group A Officers are engaged in management such as Project Managers etc
- 3) About 20% of Group A Officers and 40% of Group B, C and D Officers are implementers

While it would be desirable to sensitise/ train all officers and employees to ensure that DRR is mainstreamed in all facets of government functioning, it would be a tall order to train about 20 million officials. The above assumptions would therefore give a realistic estimate of number of officials to be sensitised or trained. The number of officials to be trained would therefore work out as follows:

**Table 11: Quantification of Training of Officers *template***

Group	State Government Officials	Total
A (50%)	2,52,240	2,99,492 or say 3 lakh
B (40%)	5,49,802	6,52,754 or say 7 lakh
C (40%)	41,49,649	49,27,003 or say 50 lakh
D (40%)	17,14,906	20,36,159 or say 20 lakh
Total	66,66,597	79,15,408 or say 80 lakh

***Explanatory Note:*** These are All India Figures for all states. Please give corresponding figures for your state only.

Considering the total numbers to be trained, it may be appropriate to take up training of 25% of officials over the period of next five years by taking up priority sectors in the first instance including health, education, panchayati raj, rural and urban development, which will reduce the numbers to be trained, both at central and state level over the period of next five years.

This would be only sensitisation of officers over a period of two days. It would be advisable to organise sensitisation programmes for them at a national institute with the support of guest faculty. The officers may be invited from specific sector for each programme. If such programmes are organised by NIDM, IIPA, LBSNAA, they would workout their own figures as shown in the Annexure. However, the State Governments which have the requisite capacity, they may work out number of training programmes based on illustration given in Annexure, keeping in view that the intake of trainees may be 25 each. However, if these are organised at national level institutes both for central and state government officers at policy level, the programmes may be distributed among three national level institutes such as NIDM, IIPA and LBS Academy at Mussoorie. Each institute will be required to organise 20 programmes of two days each. The faculty may consist of two DM specialists from the institutes and two sector specific guest speakers from premier institute in that particular sector. The states may follow the same pattern, if they propose to organise such programmes in the state. Each state may work out relevant figures for officers at the second level of management.

They may be trained in five days' training programmes. Since these training programmes will be organised in different states, the number of training programmes will be in the range of 3 to 5 for each state government which are manageable at state level training institutes including ATIs and SIRDs (particularly for RD sector).

For Group B, C, D officers (77 lakh), 25% to be trained over next five years, the coverage would be (*Fill in numbers*) or (*Fill in numbers*) annually. The training of 5 days' duration will be spread over all state governments to be undertaken at state/ district level through Master Resource Persons and Trainers. Batches of 25 each may be organised and the number of programmes to be organised

every year may be worked out accordingly. The number of trainers may be worked out keeping in view a group of four trainers. These trainers may be trained by 4 Master Resource Persons in one or more batches. However, a more feasible option would be to have a team of 4 Master Resource Persons in each state. They need not be recruited but may be taken from state level institutes or guest faculty, who can be trained as Master Resource Persons at national institutes. Sector specific Master Resource Persons can also be developed at national level who could travel to different states for training of trainers. It may be left to state governments to consider the option more suitable to them.

The no. of training modules to be developed would be 30, ten at national level, one each for ten key sectors to be developed by NIDM and ten each at state and district level, one each for ten key sectors, which may be developed at state level by each state government.

### Non Government Organisations

The NGOs at community level have been covered for training along with VDMC members. In addition, NGOs at state and district level dealing with disaster management or in any sector such as education, health, rural development and PRIs/ ULBs may be trained in five days' programme. In particular, they may be associated with development of projects based on village level Action Plans. Besides, NGOs personnel at state and district level may be trained as trainers in different sectors. If necessary, limited financial support could be provided to them for specific activities to be undertaken by them. If there are large numbers of NGOs at State level, 20 NGOs in different sectors may be picked up. If five personnel are picked up from each NGO, the total of 100 trainees may be trained in four batches of 25 each at the DM Cell at ATI. At district level if 5 NGOs are picked up, 25 personnel may be trained either at district level in a training capsule of 5 days. The training programme may inter alia include:

- Development of village and block level Disaster Management Plans
- Development of Action Plans at village/ block level
- Conversion of Action Plans in one or more projects
- Role and functions of VDMCs/ Task Forces
- Organisation of mock drills
- Facilitate documentation of disasters by district administration
- Facilitate mainstreaming of DRR and CCA in development programmes being implemented in the district
- Dissemination of early warnings through village level NGOs/ SHGs
- Awareness Generation among community members
- Assist District Administration in relief distribution and coordination between donor agencies and District Administration in case of a calamity.; and
- Such other functions as district administration may like to entrust them.

There may be two training modules, one each for state level and district level NGOs/CBOs, to be developed by each state government at state level. They may be imparted training at ATIs (DM Cells). As for village level NGOs/CBOs, these are already covered in rural development sector.

The summary of the quantification for training of NGO functionaries as follows:

**Table 12: Quantification of Training in Non-Government Organisations**

### ***Non-Governmental Organisations***

<b>No. of people to be covered (100 at state level and 25 in each district)-</b>	<i>Fill in numbers (100 +5xnumber of districts in state)</i>
<b>No. of NGOs to be trained at the state level</b>	20

<b>No. of people trained @5 from each NGO</b>	100
<b>No. of trainings</b>	4
<b>No. of NGOs to be trained at the district level</b>	5
<b>No. of people trained @5 from each NGO in each district</b>	25
<b>No. of trainings</b>	1 (in each district)
<b>No. of training module (one each for State and district level NGOs)</b>	2

***Explanatory Note:*** *If there are more than 5 active NGOs in a district, additional members may be trained at district level.*

*The percentages taken for training under different categories are illustrative. Based on capacities in each state and the numbers generated, states are free to take a lower or higher percentage of stakeholders to be trained in next 5-10 years.*

## 9. Incentives

In cases where DM and particularly DRR related functions are an add on to their respective job description, some incentive needs to be given to motivate them to carry forward the agenda for disaster risk reduction and facilitating prompt and effective response. In Health Sector, an appropriate financial incentive may be considered for ANMs, Health Workers, Anganwadi Workers and Helpers. In Education Sector, teachers trained in DM may be given nominal special pay for undertaking this additional task as also recognition as DM Advisor for the school. Both factors taken together may motivate them to take up this assignment seriously.

In PRI/ ULB Sector, the incentive has to be generated through awareness and motivation since it is a service to the community which has elected them. As for volunteers to be covered under RD Sector, awareness, motivation and an identity card as 'first aid volunteer, (fill in numbers) village' 'search & rescue volunteer, (fill in numbers) village' 'damage and loss assessment volunteer, (fill in numbers) village' etc may provide enough incentive since there is a sense of pride and ownership attached to it. They can be given modest reward, if they have actually done excellent work in a disaster situation or dissemination of early warnings etc. In case of government employees, a special mention of having put in practice the training skills in their ACRs and recognition by way of a commendation certificate may be adequate incentive. As for NGOs, recognition of organisations by issue of certificates by Secretary, Disaster management at state level and District Magistrate at district level is likely to generate commitment.

The incentives, to the extent possible, may be of non-monetary nature, except in such cases where it adds to their regular work, in which cases, financial compensation, even if partial, may indeed contribute to their motivation.

***Explanatory Note:*** This section should include strategy to motivate people to carry forward the agenda for disaster risk reduction by providing incentives in different forms like financial, identity/designation, rewards, certificates, etc. The State Government may think of other innovative measures to motivate the stakeholders. The strategy could be different for each state. The above measures are only illustrative and not exhaustive.

## 10. Prioritisation

As identified training needs and the resultant training requirements are large in number and vast in their scope, the prioritisation of training needs has been articulated in the form of 12 major training themes, as identified in SWOT Analysis, that must be taken up as a matter of priority as a part of the proposed perspective plan for training and capacity building for DRR in India.

However, it is recommended that design, pilot testing and scaling up of the proposed TOT modules is undertaken by the state government in active consultation with the stakeholders involved with specific reference to hazards, sectors and levels both as a part of a perspective plan of 3-5 years and annual plans on a regular basis.

**Table 13: Training Themes**

S.N.	Training Theme	Intended Level
1	Mainstreaming DRR into development planning	Policy makers, planners and programme/project designers at the central and state levels
2	Mainstreaming DRR into rural development policies and programmes	Policy makers and programme/project designers at the central and state levels
3	Mainstreaming DRR/CCA into City Development Plans (CDPs) and their implementation strategies	Policy makers and programme/project designers at the central, state and city levels
4	Strengthening PRIs for mainstreaming DRR/CCA into development on the ground	Programme/project managers at the district and sub-district levels
5	Preparing the health functionaries for emergency health services	Programme/project managers at the state and district levels
6	Creating a culture of safety and resilience through knowledge, innovation and education	Trainers and teachers at the state and district levels
7	Strengthening emergency communication including early warning and last mile connectivity	Programme/project managers at the district and sub-district levels
8	Community Led Hazard Risk Vulnerability and Capacity (CLHRVC) assessment	Civil society functionaries; CBO members; programme/project managers at the district and sub-district levels
9	Participatory training and capacity needs assessment (PTCNA)	Trainers and training planners and managers at NIDM, GIDM and other similar institutes, DMC, SIRDs and other sector level training institutions
10	Participatory evaluation and action learning (PEAL)	Programme/project managers at the national and state levels
11	Integrating gender approaches in disaster management plans	Programme/project designers and managers at the district and sub-district levels
12	Use of media in generating mass awareness on disaster management	Media people and information officers from within government

It must be underlined here that climate change adaptation (CCA) issues are intimately linked with disaster risk reduction (DRR) concerns and cannot be separated. Hence, in developing the training programmes on these themes, CCA would need to be integrated as a cross cutting concern. This will constitute an essential element of the perspective that would form the basis of the design and delivery of related training programmes.

***Explanatory Note:*** State Governments may, if they so desire, identify additional themes based on their vulnerability profile.

### **Training Approach**

As brought out in the Strategic Framework for Implementation of Training, the main objective of training is to develop knowledge, skills and attitude among trainees which will eventually lead to action, behaviour and change. The training modules need to be upgraded based on feedback received from trainees as also impact evaluation of training courses. It should be a judicious mix of theoretical as well as practical training. It needs to be imparted at induction level as also in-service training, based on functions assigned to the stakeholders. Since there is a large base of non-government stakeholders, NGOs, CBOs, SHGs, engineers, architects, doctors, paramedics, persons dealing with hospital preparedness and administration, corporate sector, media and other voluntary organisations, online and blended training models may also be made use of. It would, however, be prudent to develop the training modules carefully for each programme so that it is directly relevant to functional areas of stakeholders undergoing the training programme and necessary guidance and support is available from the organisations running the training programme.

***Explanatory Note:*** This section should include information about the prioritized training themes and the intended level of training out of the identified training needs in previous sections. As identified training needs and the resultant training requirements are large in number and vast in their scope, some of the training needs must be taken up as a matter of priority theme as a part of the proposed perspective plan for training and capacity building for DRR in the State. This section should also include information about the approach adopted for training purpose. This should include information about mode of training, language of training, platform of training and target trainees.

