



# ANNUAL REPORT

2007-08



NATIONAL DISASTER MANAGEMENT AUTHORITY  
GOVERNMENT OF INDIA

National Disaster Management  
Authority  
Annual Report

2007-08

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National Disaster Management Authority  
Government of India

## Our Vision

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



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# ABBREVIATIONS

<b>AERB</b>	Atomic Energy Regulatory Board
<b>ARC</b>	Administrative Reforms Commission
<b>ARMVs</b>	Accident Relief Medical Vans
<b>CBDRM</b>	Community Based Disaster Risk Management
<b>CBRN</b>	Chemical, Biological, Radiological and Nuclear
<b>CCEA</b>	Cabinet Committee on Economic Affairs
<b>CD</b>	Civil Defence
<b>CDM</b>	Chemical Disaster Management
<b>CPMFs</b>	Central Para Military Forces
<b>CRF</b>	Calamity Relief Fund
<b>CSCs</b>	Community Service Centres
<b>CSSR</b>	Collapsed Structure Search and Rescue
<b>DM</b>	Disaster Management
<b>DPR</b>	Detailed Project Report
<b>DRDO</b>	Defence Research and Development Organization
<b>EFC</b>	Expenditure Finance Committee
<b>EW</b>	Early Warning
<b>FICCI</b>	Federation of Indian Chambers of Commerce and Industry
<b>GIS</b>	Geographic Information System
<b>GoI</b>	Government of India
<b>GSDMA</b>	Gujarat State Disaster Management Authority
<b>HAZCHEM</b>	Hazardous Chemical
<b>HPC</b>	High Powered Committee
<b>IAN</b>	Integrated Ambulance Network
<b>ICP</b>	Incident Command Post
<b>ICS</b>	Incident Command System
<b>IEC</b>	Information, Education and Communication
<b>IMC</b>	Inter Ministerial Committee

<b>IMD</b>	India Meteorological Department
<b>INSARAG</b>	International Search and Rescue Advisory Group
<b>IT</b>	Information Technology
<b>MAH</b>	Major Accident Hazard
<b>MFR</b>	Medical First Responder
<b>MHA</b>	Ministry of Home Affairs
<b>MoU</b>	Memorandum of Understanding
<b>MPMCM</b>	Medical Preparedness and Mass Casualty Management
<b>NCCF</b>	National Calamity Contingency Fund
<b>NCRMP</b>	National Cyclone Risk Mitigation Project
<b>NDMA</b>	National Disaster Management Authority
<b>NDRF</b>	National Disaster Response Force
<b>NEC</b>	National Executive Committee
<b>NERMP</b>	National Earthquake Risk Mitigation Project
<b>NFRMP</b>	National Flood Risk Mitigation Project
<b>NGOs</b>	Non Governmental Organizations
<b>NIDM</b>	National Institute of Disaster Management
<b>NLRMP</b>	National Landslide Risk Mitigation Project
<b>OFC</b>	Optical Fiber Cable
<b>PIB</b>	Public Investment Board
<b>PPP</b>	Public Private Partnership
<b>PSSMHS</b>	Psycho-Social Support and Mental Health Services
<b>PTSD</b>	Post-Traumatic Stress Disorder
<b>R&amp;D</b>	Research and Development
<b>S&amp;T</b>	Science and Technology
<b>SDMA</b>	State Disaster Management Authority
<b>SDRF</b>	State Disaster Response Force
<b>ULBs</b>	Urban Local Bodies
<b>UMHP</b>	Urban Mental Health Programme
<b>UTs</b>	Union Territories
<b>WG</b>	Working Group

## Introduction

1.1 India is vulnerable, in varying degrees, to a large number of disasters. More than 28.2% of its geographical area is prone to earthquakes of high to very high intensity (falling into zones IV and V); over 40 million hectares (12%) of its land is prone to floods and river erosion; close to 5,700 kms, out of the 7,516 kms long coastline is prone to cyclones and tsunamis; 68% of its cultivable area is vulnerable to droughts; and, its hilly areas are at risk from landslides and avalanches. Vulnerability to Chemical, Biological, Radiological and Nuclear (CBRN) emergencies and other man-made disasters has also increased manifold in the recent past.

1.2 Disaster risks in India are further compounded by increasing vulnerabilities related to changing demographic and socio-economic conditions, unplanned urbanization, development within high-risk zones, environmental degradation, climate change, geological hazards, epidemics and pandemics. Clearly, all these contribute to a situation where disasters seriously threaten India's economy, its population and sustainable development.

## Genesis of NDMA

1.3 The Government of India (GoI), in recognition of the importance of Disaster Management (DM) as a national priority, had set up a High Powered Committee (HPC) in August 1999 and also a

National Committee on Disaster Management after the Gujarat Earthquake to make recommendations on the preparation of DM Plans and to suggest effective mitigation mechanisms. However, after the Indian Ocean Tsunami, the GoI took a defining step in the legislative history of the country, through an Act of Parliament, by creating the National Disaster Management Authority (NDMA), headed by the Prime Minister, to spearhead and implement a holistic and integrated approach to DM in India.

## Constitution of NDMA

1.4 NDMA was constituted on 30 May 2005 by an executive order of the GoI. Subsequently, with the assent of His Excellency President of India to the Disaster Management Act, 2005 on 23 December 2005, the Authority was notified on 27 September 2006 under the provisions of the Act.

## Composition of NDMA

1.5 General N. C. Vij, PVSM, UYSM, AVSM (Retd.) assumed the charge as Vice-Chairperson of NDMA on 28 September 2005, along with three Members Shri K. M. Singh, Prof. N. Vinod Chandra Menon and Lt. Gen. (Dr.) J. R. Bhardwaj, PVSM, AVSM, VSM, PHS (Retd). Dr. Mohan Kanda and Shri M. Shashidhar Reddy, MLA, joined the Authority on 5 October 2005. In August 2006, Smt. P. Jyoti Rao and Shri B. Bhattacharjee joined NDMA and in April 2007, Shri J. K. Sinha joined as the Member of NDMA.



1.6 The Vice Chairperson of the Authority has the status of Union Cabinet Minister and the Members of the Authority have the status of Union Ministers of State.

### Responsibilities of Members of NDMA

1.7 The disaster specific domains as well as States and Union Territories (UTs) have been assigned to the Members of the NDMA on the basis of their expertise in the subject.

### Mandate of NDMA

1.8 The NDMA, as the apex body for DM in India, has the responsibility of laying down the policies, plans and guidelines for DM for ensuring timely and effective response to disasters. Its statutory functions include the responsibility to –

- (a) lay down policies on DM;
- (b) approve the national plan and the plans prepared by the ministries/

S.No.	Name of the Member	Domains	States & UTs
1.	Lt. Gen. (Dr.) J. R. Bhardwaj (Retd.)	Chemical and Biological Disasters, Medical Preparedness and Mass Casualty Management, Psycho-Social Care and Trauma.	Uttar Pradesh, Uttarakhand, Haryana, Chandigarh.
2.	Shri B. Bhattacharjee	Nuclear and Radiological Emergencies, Early Warning and Communications, GIS & IT, Microzonation, Global Warming and Climate Change.	Rajasthan, Punjab, Dadra & Nagar Haveli.
3.	Dr. Mohan Kanda	National Policy and Plans, Floods, River Erosion, Avalanches, Landslides and Drought.	West Bengal, Maharashtra, Sikkim.
4.	Prof. N. Vinod Chandra Menon	Earthquakes, Tsunami, and NGOs.	Tamil Nadu, Kerala, Puducherry, A & N Islands.
5.	Smt. P. Jyoti Rao	Community Preparedness (CBDM), Education Curricula and Minimum Standards of Relief.	Madhya Pradesh, Karnataka, Lakshadweep.
6.	Shri M. S. Reddy	Cyclones, Urban Flooding, Risk Transfer (Insurance) and Micro Financing.	Andhra Pradesh, Orissa, Goa, Daman & Diu.
7.	Shri K. M. Singh	NDRF, Training and Public Awareness (Media).	Bihar, N. E. States, Jammu & Kashmir.
8.	Shri J. K. Sinha	Civil Defence, Home Guards, NCC, NSS, NYKS, Fire Services, Incident Command System and Public Private Partnership.	Gujarat, Himachal Pradesh, Delhi, Chhattisgarh, Jharkhand.



- departments of the GoI in accordance with the national plan;
- (c) lay down guidelines to be followed by the state authorities in drawing up the state plan;
  - (d) lay down guidelines to be followed by the different ministries/ departments of the GoI for the purpose of integrating the measures for prevention of disaster or the mitigation of its effects in their development plans and projects;
  - (e) coordinate the enforcement and implementation of the policy and plan for DM;
  - (f) recommend provision of funds for the purpose of mitigation;
  - (g) provide such support to other countries affected by major disasters as may be determined by the central government;
  - (h) take such other measures for the prevention of disaster, or the mitigation, or preparedness and capacity building for dealing with threatening disaster situation or disaster as it may consider necessary;
  - (i) lay down broad policies and guidelines for the functioning of the National Institute of Disaster Management (NIDM);
  - (j) authorize the concerned department or authority to make emergency procurement of provisions or materials for rescue and relief in threatening disaster situation or disaster;
  - (k) exercise general superintendence, direction and control of the National Disaster Response Force (NDRF), constituted under the Act for the purpose of specialist response to a threatening disaster situation or disaster;
  - (l) recommend guidelines for the minimum standards of relief to be provided to the persons affected by disasters.
- 1.9 As mandated by the DM Act 2005, NDMA will concentrate on prevention, preparedness, mitigation, rehabilitation and reconstruction and also formulate appropriate policies and guidelines for effective and synergised national disaster response and relief. It will also coordinate the enforcement and implementation of policies and plans.
- 1.10 In the DM Act 2005, disaster is defined as "a catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or man-made causes, or by accidents or negligence which results in substantial loss of life, human suffering or damage to, and destruction of property, or damage to, or degradation of environment, and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area". This definition is very wide in scope, covering aspects related to day to day happenings like law and order situations, bomb blasts and terrorism as well as accidents warranting specialized handling like oil spills, oil field fires, ship-wrecks, mine disasters etc. Most of these incidents will require the close involvement of the security forces, intelligence agencies and other designated specialized responders.

1.11 It has been further resolved after the First NDMA Meeting, held on 25 October 2007, that the following categories of events will continue to be handled by the Extant Mechanism and not by the NDMA:

- i. Terrorism (Counter-Insurgency);
- ii. Law and Order Situation;
- iii. Serial Bomb Blasts;
- vi. Hijacking;
- v. Air Accidents;
- vi. Chemical, Biological, Radiological and Nuclear (CBRN) Weapon Systems;
- vii. Mine Disasters;
- viii. Ports and Harbour Emergencies;
- ix. Forest Fires;
- x. Oil Field Fires; and
- xi. Oil Spills.

1.12 Notwithstanding the above, it has further been resolved in this meeting that:

- i. Formulation of Guidelines, training and preparedness activities will be carried out by the NDMA in respect of Chemical, Biological, Radiological and Nuclear (CBRN) emergencies.
- ii. Resources available with various Authorities at all levels, which are capable of discharging emergency support functions, will be made available to the nodal ministries/agencies dealing with specific emergencies.
- iii. The cross cutting themes like Medical Preparedness, Psycho-Social Care and Trauma Management, Community Based Disaster Preparedness, Information & Communication Technology, Training, Preparedness, Awareness Generation etc. for natural and manmade disasters will be attended to by the NDMA in partnership with the stakeholders concerned.

## The Context

2.1 This Annual Report relates to the activities carried out by the NDMA during the period from April 2007 to March 2008. This report is the second of its kind of the National Authority. Since its coming into existence, NDMA has worked towards making the country disaster resilient. The NDMA has adopted a mission mode approach towards disaster management in the country. At the national level there is a paradigm shift in the management of disasters from the erstwhile relief centric and post event syndrome, to a holistic regime that emphasizes upon measures aimed at prevention, preparedness and mitigation, as well as enduring efforts for rehabilitation and recovery.

## Major Initiatives

2.2 Over the last two years the NDMA has taken up following initiatives towards mitigating the impacts of major disasters:

- a. Formulation of National Policy on Disaster Management.
- b. Preparation of Disaster specific Guidelines.
- c. Mainstreaming Disaster Management into Developmental Plans.
- d. Mitigation Projects.
- e. Capacity Development and Awareness Campaigns.
- f. Mock Exercises.

## First NDMA Meeting

2.3 First Meeting of the NDMA was held on 25 October 2007 at PMO, 7 Race Course Road, New Delhi. Hon'ble Prime Minister and Chairman, NDMA, Dr. Manmohan Singh presided over the meeting. Vice Chairman, NDMA along-with all the Members and Additional Secretary, NDMA were also present. Shri M K Narayanan, National Security Advisor, Shri T K A Nair, Principal Secretary to PM, Shri K M Chandrasekhar, Cabinet Secretary, Shri U N Panjjar, Secretary (BM) and Dr Sanjaya Baru, Media Advisor to PM were the special invitees for this meeting.

2.4 During the meeting it has been resolved that the Union Home Minister, Finance Minister and Agriculture Minister be formally associated with the NDMA as Permanent Invitees to its meetings to lend more focus to the activities and the deliberations and to help quickly resolve the inter-ministerial issues. Further, it was also resolved that the Deputy Chairman Planning Commission be associated as a permanent invitee to these meetings to facilitate the process of mainstreaming of Disaster Management concerns into developmental plans and programmes and improving the quality of design of mitigation projects and pace of their execution. It has also been resolved that the Cabinet Secretary and the Union Home Secretary will also be invited to attend the meetings of the NDMA to provide better linkages with related agencies and the administration in general.



2.5 On the issue of Immediate Response and Relief it has been decided that activities relating to immediate response and relief be handled by the National Executive Committee (NEC) on behalf of the NDMA. Further, the Secretary/ Additional Secretary of the NDMA will be associated as a permanent invitee to the meetings of the NEC.

2.6 Further, the Authority authorizes the Chairman to take decisions regarding day-to-day functioning and to delegate powers for this purpose to the Vice Chairman, the various Standing Committees that may be constituted from time to time and/ or officers of the Secretariat of the Authority.

#### Preparation and Release of Guidelines

2.7 As mandated by the DM Act, 2005, NDMA has released National Disaster Management Guidelines on various disaster specific subjects viz., Earthquakes, Chemical (Industrial), Preparation of State Disaster Management Plans, Medical Preparedness and Mass Casualty Management and Floods. NDMA also convened several workshops on the Management of Cyclones, Biological, Nuclear and Radiological Emergencies, Chemical (Terrorism), Psychosocial Support and Mental Health services and Minimum Standards of Relief. Core Groups of experts were set up to assist NDMA in the preparation of the Guidelines for the effective management of these disasters. Meetings of several Core Groups on different types of disasters were held to identify the critical gaps in the management of these disasters and to work out strategies for improving the effectiveness of disaster preparedness, mitigation and emergency response.

#### Paradigm Shift in Disaster Management

2.8 On 23 December, 2005, the Government of India (GoI) took a defining step by piloting the enactment of the Disaster Management Act (DM Act 2005), which envisaged the creation of the National Disaster Management Authority (NDMA), headed by the Prime Minister, and State Disaster Management Authorities (SDMAs) headed by the Chief Ministers, to spearhead and implement a holistic and integrated approach to DM. At the national level, there will be a paradigm shift, from the erstwhile relief-centric response to a proactive prevention, mitigation and preparedness-driven approach. These efforts will conserve developmental gains and also minimise losses of life, livelihoods and property.

2.9 A typical DM continuum comprises six elements; the pre-disaster phase includes prevention, mitigation and preparedness, while the post-disaster phase includes response, rehabilitation, reconstruction and recovery (Diagram I). A legal and institutional framework binds all these elements together.

Diagram I

#### DISASTER MANAGEMENT CONTINUUM



### Visit to States and Union Territories

3.1 The Vice Chairman and Members of NDMA visited several States and Union Territories and met the Chief Ministers, Governors and Government officials to identify their concerns and priorities in the field of DM. Several meetings were held during these visits with various stakeholder groups to obtain their feedback on strengthening disaster preparedness, mitigation efforts and emergency response capabilities at the national, state and local levels.

### National Disaster Response Force

3.2 The DM Act, 2005 has made the statutory provisions for the constitution of the National Disaster Response Force (NDRF) for the purpose of specialized response to natural and man-made disasters. NDRF has to function under the general superintendence, direction and control of the NDMA. Though the units of this Force were nominated in 2003, it is only after the establishment of NDMA, their training and equipping were vigorously pursued. The rules for functioning of the Force have been notified on 14 February 2008. Procedures for procurement of specialist equipment have been streamlined. Several items of equipment have already been procured and are being used in the training and capacity building efforts as well as in response operations. Training of this Force for natural and man-made disasters, including CBRN emergencies is in progress.

### Mitigation Projects

3.3 Giving due recognition to the paradigm shift in DM, NDMA is initiating a number of disaster mitigation projects. The National Cyclone Risk Mitigation Project (NCRMP) in partnership with the World Bank has been initiated, covering 13 cyclone prone states/ UTs. Other projects which are in advanced stage of planning are the National Earthquake Risk Mitigation Project (NERMP), the preparation of National Reserves for disaster-prone communities, Medical Preparedness and Mass Casualty Management, National Disaster Communication Network (NDCN), National Flood Risk Mitigation Project (NFRMP), National Landslide Risk Mitigation Project (NLRMP), School Safety Project, etc. Studies have also been initiated on Microzonation, Risk Assessment and Vulnerability Analysis.

