TRAINING MANUAL

BOOKLET 2
Disaster Preparedness and Mitigation

FOR THE PROJECT ON
Capacity Building
in
Disaster Management
for Government Officials
and
Representatives of Panchayati Raj
Institutions & Urban Local Bodies
at District Level

(An Initiative of National Disaster Management Authority and Indira Gandhi National Open University)
National Disaster Management Authority (NDMA)

The NDMA has the Prime Minister of India as its Chairman. Other members of the Authority, not exceeding nine, are to be nominated by the Chairman. The Chairman of the NDMA may designate one of the members to be the Vice-Chairman of the NDMA. The Vice-Chairman of NDMA has the status of a Cabinet Minister and other members have status of Ministers of State. The NDMA has been assigned the responsibility of laying down policies, plans and guidelines for disaster management for ensuring timely and effective response to disaster.

The NDMA has the following responsibilities to:

- Lay down policies on Disaster Management;
- Approve the National Plan;
- Approve plans prepared by the Ministries or Departments of the Government of India in accordance with the National Plan;
- Lay down guidelines to be followed by the State Authorities in drawing up the State Plan;
- Lay down guidelines to be followed by the different Ministries or Departments of the Government of India for the purpose of integrating the measures for prevention of disaster or the mitigation of its effects in their development plans and projects;
- Coordinate the enforcement and implementation of the policy and plan for disaster management;
- Recommend provision of funds for purpose of mitigation;
- Take such measures for the prevention of disaster, or mitigation, or preparedness, and capacity building for dealing with the threatening disaster situation or disaster as it may consider necessary;
- Provide such support to other countries affected by major disasters as may be determined by the Central Government;
- Lay down broad policies and guidelines for the functioning of the National Institute of Disaster Management (NIDM).
The Indira Gandhi National Open University (IGNOU), since its establishment in 1985, has contributed significantly to the development of higher education in the country through the open and distance learning mode. IGNOU follows a learner-centric approach and provides seamless access to quality education, innovative learning, flexible methodology, Information and Communication Technology, professional skills and training.

The education is disseminated in conventional, as well as emerging inter-disciplinary areas, such as consumer protection, disaster management, environment, human rights, women empowerment and child development, participatory forest management, participatory planning, resettlement and rehabilitation, food and nutrition. Various literacy programmes focusing on community awareness, education and training in need-based and relevant areas have been successfully undertaken by the University as a part of its strategy of social intervention and community capacity building.

Extension education is an important component of academic activities of IGNOU. It provides much needed linkages between the community and the University. The University has established a network of 67 Regional Centres and 3200 Study Centres all over the country to provide easy access and effective support services to the learners. These include Programme Study Centres, as well as Special Study Centres for SC/STs, minorities, differently-abled learners, jail inmates, and personnel of different wings of Defence and Para-military services.

The University develops its academic programmes through 21 Schools of Study comprising Faculty trained in distance education methodology. The academic programmes of the University have multi-media support. The University has facilities for audio, video, radio, television, interactive radio and video counselling, as well as tele-conferencing. IGNOU has also been identified as the nodal agency for running a 24-hour educational TV channel called Gyan Darshan. It has the unique distinction of combining the conventional role of a University with that of an apex body in the promotion, coordination and maintenance of standards in distance education, through continuous assessment and accreditation of the Open and Distance Learning Institutions.
### Universe of the Project on “Capacity Building in Disaster Management for Government Officials and Representatives of Panchayati Raj Institutions and Urban Local Bodies at District level”.

Project is being undertaken in 11 States, covering the following 54 Districts:

1. **Andhra Pradesh**: Anantapur, Mahabubnagar, Nellore, Prakasam, Srikakulam.
2. **Assam**: Barpeta, Cachar, Dhubri, Dhemaji, Lakhimpur.
3. **Bihar**: Madhepura, Muzaffarpur, Patna, Sitamarhi, Supaul.
4. **Haryana**: Ambala, Gurgaon, Panipat, Rohtak, Yamuna Nagar.
5. **Himachal Pradesh**: Chamba, Kinnaur, Kangra, Kullu, Manali.
7. **Maharashtra**: Nasik, Pune, Raigarh, Satara, Thane.
8. **Orissa**: Balasore, Bhadrak, Ganjam, Jagatsinghpur, Kendrapara.
9. **Tripura**: Dhalai, North Tripura, South Tripura, West Tripura.
10. **Uttarakhand**: Bageshwar, Chamoli, Pithoragarh, Rudraprayag, Uttarkashi.
11. **West Bengal**: Bankura, Burdwan, Murshidabad, Purba Medinipur, South Dinajpur.
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(An Initiative of National Disaster Management Authority