## 11. State/ District level training programmes

The state/ district level training programmes may be organised by Disaster Management Centre at ATI; SDMA through ATI and sector-specific training institutes; concerned departments through training institutes under their administrative control in respect of their area of specialization; IITs/RECs, for engineers and architects, relevant Medical Colleges in the State for doctors and paramedics, Early Warnings by the state unit of IMD, Response and Relief by NDRF Unit based in or nearby states, NGOs by non-government training institutes after necessary quality checks, and elected representatives by State Institute of Panchayat and Rural Development (SIPRD). It will be desirable to constitute a coordination committee of all training institutes for clearance of training modules and avoidance of overlaps. It will also be necessary to assess the capacities of these institutes for organisation of training programmes entrusted to each in terms of available infrastructure, qualified and experienced faculty to develop training programmes and organise training courses. The faculty could always be supplemented through guest faculty. Besides, the training institutes for different sectors should also include a DM capsule relevant to the sector in their respective training modules.

NIDM, the apex level training institute, may invariably be invited in the meetings of Coordination Committee for professional support and guidance. If necessary, NIDM could train the faculty of these institutes in the development of design briefs, training modules, training materials, pre-testing of training modules, accreditation of training programmes and certification of Master Resource Persons (Master Trainers).

***Explanatory Note:*** This section should include information about the organisational framework for imparting trainings at State/District level. This section will identify sector specific training institutes in respect of their area of specialisation. This section will also include framework for coordinating and monitoring the identified institutes for training for avoiding overlaps.

### **Block/ community level Training Programmes**

At block level, there is a Block Disaster Management Officer (BDMO) or Malmatdar or some other officer who is in-charge of disaster management. However, it was observed during field visits to six states that he/she is normally spared for 3-4 months for preparedness and response. During remaining period of 8-9 months, they are assigned other duties. During the span of 3-4 months, few states provide support staffs who are generally withdrawn during the remaining period. Besides, the same support staffs are mostly not provided every year and they are just clerical staff without any training in disaster management. This situation is the main constraint that block level officers in-charge of disaster management are not able to undertake any work relating to mitigation or training at community level.

On an average, there are about 100 villages in each block. In order to attend to mitigation and training at community level, block level officers in-charge of disaster management need to be exclusively deployed on this work throughout the year and the support staff should also continue with them round the year. In that case, they can be trained. Alternately, a better option would be to depute two DM professionals with each block level officer in-charge of disaster management round the year to take up training activities for mitigation/ preparedness measures during the period they are not engaged in response and relief.

The main functions to be carried out at community level are:

- Risk Analysis and Vulnerability Assessment of village
- Constitution and training of VDMCs
- Constitution and training of members of Task Forces in different training capsules

- Preparation and updating of Village Disaster Management Plan in participation with community
- Conduct of mock drills
- Identification of mitigation projects and its submission to BDO
- Involvement of and support to NGOs, SHGs and other voluntary groups working in the village
- Regular interaction with members of Gram Panchayat

Similarly, in urban areas, DMOs have to work for urban risk mitigation which will include:

- Risk Analysis and Vulnerability Assessment at micro level taking ward as a unit
- Constitution and training of Ward DMCs
- Constitution and training of members of Task Forces in different training capsules
- Preparation and updating of Ward Disaster Management Plans in participation with community
- Conduct of mock drills
- Involvement of Voluntary Groups active in the area in taking forward DRR initiatives
- Regular interaction with Ward Councillor and identification of mitigation project and its submission to Ward Officer of the Municipal Corporation/ Municipality.

***Explanatory Note:*** This section should include information about the organisational framework for imparting trainings at Block/Local level. This section should present the roles and responsibilities of the identified post/personnel responsible for Disaster Management at Block/Local level. A detailed list of major functions to be carried out for mitigation/preparedness should also be listed.

### **Cadre of DM Professionals**

In the end-evaluation report of the DRM Programme undertaken by ADPC-SEEDS, it had been proposed that there is need for induction of DM Professionals at national level for providing support to different states in DM related functions. The draft National HR & CD Plan has further carried forward this concept and has proposed that “in order to develop proficient capacities of disaster management and risk reduction related expertise and services in the country, it is utmost important to raise a section of practitioners, professionals, educators and trainers as an identified Cadre of DM Professionals”. The functions to be carried out by these professionals are indicated in the National Plan. It would be good if a cadre of limited number of DM Personnel is built and trained as professionals and Master Resource Persons. They could undertake training of officers at district level as also block level officers, besides being entrusted the responsibility of developing training modules at different levels and for different stakeholders for specific disasters. Few district level officers, 5 or 6, could be trained as Master Resource Persons for training selected personnel at block level. The BDMO together with two officers at block level, trained adequately in training modules for imparting training at community level, may then be entrusted the task of training VDMC members, Task Force Volunteers and members of non-government organisations; development of disaster management plans and conduct of mock drills. Similarly, a ward level DMO together with two support officials may be trained for creating awareness, imparting training, facilitating preparation of ward level disaster management plans and conducting mock drills in urban areas.

If necessary, few DM professionals say 4 at state level and 4 for each district and block could be engaged on contract basis for a period of three to five years to facilitate the process of training at block and village level. It may be ensured that they have good grasp over local language. However, they should function as facilitators for a limited period so that resource persons and master trainers are eventually developed within the Directorate and different departments at state and district level as otherwise the ownership of training and capacity building may not be fully accepted within the government system.

### **Capacity Building**

An illustrative Table of key capacities to be built, areas of intervention, key institutes which may impart training and main stakeholders to be trained is given below.

**Table 14: Capacity building of major stakeholders and areas of intervention**

<b>Key Capacities</b>	<b>Areas of Intervention</b>	<b>Key Institutes</b>	<b>Stakeholders to be trained</b>
Risk Analysis & Vulnerability Assessment	<ul style="list-style-type: none"> <li>Assessment of macro and micro level risk and vulnerability</li> <li>Disaster specific risk and vulnerability</li> <li>Participatory risk and vulnerability assessment</li> <li>Disaster-specific categorisation in very high, high, moderate and marginal risk at micro level</li> <li>Development of Master Resource Persons and Resource Persons (Master Trainers and Trainers)</li> </ul>	<ul style="list-style-type: none"> <li>Jadavpur University/ RECs</li> <li>NIDM</li> <li>DM Cell at ATI</li> <li>SIRDs</li> </ul>	<ul style="list-style-type: none"> <li>Middle-rung officers in DM Department</li> <li>Senior DMOs/ DMOs at DM Directorate</li> <li>CDO at district level and 1-2 concerned officers supporting them</li> <li>BDMOs</li> <li>DM professionals attached to BDMOs</li> <li>NGOs</li> </ul>
Mitigation and Planning	<ul style="list-style-type: none"> <li>Identification of mitigation initiatives at micro level</li> <li>Development of DMPs</li> <li>Formulation of Action Plan-short, medium and long term</li> <li>Structural and non-structural measures</li> <li>Implementation mechanism for techno legal regime</li> <li>Monitoring and Evaluation</li> <li>Impact Assessment</li> <li>Development of Master Resource Persons and Resource Persons (Master Trainers and Trainers)</li> </ul>	<ul style="list-style-type: none"> <li>ATI (DM Centre)</li> <li>SIPRD</li> <li>IIT/RECs</li> <li>NIDM</li> <li>NIRD/ SIRDs</li> <li>Medical Colleges/ Hospitals</li> <li>Nurses Training Centres</li> </ul>	<ul style="list-style-type: none"> <li>VDMCs/ Ward DMCs</li> <li>Task Forces</li> <li>Planners at state and district level</li> <li>Engineers/ Architects</li> <li>Masons</li> <li>Doctors/ Paramedics</li> <li>Members of NGOs/ SHGs</li> </ul>
Climate-change Adaptation and Resilience Planning	<ul style="list-style-type: none"> <li>Impact assessment of climate change</li> <li>Integration of DRR with CCA</li> <li>Mitigation measures to</li> </ul>	<ul style="list-style-type: none"> <li>Indian Institute of Ecology &amp; Environment</li> <li>Centre for Environment</li> </ul>	<ul style="list-style-type: none"> <li>Senior &amp; middle-rung officers at state &amp; district level</li> <li>DMs/ CDOs at</li> </ul>

	<p>reduce the effects of climate change</p> <ul style="list-style-type: none"> <li>• Resilience planning</li> <li>• Development of Master Resource Persons and Resource Persons (Master Trainers and Trainers)</li> </ul>	<p>Education</p> <ul style="list-style-type: none"> <li>• NIDM</li> <li>• NIRD</li> </ul>	<p>district level</p> <ul style="list-style-type: none"> <li>• BDMOs</li> <li>• DM Professionals</li> <li>• NGOs</li> </ul>
DRR and DM policies and legislation	<ul style="list-style-type: none"> <li>• National DM Act</li> <li>• National and State DM Policies &amp; guidelines</li> <li>• Environment Protection Act &amp; Rules</li> <li>• HFA/ MDGs</li> <li>• DRR measures taken/ proposed</li> <li>• Development of Master Resource Persons and Resource Persons (Master Trainers and Trainers)</li> </ul>	<ul style="list-style-type: none"> <li>• NIDM</li> <li>• DM Centres at ATIs</li> <li>• Directorate of DM</li> </ul>	<ul style="list-style-type: none"> <li>• Policy makers/ Planners at state&amp; district level</li> <li>• Senior Officers of DM Directorate</li> <li>• DMs &amp; CDOs</li> <li>• BDMOs</li> </ul>
Safety Design, implementation and monitoring	<ul style="list-style-type: none"> <li>• Techno-legal Regime</li> <li>• Implementation Modalities</li> <li>• Monitoring &amp; Evaluation</li> <li>• Development of Master Resource Persons and Resource Persons (Master Trainers and Trainers)</li> </ul>	<ul style="list-style-type: none"> <li>• IITs/ RECs</li> <li>• CBRI</li> <li>• NIDM</li> </ul>	<ul style="list-style-type: none"> <li>• Engineers</li> <li>• Architects</li> <li>• Town Planners</li> <li>• Builders</li> </ul>
Mitigation Analysis and risk auditing Risk Communication and Spatial planning	<ul style="list-style-type: none"> <li>• Impact of DRR measures taken</li> <li>• Measures to reduce risks</li> <li>• Social DM Audit</li> <li>• Communication strategy &amp; implementation</li> <li>• DRR/ CCA Planning</li> <li>• Development of Master Resource Persons and Resource Persons (Master Trainers and Trainers)</li> </ul>	<ul style="list-style-type: none"> <li>• NIDM</li> <li>• DM Centres</li> <li>• NIRD</li> </ul>	<ul style="list-style-type: none"> <li>• Senior &amp; middle rung officers at state&amp; district level, DM Directorate</li> <li>• CDOs at district level</li> <li>• BDMOs</li> </ul>
Residual risk and emergency risk analysis	<ul style="list-style-type: none"> <li>• Concept of residual risk &amp; analysis</li> <li>• Strategy, planning and implementation modalities</li> <li>• Master Resource Persons (Master Trainers)</li> </ul>	<ul style="list-style-type: none"> <li>• NIDM</li> <li>• DM Centres</li> </ul>	<ul style="list-style-type: none"> <li>• Middle rung officers at state&amp; district level</li> <li>• Officers looking after DM at district level</li> <li>• BDMOs</li> <li>• NGOs</li> </ul>