### Inter-Ministerial Committee

3.4 In January 2006, an Inter-Ministerial Committee (IMC) with Vice Chairman, NDMA as the Chairman was constituted to consider the financial requirements of the States for the long-term rehabilitation and reconstruction in the areas severely affected by heavy rains / cyclonic storms / floods / flash floods during the monsoon season of 2005. The IMC has its Members from Ministry of Home Affairs, Planning Commission, Ministry of Finance and other concerned Ministries such as Department of Agriculture and Cooperation, Ministry of Shipping, Road Transport and Highways, Ministry of Rural Development etc.



3.5 The IMC held various rounds of meetings and submitted its First Report dated 20 October 2006 for Jammu and Kashmir. Altogether the report has been submitted for 15 States/ UTs.

### Mainstreaming Disaster Management in Developmental Plans

3.6 To mainstream the DM into developmental plans, a Working Group (WG) was constituted in partnership with Planning Commission, under the Chairmanship of Dr Mohan Kanda, Member, NDMA. Recommendations of the Working Group for the 11 Five Year Plan have already been submitted to the Planning Commission. The recommendations of the Working Group on Disaster Management, constituted for the XI Plan period (2007-2012), by the Planning Commission also emphasized mainstreaming of DM concerns into the overall developmental effort and measures to fund mitigation projects.

3.7 Meanwhile NDMA has proposed to Planning Commission to put in place a mechanism that will monitor the operationalization of the following arrangements:

- i. All ongoing and new programmes should be revisited to include design components compatible with the requirements of NDMA's guidelines in regard to the different types of hazards in different areas of the country.
- ii. Existing built environment to be audited selectively with a view to retrofitting for disaster-resilience.
- iii. Cabinet Committee on Economic Affairs (CCEA)/ Public Investment Board (PIB)/ Expenditure Finance Committee (EFC) Memos check-lists to include the requirement of compliance with guidelines of NDMA

wherever applicable (structural and non-structural measures).

- iv. All departments concerned of every State Government and every Central Ministry/Department concerned to make appropriate fund provisions - for undertaking measures arising out of their DM Plans prepared by them - as required by DM act and following the issuance of NDMA's guidelines.
- v. Planning Commission may be requested to ensure this aspect while approving annual/five-year plans of Central Ministries/ Departments and States and to keep NDMA closely associated with the process.

3.8 Planning Commission in the XI Five Year Plan (2007-12) document has given special emphasis on Disaster Management in the section 9.3. The highlights of the section are:

- i. Outline actions that need to be taken by the various Central Ministries/ Departments and State Governments.
- ii. Give guidelines for taking up projects and programmes in DM.
- iii. Suggest programmes/schemes that need to be taken up in the 11 Five Year Plan.
- iv. Bring out importance of earmarking plan funds for projects and add value to the National DM effort.

### Steps to integrate DM Measures into the Planning/Budgetary Processes at the National/State Level

3.9 The DM Act, 2005 enables the Central Government to constitute a Fund to be called the National Disaster Mitigation Fund for projects

exclusively for the purpose of mitigation. In its third report on Crisis Management, the Second Administrative Reforms Commission (ARC) recommended an initial annual contribution of Rs 5,000 crore each from the Government of India, in addition to the Calamity Relief Fund (CRF) and National Calamity Contingency Fund (NCCF), which may cease to exist at the end of the award period of the Twelfth Finance Commission. The matter is under examination. The Act also provides for the constitution of a Disaster Response Fund at all levels – National, State and District.

### Coordination of NGOs in Disaster Management

3.10 After its inception, NDMA convened a series of workshops to obtain the feedback from the Non Governmental Organizations (NGOs) to improve disaster preparedness, mitigation and emergency response in the country through mobilizing the participation of a large number of stakeholder groups. As an outcome of these meetings, a National NGO Task Force has been constituted to work out the strategies through a consultative and participatory process.

### Coordination of Corporate Sector in Disaster Management

3.11 Similarly, NDMA organized a series of workshops to obtain feedback from the representatives of various Chambers of Commerce and Industry and Trade Associations on improving disaster preparedness, mitigation and emergency response. These workshops with members of CII, FICCI, ASSOCHAM and other corporate business houses explored the various possibilities for encouraging Public Private Partnerships (PPP) in the field of DM and for streamlining the role of Corporate Sector not only in relief measures but also in mitigation and preparedness.

### Civil Defence and Fire Services

3.12 In order to ensure prompt and effective response to disasters, at the grassroots level, the reorientation of Civil Defence (CD) Organization in the country and upgradation of the Fire Services are of paramount importance. To provide the Government with necessary inputs, a committee headed by Shri K M Singh, Member NDMA has finalized the report on the upgradation of Fire Services and revised role of Civil Defence Organization and the same were submitted to the Government in February and December 2006 respectively. Revamping of Civil Defence organization is likely to be finalized during a meeting to be held with Hon'ble Union Home Minister on 02 April 2008.

### Awareness and Preparedness Campaigns

3.13 Awareness and preparedness campaigns are key components of proactive approach on DM. Three focused campaigns on Earthquake, Cyclones and Floods have been initiated on the electronic and print media at the national as well as states level. These campaigns have generated a lot of awareness amongst the community and other stakeholders.

### Mock Exercises

3.14 To inculcate a culture of preparedness among the Govt and NGOs and to reach out to the community, a number of Table Top and Mock Exercises have been planned throughout the country on various types of disasters – earthquakes, cyclones, floods, fire and chemical (industrial) disasters. These mock exercises have generated a lot of interest, awareness and enthusiasm. Critical gaps in preparedness and response have been identified for remedial actions by the stakeholders.



## Visit of Disaster Management Specialists to NDMA

3.15 After the establishment of NDMA, several distinguished DM specialists and dignitaries visited NDMA and held discussions with the Vice Chairman and Members. They included:

- i. Shri Dorjee Khandu, Hon'ble Chief Minister, Arunachal Pradesh called on the Vice Chairman and Members of NDMA on 8 May 2007 and 21 June 2007.
- ii. Shri KP Rajendran, Revenue Minister, Government of Kerala met the Vice Chairman and Members of NDMA on 8 June 2007.
- iii. Delegation from Kenya called on the Vice Chairman and Members of NDMA on 13 June 2007.
- iv. Dr. M Peterson met the Vice Chairman and Members of NDMA on 18 July 2007.
- v. Mr. Christoph Pusch, World Bank called on the Vice Chairman and Members of NDMA on 31 July 2007 and 10 October 2007.
- vi. Dr. Grant from London Research & Development Institute called on the Vice Chairman and Members of NDMA on 27 September 2007.
- vii. Delegation from Asian Disaster Reduction Centre, Japan called on the Vice Chairman and Members of NDMA on 5 November 2007.

## Advisory Committee of NDMA

3.16 In exercise of the powers conferred by Sub-section (1) of Section 7 of the Disaster Management

Act, 2005 (53 of 2005), the National Disaster Management Authority (NDMA) constituted the Advisory Committee for the NDMA, with the following as Members:

1. Ms. Kumud Bansal, IAS (Retd.)
2. Ms. Sushma Chaudhary, IAS (Retd.)
3. Prof. S. K. Dube, Director, Indian Institute of Technology, Kharagpur
4. Prof. Harsh Gupta, Former Director, National Geophysical Research Institute, Hyderabad
5. Shri Sanjoy Hazarika, Managing Trustee, Centre for North East Studies and Policy Research
6. Dr. P. K. Iyengar, Former Chairman, Atomic Energy Commission
7. Lt. Gen. Davinder Kumar, PVSM, VSM BAR (Retd.)
8. Shri Alok Mukhopadhyay, Chief Executive, Voluntary Health Association of India (VHAI)
9. Dr. R. K. Pachauri, Director General, The Energy & Resources Institute (TERI)
10. Shri R. S. Prasad, Former Chairman, Central Water Commission
11. Dr. D. R. Sikka, Former Director, Indian Institute of Tropical Meteorology
12. Lt. Gen. V. K. Sood, PVSM, AVSM (Retd.), Former Vice Chief of Army Staff

3.18 The constitution of the Advisory Committee was notified on the 14 June 2007. The term of the Advisory Committee shall be two years from the date of the publication of the notification.

### The First Meeting of Advisory Committee of NDMA

3.19 The first meeting of the Advisory Committee for the NDMA was held on 28 August 2007 in Centaur Hotel, Near IGI Airport, New Delhi. The following members of the Advisory Committee for the NDMA attended the meeting:

1. Ms. Kumud Bansal
2. Ms. Sushma Chaudhary
3. Prof. S. K. Dube
4. Prof. Harsh Gupta
5. Shri Sanjoy Hazarika
6. Lt. Gen. Davinder Kumar, PVSM, VSM BAR (Retd.)
7. Shri Alok Mukhopadhyay
8. Shri R. S. Prasad
9. Dr. D. R. Sikka
10. Lt. Gen. V. K. Sood, PVSM, AVSM (Retd.)

3.20 During the meeting the following were the main agenda:

- i. Community Based Disaster Management
- ii. Ongoing Major Interventions in CBDP in India: Assessment and Road Ahead
- iii. National Earthquake Risk Mitigation Project

3.21 A presentation on "Perspective of Disaster Management in the World and India" was made by the Additional Secretary of the NDMA Shri H. S. Brahma. Maj. Gen. R. K. Kaushal (Retd.), Senior Specialist (Policy & Plans) gave a brief account of the "Mandate of the NDMA, Work in Progress and the Road Ahead". The concept of "Earthquake Risk Mitigation Project" was discussed in details by Hon'ble Member of the NDMA Shri N. Vinod Chandra Menon. Hon'ble Member of the NDMA Smt. P. Jyoti Rao made a presentation on "Developing a Participatory and inclusive Mechanism for the DM, with close Participation of the Community, NGOs and Corporate Sector".

# 4

## POLICY, PLANS AND GUIDELINES

### Preparation of National Policy on Disaster Management

4.1 Initially the National Policy on Disaster Management was drafted by the Ministry of Home Affairs (MHA) in July 2004. Later on the task was transferred to NDMA as stipulated in the DM Act, 2005. NDMA started the preparation of the Draft Policy from the very first day of its inception. Initially some inputs on the draft were provided by the MHA to the NDMA.

4.2 NDMA prepared its first draft of the National Policy in September 2006. Several in-house discussions and meetings took place amongst Members of the NDMA and Vice Chairman, NDMA, for finalizing a document for discussion in a larger forum. Subsequently, it was extensively deliberated upon in a National Consultation held on 27 October 2006 at Dr. MCR HRD Institute, Hyderabad, Andhra Pradesh. A large number of representatives from all the Central Ministries/ Departments, States and Stakeholders concerned participated in deliberations.

4.3 During this National Consultation at Hyderabad, several groups were formed. The chairmen of these groups discussed again the group drafts under the chairmanship of Vice Chairman, NDMA.

4.4 Following this, a series of meetings were conducted in the NDMA and another draft was finalized incorporating the inputs received at the

national consultation. This draft was circulated to the Central Ministries/ Departments concerned and it was also sent to several eminent personalities soliciting their comments. A presentation was also made to the Hon'ble Home Minister on 17 November 2006. This draft was forwarded to the MHA on 24 November 2006.

4.5 In all, six drafts of the National Policy have been submitted to the MHA on 21 Sep 06, 24 Nov 06, 28 March 07, 30 April 07, 23 May 07 and 20 Dec 07. The final draft of the Policy is with the MHA and is under circulation to the States and Ministries concerned, before being put up to the Cabinet for approval.

4.6 The National Policy on Disaster Management portrays a paradigm shift from erstwhile Response-Centric approach to the holistic management of disasters with emphasis on Prevention, Preparedness and Mitigation. The Policy document has been evolved in a participatory process taking on board the relevant suggestions and recommendations for it to be a truly defining document for our national endeavour to project the disaster management as a national priority.

### Objectives of the Policy

4.7 In pursuance of the mandate enshrined in the Act, and the national vision, the objectives guiding the NDMA are:

- i. Promoting a culture of prevention and preparedness by ensuring that DM



- receives due priority at all levels;
- ii. Encouraging mitigation measures based on state-of-the-art technology, traditional wisdom and environmental sustainability;
- iii. Making DM concerns built into the developmental planning process;
- iv. Putting in place a streamlined institutional techno-legal framework in order to create and preserve the integrity of an enabling regulatory environment and a compliance regime;
- v. Developing contemporary forecasting and early warning systems backed by responsive and fail-safe communications and Information Technology (IT) support;
- vi. Promoting productive partnership with the media to create awareness and contributing towards capacity development;
- vii. Ensuring efficient response and relief with a caring approach towards the needs of the vulnerable sections of the society;
- viii. Undertaking reconstruction as an opportunity to build disaster resilient structures and habitat; and
- ix. Undertaking recovery to bring back the community to a better and safer level than the pre-disaster stage.

### Disaster Specific Guidelines

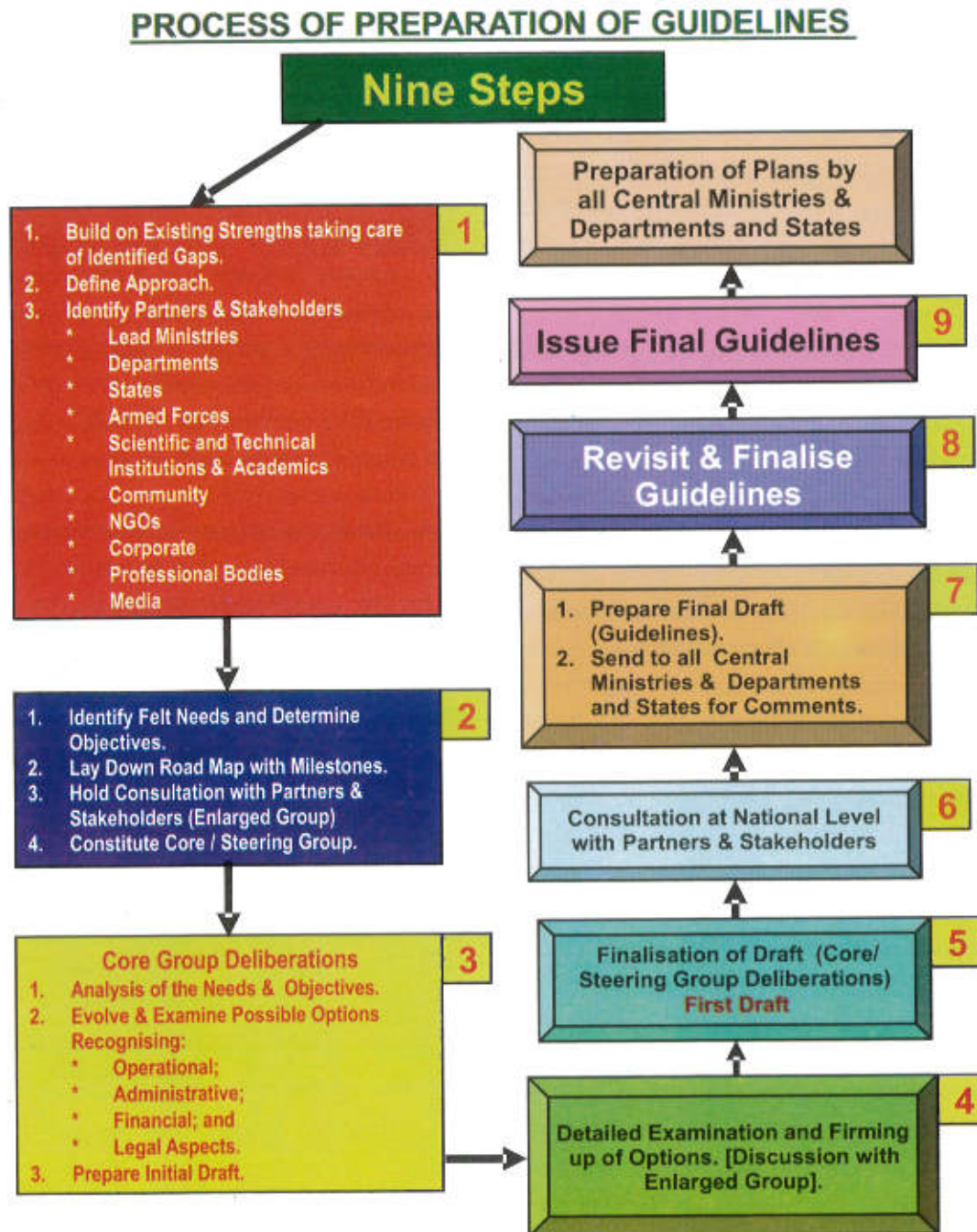
4.8 In order to translate the objectives into plans, the NDMA has adopted a mission-mode approach involving a number of initiatives with the help of various institutions (administrative, academic,

scientific and technical) operating at the national, state and local levels. As a policy, the central ministries and departments and states, have been involved in evolving the guidelines, besides all other stakeholders. These guidelines; based on specific disasters and themes (such as capacity development and public awareness) will provide the basis of preparation of plans. Preparation of these guidelines takes minimum 12 to 18 months, depending upon the complexity of the subject. The approach to formulation of guidelines has comprised a '**nine-step**' participatory and consultative process with stakeholders as shown in figure 4.1.

### 4.9 The Strategy comprises:

- i. A quick review of the studies conducted, disaster-wise, of the actions/steps so far taken by various agencies including the Central Ministries, States, Scientific and Technical Institutions etc.
- ii. Identification of the residual agenda in terms of operational, administrative, financial and legal issues.
- iii. The drawing up of a roadmap to the destination duly indicating milestones to facilitate easy monitoring.
- iv. In terms of goals and objectives, screening down the destination is to be attained, in the short, as well as long term, duly prioritized as vital, essential and desirable.
- v. Four important questions are to be answered: i.e. what is to be done?, how it is to be done?, who will do it?, and by when?
- vi. Putting in place an institutional mechanism that oversees the operationalization of this roadmap.