and

Indira Gandhi National Open University)
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April, 2012
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The National Disaster Management Authority (NDMA) was set up in 2005 by the Government of India as an apex body to spearhead and implement a holistic and integrated approach to Disaster Management. NDMA has the responsibility for laying down policies, plans and guidelines for disaster management and coordinating their enforcement and implementation for ensuring preparedness, mitigation and timely and effective response to disasters. NDMA has launched a number of initiatives to take the message of disaster management to all the stakeholders including community at the grassroots level. NDMA has taken up mainstreaming of disaster risk reduction concerns in Government departments, States, Districts and civil society, School and College education, technical education, Panchayati Raj Institutions and Urban Local Bodies. NDMA has laid down the framework of capacity building and mainstreaming DM for various disasters through its National Disaster Management Guidelines.

Communities are the first responders in the event of any disaster and the representatives of local administrative bodies have a critical role in adoption of the new culture of disaster management in India. The National Disaster Management Authority is collaborating with the Indira Gandhi National Open University (IGNOU) to undertake a pilot project on “Capacity Building in Disaster Management for Government Officials and Representatives of Panchayati Raj Institutions and Urban Local Bodies at the District Levels”. Under this project, a total of 4050 government officials and 12150 elected representatives of Panchayati Raj Institutions and Urban Local Bodies would be trained in Disaster Management through Face to Face Training Programmes at the district level in 54 hazard prone districts of 11 States.

The Face to Face Training Programmes will focus on the critical aspects of prevention, preparedness, mitigation, relief and immediate response, rehabilitation, reconstruction and recovery with respect to disasters. The Indira Gandhi National Open University has a long experience of teaching courses in disaster management and has developed rich knowledge on the subject. This project combines their knowledge with the various guidelines evolved by NDMA for Disaster Management.

I hope that this project would lead to larger programmes on capacity building of elected representatives of local bodies in the country and learning attained through such trainings will reach the community via the identified facilitators. This will help enhance preparedness, strengthen mitigation and fulfill the vision outlined in the National Policy on Disaster Management 2009, “To build a safe and disaster resilient India by developing a holistic, proactive, multi-disaster oriented and technology driven strategy through a culture of prevention, mitigation, preparedness and response.”

New Delhi
20 June 2011

(M. SHASHIDHAR REDDY)
FOREWORD

Accelerated pace of development brings with it the perils of unsafe living, pressures on non-renewable resources, densely populated spaces and environmental degradation among others. As a consequence, the frequency of catastrophes such as earthquakes, floods, cyclones, landslides, droughts, and fires has gone up. We hear of disasters so often that we as individuals are sadly becoming immune to them. We display concern and anxiety when these calamities happen, but by and large depend on the concerned stakeholders to do the needful, who on the other hand, have a reactive rather than pro-active approach to disasters. Stitching up of loose ends takes place after an event and then because of lack of follow-up in terms of reconstruction and rehabilitation, the affected areas are rendered further vulnerable to such events that keep happening, leading to enormous loss of human resources in particular.

Making disaster management more effective and efficient, against this backdrop, is not just a pressing concern, but an overarching problem facing the stakeholders in disaster management. Many efforts in the past, both governmental and non-governmental, have been initiated in this direction. Many committees, forums and organizations, both national and international, have reiterated the pressing need of managing disasters. There is no dearth of material in the form of reports, books, articles and manuals on the subject. From relief and response to preparedness and long-term recovery, all major facets of disaster management have been examined at length. Yet, the need to revisit the issue is still pertinent, as it opens up fresh avenues of analyzing its different aspects. This Manual tries to focus on the knowledge, skill and attitude inculcation on the various facets of disaster management in a novel manner. It emphasizes the role and relevance of governmental functionaries and representatives at the grassroots level, and reiterates the need for community understanding and participation in the disaster management process. The interconnection between disasters and development seems to be the core concern of the Manual.