<p>Emergency preparedness planning</p>	<ul style="list-style-type: none"> <li>• Preparedness for specific disasters</li> <li>• IDRN</li> <li>• Development of IRS Teams</li> <li>• Induction of CD &amp; HG, Fire &amp; Rescue Services</li> <li>• Development of SDRF</li> <li>• Coordination mechanism</li> <li>• Development of Master Resource Persons and Resource Persons (Master Trainers and Trainers)</li> </ul>	<ul style="list-style-type: none"> <li>• NDRF Unit</li> <li>• NIDM</li> <li>• DM Centres</li> <li>• SDRF (when in place)</li> <li>• Fire &amp; Rescue Services</li> </ul>	<ul style="list-style-type: none"> <li>• Concerned officers of all sector departments at state/ district level</li> <li>• Officers of DM Directorate</li> <li>• DMs/ CDOs/ Distt CMOs/ paramedics</li> <li>• BDOs/ BDMOs</li> <li>• DM Professionals/ Support Staff</li> <li>• VDMCs</li> <li>• Members of Task Forces</li> <li>• NGOs/ SHGs</li> <li>• NSS/ NYKs/ NCC</li> <li>• NGOs/ SHGs</li> </ul>
<p>Emergency response management</p>	<ul style="list-style-type: none"> <li>• This course may be in continuation of Preparedness course</li> <li>• Trigger mechanism</li> <li>• SOP activated</li> <li>• IRS activated</li> <li>• Fire &amp; Rescue Services activated</li> <li>• Mobilization &amp; movement of resources (human and material)</li> <li>• Coordination</li> <li>• Relief supplies and distribution</li> <li>• Development of Master Resource Persons and Resource Persons (Master Trainers and Trainers)</li> </ul>	<ul style="list-style-type: none"> <li>• Training at community level to be provided through BDMO and his/ her support staff</li> </ul>	<ul style="list-style-type: none"> <li>• All personnel involved in preparedness and additional support personnel representing specific sectors</li> </ul>
<p>Emergency responders (search, rescue, first aid, critical care)</p>	<ul style="list-style-type: none"> <li>• Community level systems in place activated (VDMCs, Task Forces, PHCs/ sub-centres etc till response forces arrive, if necessary)</li> <li>• Support systems at district level deployed</li> <li>• Support systems at state level deployed</li> <li>• Development of Master Resource Persons and</li> </ul>		<p>At community level:</p> <ul style="list-style-type: none"> <li>• VDMCs</li> <li>• Members of Task Forces</li> <li>• NGOs/ SHGs</li> <li>• NSS/ NYKs/ NCC</li> <li>• NGOs/ SHGs</li> <li>• PRI members already trained in preparedness and response at preparedness</li> </ul>

	Resource Persons (Master Trainers and Trainers)		stage
Relief (shelter, water, sanitation, waste, food, rehab) management	<ul style="list-style-type: none"> <li>• DMPs and SOPs for concerned sector departments at state &amp; district level</li> <li>• VDMCs and Task Forces at community level</li> <li>• NGOs active at grass root level</li> <li>• Relief supplies and distribution</li> <li>• Coordination systems in place</li> <li>• Development of Master Resource Persons and Resource Persons (Master Trainers and Trainers)</li> </ul>	<ul style="list-style-type: none"> <li>• NIDM</li> <li>• DM Centres</li> <li>• NDRF Unit based in WB/ NE region</li> <li>• SDRF coys</li> <li>• IRS Resource Persons</li> </ul>	<ul style="list-style-type: none"> <li>• Concerned officers of all sector departments at state/ district level</li> <li>• Officers of DM Directorate</li> <li>• DMs/ CDOs at district level</li> <li>At community level: <ul style="list-style-type: none"> <li>• VDMCs</li> <li>• Members of Task Forces</li> <li>• NGOs/ SHGs</li> <li>• NSS/ NYKs/ NCC</li> <li>• NGOs/ SHGs</li> </ul> </li> </ul>
Impact (Damage & Loss), Needs Assessment	<ul style="list-style-type: none"> <li>• Basic concepts and methodology for damage &amp; loss assessment</li> <li>• Minimum Needs Assessment</li> <li>• Sector-wise damage assessment for infrastructure, public buildings, private housing and other basic needs</li> <li>• Community level damage and loss assessment</li> <li>• Involvement of local elected representatives (PRI/ULB) in Assessment</li> <li>• Development of Master Resource Persons and Resource Persons (Master Trainers and Trainers)</li> </ul>	<ul style="list-style-type: none"> <li>• NIDM</li> <li>• DM Centres</li> </ul>	<ul style="list-style-type: none"> <li>• Officers of state depts. from different sectors &amp; DM Directorate including Finance Dept Officers</li> <li>• District level officers from sector specific departments</li> <li>• BDOs/ BDMOs</li> <li>• PRI members</li> <li>• Patwari/VDMC/ Damage Assessment Task Force members</li> <li>• Local NGO if any</li> <li>• Local school teacher(s)</li> </ul>
Safe construction and retrofitting	<ul style="list-style-type: none"> <li>• BBL/ NBC (DM related aspects)</li> <li>• Implementation mechanism</li> <li>• Check list for safe construction</li> <li>• RVS</li> </ul>	<ul style="list-style-type: none"> <li>• IITs/ RECs</li> <li>• CBRI</li> <li>• DM Centres with Guest Faculty</li> </ul>	<ul style="list-style-type: none"> <li>• Engineers</li> <li>• Architects</li> <li>• Town Planners</li> <li>• Masons for simple basic constructions</li> <li>• Engineers/</li> </ul>

	<ul style="list-style-type: none"> <li>• Retrofitting of life line buildings</li> <li>• Buildings under IAY/ SSA</li> <li>• Master Trainers</li> </ul>		<p>Architects of Municipal Corp./ Municipalities to ensure implementation</p> <ul style="list-style-type: none"> <li>• Engineers/ Architects of Flagship Programmes (IAY/ SSA)</li> </ul>
Recovery (livelihood, environment, sustainability) planning	<ul style="list-style-type: none"> <li>• Inclusive development</li> <li>• Alternate means of livelihood</li> <li>• Environment friendly approach</li> <li>• BBB</li> <li>• Participatory Planning Process</li> <li>• Time bound action</li> <li>• Master Resource Persons (Master Trainers)</li> </ul>	<ul style="list-style-type: none"> <li>• NIDM</li> <li>• DM Centres</li> </ul>	<ul style="list-style-type: none"> <li>• Officers from sector specific departments state &amp; district level</li> <li>• BDOs/BDMOs</li> <li>• PRI ULB members</li> <li>• Village level officer</li> <li>• Local NGOs/ SHGs</li> </ul>
Mainstreaming DRR into developmental planning/ Integrating DRR into sustainable development	<ul style="list-style-type: none"> <li>• Concept of sustainable development</li> <li>• Mainstreaming-What, Why, How</li> <li>• Climate Change impact</li> <li>• DRR Sub Plan for each concerned dept.</li> <li>• Master Trainers</li> </ul>	<ul style="list-style-type: none"> <li>• NIDM</li> <li>• DM Centres</li> </ul>	<ul style="list-style-type: none"> <li>• Officers of sector specific depts. at state &amp; distt level</li> <li>• Officers implementing flagship programs</li> <li>• CDOs/ BDOs/BDMOs</li> </ul>
Knowledge support system to support planning and implementation	<ul style="list-style-type: none"> <li>• Knowledge management</li> <li>• Legislation and Policy</li> <li>• Coordination mechanism and institutions</li> <li>• DRM/CRM projects or programmes</li> <li>• Disaster loss and risk data information</li> <li>• Risk Assessment</li> <li>• Indigenous and traditional knowledge</li> <li>• Documentation</li> <li>• Case Studies</li> <li>• Sharing of lessons learned</li> </ul>	<ul style="list-style-type: none"> <li>• NIDM</li> <li>• DM Centres</li> </ul>	<ul style="list-style-type: none"> <li>• Officers of state govt/ DM Directorate</li> <li>• District level officers including DM/ CDO</li> <li>• National/ state/ district level NGOs working in state</li> <li>• BDMOs</li> </ul>

As brought out in the Strategic Framework for Implementation of Training, capacity building would include, besides training, non training components also such as infrastructure, policy, strategy, action plans, work culture, and enabling environment. Further, training is closely linked to education, research and documentation. As mentioned in the National HR & CD Plan, education at higher level

itself is a type of training as it develops professionally competent personnel. Research is a part of knowledge development, involves innovations, monitoring, hypothesis testing and information development that helps advance education, training and professional practices as well. Documentation supports training through development of case studies, forward looking review of past disasters to assess “What Went Wrong; How and Why; Were there capacity gaps; and also if something was done very well, can it be done even better”. The draft National Plan brings out the strategy for integration of these components, which may be followed by State Government, if necessary, with such changes as may be considered appropriate. Eventually this exercise has to be undertaken at micro level to directly impact the community.

***Explanatory Note:*** *The table given above is illustrative. Each state needs to identify institutes in the state which have the required capacity or may be able to develop the capacity with suitable strengthening. For instance, Gujarat has developed a separate “Gujarat Institute of Disaster Management”. Such initiatives could be taken by other states also. It has to be kept in view that it may not be necessary for each state to have a separate Institute for disaster management, if the objective can be achieved by strengthening existing institutes.*

### **Implementation Strategy**

It is desirable to prepare an Action Plan, based on identified training and capacity gaps. These may be divided in three broad categories:

- Short term interventions which may be completed within two years
- Medium term interventions, which may be completed within two to five years and
- Long term interventions which may be completed within five to ten years

For instance, retrofitting of lifeline buildings, extension of techno legal regime to rural areas and its implementation modalities and making available adequate number of doctors, engineers and architects in rural areas may be considered long term interventions. However, structural safety of schools and hospitals as also key administrative buildings which need to be operational post-disaster may be included in medium term interventions. On the other hand, training of Master Resource Persons and Resource Persons (Master Trainers and Trainers) from different stakeholders at state, district and local level may be taken up as short term intervention although the actual trainings, particularly at community level, considering the vast numbers to be trained and the changing dynamics of role players, will be a continuing activity.

***Explanatory Note:*** *This section should include information about the implementation strategy of the interventions planned. The strategy should include short term, medium term and long term interventions describing implementation modalities and availing adequate resources in time to meet the planned initiatives.*

## 12. Finance and Budget

Some of the State Government Officers did mention about the financial constraints as a general observation, primarily because disaster risk mitigation is still perceived as the responsibility of Disaster Management Department. As for response and relief, adequate funds have been provided under State Disaster Response Fund, which are contributed by Central and State Governments on 75:25 basis. In case of a disaster which is beyond the coping capacity of the state government, additional funds can be provided from National Disaster Response Fund (NDRF) by the Central Government on 100% basis. Therefore, there is no problem about availability of adequate funds for response and relief.