Figure 4.1





4.10 NDMA has adopted the method of discussing the strategy first in Expanded Groups, and finalizing a draft in a Core Group to be approved again by the Expanded Group and then canvassed with the other stake-holders. A roadmap is then put in place to ensure the operationalization of these guidelines.

4.11 Following guidelines have been released so far by the NDMA –

- i. Revamping of CD & Fire Services – December 2006.
- ii. Guidelines for NIDM – 13 April 2006.
- iii. Earthquakes – 16 May 2007.
- iv. Chemical (Industrial) Disasters – 28 May 2007.
- v. Formulation of State DM Plans – 16 August 2007.
- vi. Medical Preparedness and Mass Casualty Management – 14 November 2007.
- v. Floods – 17 January 2008.

### Earthquake Guidelines

4.12 The NDMA has formulated guidelines on Earthquakes through an all inclusive and participatory process in which wide consultations were held with all important stakeholders like academics, scientists, technocrats, architects, engineers, and the representatives of central ministries, departments concerned and the states. All the important and leading institutions have also contributed. Over 300 experts have been involved in the formulation of the earthquake guidelines.

4.13 The approach to the management of earthquakes in India, in these guidelines, envisages the institutionalization of initiatives and activities based on scientific strategies, covering pre-earthquake components of prevention, mitigation



Release of Earthquake Management Guidelines

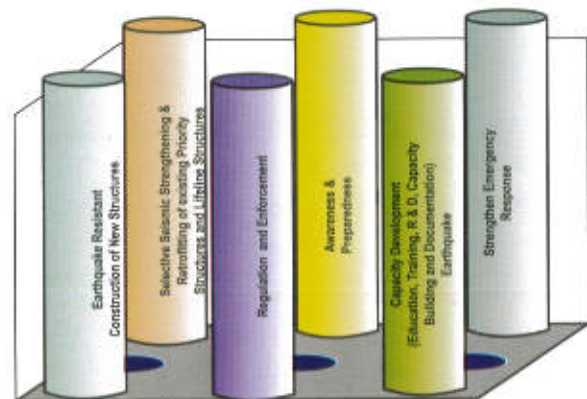
and preparedness and post-earthquake components of emergent response, rehabilitation and recovery. The objective of these guidelines is also to evolve a community that is informed, trained and prepared to face such disasters.

4.14 The Guidelines were released by Shri Shivraj V Patil, Hon'ble Minister of Home and Shri Kapil Sibbal Hon'ble Minister for Science & Technology on 16 May 2007 in the presence of 150 dignitaries at Vigyan Bhawan, New Delhi. The Guidelines have been forwarded to Central Ministries/ Departments and States to assist in the formulation of earthquake disaster management plans.

### Highlights of Earthquake Disaster Management Guidelines

4.15 The strategy to deal with the earthquakes is based on six pillars as shown below-

#### SIX PILLARS FOR EARTHQUAKE MANAGEMENT IN INDIA



These guidelines have been prepared to reduce the impact of earthquakes in the short term and the earthquake risk in the medium and long term.

### Chemical (Industrial) Disaster Management Guidelines

4.16 The chemical industry is a crucial component of the ongoing remarkable industrial growth in India. The increased production, storage/and use of hazardous chemicals (hazchem), is associated with escalation of threat of major accidents. The handling of large quantities of hazchem including spills and accidents in industries, installations, isolated storages, and during transportation of dangerous goods (road, rail, air & pipelines); leakages of chemicals, sudden release of copious quantities of toxicants, marine spills resulting in large-scale oil/chemical leaks pose grave risks by adverse impact on the communities, flora/fauna and the environment. Chemical releases can be unintentional, as in the case of an industrial accident, or intentional, as in the case of a sabotage activity or terrorist attack.

4.17 In view of the above, National Authority took initiative to formulate National Guidelines on



Release of National Guidelines on Chemical (Industrial) Disaster Management

Chemical (Industrial) Disaster Management as per nine-step process. To test the On-Site and Off-Site Emergency plans of various chemical industries, simulation exercises were conducted at NOIDA, Uttar Pradesh (06 Oct 2007); Gurgaon, Haryana (01 Dec 06) and Pithampur, Dhar District, Madhya Pradesh (12 March 07). The simulation exercises were conducted in three steps viz. Orientation-cum-Coordination Conference, Table Top Exercise and the Mock Exercise. The lessons learnt during these exercises were also incorporated in the final draft.

4.18 The Guidelines were released by Shri Oscar Fernandes, Hon'ble Minister of State- Labour and Employment (Independent Charge) on 28 May 2007 in the presence of 150 dignitaries at India Habitat Center, New Delhi. The Guidelines have been forwarded to Central Ministries/ Departments and States to assist in the formulation of Chemical Disaster Management (CDM) Plans. The nodal Ministry will continue to be responsible for CDM and based on these Guidelines will prepare the detailed Action Plan for CDM in due consultation with other stakeholders, expert bodies and organizations in the field. The plans prepared by the Central Ministries/Departments and State Authorities shall be submitted to NDMA/SDMA through NEC/SEC respectively for approval.

4.19 Chemical (Industrial) Disaster Management Guidelines were also launched at National Conferences on Chemical (Industrial) Disaster Management Awareness held at various places to reach to the stakeholders easily and efficiently. In Mumbai, Maharashtra it was launched on 01 June 2007, in Vadodara, Gujarat it was launched on 8-9 August 2007, in Goa on 15-16 November 2007, in Hyderabad on 28-29 February 2008, while in Kolkata on 27-28 March 2008.



## Salient Features of the Chemical (Industrial) Disaster Management Guidelines

4.20 Following are the salient features of the Chemical (Industrial) Disaster Management Guidelines:

- i. Detailed analysis of existing regulatory framework, identified gaps, recommendations on preparation and implementation of on-site and off-site emergency plans has been done in these guidelines.
- ii. Substantial improvement in Medical Emergency Management for improving the time lines of reaching & shifting the victims to treatment facilities has been focused.
- iii. Areas widely and comprehensively covered in the guidelines are – transportation of hazardous chemicals through all available modes, viz., roads, rail, air, marine and very significantly through pipelines.
- iv. Under each category comprehensive details on planning features for improvisation to meet any incidences/ eventualities has been included and the best operating practices available in the most developed country have been discussed and included in the guidelines for conversion into action plan.
- v. The chapters on toning up Regulatory Framework, Minimizing Inter and Intra Ministry Enforcement and Monitoring of Multiple Regulatory Framework have been included to bring in much awaited and promised simplified and

meaningful regulation for speedy delivery of results.

- vi. The implementation plans in all these sectors governing hazardous chemicals have been prepared with NDMA's Principle on Chemical Disaster Management that, "Chemical Disasters are not only preventable but eliminable" and the doctrine is followed in the guidelines in letter and spirit. The guidelines also provide to the nodal ministry the NDMA's view point – inclusion of various activities under immediate, short term and long term measures in the larger interest of the public.

## Guidelines for Preparation of State Disaster Management Plans

4.21 To assist and facilitate the States in preparing their State Disaster Management Plan, NDMA has also prepared "Guidelines for Preparation of State Disaster Management Plans. The same has already been issued to all States on 17 August 2007.

## Basic Features of Guidelines for Preparation of State Disaster Management Plans

4.22 The NDMA has framed guidelines for the preparation of state disaster management plans in which an outline to be followed by the states for preparing the plan has also been indicated.

4.23 The framework of the plan should highlight the paradigm shift in DM from a relief-centric approach to a regime that anticipates the importance of preparedness, prevention and mitigation. The plan should:

- i. Take into account the socio-cultural



- realities of the state.
- ii. Be in harmony with national, district, block, village and community level plans and should incorporate implementation strategies as well as indicate specific monitoring mechanisms.
  - iii. Develop a base line and identify the total risk and also agree on the minimum acceptable level of risk.
  - iv. Incorporate Medical Preparedness and Mass Casualty Management.
  - v. Include the essentials of a scientific approach in damage assessment exercise so that timely and adequate relief can be provided.
  - vi. Identify emergency management problems with spatial aspects appropriate for Geographic Information System (GIS).
  - vii. Lay due emphasis on the conduct of mock exercises and drills for different disasters.
  - viii. Incorporate modalities for inter-state coordination as worked out in consultation with the neighbouring states.
  - ix. Include details of international coordination as worked out for states sharing common international boundaries in consultation with the Central Government and the NDMA.

4.24 Besides the operational aspects for the preparation of state disaster management plans, some other aspects have also been mentioned into the National Disaster Management Guidelines for Preparation of State Disaster Management Plans.

These include the administrative, financial and legal aspects. Some important features of these are as follows:

- i. The State Plan must be in accordance with the overall developmental plans. The plan should also be in conformity with the state DM Policy.
- ii. The systems and institutions for implementation of the plans must be clearly identified and spelt out. The plan should explicitly take note of the available NDRF, Civil Defence, Home Guards, Youth and Students Organizations etc. Specific plans for capacity building and training should also be included in a separate chapter.
- iii. Public-Private Partnerships should be factored into the DM approach and the modalities through which these will work also need to be incorporated.
- iv. A mechanism must be put in place to ensure that the plan is updated on a regular basis (at least once in a year) and is able to accommodate changes over time.
- v. Reflect the provision of adequate funds for the requirements of relief material when disaster strikes, estimated on the basis of past experience. Care should also be taken to make full provision for the requirements of forces deployed on these occasions.
- vi. Put in place techno-legal regimes; e.g., amending building bye-laws, bringing in flood plain zoning legislation, etc.
- vii. Designate the nodal department for

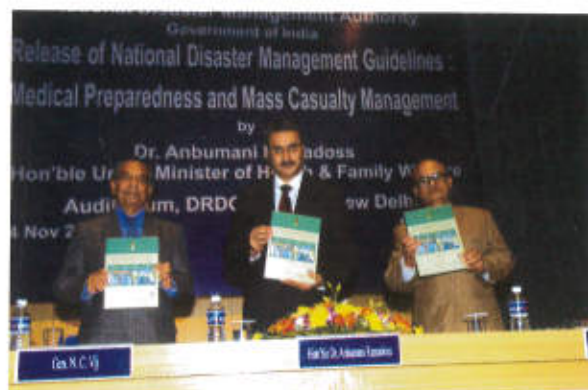
- coordinating formulation of the state plan.
- viii. Identify the focal point in each relevant department; consisting of a core group of officers and provide for adequate training to professionalize their approach.
- ix. Describe the consultative process with local authorities, district authorities and people's representatives.

### National Guidelines on Medical Preparedness and Mass Casualty Management

4.25 The National Disaster Management Authority took up the task of strengthening medical preparedness in recognition of gravity of the health risks posed by both natural and man-made disasters. The main stakeholders in the Management of Medical Preparedness and Mass Casualty Management (MPMCM) are the Ministry of Health and Family Welfare (MoH&FW); Ministry of Labour and Employment (MoL&E) through Employees State Insurance Corporation (ESIC); Ministry of Defence (MoD); Ministry of Railways (MoR); state governments and Union Territories (UTs) including their Director General Health Services and health care providers.

4.26 A core group and a steering group of experts were constituted and assigned the role in preparing the Nation to address the issue of Medical Preparedness and Mass Casualty Management. The core group in a participative and consultative approach drafted the guidelines by carrying out a situational analysis of the technological initiatives taken at the national and international level.

4.27 The National Guidelines on Medical Preparedness and Mass Casualty Management



Release of National Guidelines on Medical Preparedness and Mass Casualty Management

were released by Shri Anbumani Ramadoss, Hon'ble Minister – Health and Family Welfare on 14 November 2007 in the presence of over 150 dignitaries at Defence Research and Development Organization (DRDO) Bhawan, New Delhi. The guidelines have been forwarded to Central Ministries/ Departments and States to guide in the formulation of Medical Preparedness and Mass Casualty Management plans. The nodal Ministry will continue to be responsible for MPMCM and based on these Guidelines will prepare the detailed Action Plan for MPMCM in due consultation with other stakeholders, expert bodies and organizations in the field. The plans prepared by the Central Ministries/Departments and State Authorities shall be submitted to NDMA/SDMA through NEC/SEC respectively for approval.

### Salient Features of the National Guidelines on Medical Preparedness and Mass Casualty Management

4.28 Following are the salient features of the National Guidelines on Medical Preparedness and Mass Casualty Management:

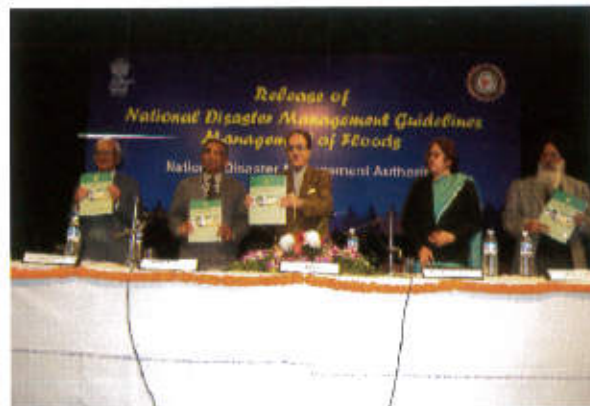
- i. Provision of Mobile hospitals at strategic locations earmarked by states/ districts for on-site treatment of large number of casualties.



- ii. Development of Integrated Ambulance Network (IAN) of Ambulances, Heli-ambulances, Accident Relief Medical Vans (ARMVs) of Railways, and Boat/Ship ambulances with inter-district evacuation services as a part of evacuation plan.
- iii. Development of new research and development models by adoption of global best practices after testing in the indigenous conditions.
- iv. Development of strategy to be adopted to integrate private health care sector for medical management of mass casualty events.
- v. Development of specialized facilities like trauma centres, blood banks, poison information centres, burn centres, bio-safety laboratories, network of diagnostic, public health and DNA identification laboratories and mortuary facilities at all levels.
- vi. Preventive measures including strengthening of Integrated Disease Surveillance Programme, Epidemic Control Programmes, Immunization, HIV control etc. will be undertaken.
- vii. Development of provisions for emergency medical response at incident site and availability of trained Medical First Responders/ Quick Response Medical Teams for triage, resuscitation and treatment at the incident site within golden hour.
- viii. Development of hospital disaster management plans at various levels with provisions for crisis expansion of beds, medical logistics including life saving drugs and equipment.
- ix. Development of specialized facilities including adequate personal protective gears, detection equipment, decontamination facilities, decorporation agents, antidotes, essential medicines and specialized teams from NDRF and SDRFs.
- x. Provide psycho-social support and mental health services integrated with general health care services.

### National Guidelines – Management of Floods

4.29 National Disaster Management Authority released the National Disaster Management Guidelines on Flood Management on 17 January 2008, at Andhra Bhawan, New Delhi. Prof. Saifuddin Soz, Hon'ble Union Minister of Water Resources, released the guidelines.



Release of National Disaster Management Guidelines on Flood Management

### Salient Features of the National Guidelines – Management of Floods

4.30 Following are the salient features of the National Guidelines – Management of Floods:

- i. Preparation of flood risk maps.
- ii. Enactment and enforcement of flood



- plain zoning regulations including laws for prevention of reclamation of low lying areas, depressions, chauras and conservation of natural lakes and ponds.
- iii. Expansion of modernization of flood forecasting and warning services to all the flood prone rivers and rivulets.
  - iv. Time bound implementation of structural measures for prevention of flooding, erosion and drainage congestion.
  - v. Implementation of a system of inspection, maintenance and restoration of structural measures.
  - vi. Establishing River Basin Organizations for effective inter-state coordination with respect to flood management.
  - vii. Introduction of flood insurance scheme in flood prone areas for providing compensation for loss of life and property to the flood affected people.
  - viii. Establishment of coordination mechanisms, involving central agencies and basin states, for operation of reservoirs for optimizing flood moderation along with other uses and ensuring safety of the dam and other structures.
  - ix. Capacity building measures in the form of education, training, awareness campaigns and involvement of community based organizations, non-governmental organizations and corporate sector along with the government agencies in prevention, preparation and mitigation in the pre-flood stage and response, relief and recovery during and after floods.
  - x. Enhancing states' capacity of flood response by providing them equipment for search and rescue.
  - xi. Formulation of flood management plans by the central ministries and departments, state governments and other stakeholders and their time bound implementation.
  - xii. Preparation and implementation of medical preparedness plans to provide healthcare services during and after floods.
  - xiii. Construction of flood shelters and ensuring that public utility installations are above flood level height.

#### Guidelines under formulation

#### Guidelines on Cyclone

4.31 The guidelines on cyclone are being formulated. A national level workshop was organized on 20 -21 April 2006 at Gujarat State Disaster Management Authority (GSDMA), Ahmedabad to assess the present status, identifying the gaps, set targets and identify the tasks and agencies encompassing all the facets of Cyclone Disaster Management. Thereafter, a core group was constituted to draft the National Management Guidelines on Cyclone. The first meeting of the core group held on 24 May 2006, deliberated on all aspects of cyclone DM. Thereafter it decided to form five sub groups to focus on Cyclone Monitoring and Early Warning System, Cyclone Warning: Communication and Dissemination, Response, Structural Measures for Preparedness and Mitigation, Mitigation Measures for Coastal Zone Management and Hazard Risk Management and Capacity Development. Sub Groups deliberated in numerous meetings, besides field visits to Andhra

Pradesh, Maharashtra, Orissa and Tamilnadu. Interaction is also being held with Academic, Scientific and Technological Institutions and eminent experts.