This Manual, which is an integral part of the Project on ‘Capacity Building for Government Officials and Representatives of Panchayati Raj Institutions and Urban Local Bodies at District Level’, addresses the concern of empowering the officials and functionaries at the grassroots level. These are the people who are in constant touch with the community. When the disaster strikes they are the immediate responders along with the community to go to the site with relief. Their training in disaster management is the best example of preparedness needed for disaster management in the country. Having myself worked in the area of capacity building of PRIs for over two decades and being deeply involved in Rural Development interventions both at national and international levels, I am convinced that this Manual will be able to live up to the expectations of the participants. I am confident that it would be of substance and value to the grassroots level officials and functionaries, and all those interested in the area of disaster management.

(Professor. M. Aslam)
Vice-Chancellor IGNOU
ACKNOWLEDGEMENT

Training Manuals are meant for the enhancement of knowledge, skills and attitudes of trainees. If this endeavour succeeds in moulding the mindsets of the target groups of this Project; a ray of satisfaction would be visible; not to mention the collective joy that would ensue. Many people are involved in such efforts. Acknowledgement is a small way of expression of gratitude to them. I wish to express my foremost appreciation for General N.C. Vij, Former Vice-Chairman, National Disaster Management Authority (NDMA), during whose tenure, the Project was conceptualized. I am equally obliged and beholden to Shri M. Shashidhar Reddy, Hon'ble Vice-Chairman, NDMA, for his guidance, constructive criticism, support and blessings towards the final execution of this Project.

I extend deep gratitude to Prof. V.N. Rajasekharan Pillai, Former Vice-Chancellor, Indira Gandhi National Open University (IGNOU) for his support and encouragement. He has been involved with all the initial phases of the Project. I am indebted to Prof. M. Aslam, Vice-Chancellor, IGNOU for his kind cooperation and support towards the implementation of the Project. My deep gratefulness to all those from the NDMA who have sincerely worked for making this Project a reality. Special gratitude is in place to the senior officers of the NDMA namely Mr. Amit Jha, Ms. Sujata Saunik, Mr. R.K Singh, Mr. S.S Yadav, Ms. Madhulika Gupta, and Ms. Preeti Banzal for their constant cooperation, as well as for their content input on the NDMA. I would also like to thank Mr. P. Thakur, Mr. Rajendra Prasad and Mr. Naval Prakash of the NDMA Project Team for their valuable help on Manual Draft. Other contributors from NDMA are also worthy of my deep gratitude. But for them, the important details in the Manual would not have been clarified. I thus thank Dr. C. Jayakumar (Sr. Consultant – Psychological Care), Shri S.N. Mahapatra (Sr. Consultant – Earthquake & Tsunami), Dr. M.C. Abani (Sr. Consultant – Nuclear & Radiological Hazards), Sh. B.B. Gadnayak (Consultant – IRS), Dr. T.S. Sachdeva (Consultant – Medical Preparedness), Sh. V.K. Jain (SAO), Dr. A.K. Sinha (SRO) for their noteworthy advice and suggestions.

Professor Pardeep Sahni of the Faculty of Public Administration, IGNOU deserves heartfelt thanks for conceiving and implementing his vision on the Project. He has coordinated each aspect of the Manual with enthusiasm. I am truly thankful to Prof. Dolly Mathew of the Faculty for her dedicated compilation of audio and video components of the Project. Prof. Uma Medury deserves my gratitude for proof reading Manual booklets thoroughly. Other members of the Faculty namely Prof. E. Vayunandan and Dr. Durgesh Nandini need to be exclusively thanked for their commitment and sincerity towards the conduct of Project Workshops in different states of the country. In fact, all Faculty members deserve earnest thanks for their genuine involvement in the Project Workshops. I express deep appreciation for the Research and Teaching Assistants of the Faculty, namely Ms. Sandhya Chopra for her assistance on the audio-video input, and also Mr. Senthilkanal, Mr. Senthil Nathan, Ms. R. Anitha and Ms. G Niranjani for their ceaseless help and support in this endeavour. Dr. Rajwant, Former Consultant with the Faculty, deserves a special thanks for preparing guidelines and slides for the Project Facilitators.