As for recovery including reconstruction, a separate proposal is formulated and funds are made available by the Central Government as Additional Central Assistance.

As for mitigation and preparedness, following financial mechanism is already in place:

- As and when any project is formulated, inclusion of disaster resilient measures as also any measures needed to ensure that it does not add to vulnerability are necessarily to be included in the project cost and will be provided as a component of total cost for undertaking the project.
- A total grant of Rs. 525 crore has been provided for capacity building, from 2010-11 to 2014-15. Capacity building would include training including strengthening of DM Faculty and purchase of training equipment as also any other expenditure on non-training components of capacity building for disaster risk reduction.
- Besides, every department is expected to spend 2% of its salary and allowances provided in the budget on training. In fact several departments are organising training programmes in their respective sectors. Disaster Management may be taken on board by adding a training capsule on DM in their respective training programmes.
- In addition, any scheme for disaster risk reduction including capacity building can be prepared and approval obtained through the State Five year Plan and Annual Plans.

Therefore, availability of funds for training and capacity building for disaster risk reduction is not really a major constraint. However, several state governments, particularly district magistrates, felt that there is a felt need for State and District Disaster Mitigation Fund to allow the District Administrations to take up modest programmes for risk reduction in local areas; more so when they do not have any other discretionary fund at district level. Although there is a statutory provision in the DM Act for state and district disaster mitigation funds, the Central Government has decided not to constitute such funds. It is considered that Mitigation Funds may be provided, as prescribed in the Act, at national, state and district level; so that intervention programmes could be undertaken for mitigation at all levels including financial support needed for implementation of State Human Resource and Capacity Development Plans, at state, district and sub-district level.

***Explanatory Note:*** This section should include information about the existing financial mechanisms for disaster management and how the financial resources will be met in the planned strategy for disaster management.

## 13. Annexure

### ***Quantification of All India number of personnel to be trained, number of Trainers and Master Trainers needed and number of Training Programmes required to be organised***

A realistic National Human Resource and Capacity Development Programme needs to be designed to ensure effective disaster risk reduction at the country level from a multi-hazard, multi-sector and multi-level perspective. This has to be commensurate with the nature and extent of hazards in India and need to be evolved and implemented in view of the existing capacities and resources.

This programme of capacity and resource enhancement has to encompass all institutions, organisations and individuals that have a role to play in any part of the disaster management cycle. To mitigate the impact of disasters, there is a need to work collectively through multi-dimensional channels combining the efforts, resources and expertise of the government, non-governmental organisations and civil societies. Managing disasters holistically from a larger sustainable development perspective is a highly complex and specialised task which cannot be approached in an ad hoc manner. Disaster management brings multiple sectors into action and therefore calls for all the concerned sectors to develop their respective human resource capacities to deal with disaster related emergencies and exigencies.

The study suggests that there exists a wide gap in the knowledge, skill, and attitude of the disaster managers across sectors. Capacity risk ratio is the key: if capacity is not equal to the risk, the probability of damage and loss due to disasters are likely to be higher in proportion to the gap between the two. In order to efficiently manage emergency situations particularly at local and state level, capacity gaps and needs have to be identified and addressed. According to a study by NIDM, capacity-risk ratio in case of India is remarkably low. To bridge this gap, it is important to have specific capacity development plans and strategies<sup>7</sup>.

NIDM, an apex level training and capacity building institute, has been legally entrusted with the responsibility to formulate and implement a comprehensive human resource development plan covering all aspects of disaster management. In this context, it is considered that the community based DRM Programme is one of the major components of the Disaster Risk Reduction (DRR) initiatives. The strategy to be adopted is one of holistic integration of DRR initiatives in the development process. A similar exercise needs to be undertaken by all state governments.

The Hyogo Framework for Action 2005-2015 for Building the Resilience of Nations and Communities to Disasters has also identified as strategic goals "the need for more effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels, with special emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction; development and strengthening of institutions, mechanisms and capacities at all levels, in particular at the community level, that can systematically contribute to building resilience to hazards; and the systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of the affected communities."

The NIDM has recently brought out the Human Resource and Capacity Development Plan for Disaster Management and Risk Reduction in India, 2013. The Plan puts disaster risk mitigation at centre-stage with inter-linkages with different approaches such as community based disaster risk reduction, engineering based disaster risk mitigation, environmental approach to risk mitigation and

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<sup>7</sup> Disaster Management in India, 2011, Ministry of Home Affairs (Accessed in August, 2013) ([www.ndmindia.nic.in](http://www.ndmindia.nic.in))

incident command system approach which have to be adapted together to ensure an inclusive disaster risk mitigation strategy.

The draft HR & CD Plan 2013 assesses the present status, sector-wise and stakeholder-wise, status of training institutes and analyses institutional network. It discusses capacity gaps and advocates creation of a cadre of DM professionals. The plan also identifies disaster-specific issues being faced during pre-disaster, during-disaster and post-disaster stages. Further it discusses training and education network with possible areas of intervention, broadly on the lines of National Disaster Management Framework. The Plan culminates with implementation strategy, time frame and budget and also identifies activities/ sub-activities which may be undertaken for training, education, public awareness and organisation and institutional development, the main components of the current study.

The quantification of number of stakeholders to be trained is a complex exercise. The National HR & CD does not quantify the number of functionaries to be trained. During interaction with the six State Governments, it was brought out that none of the State Governments have undertaken this exercise as yet. The national HR & CD Plan in a way lays down guidelines for national, state and district governments. It does not attempt to set capacity benchmarks or go into the logic of quantification and its underlying facts and assumptions.

This is based on the understanding that specific training and infrastructure needs can appropriately be identified at micro level based on a number of key factors that include: micro level vulnerabilities; characteristics of the population affected, particularly socially and economically disadvantaged segments; gender dimensions of vulnerability and capacity; women empowerment issues; and special needs of children and elderly. All this is supposed to be done following a participatory, consultative and bottom up approach. Quantification of personnel to be trained at national or state level is therefore generally not desirable since it would necessarily be based on certain broad assumptions and not on ground realities across different multi-hazard prone regions of the country.

As for identification of capacity gaps on the ground, this exercise has to be undertaken at micro level, from village to block/Taluka to District to State level using a bottom-up approach. Even at village level, there can be no pre-determined standards to quantify gaps since it would depend on analysis of micro level vulnerabilities including: geo-physical, social, economic and environmental vulnerabilities; population of each village; dispersal of population within a village and other related factors. For instance, in hilly terrain, population of a village is distributed across different hamlets spread over a large area, often over 2-3 kilometres; yet the total village population may be even less than 1000 as against some other villages in plain areas where the population may be even more than 5000 to 7000 in a relatively very small geographical area. Besides, training needs would also differ on the basis of specific vulnerabilities, constitution of population in terms of men and women, children, elderly and disabled. Similarly, urban poor have different vulnerabilities like settlements in low lying areas, health, hygiene and sanitation needs, power needs, drainage systems, fire incidents etc.

Another limitation, as brought out during state level interactions, is that numbers to be trained over a period of 5 or 10 years would not be politically acceptable unless states have generated their own numbers which are both politically and financially convenient, though not necessarily need based. However, the strategic framework for implementation of training (SFIT) suggests the development of a perspective plan for 10 years divided into the following three phases: short term phase of 2 years; medium term phase of 3 years; and long term phase of 5 years.

The proposed 10 year perspective plan is envisaged to be developed at the national level and anchored by NIDM. Similar plans are proposed to be developed at the state level on the basis of a detailed exercise to be conducted by respective state governments using a bottom up approach. As it may not be prudent to engage in a quantification exercise for 10 years without active consultation

with the concerned state governments, an exercise for quantification of number of personnel to be trained, Master Resource Persons and trainers to be developed, number of training programmes required to be organised at various levels has been undertaken only for next five years. This would cover the short term and medium term phases of the proposed perspective plan at the national level.

It is envisaged that the state governments would be able to develop their own respective HR & CD Plans with a bottom up approach and suitably enhance the capacities of their training institutes. Without such an exercise, even on macro basis, the training would continue to be undertaken in a largely supply driven mode using standard training modules, as at present, which are neither demand-driven nor need-based. Since the state governments are likely to take at least a few years to develop the training modules based on micro level vulnerability and risk analysis from village to state level to build up the capacities of their training institutes, the quantification exercise carried out here could be used by the state governments as well till they undertake their own exercise.

The quantification exercise that follows has been undertaken for health, education, PRIs/ULBs and rural development sectors.

### **Health Sector**

The total number of health workers at PHCs, CHCs and sub centers in India is 475,753, which include doctors at PHCs (30,198), nursing staff at PHCs/ CHCs (69,439) and ANMs at PHCs/ Sub-Centers (232,177). These do not include doctors and other health workers in government hospitals at district, state and national level and doctors and paramedics in private sector including private hospitals.

As per the Medical Council of India, the total number of registered doctors in the country as on 31.07.2011 was 8, 56,055 and total nursing staff was 3.72 lakh. Although figures of paramedics in the country are not readily available, it would easily run into millions. The target of one Auxiliary Nurse Midwife (ANM-female) and one male Health worker for each village is far from being achieved. The above figures show the skewed distribution of doctors and nurses in urban and rural areas.

The total number of government hospitals in the country is 11,614. To begin with, it is considered that 5 doctors and 10 nurses from each hospital may be trained in addition to all the government health workers in rural areas. The total number of personnel to be trained during the first five years would work out to be as follows:

Category	Numbers to be trained
Government hospitals' Doctors @ 5 from each hospital	58,070
Doctors attached to PHCs	30,198
<b>Total Doctors</b>	<b>88,268</b>
Government hospitals' Nurses @ 10 from each hospital	1,16,140
Nursing Staff at PHCs/ CHCs	69,439
<b>Total Nurses</b>	<b>1, 85, 579</b>
ANMs at PHCs/ Sub Centers	2,32,177
Other Health Workers at PHCs/ CHCs/ Sub Centers	1, 43, 939
<b>Grand Total</b>	<b>6, 49, 963 or say 6, 50, 000</b>

Source: <http://nrhm.gov.in/>

The training programmes and modules will be different for different categories with focus on health, hygiene, water and sanitation in general and medical first response in particular. There may be 4 training modules, one each for doctors, nurses, ANMs and other health workers, to be developed at state level by each state/UT.

Taking an average intake in each training programme at 25 participants, the number of training programmes required to be organised over a period of five years would work out to 26, 000 or 5,200 annually.

If 4 trainers are needed for planning, developing training materials and organising training programme and assuming each group of trainers may organise 12 training programmes per year, each group may train 300 trainees. The number of trainers' groups needed would be about 434 (5200 divided by 12) or 1736 trainers. These 1736 trainers may be trained in 72 batches of 24 each by groups of 4 Master Resource Persons. Assuming that each group of 4 Master Resource Persons may organise 12 training programmes annually, 6 groups of 4 Master Resource Persons would be needed making up a total of 24 Master Resource Persons. In order to allow for flexibility to take care of different groups of trainees (doctors, nurses, ANMs, other health workers), as also the possibility that all trainers/ Master Resource persons may not always be available, the number of Trainers/ Master Resource Persons may be more, say about 2,170 Trainers (allowing for 25% increase) and 36 Master Resource Persons (allowing for 50% increase).