#### Preparation of the Guidelines on Management of Nuclear and Radiological Emergencies

4.32 The Guidelines on Management of Nuclear and Radiological Emergencies duly vetted by the Department of Atomic Energy and the Atomic Energy Regulatory Board (AERB) with subsequent incorporation of the comments received from the various ministries/agencies are ready for release.

#### Preparation of National Disaster Management Guidelines – Management of Biological Disasters

4.33 Biological disasters encompass outbreak of epidemic diseases, animal or plant contagion, insect plagues etc. affecting a wide swath of community, biotic and abiotic systems, accidental exposure to pathogenic microorganisms or toxins or deliberate use of viruses, bacteria or bioactive agents by anti-social elements, which can cause loss of life, crop damage, social and economic disruptions or environmental degradation. In recent years, biological disasters including bioterrorism have assumed serious dimensions and pose far greater threat to health, environment and national security. Risks and vulnerabilities of our food and agriculture sectors to agro-terrorism could also be very damaging.

4.34 Therefore, the need of specifically formulated guidelines was found necessary for all the ministries/departments concerned, states/district entities, emergency functionaries, specialized responders, decision makers, NGOs, hospitals (government, local bodies, private and others),

health care providers at Center, State and District levels and all the stakeholders that are connected directly or indirectly with biological disaster management to mitigate the effects of biological agents.

4.35 Meetings of the core group under the chairmanship of Lt. Gen (Dr.) J R Bhardwaj, PVSM, AVSM, VSM, PHS (Retd), Member NDMA, were held on 17 May 07, 29 June 07, 17 July 07, 03-09 September 07 and 05 Nov 07 respectively to assist NDMA in preparing the National Guidelines on Management of Biological Disaster (including terrorism). A consensus has been evolved on several issues in the meetings in consultation with ministries concerned, regulatory bodies and industries involved. The work on the compilation of the draft guidelines is in the final stages.

#### Preparation of National Disaster Management Guidelines – Management of Chemical (Terrorism) Disasters

4.36 United Nations panel (November, 2004) described terrorism as 'an act intended to cause death or serious bodily harm to civilians or non-combatants with the purpose of intimidating a population or compelling a government or an international organization to do or abstain from doing any act'. The terrorist attack involving chemical agents differs from the other terrorist attack, as it presents specific health effects to a larger population in the shortest possible period, hence creating greater panic to the community. The incidences of terrorist threats have shown a gradual but steady rise globally over the recent past. In the present global threat scenario posed by Al Qaeda and other fundamental groups, India is equally prone to terrorist activities. The management of chemical weapons and other related intelligence issues are in the domain of MoD and intelligence agencies. However, the preparedness for



management of Chemical Terrorism Disasters (CTD) being common for both types of agents need to be addressed in detail.

4.37 The issue of chemical disaster was deliberated during a 'National Workshop on Chemical (Terrorism) Disasters' held on 22-23 Feb 07 at NDMA, New Delhi, which was attended by nearly 100 stakeholders.

4.38 The chemical (terrorism) core group under the chairmanship of Lt. Gen (Dr.) J R Bhardwaj, PVSM, AVSM, VSM, PHS (Retd), Member NDMA, met on 7 June 07, 9-10 July 07, 05 Sep 07 and 19 Nov 07 and reviewed the present status in the country. The draft of National Guidelines on Chemical (Terrorism) Disasters has been formulated.

#### Preparation of National Disaster Management Guidelines – Psycho-Social Support and Mental Health Services

4.39 Medical Preparedness for effective disaster management has number of aspects that were not paid much attention in the past. One of the most important aspects is the provisions of providing Psycho-Social Support and Mental Health Services (PSSMHS) to the survivors of the natural and man-made disasters. Activities under PSSMHS range from the emotional first-aid, guilt-syndrome, and depression to post-traumatic syndromes. A large number of cases of Post-Traumatic Stress Disorders (PTSD) were reported in aftermath of Tsunami, 2004 which gradually reflected the lack of awareness in this particular sector. Further the issues of care of carers, long-term management of survivors are also of great importance. The integration of this sector in the preparedness for rehabilitation and recovery activities to be performed in the aftermath of disasters is the biggest challenge of the present system.

4.40 NDMA as mandated by DM Act 2005, has decided to focus on this particular sector during the deliberations of core group of medical preparedness and mass casualties management. It was then decided to formulate a separate document on issues of "Psycho-Social Support and Mental Health Services". Accordingly, a steering group of eminent persons drawn from the field of Psychiatry, Clinical Psychology, and Psychiatric Social Work from the major mental health and disaster management institutions in the country, administrators, NGOs representatives, funding agencies and UN Agency was constituted.

4.41 The sub-steering group has met initially on 26 April 2007 at NDMA, New Delhi. The group has outlined the content of the guidelines during the second meet at NDMA. The draft guidelines formulated on the basis of the inputs received during various meetings has been reviewed at AFMC, Pune and NIMHANS, Bangalore respectively. The work on the compilation of the draft guidelines is in the final stage.

#### Preparation of National Disaster Management Guidelines – Minimum Standards of Relief for Food, Water, Medical Cover and Sanitation during Disasters and Disposal of Dead

4.42 A "National Conference on Minimum Standards of Relief for Food, Drinking Water, Medical Cover and Sanitation during Disaster" was held on 26-27 February 2008. Consequent to the conference National Authority has constituted a core group under the chairmanship of Lt. Gen (Dr.) JR Bhardwaj, PVSM, AVSM, VSM, PHS (Retd), Member NDMA, for preparing "National Guidelines on Minimum Standards of Food, Drinking Water, Medical Cover and Sanitation for Disaster Relief". The guidelines are in initial stage and it will take another 6 to 8 months to come in a draft form.



# 5

## DISASTER PREPAREDNESS & COMMUNITY AWARENESS

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### Communication Support for Disaster Management

5.1 NDMA has planned the design of an integrated disaster communication network to ensure connectivity of all the stakeholders before, during and after the disasters. This network is conceived to be a fail-safe, multi-faceted and highly reliable communication network with adequate redundancy at each level, building on the existing telecommunication facilities and infrastructure available with the Government and private sector. Some of its important features are as follows:

- i. It will ensure voice, data and video connectivity for all the stakeholders before, during and after the disasters.
- ii. It will ensure the restoration of disrupted communication at the disaster site and fail-safe last-mile connectivity to disaster affected areas.
- iii. It will provide Multi-Lingual Voice Connectivity upto the Village Level, through terrestrial and microwave-based Communication and Information Technology System and Data Connectivity upto the 'clusters of villages' through Fibre Optic Cable-based 'Community Service Centres' (CSCs).

### Medical Preparedness

5.2 In the recent past, India has witnessed numerous mass casualty events including the Latur Earthquake, Orissa Super Cyclone, Bhuj Earthquake, Indian Ocean Tsunami in the Southern Coastal States and Andaman & Nicobar Islands and J&K Earthquake causing large scale damage to life, property and environment. The unexpected disasters of such magnitude and our capability to cope with them highlighted the need for high level of preparedness for addressing the emergency medical health needs of disaster affected communities. The lessons learnt from these disasters revealed the need for the establishment of a community-centric institutionalized mechanism to prepare, prevent, mitigate and respond at all levels so that the adverse effects can be minimized in terms of mortality and morbidity. Medical management of mass casualties is an 'all-hazard' concept where practically every Ministry/ Department, along with the private sector health providers, will be playing a role, directly or indirectly, with the Ministry of Health and Family Welfare, Gol acting as the nodal ministry.

### Civil Defence and Home Guards

5.3 The mandate of the Civil Defence and the Home Guards is proposed to be redefined to play an effective and meaningful role in the DM in India.

As an important part of the DM structure, they will also contribute in community preparedness and public awareness at the grassroots. Under the aegis of the State and District Disaster Management Authorities, the Civil Defence and Home Guards will also be key responders. Efforts will be directed to upgrade them progressively to be able to contribute significantly in DM functions. Further, a culture of voluntary reporting of Civil Defence personnel to their designated duty stations in the event of any disasters will be promoted.

5.4 The Civil Defence Policy of the Government of India, till 1962, remained confined to making the states and UTs conscious of the need for civil protection measures and to prepare civil protection plans for major cities and towns under the Emergency Relief Organization Scheme. However, following the Chinese aggression in 1962 and the Indo-Pak conflict of 1965, there was considerable rethinking on the policy and scope of Civil Defence (CD) Act, 1968. Since then the organization has been functioning as per the provisions of the Act. Even though 225 towns have been identified as CD towns, it is currently operational in only 124 towns.

5.5 During the seventies, CD was successful in mobilizing citizens to assist civil administration in their functions and supporting the Armed Forces during hostile attacks. While the global geo-political factors have reduced the chances and occurrence of traditional wars, new challenges have emerged for the community in the form of terrorism, natural calamities or human-induced disasters, resulting in large-scale destruction of property, loss of human lives and disruption of normal life in society. Since the community is invariably the first responder to any disaster situation, adequate awareness and preparedness of the community to respond to any such situation can be crucial in mitigating the damage and the suffering. The CD being a community-based

voluntary organization can, in addition to rescue, relief and rehabilitation, play a stellar role in the field of public awareness and community capacity building, as is being done by the CD in many countries.

5.6 Keeping in mind the huge requirement of resources and the need for Community Participation in the Disaster Management the Government by an executive order had approved the utilization of Civil Defence for Disaster Management. It also set up a High Powered Committee under Shri K.M. Singh, Member, NDMA, to suggest measures for revamping the Civil Defence set up. The Committee submitted its report to the Government in December, 2006. The main features of the recommendations of the Committee are:-

- i. Conversion of the Civil Defence set up from being Town Centric to District Centric.
- ii. A small but permanent cadre of eight CD trainers in each District, who will continuously train CD volunteers from village to village in Disaster Management activities.
- iii. Revamping of Civil Defence Training Centre in each State and set up new ones in States which do not have any.
- iv. Amend the Civil Defence Act of 1968 to incorporate Disaster Management duties also.
- v. Allow Private Sector Contribution to the Civil Defence set up and if possible give them Income Tax rebate to that contribution.

5.7 Revamping of Civil Defence organization is likely to be finalized during a meeting to be held with Hon'ble Union Home Minister on 02 April 2008.



5.8 While waiting for the final decision and orders of the Govt. on the above, discussions and consultations have already been started to work out the strategy for extending the Civil Defence set up in non-operationalised towns and strategies for covering the whole district and not just the towns only. In this connection a series of meetings and workshops have been planned. Meeting with Bihar Government was conducted on 20 August 2007 at Patna. A similar meeting was held with some private sector company heads at Jamshedpur on 20 November 2007 to work out Public Private Partnership in the Civil Defence. More such discussions are slated with various other States and other stakeholders.

5.9 A one day meeting was also organized on 28 January 2008, at NDMA, New Delhi to discuss and prepare for the presentation on the revamping of the Civil Defence before the Civil Defence Advisory Committee scheduled to be held later. The CD official of Delhi and other States were invited for participation.

5.10 In view of the addition of role in Disaster Management in the job profile of Civil Defence volunteers, a core group meeting was organized to discuss training needs of Civil Defence Volunteers at NDMA, New Delhi on 21 March 2008. Representatives of Civil Defence of various states and USAID representative and officers were invited and it was decided that a training curriculum on Civil Defence volunteers will be developed in collaboration with USAID/IRG. The core group also discussed strategy for curriculum development. It was decided that four regional consultation workshop will be conducted in various regions of the country involving personnel of CD to elicit the training needs directly from the stakeholder. The workshop scheduled was named as 'Manthan' as it would be a churning effort.

## Community-Based Disaster Management

5.11 During any disaster, community is always the first responders. Community participation ensures local ownership, addresses local needs, and promotes volunteerism and mutual help to prevent and minimize damage. Therefore, the efforts of the States/UTs, in this regard will be supported through robust campaigns to make communities understand their vulnerabilities and the lead role that they can play in managing risks with less dependence on external entities.

## Public Private Partnership

5.12 With the increasing frequency of natural and man-made disasters, there is an urgent need to mobilize and expand the efforts of disaster preparedness, risk mitigation and effective response. As a part of mobilizing critical stakeholders in professionalizing DM, NDMA has initiated the process of interaction with the corporate sector to understand and define corporate sector's role in DM. Corporate sector has contributed in post-disaster relief and it has also been identified that their role in disaster preparedness and mitigation is significant.

5.13 A meeting on importance of the role of corporate in Disaster Management was organized at NDMA, New Delhi with officials of FICCI on 14 January 2008. A road map for involving the corporate sector in disaster management was discussed. It was also decided to hold a detailed meeting of FICCI officials to take forward the involvement of different companies in disaster management.

5.14 A meeting was organized on 21 January 2008 at FICCI, Federation House, New Delhi with Member, NDMA. It was decided that NDMA and



FICCI would work together in the following three areas and FICCI would act as an 'industry-interface partner' in the management of disaster in country. A meeting with CII officials was held on 22 February 2008 to organize a series of seminars on Business Continuity Management at Delhi, Mumbai and Bangalore. It was also decided to launch the BS 25999 series of management system standards recently published by the British Standard Institute which combine the established Business Continuity Management and Disaster Recovery Methodologies with the systems approach which is an easy format for adoption by organizations belonging to all sectors and sizes.

5.15 A meeting was organized with Response Net & Admatrix on 7 March 2008 at NDMA to organize a two days Conference on 'International Disaster Management: Operationalizing Public Private Partnership for Disaster Management'. It was decided that the awareness generation for communities on potential disaster response across the geographic spread of India and identify and incorporate the strength of corporate through Public Private Partnership model. The conference would target all Navaratnas, Mini Navaratnas and other leading corporate of the country and abroad.

5.16 A meeting was held with FICCI on 12 March 2008 at NDMA to organize a National Conference on Corporate Role in Disaster Management. In the meeting it was decided to conduct an intensive interaction with corporate on defining the role of corporate sector and working out modalities for an effective partnership in the field of disaster management.

### Mock Exercises

5.17 To facilitate the State Governments in reviewing the adequacy and efficacy of the State and selected District/s Disaster Management Plans

and to identify gaps in resources, communications and systems, NDMA in coordination with the vulnerable States, has undertaken the initiative of conducting Mock Exercises on various types of natural and man-made disasters. This will also help in inculcating a culture of preparedness among the community and the first responders.

5.18 The Mock Exercises are being conducted in a systematic step-by-step approach as follows:

Step 1. Orientation-cum-Coordination Conference, to sensitize the various stakeholders and delineate their roles and responsibilities during the Table-Top and Mock Exercises.

Step 2. Conduct of Table-Top Exercise. The key stakeholders present their response DM plans; thereafter the scenarios are simulated in various levels from preparedness to early warning to rescue and relief phases and response of the stakeholders is sought. Independent observers are detailed.

Step 3. Actual conduct of the Mock Exercise takes place by mobilization of the resources according to developing situations. The situations are conceptualized to derive certain lessons. At conclusion of mock exercises, detailed debriefing takes place where observers and stakeholders give their views. The gaps identified are



Mock Exercise on Earthquake in East Khasi Hills District, Meghalaya



communicated to the Chief Secretary of the State/ MD of industries for follow up action.

5.19 The implementation of the above initiative by the NDMA started in September 2006. During 2007-08 altogether 20 Table Top and Mock Exercises were conducted throughout the country on various types of disasters, namely earthquakes, cyclones, floods, urban fire, chemical (industrial) Mock Exercises conducted by NDMA from 1st April, 2007 to 31st March, 2008

and man-made disasters. These mock exercises have generated a lot of interest, awareness and enthusiastic response. Critical gaps in preparedness and response have also been identified for remedial actions by the stakeholders.

5.20 These Mock Exercises have had a useful and lasting impact. The response capabilities of the different States / Districts / Major Accident Hazards

Sr. No.	Date	Hazard/Disaster	Location
01.	8 & 9 May 07	Earthquake	Uttarkashi, Chamoli, Pithoragarh and Bageshwar Districts of Uttarakhand
02.	18 May 07	Floods	Nalbari District of Assam
03.	25 May 07	Floods	Ainavilli, Gannavarm and Amalapuram Taluks of East Godavari District, Andhra Pradesh
04.	13 Jun 07	Chemical (Industrial) Disaster	Mangalore Chemical & Fertilizers Ltd. (MCFL) and New Mangalore Port Trust (NMPT), Mangalore, Karnataka
05.	19 Jun 07	Cyclone	Kendrapada and Jagatsinghpur Districts of, Orissa
06.	23 Aug 07	Chemical (Industrial) Disaster	Andhra Petro Chemical Limited and Coromandal Limited, Vishakhapatnam, Andhra Pradesh
07.	8 Sept 07	Urban Fire & Bomb Diffusion	Koramangla National Games Complex Residential Area, Bangalore, Karnataka
08.	18 Sept 07	Urban Fire	Kral Khud Area of Hebba Kadal in Down Town Srinagar, J&K
09.	24 Sept 07	Chemical (Industrial) Disaster	Hindustan Zinc Ltd. (HZL), Chittorgarh, Rajasthan
10.	18 Dec 07	Urban Fire	Kanchanjunga Shopping Complex, Lal Bazar, Gangtok, Sikkim
11.	8 Jan 08	Chemical (Industrial) Disaster	Travancore Cochin Chemical Limited (TCCL), Hindustan Insecticides Limited (HIL), and Fertilizers & Chemicals Limited, Travancore (FACT), Kochi, Kerala
12.	14 Feb 08	Terrorist Attack, Gas Leak, Fire and Bomb Diffusion.	Four Metro Stations of DMRC, namely Rajiv Chowk, Chawri Bazar, Rithala and Shastri Park.
13.	25 Feb 08	Chemical (Industrial) Disaster	ONGC Refinery, Digboi, Assam
14.	14 Mar 08	Cyclone	Cuddalore District, Tamil Nadu.
15.	14 Mar 08	Cyclone	Puducherry District, Puducherry.
16.	15 Mar 08	Cyclone	Kancheepuram, Tamil Nadu
17.	19 Mar 08	Earthquake	Pappumpare District, Arunachal Pradesh
18.	24 Mar 08	Earthquake	East Khasi Hills District, Meghalaya
19.	25 Mar 08	Earthquake	Jaintia Hills District, Meghalaya
20.	28 Mar 08	Chemical (Industrial) Disaster	ONGC, Kribhco and Reliance Industries in Hazira, Surat, Gujarat.