The number of Master Resource Persons and Trainers may have to be increased further by 25% from third year onwards so that these additional Master Resource Persons and Trainers can undertake shorter duration Refresher Programmes for trainees. It would be appropriate if refresher training programmes are organised after every two years.

The duration of the initial training programmes may be 5 working days and Refresher Training Programmes 3 working days.

The trainees at grass root level would generate awareness among the communities and also impart training in the basics of health, hygiene, safe drinking water and sanitation including first aid in normal times as also during and in the aftermath of a disaster.

A major constraint is that, at community level, the health workers, particularly ANMs, would be responsible for generating awareness and imparting training as also extending initial medical assistance during disasters. However, the number of ANMs is at present not adequate. At present, an ANM has to cover 2 or 3 villages. The situation becomes more difficult if the village has more population or it is located in hilly terrain with scattered hamlets. A support system is therefore needed to supplement the efforts of health workers discussed above.

The ICDS infrastructure is presently available in almost all villages in the country. There are at present 13, 66,776 sanctioned posts of Aaganwadi Workers and 12, 49,098 sanctioned posts of Aaganwadi Helpers<sup>8</sup>. They are already engaged in child care including facilitating inoculation/ vaccination, personal hygiene and related health issues. They also educate women and adolescent girls in personal hygiene. Given some incentive, this Force can be gainfully utilised to generate awareness among women and children in personal hygiene, water and sanitation and basic do's and don'ts on health related issues in normal as also disaster situations. The advantage is that Aaganwadi Workers and Helpers mostly belong to the same village and are already well known to women and children in the village. However, their total strength of 26, 15, 874 cannot be imparted training over five years. To begin with, even if 20% of them are imparted training over five years, it would gradually create a focused village based force for creating awareness and imparting basic training on health related issues. There may be one training module for Aaganwadi workers and helpers, to be developed under ICDS project with the support of national level health and DM institutes.

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<sup>8</sup> [www.saiindia.gov.in/english/home/Our\\_Products/.n./Chap\\_5.pdf](http://www.saiindia.gov.in/english/home/Our_Products/.n./Chap_5.pdf).

20% of the total sanctioned strength of Anganwadi workers/ helpers would work out to 5, 23,175. Keeping in view that, at any time, there are about 10% vacancies, we can take 5 lakh Anganwadi workers/ helpers as a reasonable figure to be trained over five years, or say, one lakh annually. The training may be organised at their respective training centres or through ANMs for a cluster of villages. A short term two days' duration training programme through practical training may be sufficient. If the training is organised through trained ANMs, it may not be necessary to have separate trainers/ master resource persons. If the training is organised at ICDS Training Centres, the trainers at these centres would need to be given a brief exposure to related health, hygiene, water and sanitation issues in two days training programme. If a batch of two trainers is engaged exclusively for this purpose, they can organise 40 training programmes with 25 trainees in each training programme in a year, or say 1,000 trainees in a year with the assistance of two trainers. Therefore the number of trainers exclusively needed for this purpose would work out to 200. Four Master Resource Persons, working in two batches of two each can train these trainers in 8 to 10 training programmes of two days duration each, say 4 to 5 training programmes for each batch of two Master Resource Persons. After the training of trainers, which can be completed over a period of 3 to 6 months, these master resource persons can act as observers for training programmes being organised by trainers, to ensure maintenance of quality of training being imparted.

While the training for the development of Master Resource Persons and trainers may be organised at State level, the training of doctors may also be organised at state level. The training of nurses may be dispersed at district level and the training of ANMs and other Health Workers may be organised at block level. The venue of training programmes could be the Conference Halls in hospitals or any other government institute which has the requisite facilities at block level. The number of training programmes required to be organised every year for different categories of medical persons may be worked out by respective state governments, based on the number of doctors/ nurses/ ANMs/ health workers in each state and the manner of calculation of number of training programmes indicated above.

As for ICDS workers, the training programmes may preferably be organised at ICDS Training Centers or any other institute which has the requisite facilities at district or block level. Since the number of training programmes to be organised are high at 40 for each group of trainers although each training programme would be of two days duration each, it would be better to have regular arrangements for venue. If necessary, the option of organising such training programmes over week-ends could also be considered.

The following table summarises the quantification for the health sector along with Anganwadi workers.

### Quantification of Training in Health

<b>Health</b>	
<b>Total no. of people to be trained*</b>	<b>6,50,000</b>
<b>No. of trainers required:</b>	2,170
<b>Master resource persons:</b>	36
<b>No. of training programmes for trainers</b>	72
<b>No. of Training Modules</b>	4**
<b>No. of trainings required in five years:</b>	26,000
<b>No. of trainings annually:</b>	5,200
<b>No. of refresher trainings in five years:</b>	10,400

\*This includes the number of doctors and nursing staff at the government hospital and PHCs/CHCs, ANMs at CHCs/ Sub Centres and other Health Workers at PHCs/ CHCs/ Sub Centres

\*\* One each for doctors, nurses, ANMs and other health workers

<b>No. of Aaganwadi workers</b>	<b>5,00,000</b>
<b>No. of trainings required in five years</b>	20,000
<b>No. of trainings in a year</b>	4,000
<b>No. of trainers required</b>	200
<b>No. of Master Resource Persons required</b>	4
<b>No. of TOT Modules (2 days duration)*</b>	35

\*This includes one TOT for each state/ UT

### **Education Sector**

Education sector is envisaged to be the key to creating awareness about disaster risks and sensitising the students in schools and colleges about their possible role in disaster risk reduction. An early awareness in this is likely to result in reduction of damage and losses due to disasters and help young girls and boys to respond effectively as disaster managers and volunteers. They need to know about the dos and don'ts during disaster related emergencies caused by hazards such as earthquake, landslides, cyclones, floods and drought. Young adults in college can also be trained to be members of search and rescue and other disaster task teams. The numbers involved are large and can be used as a massive resource for effective DM and DRR. The position of number of schools/ colleges and enrolment in the country is as follows:

Category <sup>9</sup>	Sub-category	No. of institutions	Enrolment	No. of teachers to be trained for each institution	No. of teachers to be trained
School Education	Pre-Primary School (Nur/ KG)	67,157	5,264,053	Nil	Nil
	Primary School (1-5)	7,72,568	132,048,727	1 (Average school strength=171)	772,568
	Middle School (6-8)	2,88,493	52,195,171	2 (Average school strength=181)	576,986
	High ( 9-10) and Higher Secondary (11-12)	1,59,708	24,971,520 + 13,414,499=38,386,019	2 (Average school strength=240)	319,416
<b>Sub Total</b>		<b>1,287,926</b>	<b>227,893,970</b>		<b>1,668,970</b>
Vocational Training	Government ITI/ Private ITC	7,065	1,062,524	1 (Average Institute's strength=150)	7,065
College Education	Central University	20	Total Strength of Colleges/ Universities etc= 7,631,021	20	400

<sup>9</sup> The technical and professional institutes have not been taken into consideration since the students therein are required to be trained in respective areas of specialization such as engineers, architects, doctors, paramedics etc.

	State University	216	Included above	20	4,320
	Deemed University	101	Included above	20	2,020
	Institutions of National Importance	13	Included above	20	260
	Research Institutions	140	Included above	10	1,400
	Arts, Science and Commerce Colleges	11,698	Included above	10	116,980
<b>Sub total</b>		<b>19,253</b>	<b>8,693,545</b>		<b>125,380</b>
<b>Total</b>		<b>1,307,179</b>	<b>236,587,515</b>		<b>1,794,350</b>

Source: [www.ficci.com/SPdocument/20073/IMaCS.pdf](http://www.ficci.com/SPdocument/20073/IMaCS.pdf)<sup>10</sup> (Accessed in August, 2013)

*In calculating the above strength, the strength of BE/ Arch/ Medicine/ Dentistry/ Nursing/ B. Ed./ Polytechnics and enrolment in Open Universities has not been taken into account, on the assumption that in technical institutes, related DRR components would be part of syllabus. Besides, students in Open Universities would be difficult to cover since they are not regular students.*

Therefore, in education sector, 1,794,350 teachers or say 1.8 million teachers are required to be trained even when benchmarks determined are minimal. Even if the existing capacities and infrastructure are significantly improved, it may not be possible to undertake such an ambitious programme over the next five years, pending state governments working out detailed HR & CD Plans for their respective states based on bottom up micro level exercise. Therefore, to begin with, it may be appropriate to plan for training of one third of the teachers worked out above during the next five years, or say, 600,000 teachers.

Taking an average intake in each training programme of five days duration at 25 participants, the number of training programmes required to be organised over a period of five years would work out to 24,000 or 4,800 annually. If a group of 4 trainers organise 12 training programmes annually, we would need 400 groups of 4 trainers each, who are exclusively available for imparting training to teachers on DM related issues or 1,600 trainers. In order to train these trainers, in batches of 24 each, it would be necessary to organise 67 training programmes for trainers every year. If a group of four Master Resource Persons are entrusted to organise 10 training of trainers' programmes annually, we would need 7 groups of Master Resource Persons or say 28 Master Resource Persons. Further, in order to allow for flexibility to take care of different groups of trainees (teachers to impart training at university, college, higher secondary, secondary and primary level with different training modules for each category), as also the possibility that all trainers/ Master Resource persons may not always be available, the number of Trainers/ Master Resource Persons may be more, say about 2,000 Trainers (allowing for 25% increase) and 42 Master Resource Persons (allowing for 50% increase).

There may be five training modules, one each for primary, secondary, high school, higher secondary schools and university/college teachers.

<sup>10</sup> The source does not include benchmarks proposed for each category of schools/ colleges/Universities, which is proposed under the Study. The state governments are free to determine their own benchmarks for their states.

Refresher training programme are considered essential to ensure that knowledge and skills are sustained. A refresher training programme of three days' duration may be organised two years after the initial training was imparted. In other words, teachers trained during the first year may be imparted refresher training during the third year and so on. It would therefore be desirable to increase the number of trainers and master resource persons by 25% from third year onwards to take care of refresher training programmes exclusively.

A summary of the quantification exercise for the education sector is as in the following table:

<b>Education</b>	
<b>No. of teachers to be trained</b>	<b>6,00,000</b>
<b>No. of training programmes in five years</b>	24,000
<b>No. of training programmes annually</b>	4,800
<b>No. of training of trainers programmes</b>	67
<b>No. of training modules</b>	5*
<b>Master resource persons</b>	42
<b>No. of trainers</b>	2,000
<b>No. of refresher trainings in five years</b>	9,600

\* One each for primary, secondary, high school, higher secondary schools and university/college teachers

While the training for the development of Master Resource Persons and trainers may be organised at State level, the training of teachers for university/ colleges etc may be organised at district level and the training of teachers for schools from primary to higher secondary schools may be organised at block level. The venue of training programmes could be the Assembly or Conference Halls in colleges and Higher Secondary schools. The number of training programmes required to be organised every year for different categories of teachers may be worked out by respective state governments, based on the number of teachers in different categories in each state and the manner of calculation of number of training programmes indicated above.