Mock Exercise on Cyclones in Kendrapada District of Orissa (MAH) Units got reviewed. It also helped in role clarity for the different stakeholders. Most importantly it has resulted in identifying the various gaps and deficiencies that exist in the response capabilities. Follow up action will ensure rectifying and plugging the gaps for better response.

## SUCCESS STORIES AND SALIENT FEATURES OF THE MOCK EXERCISE

5.21 All the mock exercises have generated a very positive response and participation from the community, as well as first responders. These mock exercises have generated tremendous enthusiasm among the concerned stakeholders. These events are being well covered by the electronic and print media. The principal gain of all these mock



Decontamination Activity during the Mock Exercise on Chemical (Industrial) Disaster in Vishakhapatnam, Andhra Pradesh

exercises is that all stakeholders are now getting familiar with their roles and responsibilities in the event of a disaster and their capabilities to achieve them. Also these exercises are spreading general awareness, especially at the community level. In some of the mock exercises, the participation of political leadership evoked good response. The authorities and community showed keen interest to learn.

5.22 These mock exercises have also provided several lessons regarding disaster management at



Jaintia Hills District, Meghalaya

various levels. The concept of Incident Command Post (ICP) or Control Room is not clear to the district officials in most of the districts. They need to be educated, trained and practiced in functioning of ICP/ Control Room at district level. The Alert system at village/ community level needs to be formalized



Mock Exercise on floods in Nalbari District of Assam



and practiced. There is shortage of doctors and paramedic staff at the district and below level. Specialists are not available. There is deficiency in ambulances for carrying victims. Most existing ambulances are also load carriers. The hospital preparedness and creation of surge capacity are other gaps in medical response. In cyclone prone areas, where the mock exercises have been conducted during the year 2007-08, it was generally found that there is a gap of communication between the District and Block as also between Block and Cyclone Shelter level. There is a need to encourage use of HAM radio and train HAM Operators.



Mock Exercise on Chemical (Industrial) Disaster in Chittorgarh, Rajasthan.

### Awareness Campaigns

5.23 In its endeavor to spread awareness amongst the masses, NDMA has launched a few public awareness campaigns through electronic and print media. The focus was on building appropriate environment for Disaster Management and creating a high level of impact on the target audience. Following four campaigns were launched during the period 2007-08:

- i. Cyclone awareness campaign (focused on Cyclone-prone States).
- ii. Earthquake awareness campaign (across the earthquake-prone states).
- iii. Floods Awareness Campaign.
- iv. Chemical (Industrial) Disaster Awareness Campaign.

### Cyclone Awareness Campaign

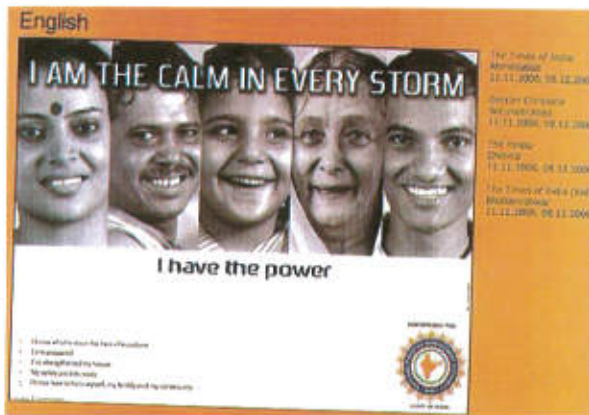
5.24 The first campaign, launched in October, 2007, focused on cyclones awareness was aimed at increasing the levels of:

- i. Risk Perception
- ii. Preparedness
- iii. Self-reliance; and
- iv. Self- confidence



Newspaper Advertisement on Cyclone

(b) Three TV commercials, two radio spots and five print advertisements were run for a six weeks period in all the cyclone prone states from 05.10.2007 to 30.11.2007 on Pvt. TV channels as well as on Radio City, Radio Mirchi and Red FM.



Newspaper Advertisement on Cyclone

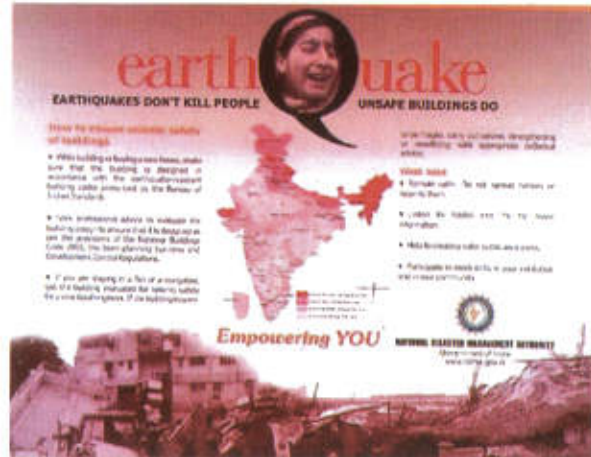
Earthquake Awareness Campaign:

5.25 The focus was on selected areas of knowledge gap amongst the target audience. The media selected are as under:

- (a) T.V. commercials on Doordarsan:
  - i. DD National News
  - ii. DD Regional News
  - iii. DD Prime time serials
- (b) Public awareness campaign through Postal Department:
  - i. The Department of Post printed Meghdoot post cards, Inland letters, speed post envelopes in Hindi, English and some regional languages and dispatch across the country on behalf of NDMA.
- (c) Public awareness advertisement spots on All India Radio:
  - i. Cricket series for main sponsorship between India & Australia during the period from 26.12.2007 to 07.03.2008.
  - ii. AIR had broadcasted advertisement on Earthquake awareness during the period from 16.02.2008 to 31.03.2008

in various states located in Earthquake zone.

- iii. Print advertisements in leading national and regional dailies across earthquake prone states.



Newspaper Advertisement on Earthquake

Floods Awareness Campaign:

5.26 The focus was on selected areas of knowledge gap amongst the target audience.

Chemical (Industrial) Disaster Awareness Campaign:

5.27 The growth of chemical industries has led to an increase in the risk of occurrence of incidents associated with Hazardous Chemicals (HAZCHEM). Increased industrial activities and the risks associated with HAZCHEM and enhanced vulnerability lead to industrial and chemical accidents. Chemical accidents may originate in the manufacturing or formulation facility, or during the process operations at any stage of the product cycle, material handling, transportation and storage of HAZCHEM. Vulnerability is sometimes compounded due to the location of Major Accident Hazard (MAH) industries closer to densely populated areas.



5.28 The Chemical (Industrial) Disaster awareness campaign focused on the selected areas of salient gaps related to preparedness, mitigation response and recovery. The conducted awareness programmes for Chemical (Industrial) Disaster include:

(a) Awareness programmes for the management of chemical (Industrial) Disaster Management

- i. National Conference on Chemical (Industrial) Disaster Management Awareness and Launch of National Guidelines on Chemical (Industrial) Disaster Management held on 1-2 June 2007 at Mumbai. More than 200 persons participated in the conference. The guidelines were launched by Shri Vilasrao Deshmukh, Hon'ble Chief Minister of Maharashtra and the summary of the guidelines were deliberated by Lt. Gen. (Dr) JR Bhardwaj, PVSM, AVSM, VSM, PHS (Retd), Member, NDMA. Talks were deliberated and discussed in length on the issues like Implementation Status of the Policies related to Chemical (Industrial) Accidents/ Disaster Management in the Country; Multifaceted Role of Other Ministries in Management of Chemical Accidents including Transportation; Safety and Security in handling commonly used Toxic Industrial Chemicals/ Materials etc. A Case Studies on A System of Medical Response to Transport Emergency; Emergency Management for Prevention and Management of Toxic & Inflammable Gases/ Substances and; Disposal of Different Types of Hazardous Wastes were also

discussed.

- ii. National Conference on Chemical (Industrial) Disaster Management Awareness and Launch of National Guidelines held on 8-9 August 2007 at Vadodara, Gujarat. More than 250 people participated in the conference. Talks were deliberated and discussed in length on the issues. Case Studies on Developing Safe Model for Full Containment of Toxic Releases Corresponding to Inventories of Hazardous Chemicals –LPG / Petroleum Products have also been discussed.
- iii. National Conference on Chemical (Industrial) Disaster Management Awareness and Launch of National Guidelines held on 15-16 November 07 at Goa. National Conference was inaugurated and National Guidelines was launched by Shri J P Singh, Chief Secretary, Government of Goa. More than 150 people participated in the conference.
- iv. National Conference on Chemical (Industrial) Disaster Management Awareness and Launch of National Guidelines held on 28-29 Feb 08 at Hyderabad. National Conference was inaugurated and National Guidelines was launched by Smt Geeta Reddy, Hon'ble Minister of Major Industries, Government of Andhra Pradesh. More than 1800 people participated in the conference. Issues like Prevention and Preparedness for Chemical (Industrial) Disasters- Emerging Concepts; Development of Industrial Resilience; Chemo-Surveillance and

Risk Management Strategies to Enhance Industry-Community Linkages; Identification of Occupational Health Needs & Solutions for the Industrial Workers Handling Hazardous, Toxic Chemicals & Wastes; Off-Site Emergency Management Plan of Hyderabad; Development of Decontamination Facilities at Incident Site; Status of Hazardous Waste Management and Engineered Landfill Sites in Andhra Pradesh; Chemical Radiological Disaster Management System etc. were discussed.

National Conference on Chemical (Industrial) Disaster Management Awareness and Launch of National Guidelines held on 27-28 March 08 at Kolkata. National Conference was inaugurated and National Guidelines was launched by Dr. Mortaza Hossain, Minister of Disaster Management, Government of West Bengal. The guidelines were deliberated in length in the conferences and several issues like need of Hazardous Industrial units to handle disasters using a good emergency plan; do's and don't's to protect themselves in case of any natural or man-made disaster; more interactive sessions with industry and DDMA's regular table top exercises or offsite drills etc. were discussed. It was emphasized that Industrial Safety Plan should be integrated with strategies of DDMA's. Success Stories in Prevention and Management of Chemical was also discussed to learn the ground reality.

(b) Training and Awareness programme on Medical Management for Chemical (Industrial) Disasters: National Symposium on Awareness, Preparedness and Mitigation of exposure to domestic and industrial chemicals held on 30-31 Aug 07 at AIIMS. The issue like medical preparedness for casualties caused by domestic and industrial chemicals, awareness for the health effects of domestic and industrial chemicals etc. was discussed. A large number of medical officers, nurses and paramedics were trained for the effective medical management for the chemical (industrial) disaster.

(c) Public awareness campaign through Postal department: Hard copies of the National Disaster Management Guidelines- Management of chemical (Industrial) Disaster have been dispatched to several stakeholders/ department Corporate Industrial sectors/ NGOs and other persons who requested for the National guidelines.

(d) T.V programme on Lok-Sabha TV: Lt Gen (Dr) J R Bhardwaj, PVSM, AVSM, VSM, PHS (Retd) Member NDMA, always remain available for media personnel and appeared several times on Lok-Sabha TV for addressing the issue related to Chemical (Industrial) disaster management. Member, NDMA interacted and discussed the issues related to preparedness, mitigation, response and recovery.

#### Training and Awareness programme on Industrial disaster

5.29 Following initiatives have been undertaken to make the community and other stakeholders aware on Industrial disasters:

- i. National Symposium on Awareness, preparedness & Mitigation of Exposure to Industrial & Domestic



- Chemicals held on 24-25 May 07 at AIIMS, New Delhi.
- ii. National Conference on Chemical (Industrial) Disaster Management Awareness & Launch of National Guidelines held on 8-9 Aug 07 at Vadodara.
  - iii. National Symposium on Awareness (Industrial & Domestic Chemical) on 30-31 Aug 07 at AIIMS.
  - iv. National Conference on Chemical (Industrial) Disaster Management Awareness & Launch of National Guidelines held on 15-16 Nov 07 at Goa.
  - v. National Conference on Chemical (Industrial) Disaster Management Awareness & Launch of National Guidelines held on 28-29 Feb 08 at Hyderabad.
  - vi. National Conference on Chemical (Industrial) Disaster Management Awareness & Launch of National Guidelines held on 27-28 Mar 08 at Kolkata.

#### Training and Awareness programme on Medical Preparedness

5.30 National Conference and Awareness Programme on HIV & AIDS Infection held on 16-17 Feb 08 at AFMC, Pune.

#### Information, Education and Communication Activities through States/UTs

5.31 In order to reach out to the villages and local level communities, NDMA decided to involve the States/ UTs Governments in the awareness generation activities.

5.32 In order to ascertain the activities that the states may like to take up on behalf of NDMA, a video conference was first held with the States on 2 February 2007, followed by a meeting with representatives of State Governments on 9 February 2007. This was considered necessary as it would be difficult for NDMA to arrange local level awareness programmes/schemes in local languages.

5.33 NDMA issued guidelines for awareness generation programmes at regular intervals such as Chemical Disaster, Management of Floods etc. during the financial year 2007-08.

5.34 The activities proposed by the states include posters, documentary films in cinema halls (including radio jingles, TV spots), distribution of booklets/leaflets in local languages, hoardings, wall paintings, school safety programmes, mock drills, preparation of training modules on preparedness, emergency response, retrofitting, earthquake resistant construction, public awareness etc. A duly constituted committee scrutinized the proposals from the States and thereafter recommended activities that State Governments may take up on behalf of NDMA for generating public awareness on disaster risk and vulnerability in their respective states.

# 6

## DISASTER MITIGATION PROJECTS

6.1 During discussions with the Planning Commission, the Ministry of Home Affairs, Gol and NDMA have proposed two categories of Disaster Mitigation Projects to be initiated at the National level. The category A consists of projects, programmes and schemes to be undertaken by NDMA for implementation, while category B consists of projects, programmes and schemes by Ministries for which the overall assistance, supervision, monitoring of design and implementation will be done by NDMA.

6.2 The category A consisting of projects, programmes and schemes to be undertaken by NDMA for implementation are:

- i. National Cyclone Risk Mitigation Project (with World Bank assistance);
- ii. National Earthquake Risk Mitigation Project;
- iii. National Flood Risk Mitigation Project;
- iv. National Landslide Risk Mitigation Project;
- v. Expanded Disaster Risk Mitigation Project;
- vi. National Disaster Communication Network (NDCN);
- vii. Information, Education and Communication (IEC) Programme;
- viii. Micro-zonation of Major Cities;
- ix. Project Preparation Facility/ Research Programme Studies;

- x. Vulnerability Assessment Schemes;
- xi. International Cooperation;
- xii. Infrastructure of 8 NDRF Battalions (04 more proposed);
- xiii. Upgradation of NIDM and other Institutes; and
- xiv. Strengthening of Fire Services.

6.3 The category B consisting of projects, programmes and schemes to be undertaken by the nodal ministries, with the overall assistance, supervision and monitoring of design and implementation by NDMA, are:

- i. Medical Preparedness for Mass Casualty Management;
- ii. National School Safety Project;
- iii. Programme for Upgrading Capabilities and Dissemination of Early Warning to Communities;
- iv. Detection, Early Warning System and Preparedness & Response for Nuclear Emergencies; and
- v. National Standing Mechanism (Science & Technology).

6.4 The methodology for project implementation of the mitigation projects being pursued by NDMA begins with the conceptualization and fixing of the contours of projects and architecture of design by NDMA in consultation with the Nodal Ministry and concerned Government agencies. Detailed Project



Reports (DPRs) are being formulated through multi-disciplinary teams describing all support systems like financial, technical and managerial resources and techno-legal regimes required. The execution of the projects will be entrusted to the various nodal agencies responsible for specific disasters and/ or thematic interventions. Periodic monitoring will be carried out through a multi-sectoral group consisting of representatives of the ministries, state governments and technical experts in the NDMA.

6.5 NDMA has initiated the preparatory work for launching a National Cyclone Risk Mitigation Project (NCRMP), National Earthquake Risk Mitigation Project (NERMP), National School Safety Project (NSSP), National Flood Risk Mitigation Project (NFRMP), National Landslide Risk Mitigation Project (NLRMP) and National Disaster Communication Network Project (NDCNP) in close collaboration with the nodal agencies and the State Governments.

#### National Cyclone Risk Mitigation Project

6.6 National Cyclone Risk Mitigation Project (NCRMP) developed for the 13 cyclone-prone coastal States/ UTs, was formulated by the ministry of Home Affairs and was transferred to NDMA in September 2006 for its management. The project is proposed to be implemented by nine States namely, Andhra Pradesh, Goa, Gujarat, Karnataka, Kerala, Maharashtra, Orissa, Tamil Nadu and West Bengal and four UTs namely, Andaman & Nicobar Islands, Daman & Diu, Puducherry and Lakshadweep.