### **PRI/ ULB Sector**

In view of the larger policy commitment of democratic decentralisation in delivery of development programmes, PRIs and ULBs have the most significant role to play in implementing a wide variety of these programmes on the ground. This offers a huge opportunity to try and mainstream DRR into development planning and administration closer to the people, where it matters the most.

There are around 2.8 million elected representatives at the village, intermediate and district levels of Panchayati Raj Institutions (PRIs) out of which more than 2.6 million are in Gram Panchayats at the village level itself.

The number of PRIs at village, intermediate and district level together with number of elected representatives at each level are as in the following table:

Panchayat level	No. of Panchayats	No. of elected members
Village Panchayats	232,855	2,645,880
Intermediate Panchayats	6,094	156,557
District Panchayats	633	15,581
<b>Total</b>	<b>239,582</b>	<b>2,818,018</b>

Source: [www.data.gov.in](http://www.data.gov.in) (Data Portal India)

The functions assigned to Local Authorities (PRIs/ ULBs), subject to the directions of District Authority, are to:

- Ensure that its officers and employees are trained for disaster management;
- Ensure that resources relating to disaster management are so managed as to be readily available for use in the event of any threatening disaster situation or disaster;
- Ensure all construction projects under it or within its jurisdiction conform to the standards and specifications laid down for prevention, of disasters and mitigation by the National Authority, State Authority and the District Authority;
- Carry out relief, rehabilitation and reconstruction activities in the affected area in accordance with the State Plan and the District Plan;
- Take such other measures as may be necessary for disaster management.

During interactions with village level elected representatives, it was brought out that very rudimentary training has been imparted to them during their induction training. The DM Capsule in five day training programme ranged from one lecture of one to one and half hours duration to half a day with theoretical training without any practical component. Considering the level of education of majority of elected representatives at village level, they could neither comprehend the purpose of training nor the actions required to be taken by them. Besides, the training was primarily response oriented without any component of risk reduction or climate change adaptation or mainstreaming of DRR in rural flagship programmes. They had no information about their legal responsibilities under the Disaster Management Act, 2005. There was a general sense of despondency that the revenue officials tend to ignore them in case of any calamity and elected representatives are not taken into confidence in response and relief as also damage and loss assessment related activities. GP employees had never been exposed to any training related to disaster management.

It would be desirable to give them exposure through a training programme of five days duration, which should have mostly practical component using a range of methods including video clips on various aspects of disasters. The training modules may be developed based on micro level vulnerabilities and ground situations. It would be necessary to train all elected representatives, keeping in view their statutory responsibilities.

Taking a batch of 25 participants, the number of training programmes to be organised, spread over a period of five years, would work out to 1,12,720 or 22,544 programmes every year. If 12 training programmes are organised by a group of four trainers annually, the number of such group of trainers would work out to 1879, or say, 1880 groups or 7520 trainers. If the Master Resource Persons, in a group of 4 each, organise 10 training programmes annually, with 24 participants each, there would be need for 32 groups of Master Resource Persons, or say, 128 Master Resource Persons. In order to allow for flexibility to take care of different groups of trainees (elected members of Zila Parishad, intermediate level and village level PRIs) as also the fact that the elected members would have to be trained in different training modules, keeping in view micro level needs, as also the possibility that all trainers/ Master Resource persons may not always be available, the number of Trainers/ Master Resource Persons may be more, say about 9,400 Trainers (allowing for 25% increase) and 192 Master Resource Persons (allowing for 50% increase). Although these figures look too ambitious, the number of training programmes could be manageable, keeping in view that trainings would be dispersed in different states and also that, in view of their statutory responsibilities, it may not be advisable to cover only a percentage of elected representatives over five years. There may be one training module for elected members of PRIs, to be developed by each state government.

The summary of the quantification exercise for the PRIs/ULBs is as in the following table:

<b>PRI sector</b>	
<b>No. of elected members to be trained</b>	<b>2,818,018</b>
<b>Training programme to be organised in five years</b>	<b>1,12,720</b>
<b>No. of annual training programmes</b>	<b>22,544</b>
<b>No. of trainers</b>	<b>9,400</b>
<b>Total no. of TOT's</b>	<b>313</b>
<b>No. of training modules (one for each state)</b>	<b>35</b>
<b>No. of master resource persons</b>	<b>192</b>
<b>No. of refresher trainings</b>	<b>45,088</b>

As in other cases, refresher training programmes of three days' duration would be necessary for elected representatives also. Therefore, the number of trainers and Master Resource Persons may be increased by 25% from third year to enable these additional trainers and Master Resource Persons to exclusively take care of refresher training programmes.

It has also to be kept in view that attrition level in case of elected representatives may be as high as 50% to 60% since elections are held after every five years, compared to other stakeholders where it may be between 10% -- 20% over a period of five years.

While the template for training of Master Resource Persons may be developed by NIDM, the training modules may be developed by DM Cells at state level with professional support from NIDM. The training for development of Master Resource Persons and trainers may be organised at state level. While the training of members of Zila Parishad and intermediate level may be organised at district level, the training of village gram panchayat members may be organised at block level. Since the training programmes may continue to be held regularly throughout the year, considering the vast numbers, it would be appropriate to make institutional arrangements with necessary infrastructure at block level.

The number of training programmes required to be organised every year for different categories of elected representatives may be worked out by respective state governments, based on the number of elected representatives in different categories in each state and the manner of calculation of number of training programmes indicated above.

There are about 8000 towns/ cities with municipalities. The total number of elected representatives in the urban local bodies as on date is 68723<sup>11</sup>. Therefore, on an average, there are about 9 elected representatives in each municipality. One training programme for elected members of two municipalities could therefore be organised at state level. The total number of training programmes to be organised for 8,000 municipalities would therefore work out to 4,000, spread over 35 states/ UTs or say about 115 training programmes, on an average, for each state/ UT over a period of five years or say about 23 programmes every year. The training programmes may be organised on the lines of training programmes for PRIs with duration of five days each. A batch of 4 trainers in state/ UT may be needed for this purpose. Allowing for 25% increase, as in other cases, the number of trainers needed would be 5 for each state/ UT or 175 for 35 states/ UTs.

The trainers may be trained by State Urban Development Department or its state level institute, if necessary with the support of Guest Faculty and Sector Specialists. The contents of the course would however cover urban risk mitigation measures based on hazard and vulnerability assessment in normal as also in disaster situations including the following sectors: power, water and sanitation,

<sup>11</sup>State of Women in urban local government-India Report, UNESCAP

storm water drainage, solid waste management, education through municipal schools, health care through municipal hospitals, development plan for city/ town, estate and land management, garden management, road development, fire services if under the control of municipal body etc. Besides, there may be one training module for each state/ UT, keeping in view the specific urban vulnerabilities of each state. It has also to take up DM related actions in accordance with the provisions contained in section 41 of the DM Act. Sector specific training programmes may be developed with the support of specialists for the employees of municipality in each town and employees imparted training through DM Cell in the municipality, if there is adequate strength; otherwise may be organised with the assistance of guest faculty. The summary is given in the Table below:

<b>ULB sector</b>	
<b>No. of elected members to be trained</b>	<b>68,723</b>
<b>Training programme to be organised in five years</b>	4,000
<b>No. of annual training programmes</b>	800 (23 for each state/ UT on an average)
<b>No. of trainers</b>	175*
<b>No. of training modules (one for each state)</b>	35**
<b>No. of master resource persons</b>	NIL***
<b>No. of refresher trainings</b>	1600

\*175 trainers are dispersed over 35 states/ UTs @ 5 trainers for each state/ UT.

\*\*One training module for each state/ UT

\*\*\*Since only 5 trainers are to be trained for each state/ UT, the State Urban Development Department/State Urban Development Institute can take care of it easily, if necessary by involving sector/ subject specialists.

### **Rural Development (RD) Sector**

Under RD Sector, an attempt has been made to work out modalities for creating awareness through constitution of Village Disaster Management Committees (VDMCs) and Task Forces, imparting training to community through training of seven Task Forces in villages in India.

The seven Task Forces may be on First Aid; Search and Rescue; Early Warnings; Water and Sanitation; Evacuation, Shelter Management and Relief Distribution; Trauma Counselling and Damage and Loss Assessment. These task forces had been initially determined for training at grass root level under the DRM Programme. These task forces had been initially determined for training at grass root level under the DRM Programme. The numbers in each task force has to be decided based on vulnerability and risk profile of each village, experience of past disasters, population, whether the village is located at one or two places as a dense unit or is dispersed in different hamlets over a large area and other related considerations. This would be possible only when a micro level vulnerability and risk assessment is carried out for each village in participation with the community. The hazard, risk, vulnerability and capacity assessment (HRVCA) may be inclusive to cover geo-physical, social, economic and environment vulnerability.

Pending this exercise by the respective state governments to make the training needs assessment to work out the village level HR & CD Plan, a macro level exercise has been undertaken so that, based on it, community level training and capacity development programme can be initiated over the next five years during which period state governments may develop village level HR & CD Plans in

participation with community, Gram Panchayat, government and non-government stakeholders in the village.

The following data extracted from Census 2011 has been relied on to work out the macro level training plan:

<b>Number of districts in India</b>	640
<b>Number of Community Development Blocks</b>	6,374
<b>Number of villages (inhabited)</b>	5,93,732
<b>Number of villages (uninhabited)</b>	44,856
<b>Total Population</b>	121,01,93,422 (say 1210 million)
<b>Rural Population</b>	83, 30, 87,662 (say 833 million) (68.84%)
<b>Urban Population</b>	37, 71, 05,760 (say 377 million) (31.16%)

Of the 5.94 lakh villages, the population of 2.36 lakh villages is less than 500 and the population of 3,976 villages is more than 10,000. The population of the remaining 3.54 lakh villages is in the range of 500-10,000. However, the approximate average population of each village will work out to 1403 or say about 1400.

The VDMC may consist of 10 members including Gram Pradhan, two members of Gram Panchayat, Village Development Officer and six other members to be decided in consultation with villagers subject to the following conditions:

- At least 50% of total members are women;
- SCs/STs/OBCs are represented in proportion to their population in the village
- Religious minorities are represented in proportion to their population in the village
- Gram Pradhan may be the Chairperson of the VDMC and Village Development Officer its Vice Chairperson

The functions of VDMC may include:

- Responsibilities assigned to it under Section 41 of the DM Act
- Preparation of Village Disaster Management Plan through a participatory exercise with the community;
- Action Plan for DRR and CCA interventions
- Ensure training of seven Task Forces through the assistance of Village Development Officer
- Oversee maintenance of identified village shelter(s) including shelter for livestock in case of a calamity
- Supervise the working of Task Forces in case of a disaster or threatening disaster situation
- Facilitating organisation of mock drills
- Any other function related to disaster management, as may be assigned by the District Administration/District Authority/ Block Development Officer

It would be necessary to give an orientation training to VDMC members and training in the specific functions assigned to each Task Force. Each Task Force may have a minimum of 4 members, making up a total of 28 members in seven Task Forces. In addition, 5 members of NGO/ CBO/SHG active in the area may also be imparted training, which number may increase depending on the population of the village. Therefore, the total minimum number of personnel to be imparted training in a village may be 43 (10 VDMC members plus 28 Task Force members plus 5 NGO/SHG members). This would work out to about 3% of the average population of the village. If the population of the village is significantly more, the number of personnel to be trained may also be correspondingly more on need-based basis. However, in such cases, the overall percentage of people to be trained is likely to be correspondingly less than 3% of the population of the village.

Although the number of villages in each block would vary, on an average, there may be around 93 villages in each block. It may not be feasible to cover all villages simultaneously during the first five years. Therefore, about 25% of the most multi-hazard prone villages may be selected for putting in place the above mentioned systems, which works out to 23.25 villages or say 23 villages in each block. The number of personnel to be trained in each village would therefore work out to approximately 989 (23x43) or say about 1000 persons over 5 years or say about 200 persons every year. The training will have to be organised separately for different Task Forces which may be undertaken by taking members of each Task Force for five villages. The number of training programmes, each of five days' duration every year, would work out to 7 for seven Task Forces for a group of 20 each and 3 training programmes for VDMC Members plus representatives of NGO/CBO/SHG in five villages (10+5=15x5=75). In other words, it will include 10 VDMC members plus 5 NGO/SHG members for each village, for 5 villages.

The total number of training programmes to be organised in each block would therefore be 10 every year. The Block Disaster Management Officer (BDMO) or the officer entrusted with DM work at block level with three support staff may undergo intensive training for 10 working days at DM Cell at ATI or SIRD, to be trained as trainers. There may be 8 training modules, one each for seven task forces and one for VDMCs/ NGOs/CBOs to be developed at state level by each state/UT government.

On all-India basis, the number of trainers to be trained would work out to 1594 or say 1600 multiplied by 4 trainers each or say 6,400 over a period of 5 years (25% of total 6374 blocks=1594 rounded off to 1600 blocks x 4 trainers for each block=6,400). However, since same trainers will impart training every year over the period of five years, the actual no. of trainers needed would be 1280 only (6400 divided by 5). If a group of 4 Master Resource Persons undertake 6 training programmes every year for a batch of 25 trainers each, the number of groups of 4 Master Resource Persons would work out to 9 or 36 Master Resource Persons. Allowing for flexibility and availability of Master Resource Persons, as in other sectors, the total requirement of Master Resource Persons may be around 54. However, in effect, it will work out to one batch of 4 Master Resource Persons for each state. If these targets can be achieved during the first two years, the state governments may consider coverage of additional villages in the coming years. Besides, this group will also be able to undertake refresher programmes of 5 days duration for trainers from third year onwards.

Practically, since Master Resource Persons will be engaged by DM Cells at state level, it might be necessary to provide one batch of 4 Master Resource Persons to each state/ UT. The total number of Master Resource Persons may therefore work out to 35 states/ UTs x4=140.

## Rural Development

### *At the community level*

<b>Total number of people to be covered over 5 years (25% of villages in each block)</b>	15.94 lakh
<b>Number of blocks</b>	6,374
<b>Total no. of villages to be covered in each block</b>	23
<b>No. of people to be trained in each block in 5 years</b>	1,000
<b>No. of people to be trained in each block annually</b>	200
<b>Total no. of training programmes to be organised in each block</b>	10
<b>No of training modules (7 for 7 Task Forces +1 for VDMC/NGOs Members)</b>	8
<b>No. of trainers to be trained on all India basis in five years</b>	6,400
<b>No. of trainers to be trained on all India basis annually</b>	1,280
<b>No. of master resource person in 35 states</b>	140

The training of village level personnel may be organised at block level mostly with practical demonstration and video clips. The training material would therefore have to be developed quite imaginatively assuming that most of the villagers may not have been educated beyond primary level.

Group of post	As on 31st March, 2009	
	No. of employees	% age to total
A	94504	3.05
B	257486	8.31
C	1943384	62.72
D	803133	25.92
Total	3098507	100.00

### **Government Officers and Employees**

Assessment of government officers and employees to be trained has been made separately.

#### **Table: Regular central government employees classified by group of posts held**

*Source: Census of Central Government Employees, 2009*

While quantifying number of personnel to be trained for different sectors discussed above, the number of government officials to be trained, both at central and state level had not been taken into consideration as it was considered that since sector-wise figures are not readily available, we may take the entire government sector as one integrated unit for working out the number of personnel to be sensitised/oriented or trained. It may be clarified that figures of state government employees include officials at state, district, sub-district and local level.

There is a general impression that there are too many bureaucrats in India from national to local level. However, data compiled from multiple sources, including a 2008 official survey, Right to Information applications, media reports and the Census, 2011 reveals that India has 1,622.8 government servants for every 100,000 residents. In stark contrast, the U.S. has 7,681. The Central government, with 3.1 million employees, thus has 257 government personnel serving every 100,000 population, against the U.S. federal government's 840.

Based on above data, the number of central and state government employees is 1.6228% of population or 1,96,35,880, of which 30,95,507 are civilian central government employees. The break-down of these officials in different groups is as follows:

The total number of state government employees would therefore work out to be 1,65,40,373. It is an approximate figure but more or less correct since variations in absolute numbers would be very insignificant. The break-down of these employees in different groups is not readily available. However, based on broad distribution percentages of central government employees, the group-wise break-down would work out as follows:

#### **Gazetted and non-gazetted state government employees as on 31st march, 2009**

Group of post	% age to total number of employees	No. of employees
A	3.05	5,04,481
B	8.31	13,74,505
C	62.72	1,03,74,122
Total	100.00	1,65,40,373 (16.5 million)

The following assumptions have been made:

- 1) About 10% of Group A Officers are primarily engaged in policy making
- 2) About 20% of Group A Officers are engaged in management such as Project Managers etc
- 3) About 20% of Group A Officers and 40% of Group B, C and D Officers are implementers

While it would be desirable to sensitise/ train all officers and employees to ensure that DRR is mainstreamed in all facets of government functioning, it would be a tall order to train about 20 million officials. The above assumptions would therefore give a realistic estimate of number of officials to be sensitised or trained. The number of officials to be trained would therefore work out as follows:

Group	Central Government Officials	State Government Officials	Total
A (50%)	47,252	2,52,240	2,99,492 or say 3 lakh
B (40%)	1,02,952	5,49,802	6,52,754 or say 7 lakh
C (40%)	7,77,354	41,49,649	49,27,003 or say 50 lakh
D (40%)	3,21,253	17,14,906	20,36,159 or say 20 lakh
Total	12,48,811	66,66,597	79,15,408 or say 80 lakh

Considering the total numbers to be trained, it may be appropriate to take up training of 25% of officials over the period of next five years by taking up priority sectors in the first instance including health, education, panchayati raj, rural and urban development, which will reduce the numbers to be trained, both at central and state level to about 20 lakh, over the period of next five years.

So far as policy makers both at central and state level are concerned, it would be 10% of 25% of 3 lakh officers or say 7,500 over five years or 1,500 annually. This would be only sensitisation of officers over a period of two days. It would be advisable to organise sensitisation programmes for them at a national institute with the support of guest faculty. The officers may be invited from specific sector for each programme. This would require 60 sensitisation programmes to be organised every year with the intake of 25 each. The programmes may be distributed among three national level institutes such as NIDM, IIPA and LBS Academy at Mussoorie. Each institute will be required to organise 20 programmes of two days each. The faculty may consist of two DM specialists from the institutes and two sector specific guest speakers from premier institute in that particular sector.

At the second level of Management, the numbers would be 20% of 25% 3 lakh officers or say 15,000 over five years or 3,000 every year, which will include about 2,350 officers from central government and 12,650 from state governments. In terms of annual numbers, it would work out to 470 central government and 2530 from state governments. They may be trained in five days' training programmes. The Central Government officers may be trained at national institutes in 19 batches of 25 each with the support of DM and sector specialists, as proposed above. Similarly, there will be 102 batches of 25 each for state officers. However, since these training programmes will be organised in different states, the number of training programmes will be in the range of 3 to 5 for each state government which are manageable at state level training institutes including ATIs and SIRDS (particularly for RD sector).

For Group B, C, D officers (77 lakh), 25% to be trained over next five years, the coverage would be 19.25 lakh or 3.85 lakh annually. The training of 5 days' duration will be spread over all state governments to be undertaken at state/ district level through Master Resource Persons and Trainers. 15,400 batches of 25 each may be organised every year. If a group of four trainers exclusively taken for this purpose, organise 12 training programmes every year with the intake of 25 trainees in each batch, there would be need for 52 groups of trainers or 208 trainers. These trainers may be trained by 4 Master Resource Persons in 9 batches. However, this would not be a feasible solution. It would be better to have a team of 4 Master Resource Persons in each state. They need

not be recruited but may be taken from state level institutes or guest faculty, who can be trained as Master Resource Persons at national institutes. Sector specific Master Resource Persons can also be developed at national level who could travel to different states for training of trainers. In that case, number of Master Resource Persons may be 20 in 10 key sectors. It may be left to state governments to consider the option more suitable to them.

The no. of training modules to be developed would be 30, ten at national level, one each for ten key sectors to be developed by NIDM and ten each at state and district level, one each for ten key sectors, which may be developed at state level by each state government.

The following table presents the number of officers to be trained at policy, management and operational levels.

### **Government Officers and Employees**

	<b>Policy</b>	<b>Management</b>	<b>Operational</b>
<b>Officers to be trained over 5 years</b>	7,500	15,000*	1,925,000
<b>Officers to be trained annually</b>	1500	3000**	3,85,000
<b>No. of training programmes annually</b>	60	121	15,400
<b>No. of Training Modules (1 each for 10 key sectors at each level)</b>	10	10	10
<b>No. of refresher training programmes in five years</b>	120	242	30,800

\*2,350 central govt. employees+ 12,650 state govt. employees

\*\*470 central govt. employees+ 2,530 state govt. employees

It would be necessary to organise refresher training programmes of three days' duration from third year onward. The trainers in each state may be utilised for this purpose. The methodology may be same as for regular training programmes.

### **Non-Governmental Organisations (NGOs)**

The NGOs at community level have been covered for training along with VDMC members. In addition, NGOs at state and district level dealing with disaster management or in any sector such as education, health, rural development and PRIs/ ULBs may be trained in five days' programme. In particular, they may be associated with development of projects based on village level Action Plans. Besides, NGOs personnel at state and district level may be trained as trainers in different sectors discussed above. If necessary, limited financial support could be provided to them for specific activities to be undertaken by them. If there are large numbers of NGOs at State level, 20 NGOs in different sectors may be picked up. If five personnel are picked up from each NGO, the total of 100 trainees may be trained in four batches of 25 each at the DM Cell at ATI. At district level if 5 NGOs are picked up, 25 personnel may be trained either at district level in a training capsule of 5 days. The training programme may inter alia include:

1. Development of village and block level Disaster Management Plans
2. Development of Action Plans at village/ block level
3. Conversion of Action Plans in one or more projects
4. Role and functions of VDMCs/ Task Forces
5. Organisation of mock drills
6. Facilitate documentation of disasters by district administration
7. Facilitate mainstreaming of DRR and CCA in development programmes being implemented in the district
8. Dissemination of early warnings through village level NGOs/ SHGs

9. Awareness Generation among community members
10. Assist District Administration in relief distribution and coordination between donor agencies and District Administration in case of a calamity.; and
11. Such other functions as district administration may like to entrust them.