6.7 The aim of the project is to address the cyclone-hazard risks in the country. The project will be implemented with the financial support of the World Bank. The main objective of the project is to strengthen the structural and non-structural mitigation efforts to reduce the cyclone risks and

vulnerability in the 84 coastal districts prone to cyclones. NCRMP will assist States/UTs which are prone to cyclones to build capacities for cyclone risk mitigation, strengthen cyclone preparedness and improve emergency response capacities in cyclone-prone areas. National Guidelines have been prepared to help the participating States/UTs in prioritizing, preparing and submitting their proposals for cyclone mitigation investments.

6.8 The NCRMP has the following four components:

- i. **Component-A:** This is related to the improvement of Cyclone Early Warning System in totality to be implemented by India Meteorological Department (IMD) under its upgradation programme through its own budget. Last-Mile Connectivity, relating to cyclone warning and advisories from district and sub-district levels to community, is proposed to be included as an element of this component. However, elements of this component are still under preparation.
- ii. **Component-B:** This component is related to Risk Mitigation Investments to be implemented by 13 participating coastal States/UTs. It has many sub-components like construction of cyclone shelters, construction of coastal canals and embankments for improved drainage, shelterbelt plantation, plantation/ regeneration of mangroves, construction of missing road links/ bridges, institutional capacity building and hazard reduction studies, improvement of on-shore warning dissemination system, retrofitting of life-line/key/vital installations and Awareness

- generation for cyclone risk mitigation.
- iii. **Component-C:** This component is related to technical assistance for hazard risk management and capacity building to be implemented by all the states/UTs which inter-alia includes strengthening of national and regional training institutions, putting in place the techno-legal regime for cyclone mitigation, commissioning of different studies on risk assessment and cost-benefit analysis of cyclone risk mitigation measures, strengthening of NIDM and ATIs in the project states, development of codes and manuals by Bureau of Indian Standards (BIS), wherever needed, and need-based studies related to storm surge modeling, etc.
- iv. **Component-D:** This component is related to project management and monitoring of the entire system. Under this component, project management and monitoring units will be established in implementing States/UTs. High level State Steering Committees will be constituted in each implementing State/UT for screening the Investment proposals and monitoring the implementation status. NDMA will manage the project. A National Steering Committee is in place to screen the Project at national level and to provide guidance for its implementation.

6.9 The total cost of the project is estimated to be about Rs. 1,642 crores (varying with variations in exchange rate and final cost will be confirmed only after the preparation of DPRs by the concerned State Governments and agencies). The States/UTs

have been requested to submit investment proposals as per the National Guidelines. The completed investment proposals from Andhra Pradesh, Gujarat, Maharashtra and Orissa have been received. The investment proposals of the above four States have been sent to the World Bank for preliminary examination. Proposals from the remaining States will also to be processed similarly, as and when, they are received.

6.10 NDMA has engaged a Consultancy Agency to assist NDMA in managing the Project. The Agency will help the Project to be appraised by the World Bank for assistance and has made considerable progress in preparing different Manuals and format that would be required for the preparation of Detailed Project Reports and appraisal documents.

#### National Earthquake Risk Mitigation Project (NERMP)

6.11 The National Earthquake Risk Mitigation Project (NERMP) aims to address the critical gaps in the management of earthquake related risks. The NERMP aims to achieve the following objectives:

- i. Capacity building of various stakeholder groups like engineers, architects, faculty members of engineering colleges, site supervisors, contractors, lead masons and masons etc;
- ii. Creation of public awareness on earthquake risk and vulnerability, techno-legal regime, building safety etc;
- iii. Creating an enabling techno-legal regime and its enforcement and compliance by different Ministries of Gol and State Governments;



- iv. Institutional strengthening and Research and Development;
- v. Retrofitting of lifeline structures starting with district hospitals in 229 high risk districts in seismic zones IV and V for demonstrative effect; and
- vi. Project management support.

6.12 The concept paper of NERMP has been forwarded to the Ministry of Home Affairs, for seeking the "In Principle" approval of the Planning Commission.

6.13 On 17 December 2007, Prof. N. Vinod Chandra Menon, Member, NDMA gave a presentation on the National Earthquake Risk Mitigation Project (NERMP) to Shri Shivraj Patil, Hon'ble Union Home Minister of India. On 19 March 2008, this project was discussed with officials of the concerned Ministries of Government of India. On the basis of the feedback received, the Concept Paper is being revised and activities being initiated for the preparation of Detailed Project Report.

#### National Disaster Communication Network

6.14 The country requires dedicated Communication & IT support for pro-active disaster support functions including for early warning & forecasting. The support has to be converged (Voice, Video & Data), adequate and also responsive. It also has to be multilayered; both for Command & Control as also for execution & Early Warning (EW)/ Forecasting.

6.15 NDMA has initiated the process for selection of a Consultancy Agency for the preparation of DPRs on the activities in the National Disaster Communication Network Project (NDCNP).

#### National Flood Risk Mitigation Project

6.16 The aims and objectives of the Project are as under:-

- i. Mitigation or reduction in risk, severity or consequences of floods.
- ii. Improve capability to deal with floods; Effective preparedness to deal with floods; Improve promptness in response to the impending threat of flood or actual occurrence and to assess the risk and vulnerabilities associated with various flood disasters.
- iii. To ensure that arrangements are in place to mobilise the resources and capability for relief, rehabilitation, reconstruction and recovery from disasters and to create awareness and preparedness and provide advice.

6.17 NDMA has initiated the process for selection of a Consultancy Agency for the preparation of DPRs on the activities in the NFRMP.

#### National Landslides Risk Mitigation Project

6.18 NDMA has initiated the process for selection of a Consultancy Agency for the preparation of DPRs on the activities in the NLRMP.

6.19 The main objective is to create a Detailed Project Report (DPR) for a National Landslide Risk Mitigation Project for XI Five Year Plan. Important components of the DPR will include evaluation of the mitigation activities, their classification into short term and long term categories as per guidelines on landslides that are under preparation, their prioritization and setting up of short term and long

term targets that have to be met either within plan period or dates specified beyond the concerned plan. The objective will also include identifying the agencies responsible for executing specific tasks and the budget allocation. Besides technical studies required to assess, estimate and mitigate the risk posed by landslides at specific sites and in an area, the other components proposed to be included in the DPR are capacity development of different institutions, creation of technically trained workforce, generation of awareness about this hazard among the effected communities, enhancing the capacity of NGOs and making them an integral part of the awareness generating endeavour. Both print and electronic media are also proposed to be involved in this effort.

### National Mitigation Reserve

6.20 The idea is to retain a reasonable reserve at the National level, to cater to emergent requirements in the wake of serious disasters in both the hilly and the non-hilly terrain. Experience in major disasters in the last decade has clearly established the need of a national initiative for pre-positioning of some essential reserves at crucial locations, including some for the high altitude areas.

These reserves are intended to augment the resources at the State level in the immediate wake of occurrence of major disasters. The work for preparation of National Reserves for 4,00,000 people has been initiated, on priority.

### School Safety Project

6.21 To promote the culture of safety in schools, a National Programme is contemplated to be launched as a Pilot Project in the year 2009-2010. The aim of this project is to provide a safe learning environment for the children. The Pilot Project will be implemented in all the districts falling in earthquake zones IV and V as well as the vulnerable coastal districts of India. Building upon the lessons learnt during this Pilot Project a full-fledged safety programme will be launched subsequently nationwide under the Ministry of Human Resource Development (MoHRD). Under this programme, measures will be initiated for capacity building at the school level as well as formulation of the draft School Safety Policy. This programme will also include retrofitting of minimum two Schools in the 44 targeted districts and a sensitization programme for the teachers as well as the students including conduct of mock drills.



# 7

## STRENGTHENING EMERGENCY RESPONSE

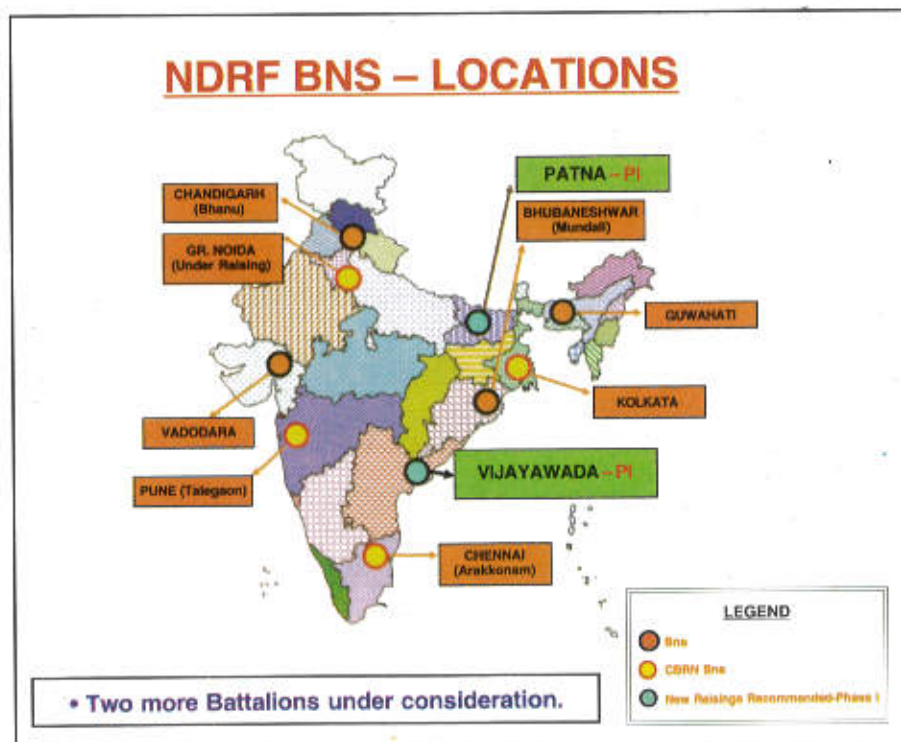
### National Disaster Response Force

7.1 The National Disaster Response Force (NDRF), constituted under the provisions of Sections 44 and 45 of the DM Act, 2005, began to take shape as a 'Specialist Force' and set out to a planned road-map towards its operationalization during this period. All the NDRF battalions are presently located at Guwahati, Kolkata, Mundali (Bhubaneshwar), Arakonam (Near Chennai), Pune, Vadodara, Chandigarh and Greater Noida. Four additional battalions of NDRF have also been proposed (Fig 7.1).

7.2 NDRF is gradually emerging as the most visible and vibrant force of the NDMA. The NDRF proved its efficacy with its commendable performance during the floods in Orissa, Maharashtra, Kerala and Assam. Additionally, the Community Capacity Building Programmes carried out by NDRF in different states brought it face to face with the masses and a distinct recognition of an elite disaster response team emerged.

### Infrastructure

7.3 NDMA made persistent efforts with State Governments for allotment of land for the NDRF Battalions and was able to get land allotted at three places, i.e. Guwahati, Vadodara and Kolkata. Government of Maharashtra has also offered land for the NDRF Bn at Talegaon (Pune) and also for Apex Level Training Institute for NDRF at Kampatee (Nagpur). NDRF Bn Gandhinagar took over the possession of land at Vadodara. Master Plan of the NDRF Bns at Vadodara and Greater Noida has been prepared by the architect engaged by the NDMA.



## Manpower

7.4 The NDRF battalions are authorized a strength of 1158 personnel each including 145 technical and medical personnel. At the beginning of the year 2007-08, the overall availability of manpower in the NDRF Battalions was roughly around 78%, which had risen up from 46 percent during the same period in year 2006. However, it required continuous efforts on the part of NDMA in maintaining the status of manpower situation in these NDRF battalions during 2007-08.

7.5 A major breakthrough came about on the issue of technical manpower during the year when a Committee headed by Addl. Secretary, NDMA submitted a comprehensive recommendation for the recruitment of technical and medical manpower in the NDRF Battalions. The MHA accepted the report and the process of formulating the Recruitment Rules for these posts has begun to take shape.

## Training

7.6 NDMA organised Heli Slithering training of 1,260 personnel of NDRF with the help of Ministry of Defence during July 2007 to February 2008 at Air Force SFTS Nahan, Himachal Pradesh.

7.7 Flood rescue training was organised for 1,500 NDRF personnel at Rashtriya Life Saving Society and Sea Explorers Institute, Kolkata during the period of August 2007 to March 2008.

7.8 Management of Hospitals in Disaster Management for NDRF was conducted by NDMA in September 2007 at Institute of Health Management Research, Jaipur and 7 personnel were trained.

7.9 The Disaster Management Training Centres of Central Police Forces conducted Collapsed Structure Search and Rescue (CSSR) and Medical First Responder (MFR) training of 1,800 personnel of NDRF during the period of April 2007 to March 2008 at NISA, CISF Hyderabad, CTC-II, CRPF Coimbatore, NITSRDR, ITBP Panchkula and BIDR, BSF Tekanpur.

7.10 NBC First Responder training was also conducted for 1,200 personnel of NDRF during the period of September 2007 to March 2008 at NDRF Pune, NISA Hyderabad, CTC-II Coimbatore and NITSRDR Panchkula.

7.11 A delegation from the Swiss Agency for Development and Cooperation (SDC) visited CRPF NDRF Bn, Pune and NISA, Hyderabad in November, 2007 to assess the Search and Rescue capability of the NDRF at the ground level to prepare for the three year MoU between the GoI and SDC for cooperation in Advanced Search and Rescue training.

7.12 Another Swiss team visited BTC, ITBP Bhanu to see the canine training activities. Subsequently, a Search and Rescue Training Course was organised by Swiss Development Corporation (SDC) under Indo-Swiss collaboration to enhance and update disaster response skills of handlers and their dogs. The course was attended by 12 dog handlers along with their dogs at BTC, ITBP Bhanu in November, 2008.

7.13 The year also witnessed new area of cooperation with USAID, India under Programme of Enhancement of Emergency Response (PEER). A team of experts visited NISA, Hyderabad towards planning of an Advanced Search and Rescue (ASAR) course in Urban Search and Rescue (USAR). The course was finally decided to be held at Florida, USA during April 2008.



7.14 NDMA approached Remount Veterinary Corps (RVC) Meerut for supply of Search and Rescue trained dogs and also for the training of dog handlers. After a series of discussions and meetings a Memorandum of Understanding (MoU) was finalised between NDMA and RVC for supply of 288 dogs and training of 432 dog handlers over a period of 6 years for a total cost of Rs. 8.39 crores. The MoU was sent to Govt for approval.

### Foreign Courses/ Exercises

7.15 NDMA organized the following foreign courses/ exercises for the NDRF personnel during the year 2007-08:

- i. United Nations Disaster Assessment and Co-ordination (UNDAC) Asia Pacific Refresher Course at Malaysia, in July 2007 in which 2 personnel of NDRF participated.
- ii. International Search and Rescue Advisory Group (INSARAG) Asia Pacific Earthquake Response Exercise in Mongolia, in July-August 2007, in which 4 personnel of NDRF participated.
- iii. United Nations Disaster Assessment and Co-ordination (UNDAC) Asia Pacific Induction Course at New Zealand in October 2007, in which 2 personnel of NDRF participated.
- iv. Organisation for the Prohibition of Chemical Weapons (OPCW) Chemical Emergency Course at Finland in September 2007, in which 2 personnel of NDRF participated.
- v. HAZMAT Specialisation Training at Singapore Civil Defence Academy in March 2008, in which 20 personnel of NDRF participated. The training

provided good exposure to the NDRF Master Trainers in NBC Emergencies according to the best international practices and equipments.

### Disaster Response, Community Preparedness and Public Awareness Programme

7.16 NDRF embarked upon the community capacity building and public awareness programmes in a big way which included training of vulnerable people and officials at different levels in the areas with high vulnerability. A pilot project on Community Capacity Building and Public Awareness campaigns on floods, earthquakes and other natural disasters was organised by NDRF teams during June-July, 2007 in 14 highly vulnerable districts (Araria, Saharsa, Kishanganj, Madhepura, Supaul, Khagaria, Begusarai, Darbhanga, Madhubani, Munger, Patna, Muzaffarpur, Sitamarhi and Samastipur) of Bihar. In this project, 2,200 volunteers and State Disaster Management Authority (SDMA) officials were trained by the NDRF. The NDRF Battalions actively responded to floods in Maharashtra, Orissa, Assam and Kerala in June-August 2007. The NDRF Battalion also successfully responded to Sabzi Mandi roof collapse in Chandigarh and building collapse at Vishakhapatnam, Andhra Pradesh in June 2007 and November 2007 respectively.

### Development of Training Infrastructure

7.17 During the meeting with Hon'ble Home Minister on 23 June 2007, NDMA proposed for 4 National Training Centres (One with each Central Para Military Forces) and one Apex Training Centre. The proposed locations for the National Training Centres are Latur (CRPF), Hyderabad (CISF), Kolkata (BSF) and Greater Noida (ITBP). The proposed location for the Apex Training Centre is

at Nagpur and Government of Maharashtra has already offered 110 acres of land at Kamptee for the purpose. A detailed survey plan is under preparation.

7.18 Procurement of 49 latest equipments was also identified for Advanced Search and Rescue (ASAR) Course to be made available to NISA, CISF Hyderabad by USAID.

### NDRF Workshops/ Exhibitions

7.19 A two-day NDRF Commandant's conference was held at NDMA, New Delhi during 29-30 May 2007. The conference finalized many issues regarding deployment, community capacity building, Regional Response Centre (RRC) and uniforms, etc., of the NDRF.



Hon'ble VC and Members NDMA during NDRF Exhibition

7.20 A one-day workshop for the communication officers of NDRF was held on 10 September 2007 at NDMA to discuss and finalise various communication related issues of NDRF Bns.

7.21 A two-day exhibition cum workshop on "Community Capacity Building and Public Awareness" being undertaken by NDRF Bns was held at BSF NDRF Bn, Kolkata during 25-26 September 2007.

7.22 An International exhibition was organized by the Department of Home Guards and Civil Defence of Karnataka State in October 2007; the CRPF NDRF Bn Pune was adjudged the best stall in this exhibition and received the First Prize from Shri Rameshwar Thakur, Governor of Karnataka.

7.23 NDRF put an impressive exhibition during 2 Asian Ministerial Conference on Disaster Risk Reduction during first week of November 2007. The exhibition stall was visited by Hon'ble Union Home Minister, Shri Shivraj Patil, and many other foreign dignitaries attending the conference.

7.24 NDRF participated in a two day international conference on "Managing Earthquake Risk" organized by the Construction Industry Development Council (CIDC) in January 2008 at the India Habitat Centre, New Delhi. A number of delegates from India and abroad participated in the exhibition cum conference to discuss initiatives to manage and mitigate earthquake risks.

7.25 In 11th International Exhibition on Security, Safety, Fire, Disaster Management Equipment and Services in February 2008 at Pragati Maidan, New Delhi; the initiatives of NDRF in various fields of disaster management were displayed. Hon'ble Union Home Minister inaugurated the exhibition and visited the NDRF stall which exhibited improvised floating equipments for life saving during floods.

7.26 The 5th Def-Expo organized by the Ministry of Defence, Govt. of India, in association with the Confederation of Indian Industries (CII) at Pragati Maidan, New Delhi in February 2008; for the first time created a focused zone for disaster management where NDRF displayed its achievements and recent initiatives through a series of panels during the exhibition.



## Incident Command System

7.27 In essence, the ICS is an Organised Response Mechanism, to ensure efficiency and prevent adhocism and chaos in any response. It ensures role clarity, clearly defines various areas and duties that have to be necessarily kept in mind and helps in the clearly setting the goals for response.

7.28 It has been felt that there is an urgent need to adapt the ICS to the Indian context and come out with a guideline / manual on ICS for the whole country to follow. For this purpose a number of discussions were held with the then Dy. Director & Executive Director of Centre for Disaster Management, LBSNAA, NIDM and various other stakeholders. A Core Group consisting of various experts from different Training Institutions and various Stakeholders has also been formed.

7.29 The first meeting of the Core Group was held on 09 October 2007 at NDMA in New Delhi. After deliberation and discussion on various aspects it was decided that on the pattern of American ICS manual a dummy manual incorporating adjustments according to the Indian context should be prepared. This dummy manual should then be taken to four Regional Workshops ensuring that all states participate. The dummy manual will be discussed with all the participants and their suggestions be recorded. This has been felt necessary because there are variations in the administrative structures in different States. A smaller Steering Committee out of the Core Group was formed to prepare this dummy manual. This dummy manual has already been prepared.

7.30 The second meeting of the core group for the preparation of the ICS Manual was organized at NDMA in New Delhi on 14 March 2008. In this

meeting a systematic strategy was developed for the adaptation of ICS. It was also decided to conduct a wide scale consultation with all the States and UTs. It was also decided that four Regional Consultation Workshops should be held at (i) HCM Rajasthan Institute of Public Administration (RIPA), Jaipur, Rajasthan; (ii) Assam Administrative Staff College, Guwahati, Assam; (iii) MCR HRD Institute, Hyderabad, Andhra Pradesh; and (iv) Goa Institute of Rural Development, Goa.

7.31 To assess and get a feel of the ongoing training on ICS in different State Training Institutions, the NDMA participated in the Training of Trainers (ToT) programme on Basic and Intermediate Course on ICS at Shri Krishna Institute of Public Administration, Govt. of Jharkhand, Ranchi, on 18 February 2008.

7.32 Apart from the above, during the 2nd Asian Ministerial Conference on Disaster Risk Reduction held at New Delhi during 7-8 November 2007 an Interactive Forum to discuss the experiences in using the Incident Command System was organized. The objectives were:

- i. Sharing best management practices of countries currently using the Incident Command System for disaster response,
- ii. Sharing information from countries currently in transition to the Incident Command System for disaster response, and
- iii. Exploring adaptation features and challenges of countries in transition to the Incident Command System

7.33 The outcome of these deliberations will help in a big way for formulation of the Indian ICS.

# 8

## INFORMATION, COMMUNICATION AND EARLY WARNING SYSTEMS

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### General

8.1 Frequent occurrence of disasters, both natural and man-made, is a worldwide phenomenon, and India is no exception to this. In fact, the Indian Sub-Continent is considered to be one of the most vulnerable regions to natural disasters. When a disaster strikes, the losses in terms of private, public and community assets are astronomical. This has necessitated the requirement of an efficient DM mechanism with due emphasis on Prevention, Preparedness, Mitigation and Early Warning (EW) rather than it being only relief centric in nature.

8.2 In order to enable NDMA and all other stakeholders within the country to function in an effective and efficient manner, availability of a reliable communication system with requisite IT backup constitute one of the key factors. Ironically when a disaster strikes, it is the communication networks that become the first casualty, thereby negating and hampering all the DM efforts. This necessitates the requirement of an all pervasive, reliable and 'State-of-the-Art' Communication and IT Network covering the entire continuum of DM from prevention, mitigation, and preparedness during the pre-disaster phase to response, rehabilitation and reconstruction during post-disaster phase.

8.3 The overall objective is to provide reliable, responsive and dedicated Communication & IT Support for effective DM (during all phases of

disaster) at the National/State/District levels, with optimum redundancy and diversity, coupled with dynamic integration, reconfiguration and management capabilities in a seamless environment; with special reference to the following:-

- i. Extending voice connectivity up to the 'village' level, and data connectivity up to Community Service Centre (CSC) level. Ensuring Last Mile Connectivity (LMC) is one of the key components.
- ii. Expeditious restoration of communications at the disaster site from minimum essential resuscitation to full scale, in graded manner.
- iii. Maximum and optimum utilization of existing as well as in the pipeline National Level Information and Communication Technology (ICT) Infrastructure; both in the public and private domain.

### The NDCN Plan

8.4 The Overall NDCN plan has been formulated. Its salient features are given in succeeding paras.

### Network Architecture

8.5 The basic architecture revolves around creation of a digitized, converged, multi-layered,



multi-systemic, inter-operable, converged (Voice, Data & Video) and self-healing Sub-Continental Network, utilizing the existing and planned national level communication infrastructure to the maximum possible extent. The Network is planned to be hosted on the terrestrial backbone (OFC/MW) with satellite media as its backup. The last mile connectivity would be based on Cellular/Micro Cellular/Wi Max/Radio, where required. The complete network will have EOCs with Multi Service Static and Mobile Communication Access Platforms (SCAPs/MCAPs) at all levels, including Mobile EOCs (MEOCs) at the disaster site, for management of disasters. Network Management Services (NMS) would also cater for Voice/Video Conferencing and Voice/Video hotlines on demand. The planned Architecture would be dynamically reconfigurable for the complete DM continuum from routine functioning to active/live DM.

#### Forecasting & Early Warning (EW)

8.6 Since Forecasting and EW require dedicated and appropriate bandwidth connectivity for real/near real time information receipt and dissemination; a network in the form of an Metropolitan Area Network (MAN), is planned to be established at Delhi interconnecting all the EW Agencies and Departments such as India Meteorological Department (IMD), Central Water Commission (CWC), Geological Survey of India (GSI), National Remote Sensing Agency (NRSA), National Technical Research Organization (NTRO), Indian National Centre for Ocean Information Services (INCOIS), Survey of India (Sol), National Spatial Data Infrastructure (NSDI), Space Application Centre (SAC), etc. In addition, requisite broadcasting gateways would also be engineered both at National and State level for issue of EW and guidelines to the affected community and all the stakeholders on occurrence of impending

disasters, through all available broadcasting and information dissemination agencies such as, AIR, Doordarshan, World Space Radio, HAM Radios, Internet/Intranet, Service Providers etc.

#### Disaster Management Information System (DMIS)

8.7 The Network would also cater for an effective DMIS with due emphasis on Data storage, Data mining and simulation etc, to meet the information needs in DM. Towards this, it is planned to establish a Data Fusion Centre at MHA-NDMA level, Data Centres at respective State levels and Mini Data Centres at the District level. Mirror image for the Data Fusion Centre will be set up at Bhopal. Call Centre based help lines will be established at various levels, which will be multi lingual (Hindi, English & State Specific Language), particularly at State/District Levels. In addition, appropriate interactive Websites at National and State levels are planned to be established for DM as also in support of public awareness and general education and e-learning.

#### Communication & IT Support For NDRF

8.8 To enable the NDRF Bns to undertake immediate search, rescue and relief operations in disaster situations, each battalion is planned to be equipped with adequate communication equipment, for all their command and control, coordination, execution and administrative functions.

#### Communication Build-up at Disaster Site

8.9 On occurrence of a disaster, immediate restoration of communications at the disaster site assumes greatest importance. For this purpose, nine composite "Communication Packs" comprising of most essential communication equipment for

establishing vehicle based MEOC, along with associated MCAP, are planned at the National Level, and will be co-located with the NDRF Bns. Further, it is also planned to provide light vehicle based "Mini Mobile Communication Packs", comprising of minimum essential communication equipment, to 241 multi hazard prone districts in the country; which, on occurrence of disaster could be moved immediately to the disaster site under the affected district arrangements for restoring basic essential communications till the national level resources arrive and get deployed.

### Implementation

8.10 The Expression of Interest (EoI) for selecting consultants for preparation of the DPR for NDCN has already been floated. Once the DPR is ready and on approval at appropriate level, requisite RFP

for execution of the project will be floated on open tender basis.

8.11 The Communication and IT Support Plan is envisaged to be implemented in three phases i.e. Phase – 1 Short Term (1 to 2 Years), Phase – 2 Mid Term (2 to 3 Years) and Phase – 3 Long Term (3 to 4 Years). In Phase 1, we need to utilize and stand alone Communication and IT facilities as existing through PSTN and PSDN. This would include inputs from any of the existing Communication and IT assets of the Government such as POLNET, NICNET and VPN (DMS), SWAN & so on. In the next phase, the aim would be to integrate all possible networks and facilities, and in the final phase to create a truly seamless network. The Overall Plan involves an approximate financial outlay of Rs. 450 Crores spread over the 11<sup>th</sup> Plan period.



# 9

## IMPROVING RECONSTRUCTION AND POST-DISASTER RECOVERY

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### Coordination of the Post-Tsunami Reconstruction in Andaman & Nicobar Islands

9.1 During 24 to 26 April 2007, an Inter Ministerial Team led by Gen N.C. Vij, Hon'ble Vice Chairman, NDMA along with Prof. N. Vinod Chandra Menon, Member, NDMA visited Andaman & Nicobar Islands to review the progress of the post Tsunami reconstruction work. The Inter-Ministerial Team visited various islands, had interactions with the tsunami affected communities, officials and community leaders and on return to Port Blair attended a Review Meeting chaired by Lt Gen (Retd) Bhopinder Singh PVSM, AVSM, Hon'ble Lt Governor of Andaman & Nicobar Islands.

9.2 During 3 to 5 March 2008, Gen N C Vij, Vice Chairman, NDMA, along with Prof. N. Vinod Chandra Menon, Member, NDMA, led an Inter-Ministerial Team to visit the Andaman & Nicobar Islands to review the progress of the post-Tsunami reconstruction and had interactions with the tsunami affected communities, tribal leaders and government officials.

### Minimum Standards of Relief

9.3 As mandated by the DM Act 2005, NDMA has to recommend guidelines for the minimum standards of relief to be provided to the persons affected by disasters. The preparatory work for reviewing the current provisions of relief to the people affected by disasters has been initiated by NDMA.

9.4 A National Conference on Minimum Standards of Relief for Food, Drinking Water, Medical Cover and Sanitation during Disaster was held on 26-27 February 2008. Consequent to the conference, National Authority has constituted a core group under the chairmanship of Lt. Gen (Dr.) J R Bhardwaj, PVSM, AVSM, VSM, PHS (Retd) to assist NDMA in preparing National Guidelines on Minimum Standards of Food, Drinking Water, Medical Cover and Sanitation for Disaster Relief.

## Management of Tsunami

10.1 On 18 May 2007, NDMA organised a one day National Conference on Tsunami Risk Management at the NASC Lecture Hall, ICAR, New Delhi. More than 50 experts and professionals from leading Institutions attended this Conference. Several Core Groups were constituted for the purpose of addressing various critical aspects of the management of tsunamis in India.

10.2 Core group meetings were held on 19 June 2007 at New Delhi, on 6 July 2007 at IIT Bombay, 23 to 24 July, 2007 at the Institute for Ocean Management, Anna University, Chennai and on 16 Nov 2007 at New Delhi to review the critical gaps in the effective management of tsunamis in India and to identify the strategies to strengthen tsunami preparedness, early warning and mitigation. The draft guidelines for the Management of Tsunami

were prepared and circulated to the Core Group Members and concerned government agencies and academic institutions. A National Workshop on Tsunami Risk Management was held on 29 November 2007 at Centaur Hotel, New Delhi to review the draft guidelines. Based on the feedback received, the guidelines are being revised.

10.3 On 21 July 2007, Prof. N. Vinod Chandra Menon, Member, NDMA Inaugurated the International Workshop on Post Disaster Shelter Programme and Disaster Management Issues organized by Caritas India at Hotel Breeze, Chennai and on 27 July 2007. He also delivered the Keynote Address in the Seminar on Disaster Management Awareness for Journalists organized by the Government of Kerala at Cochin. Along with the Hon'ble Revenue Minister, Government of Kerala, Prof. Menon visited the flood and landslide affected areas in Kerala after the Inaugural Session of the Seminar.

10.4 On 3 September 2007, Prof. N. Vinod Chandra Menon, Member, NDMA delivered the Inaugural Lecture for the first batch of the Masters Programme (M.Sc./MA) in Disaster Management at the Tata Institute of Social Sciences, Mumbai. On 6 September 2007, he chaired the Plenary Session on 'Safe Mitigation of Natural Hazard & Fire Safety' in the Safety Convention 2007 organised by The Institution of Engineers (India), Delhi State Centre at Hotel Le Meridian, New Delhi. On 26 September 2007, Prof. Menon inaugurated



Gen. N.C. Vijm PVSM, VYSM, AVSM (Retd.), Hon'ble VC, NDMA, delivering lecture during National workshop on Tsunami Risk management



the World Bank Institute and UN ISDR supported Training of Trainers Programme in Disaster Management at University of Madras, Chennai which was organised by the University of Madras in collaboration with University of Kyoto, Japan and the Middle East Technical University, World Bank Institute and UN ISDR.

10.5 On 8 October 2007, Prof. N. Vinod Chandra Menon, Member, NDMA inaugurated the Training Programme on Retrofitting of Buildings and the Foundation Slope System in Earthquake- and Landslide-prone areas at VIT Vellore, jointly organized by the Centre for Disaster Mitigation and Management, VIT University, Vellore and the Building Materials Technology Promotion Council (BMTPC), Government of India.

10.6 On 12 October 2007, Prof. N. Vinod Chandra Menon, Member, NDMA delivered a Special Address in the Valedictory Session of the Two Day National Workshop on Urban Flooding – Scientific, Technological and Management Challenges at Yashwantrao Chavan Academy of Development Administration (YASHADA), Pune organised by NDMA. On 21 November 2007, Prof. Menon delivered the Todar Mal Memorial Lecture in the XXVII Indian National Cartographic Association International Congress at Vishakapatnam organised by INCA and the National Hydrographic Office, Dehradun. On 28 November 2007, Prof. Menon delivered the inaugural address at the International Conference on Disaster Reduction (ICDR) on 29 November at Nehru Centre, Mumbai organised by ICDR Secretariat, Twin Arcade, Mumbai.

10.7 On 7 January 2008, Prof. Menon delivered the Inaugural Address of the 5 days Workshop on Planning and Management for Institutionalizing of School Safety at National University of Educational

Planning and Administration, New Delhi. On 18 January 2008, Prof. Menon delivered a Special Address on the one day seminar on Disaster Management Impact - Mitigation Challenges and Preparedness for Kerala at Trivandrum organized by Government of Kerala. On 24 January 2008, Prof. Menon delivered the Valedictory Address of the Regional Workshop on 'The Context of Panchayat Raj in Disaster Management Act 2005' at Chennai organized by PREPARE, Chennai. On 28 January 2008, Prof. Menon delivered a Special Address in the inaugural session of the Conference on Disability and Disaster organized by Shantha Memorial Rehabilitation Centre, Bhubaneswar at Bhubaneswar. On 29 January 2008, Prof. Menon addressed the delegates of the International Conference on Managing Earthquake Risk organized at New Delhi by NDMA and Construction Industry Development Council (CIDC).

10.8 During 28 to 29 February 2008, Prof. Menon participated in the Oslo Policy Forum conference on "Changing the Way We Develop: Dealing with Disasters and Climate Change" convened by the Norwegian Government, the ProVention Consortium of the World and UNDP in Oslo and the Consultation on South-South Cooperation for Mainstreaming Disaster Risk Reduction convened by GFDRR & World Bank on 27 February 2008 in Oslo, Norway.

10.9 On 01 February 2008, Prof. Menon delivered a Special Address on "Protection of Environment and Access to Social Justice" on 01 February, 2008 during the Conference of All India NGO Summit at the Art of Living International Centre, Bangalore organised by the International Association of Human Values, Bangalore.