There may be two training modules, one each for state level and district level NGOs/CBOs, to be developed by each state government at state level. They may be imparted training at ATIs (DM Cells). As for village level NGOs/CBOs, these are already covered in rural development sector.

The summary of the quantification for training of NGO functionaries as follows:

<b>No. of people to be covered (100 in each state at state level and 25 in each of 640 districts)</b>	<b>19,500</b>
<b>No. of NGOs to be trained at the state level</b>	20
<b>No. of people trained @5 from each NGO</b>	100
<b>No. of trainings</b>	4
<b>No. of NGOs to be trained at the district level</b>	5
<b>No. of people trained @5 from each NGO in each district</b>	25
<b>No. of trainings</b>	1
<b>No. of training module (one each for State and district level NGOs)</b>	2

The above exercise on quantifications of number of stakeholders to be trained over five years has been undertaken as an interim measure pending a detailed village/ block/ district/ state-wise exercise which may be undertaken by the respective state governments. The purpose is to ensure that training at all levels may kick-start immediately pending detailed exercise by respective state governments. Based on the quantification and training need analysis the following training themes have emerged for all states/ UTs:

## Training Themes

Sector/Level	Number of trainings	Themes
<b>Health Sector</b>		
<b>Total number of training modules</b>	<b>5</b>	
Doctors	1	Management of Mass Casualties and Hospital preparedness for Doctors
Nurses	1	Management of Mass Casualties and Hospital preparedness for Nurses
ANMs	1	Healthcare for Women and Children at Community Level
Other health workers	1	Healthcare at Community Level
Aaganwadi	1	Public Health & Food and Nutrition
<b>Education</b>		
<b>Total no. of training modules</b>	<b>5</b>	
Primary	1	} Creating a culture of safety and resilience through knowledge, innovation and education
Secondary	1	
High school	1	
Higher secondary schools	1	
University/college teachers	1	
<b>PRI/ULB</b>		
<b>Total no. of training modules</b>	<b>2</b>	
PRI	1	Strengthening PRIs for mainstreaming DRR/CCA into development on the ground
ULB	1	Mainstreaming DRR/CCA into City Development Plans (CDPs) and their implementation strategies
<b>Rural Development</b>		
<b>Total no. of training modules</b>	<b>8</b>	
Total no. of modules at the community level	<b>8</b>	
Task Force 1	1	Training module on First Aid
Task Force 2	1	Training module on Search & Rescue
Task Force 3	1	Training module on Early warnings
Task Force 4	1	Training module on Water and sanitation
Task Force 5	1	Training module on Evacuation, Shelter Management & Relief Distribution
Task Force 6	1	Training module on Damage and Loss assessment
Task Force 7	1	Training module on Trauma Counselling
VDMC/NGO	1	Role and Functions of VDMCs in Disaster Management

Total training modules for government officers and employees	10+10+10=30	
Policy	10 ( 1 module each 10 key sector <sup>12</sup> )	Mainstreaming DRR in Sectoral Plans and Policies
Management	10 ( 1 module each 10 key sector)	Training module on management of sector specific DRR plans and policies
Operation	10 ( 1 module each 10 key sector)	Training module on implementation of sector specific DRR plans and policies
Total training modules for non-governmental organisations	2	
State	1	Training module on strengthening the capacities of NGOs to support and sustain community-based disaster risk management initiatives
District	1	Training module on strengthening the capacities of NGOs to support and sustain community-based disaster risk management initiatives

The summary of sector-wise number of training programmes to be organised over 5 years, training modules, Master Resource Persons and Trainers is given below:

Sector	No. of Training Modules	No. of Training Programmes in 5 years	No. of Master Resource Persons	No. of Trainers
<b>Health</b>	4	26,000	36	2,170
<b>Anganwadi Workers/ Helpers</b>	35 (1 for each state/ UT)	20,000	4	200
<b>Education</b>	5	24,000	42	2,000
<b>PRIs</b>	35 (one for each state/UT)	1,12,720	192	9,400
<b>ULBs</b>	35 (one for each state/UT)	4,000	---	175
<b>Rural Development</b>	8	63,740 (10 for each of 6,374 blocks)	140 (4 for each state/ UT)	6,400
<b>Government Officers</b>			NIDM + Sector Specialists	--
<b>A. Policy</b>	10	60	State DM+	--
<b>B. Management</b>	10	120	Sector Specialists	

<sup>12</sup>The list of 10 key sectors is given as annexure 3

<b>C. Operational</b>	10	77,000	20	208
<b>NGOs</b>	2	140* +640** =780	State DM Institute	--
<b>Total</b>	154***	3,28,420#	434	20,533

\*4 training programmes in each state/ UT for state level NGOs

\*\* One training programme in each of 640 districts for district level NGOs

\*\*\*These 154 training modules include 105 to be developed by each state/ UT @3 per state; at national level, only 10 training modules are to be developed by NIDM for policy level officers in 10 different sectors. Rest of the modules will be developed by respective states/ UTs. If state governments so desire, NIDM can share template for other modules, which would be 42 only. (154-105+3-10=42)

#these are total number of training programmes to be undertaken from national to block level throughout the country over five years. On annual basis, these work out 65,684 or, on an average, 1876 per state. Its further dispersal at district/ block level will show that these programmes are manageable.

### Satellite Based Training for PRIs

Keeping in view a very large number of PRI Members to be trained, the option of organizing training for them through Satellite based training programme was considered. However it is considered that it may not be very successful for the following reasons:

- An intensive awareness campaign would be needed in the first instance to motivate them to participate in such training.
- They are not likely to take initiative to assemble on their own at one place at the appointed time to participate in training, since it is not a priority task for them.
- Considering their level of education and comprehension, this type of training may not have the desired impact which face to face training will have.
- They are likely to be shy to ask questions in such mode of training
- Since such training will have a much wider canvas, all issues taken up for discussion may not be of direct concern to all of them, depending on the vulnerability and other issues related to their respective village.
- On the other hand, a training programme for PRI members of a cluster of 4-5 villages, through trainers with whom they have become familiar, is likely to be more effective; more so since local issues will be discussed and it would be more conducive to mutual interaction.

On the other hand, it is true that satellite based training would be more cost effective and technology driven wherein it may be more feasible to disseminate imaginative case studies. However, the Team still feels that face to face training may be more useful in view of the factors mentioned above. At best, satellite based training module may be tried in one state on experimental basis and evaluated before adopting it for training of PRIs for all states/ UTs.

### Incentives

In cases where DM and particularly DRR related functions are an add on to their respective job description, some incentive needs to be given to motivate them to carry forward the agenda for disaster risk reduction and facilitating prompt and effective response. In Health Sector, an appropriate financial incentive may be considered for ANMs, Health Workers, Anganwadi Workers

and Helpers. In Education Sector, teachers may be given nominal special pay for undertaking this additional task as also recognition as DM Advisor for the school. Both factors taken together may motivate them to take up this assignment seriously.

In PRI/ ULB Sector, the incentive has to be generated through awareness and motivation since it is a service to the community which has elected them. As for volunteers to be covered under RD Sector, awareness, motivation and an identity card as ‘first aid volunteer, *(name of the village)*’ ‘search & rescue volunteer, *(name of the village)*’ ‘damage and loss assessment volunteer, *(name of the village)*’ etc. may provide enough incentive since there is a sense of pride and ownership attached to it. They can be given modest reward, if they have actually done excellent work in a disaster situation or dissemination of early warnings etc. In case of government employees, a special mention of having put in practice the training skills in their ACRs and recognition by way of a commendation certificate may be adequate incentive. As for NGOs, recognition of organisations by issue of certificates by Secretary, Disaster management at state level and District Magistrate at district level is likely to generate commitment.

The incentives, to the extent possible, may be of non-monetary nature, except in such cases where it adds to their regular work, in which cases, financial compensation, even if partial, may indeed contribute to their motivation.

### Prioritisation

As identified training needs and the resultant training requirements are large in number and vast in their scope, the prioritisation of training needs has been articulated in the form of 12 major training themes that must be taken up as a matter of priority as a part of the proposed perspective plan for training and capacity building for DRR in India.

However, it is highly recommended that design, pilot testing and scaling up of the proposed TOT modules is undertaken in active consultation with the stakeholders involved with specific reference to hazards, sectors and levels both as a part of a perspective plan of 3-5 years and annual plans on a regular basis.

### Prioritising Training Themes

S.N.	Training Theme	Intended Level
1	Mainstreaming DRR into development planning	Policy makers, planners and programme/project designers at the central and state levels
2	Mainstreaming DRR into rural development policies and programmes*	Policy makers and programme/project designers at the central and state levels
3	Mainstreaming DRR/CCA into City Development Plans (CDPs) and their implementation strategies*	Policy makers and programme/project designers at the central, state and city levels
4	Strengthening PRIs for mainstreaming DRR/CCA into development on the ground*	Programme/project managers at the district and sub-district levels
5	Preparing the health functionaries for emergency health services*	Programme/project managers at the state and district levels
6	Creating a culture of safety and resilience through knowledge,	Trainers and teachers at the state and district levels

	innovation and education*	
7	Strengthening emergency communication including early warning and last mile connectivity	Programme/project managers at the district and sub-district levels
8	Community Led Hazard Risk Vulnerability and Capacity (CLHRVC) assessment	Civil society functionaries; CBO members; programme/project managers at the district and sub-district levels
9	Participatory training and capacity needs assessment (PTCNA)	Trainers and training planners and managers at NIDM, GIDM and other similar institutes, DMC, SIRDs and other sector level training institutions
10	Participatory evaluation and action learning (PEAL)	Programme/project managers at the national and state levels
11	Integrating gender approaches in disaster management plans	Programme/project designers and managers at the district and sub-district levels
12	Use of media in generating mass awareness on disaster management	Media people and information officers from within government

The above mentioned 12 themes would encompass all the functions undertaken in different phases of disaster management and have to be integrated across all training modules be it at national, state, district or community level. When these themes are effectively integrated in all training modules these would, in effect mainstream DRR and CCA in all phases of disaster management including activities being undertaken/to be undertaken in government sector, non-government sector, corporate sector and private sector as also at community level.

It must be underlined here that climate change adaptation (CCA) issues are intimately linked with disaster risk reduction (DRR) concerns and cannot be separated. Hence, in developing the training programmes on these themes, CCA would need to be integrated as a cross cutting concern. This will constitute an essential element of the perspective that would form the basis of the design and delivery of related training programmes.

***Explanatory Note:*** Before attempting a State Human Resource and Capacity Development Plan based on above Template, it is suggested that following documents may be perused to facilitate the exercise:

- Draft National Human Resource and Capacity Development Plan prepared by NIDM
- SWOT Analysis undertaken as a part of this Study\*
- Strategic Framework for Implementation of Training, also undertaken as a part of this Study\*

\*These documents are available in the website of NIDM under "Projects" "NCRMP"