10.10 On 29 March 2008, Prof. Menon delivered the Keynote address on the theme of 'Disaster

Preparedness – a Government and NGO Partnership’ on the occasion of the successful completion of EFICOR’s interventions in Tsunami Relief and Rehabilitation at Chennai.

### Management of Urban Floods

10.11 A nine step process is being followed for evolving Guidelines for Management of Urban Floods. In the process of evolving guidelines, a Brainstorming Session on this subject was held on 8 August, 2007 and identified themes, issues and objectives. The meeting decided to conduct a National Workshop on “Management of Urban Floods” and further road map with timeframe for the preparation of the Guidelines.

10.12 The two-days National Workshop on Urban Flooding: Scientific, Technological and Management Challenges was held on 11-12 October 2007 at YASHADA, Pune. Realizing the increasing trend of urban floods in last few years, NDMA has decided to deal with Urban Flooding as a separate disaster domain delinking from the subject of urban floods. The urban floods deal with the specific issues, many of which are not related to regular floods. Considering the urban floods as an important issue the workshop intended to take on board Ministries of Government of India, Development Authorities, Municipal Commissioners, Urban Local Bodies, Administrative Training Institutes and other concerned departments from State Governments, Academic & Scientific institutions and NGOs etc. with exhaustive feedback from the departments at lower level.

10.13 The two day Workshop was introduced by Shri M. Shashidhar Reddy, Member, NDMA and inaugurated by Shri S. Jaipal Reddy, Hon’ble Union Minister of Urban Development. Presidential address was delivered by Gen. N.C. Vij, PVSM,

UYSM, AVSM, (Retd.), Hon’ble Vice Chairman, NDMA. A total of 55 representatives attended from concerned ministries of Government of India, senior government officials from States, senior members of national academic and science and technology institutions, social workers from prominent NGOs and resource persons from various disciplines.

10.14 The workshop was designed to evolve National Guidelines for Management of Urban Floods by formation of Sub Groups on:

- i. S & T Tools for Management of Urban Flooding;
- ii. Drainage Systems Design; and
- iii. Disaster Management Plan for Urban Flooding.

10.15 The Workshop flagged several issues on Management of Urban Floods. Following the identification of task and agencies, it was decided to constitute a Steering Committee and hold detailed consultation with all stakeholders on all aspects of Urban Flood disaster management.

10.16 As a first step, a Steering Committee was constituted to draft the National Guidelines. The first meeting of the Steering Committee was held on 26 October 2007, at NDMA to deliberate exhaustively on all aspects of Urban Flood Disaster Management and the sub groups were formed. The Table of Contents was prepared and discussed in detail in the meeting. Following to this number of steering committee meetings were held at Hyderabad and Delhi. Besides this a Regional Workshop was held at NDMA taking into board the state and UTs of Rajasthan, Haryana, Punjab, Delhi and Chandigarh and state review meetings were held in the states of Maharashtra, Tamil Nadu and Assam to document the present status and management practices at state as well as local level. The sub



groups meetings were held at Delhi, Bangalore and Mumbai to deliberate upon the inputs provided by the experts and review the inputs from the experts which are not received so far. The sub group members also review the present situation and further agenda to prepare the National Guidelines.

10.16 While preparing the draft Guidelines, the Environmental Impact Assessment (EIA) is considered as an important issue in the present scenario of new urban developments. The new urban developments are disrupted due to climate

change and high intensity of rainfall, which are being resulting into increased frequency and intensity of urban floodings in many areas. Hence considering the importance of the subject a Brain Storming Session on "Urban Flooding: Environmental Impact Assessment (EIA) for New Urban Developments" is planned to be held at A. P. Pollution Control Board, Hyderabad on 26 May 2008. At present the Steering Committee is in the process of preparing the first draft of National Guidelines on Management of Urban Floods.



Shri S. Jaipal Reddy, Hon'ble Union Minister of Urban Development, Inaugurating the National Workshop

## Pilot Project on Mapping, Impact Assessment and Management of Hyderabad Urban Floods

10.17 This Pilot Project is a Joint Study by A.P. State Disaster Mitigation Society (APSDMS), Planning Department, GoAP and National Disaster Management Authority (NDMA). APSDMS, Planning Department of GoAP initialized this pilot project and it is proposed to be taken up by APSDMS with National Remote Sensing Agency (NRSA) Hyderabad. The Society has requested NDMA to partly fund this project along with strategic guidance.

10.18 An Empowered Committee was constituted by NDMA to examine the proposed pilot project. The Committee invited APSDMS, Hyderabad to make a presentation on the subject. Accordingly, APSDMS presented the project proposal on 03 July 2007 at NDMA. During the meeting the Committee suggested to modify the proposal in the prescribed format given to the Society. In the process of modification, APSDMS has submitted the modified proposal.

10.19 The objective of the Pilot Project is to develop flood forecasting model for riverine flash floods,

vulnerability mapping and assessment of flooding hazard. The project will study the impact of cloudburst/ river overflow/ cyclone in flash flood in a period of 12 months. The output of the project will be with recommendations to solve the problem of flash floods. The study will be conducted in the catchment of Hussainsagar, Hyderabad, which is frequently prone to flooding due to conversion of agriculture/ vacant land into concrete jungle, and erratic rainfall. The total geographical area proposed for the study is 330 sq. km.

10.20 The Urban Flood Disaster Management System shall be developed based on the best available data sources from the commissioning of Doppler Weather Radar by IMD, expansion of rain gauge network by IMD and AP Govt. and ALTM data from NRSA. The assessment of urban flooding will become more and more accurate as and when additional data becomes available through the commissioning of the above S&T Tools.

10.21 The project is a state of the art proof of demonstration of S&T tools for developing Urban Flood Management System in a pilot mode. Hence, NDMA partnership is solicited in this initiative along with APSDMS/APSRAC Govt. of AP with a part contribution of Rs. 5,00, 000/ (Five Lakh only).



## General Administration

### Office Accommodation of NDMA

11.1 The NDMA was constituted on 30 May 2005 by an executive order of the Government of India. Subsequently, with the assent of the His Excellency President of India to the Disaster Management Act, 2005 on 23 December 2005, the Authority was notified on 27 September 2006 under the provisions of the Act.

11.2 The NDMA started its functioning since 28 September 2005. At the very beginning unavailability of suitable office accommodation forced NDMA to start functioning from a makeshift accommodation, i.e., from the Centaur Hotel, Near Indira Gandhi International Airport. Meanwhile, NDMA identified its permanent office accommodation in the form of an old DDA building in Safdarjung Enclave. The condition of the building required proper reconstruction and renovation activities.

11.3 After consultation and discussion with the MHA, the task of reconstruction and renovation of the new office accommodation has been assigned to the National Building Construction Corporation (NBCC), a PSU under the Ministry of Urban Development. It has been also proposed that the new office accommodation will be known as "NDMA Bhawan".

11.4 NDMA Bhawan will be a 'state-of-the-art' modern building of four floors. This building will also have the facilities of two lifts, video conferencing,

video-wall, OPs room, auditorium, library and modern telephone exchange. Modern furniture and work stations should be provided for optimum use of space in NDMA Bhawan. Besides regular electric supply, this building will have back-up of two DG sets of 320 & 250 KVAs so as to ensure uninterrupted electric supply. Rain-water harvesting and fire fighting facilities will be properly installed in NDMA Bhawan.

11.5 A Project Monitoring Group has been formed under the Chairmanship of Ms. Somi Tandon, Former Secretary, Defence Accounts to monitor the reconstruction and renovation activities. The work is in full swing and it is likely to be completed very soon.

### Organizational Structure

11.6 Immediately after its constitution, the Authority set about implementing its mandate in a highly professional manner. The foremost challenge before the Authority was to evolve its organizational structure which would enable it to perform its functions in an efficient manner. This process involved studies of various disaster management authorities/ agencies the world over, consultation with eminent personalities and various Ministries / Departments of the Govt. The organization proposed is a lean and a professional structure which is IT enabled. In keeping with the management imperatives, most of the functions of routine nature are to be outsourced. Disaster being a specialized subject, it has also been ensured that the expertise

of specialists is available on contractual basis. This organization envisages working in close harmony with the existing administrative and institutional set up in the country and is not a parallel organization. The Cabinet Note has been submitted and is waiting the final approval of the Cabinet.

## Finance and Budget

### Role & Responsibilities

11.7 Finance and Accounts Division plays a supportive role in fulfillment of the mandate assigned to NDMA, keeping in view the guidelines/ instruction issued by the Ministry of Finance from time to time. Some of its functions and responsibilities are:-

- i. Drawal of budget of the NDMA.
- ii. Maintenance of departmental accounts in accordance with the requirements under General Financial Rules (GFRs).
- iii. Watch and review the progress of expenditure against sanctioned grants through maintenance of control registers.
- iv. Advise NDMA on all matters falling within the field of delegated powers.
- v. Associate closely with the formulation of schemes and important expenditure proposals from their initial stages.
- vi. To watch settlement of audit objections, Inspections Reports, draft audit paras etc.
- vii. To ensure prompt action on Audit Reports, Reports of Public Accounts

Committee (PAC) and Estimates Committee.

- viii. To ensure timely submission of periodical reports and returns.

### Formulation of Standard Operating Procedures (SOPs)

11.8 With a view to standardize the procedures and practices, SOPs have been drawn on the following subjects to enable the office of NDMA to take uniform decision in a speedy manner:-

- i. Extending financial support for organizing Mock Exercise in States on behalf of NDMA.
- ii. Procurement of stationery items, furniture etc., for official use.
- iii. Organising training programmes/ workshops/ seminars/ conferences etc. through Central/ State Government (and their agencies), premier training and academic institutions and national level federations.
- iv. Engaging institutes/ organizations/ agencies/ individual experts for award of "Studies" on various fields of disaster management.
- v. Booking/ cancellation of air tickets for vice Chairman/ Members and payments of bills raised by the approved travel agents.
- vi. Booking/ cancellation of air tickets for Senior Officers/ Specialists/ Consultants/ SROs/ Personal staff of Vice Chairman/ Members of NDMA.



## Budget Classification

under Grant No. 54 – Other Expenditure of MHA.  
Other heads allotted to NDMA in detail are:-

11.9 In the Demands for Grants of Ministry of Home Affairs (MHA), NDMA has been classified

## Revenue (Non-Plan)

Major Head (2245)	–	Relief on account of Natural Calamities.
Sub-Major Head (80)	–	General.
Minor Head (102)	–	Management of natural disasters, contingency plans in disaster prone areas.
Sub-Head (04)	–	National Disaster Management Authority.
Detailed Head (01)	–	Establishment Charges.

## Revenue (Plan)

A separate sub-head has been allotted for each project of NDMA as shown below:-

02	–	National Earthquake Risk Mitigation Project (NERMP).
03	–	National Landslide Risk Mitigation Project (NLRMP).
04	–	National Disaster Management Communication Network (NDMCN).
05	–	Other Disaster Management Projects.
06	–	National Cyclone Risk Mitigation Project (NCRMP) with World Bank Assistance.

Capital Section (Non-Plan)

Major Head (4250)	-	Capital outlay on other Social Services.
Minor Head (101)	-	Natural Calamities.
Sub-Head (03)	-	National Disaster Management Authority.
Sub-Head (04)	-	National Cyclone Risk Mitigation Project (NCRMP) with World Bank Assistance.

Fund Allocation

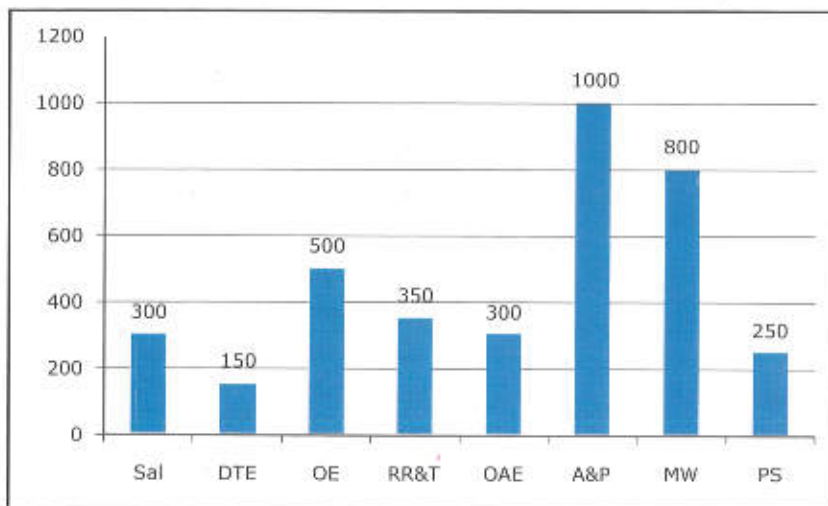
11.10 During the period under report (2007-08), NDMA had been allotted a total amount of Rs. 89.115 Cr., out of which Rs. 50 Cr. was meant for Plan Schemes/ Projects of the Orgaization.

11.11 A substantial portion of expenditure under Non-Plan is incurred under the following object heads:-

- i. Salaries.
- ii. Domestic Travel Expenses (DTE).
- iii. Office Expenses (OE).

- iv. Rent, Rates & Taxes (RR&T) (during 2007-08, NDMA is housed in a rented accommodation).
- v. Other Administrative Expenses (OAE).
- vi. Advertising & Publicity (A&P).
- vii. Minor Works (MW) (carried out for the new office building of NDMA).
- viii. Professional Services (PS).

11.12 Funds allocation in BE 2007-08 under the above mentioned project heads are shown below in graphical form also:

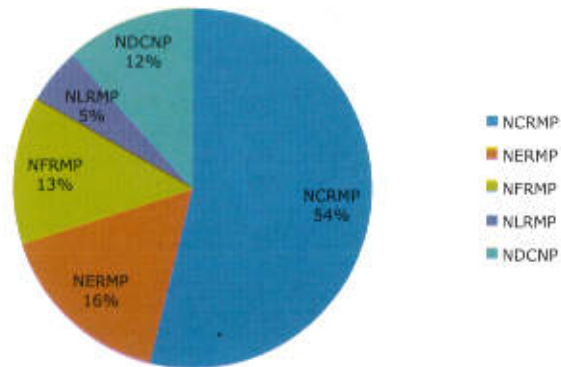




11.13 Total amount of Rs. 50 cr. allotted in BE 2008 for preparation of Detailed Project Reports (DPRs) had been distributed as follows for various Plan projects of NDMA:-

i.	National Earthquake Risk Mitigation Project (NERMP)	- Rs. 5 cr.
ii.	National Landslide Risk Mitigation Project (NLRMP)	- Rs. 2 cr.
iii.	National Disaster Management Communication Network (NDMCN)	- Rs. 4 cr.
iv.	National Cyclone Risk Mitigation Project (NCRMP) with World Bank Assistance	- Rs. 20 cr.
v.	Other Disaster Management Projects	- Rs. 19 cr.
	<b>Total</b>	<b>- Rs. 50 cr.</b>

11.14 The above mentioned projects have been included for implementation during the 11th Plan period of 2007-12. Tentative project costs of Major Projects of NDMA are graphically shown below:-



11.15 The project costs are subject to revision after preparation of DPR for each project.

# Annexure I

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## Composition of the NDMA

1. Dr. Manmohan Singh Prime Minister of India	Chairperson
2. Gen. N. C. Vij, PVSM, UYSM, AVSM (Retd.)	Vice-Chairperson
3. Lt. Gen. (Dr.) J. R. Bhardwaj, PVSM, AVSM, VSM, PHS (Retd.)	Member
4. Shri B. Bhattacharjee	Member
5. Dr. Mohan Kanda	Member
6. Prof. N. Vinod Chandra Menon	Member
7. Smt. P. Jyoti Rao	Member
8. Shri M. Shashidhar Reddy	Member
9. Shri K. M. Singh	Member
10. Shri J. K. Sinha	Member



## Annexure II

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### List of Senior Officers of the NDMA

1. Shri H. S. Brahma, Additional Secretary (Since 01-12-2006)
2. Smt. Dipali Khanna, Financial Advisor
3. Shri J. B. Sinha, Joint Secretary
4. Shri A. R. Sule, Deputy Secretary
5. Shri R. K. Chopra, Under Secretary (Since 14-11-2006)

## Annexure III

### Composition of the Advisory Committee for the NDMA

1. Ms. Kumud Bansal,  
IAS (Retd.),  
Former Secretary, Elementary Education and Literacy,  
Ministry of Human Resource Development
2. Ms. Sushma Chaudhary,  
IAS (Retd.),  
Former Principal Adviser,  
Planning Commission
3. Prof. S. K. Dube,  
Director, Indian Institute of Technology, Kharagpur, West Bengal
4. Prof. Harsh Gupta,  
Former Director,  
National Geophysical Research Institute, Hyderabad
5. Sanjoy Hazarika,  
Managing Trustee,  
Centre for North East Studies and Policy Research, New Delhi
6. Dr. P. K. Iyengar,  
Former Chairman, Atomic Energy Commission, Mumbai
7. Lt. Gen. Davinder Kumar,  
PVSM, VSM BAR (Retd.),  
Former Signal Officer-in-Chief of the Indian Army
8. Shri Alok Mukhopadhyay,  
Chief Executive,  
Voluntary Health Association of India (VHAI), New Delhi
9. Dr. R. K. Pachauri,  
Director General,  
The Energy & Resources Institute (TERI), New Delhi
10. Shri R. S. Prasad,  
Former Chairman, Central Water Commission, New Delhi
11. Dr. D. R. Sikka,  
Former Director, Indian Institute of Tropical Meteorology, New Delhi
12. Lt. Gen. V.K. Sood,  
PVSM, AVSM (Retd.),  
Former Vice Chief of Army Staff