My earnest thanks to Professor Vinod K. Sharma of the Indian Institute of Public Administration (IIPA) for meticulously undertaking the content editing of all the 4 Booklets of the Manual. I am truly beholden to all those who have been involved with the different aspects of the Manual, be it typing of the manuscript, running errands for the Workshops, or translation tasks. Mr. Lalit Kumar, Mr. Devender Pal Rawat, Ms. Yogita Vasandani, Mr. Sanjay Aggarwal, Mr. Amit Kumar Thakur and Mr. Dheeraj Kumar thus deserve my heartfelt thanks. I also owe special thanks to Ms. Abha Mishra, Project Officer, GOI–UNDP DRR Programme, New Delhi and Mr. Anshu Sharma of SEEDS, New Delhi for their valuable comments on the drafts of the Manual Booklets. Deep gratitude is in place to all those who have worked very hard on the presentation style of the Booklets. I am grateful to Mr. Amit Srivastava for creating the graphics, Mr. Tamal Basu for finalizing the illustrations and booklet covers, Mr. Rahul Chhabra for conceptualizing the cover designs, Mr. Manjit Singh for printing, and Graphic Printers for laser composition of the Booklets.

(Alka Dhameja)
INTRODUCTION TO THE PROJECT

The Pilot Project on “Capacity Building in Disaster Management for Government Officials and Representatives of Panchayati Raj Institutions and Urban Local Bodies at District Level” is a joint effort of Indira Gandhi National Open University and National Disaster Management Authority. The Project is aimed to build and strengthen the capacity of the target groups in the areas of disaster prevention, preparedness, mitigation, response and recovery.

It is being undertaken in selected 11 States, identified on the basis of their vulnerability to various natural and man-made hazards. These States have been selected from all five Regions namely North-East (Assam, Tripura); North (Haryana, Himachal Pradesh, Uttarakhand); East (Bihar, Orissa, West Bengal); West (Maharashtra); and South (Andhra Pradesh, Kerala); covering the following 54 districts, 4 from Tripura and 5 from each of the other ten identified States under the Project:

- Andhra Pradesh: Anantapur, Mahabubnagar, Nellore, Prakasam, Srikakulam.
- Assam: Barpeta, Cachar, Dhubri, Dhemaji, Lakhimpur.
- Bihar: Madhepura, Muzaffarpur, Patna, Sitamarhi, Supaul.
- Haryana: Ambala, Gurgaon, Panipat, Rohtak, Yamuna Nagar.
- Himachal Pradesh: Chamba, Kinnaur, Kangra, Kullu, Manali.
- Kerala: Ernakulam, Idukki, Malappuram, Palakkad, Wayanad.
- Maharashtra: Nasik, Pune, Raigarh, Satara, Thane.
- Orissa: Balasore, Bhadrak, Ganjam, Jagatsinghpur, Kendrapara.
- Tripura: Dhalai, North Tripura, South Tripura, West Tripura.
- Uttarakhand: Bageshwar, Chamoli, Pithoragarh, Rudraprayag, Uttarkashi.
- West Bengal: Bankura, Burdwan, Murshidabad, Purba Medinipur, South Dinajpur.

From each district, 300 people shall be trained under the Project, out of which 75 will be Government officials and 225 will be the representatives of Panchayati Raj Institutions (PRIs) and Urban Local Bodies (ULBs). Thus, in all, 16,200 Government Officials (GOs) and representatives of PRIs/ULBs shall be trained in Disaster Management under this Project.

Objectives of the Project have been to:

- Build and strengthen the capacity of Government Officials and representatives of PRIs and ULBs in the areas of disaster prevention, preparedness, mitigation, response and recovery.
- Encourage the GOs as well as PRI and ULB representatives to enlist the support of local institutions, NGOs, CBOs, etc., for community awareness, as well as capacitate the officials and local institutions to procure the support from other relevant quarters.
- Reinforce the skills of officials and representatives in appropriate hazard assessment, vulnerability analysis, resource analysis and local capacity assessment.
- Develop the required disaster management knowledge base of the GOs, as well as PRI and ULB representatives.
- Formulate training modules, including standardized training methodology, technical support for organizing training programmes on emergency preparedness and management for the officials and representatives.
- Develop community based disaster management systems for their specific needs in view of the regional diversities and multi-hazard vulnerabilities through a consultative process.
• Disseminate important concepts of NDMA Guidelines in the various regional languages through multi-media technologies.
• Enable officials who are functioning at the district levels to be better equipped to deal with natural disasters such as earthquakes, floods, landslides and other natural phenomena that are likely to cause damage.
• Train the team of district officials to enable them to introduce basic guidelines/procedures and become aware of safety and evacuation techniques, as well as seismic-resistant constructions.
• Equip the functionaries at district level to immediately arrange for basic relief work, in case of common natural/man-made disasters without waiting for help/ instructions from external sources.

**Methodology of Execution:**

In the identified 54 multi-hazard districts, a systematic methodology has been adopted under the Project, which includes:

1. Identification of Administrative Training Institutes (ATIs), in each of the 11 States for organization of Pilot Face-to-Face Training Programme (FFTP) for Training Need Analysis (TNA).
2. Development of background material and audio and video programmes to be provided to the participants of FFTPs.
3. Translation of background material in Hindi, Assamese, Bengali, Marathi, Malayalam, Oriya, and Telugu.
4. The Study Centre Coordinator has been identified as the nodal officer representing IGNOU for carrying out the following activities pertaining to the Project:
   - To be in touch with the Nodal Officer from the District Administration to get the names of the participants for attending FFTPs. NDMA is responsible for passing on the names and contact details of the Nodal Officers to the Study Centre Coordinator, once the same is finalized and conveyed by the district administration.
   - To organize the Capacity-Building exercise through 8 FFTPs of two day duration each, to be attended by 35-40 participants identified by the district administration for each FFTP.
   - 2 Resource Persons identified from different fields of study from each Study Centre have been assigned to conduct 8 FFTPs of two day duration each.
   - Mock Drill of around two hours on the second day of each FFTP has been provisioned to demonstrate skills and methods required in rescue operations, including first aid techniques/ skills.

**The Main Stakeholders of the Project are:**

- National Disaster Management Authority (NDMA)
- Indira Gandhi National Open University (IGNOU)
- State Governments
- State Disaster Management Authority (SDMA)
- District Disaster Management Authority (DDMA)
- District Administration

The Project aims at training the participants who shall further help the community to undertake required tasks for effective disaster management.
INTRODUCTION TO THE BOOKLET

As we all know disasters, especially natural catastrophes like earthquakes, cyclones, tsunamis, landslides cannot be wished away; all we can do is prepare ourselves to lessen their destructive wrath on our lives and infrastructure. In fact, the approach of the stakeholders in disaster management has also shifted from being reactive-relief oriented to proactive-preparedness oriented in the past decade. The National Policy on Disaster Management prepared by the National Disaster Management Authority (NDMA) projects a paradigm shift from the earlier ‘response-centric’ approach to the holistic management of disasters with emphasis on Prevention, Preparedness and Mitigation. The Policy document focuses on disaster management as a national priority.

This Booklet entitled ‘Disaster Preparedness and Mitigation’ brings out the role of institutional and functional mechanisms/strategies in preparing for disasters. It discusses the concept of preparedness and mitigation, underlining the relationship between the two. The disaster preparedness framework in India is described in detail, especially the pertinent role played by the NDMA and the National Disaster Response Force (NDRF). The NDMA guidelines with regard to the role of Non-Governmental Organizations are also explained at length. The Booklet gives a detailed list of ‘Concepts to Remember’ including concepts like awareness campaign, building codes, capacity assessment, community profiling, land-use planning, mapping exercises, mock drill, mercalli scale, rainwater harvesting, traditional wisdom, universal design etc. In order to elucidate the preparedness tasks better, the typology of preparedness is explained under 3 broad categories; namely Target-Oriented Preparedness, Task-Oriented Preparedness and Disaster-Oriented Preparedness. The Booklet will be of use to you all in preparing local level plans to manage disasters effectively.
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# ABBREVIATIONS

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<td>ADPC</td>
<td>Asian Disaster Preparedness Centre</td>
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<td>AIIMS</td>
<td>All India Institute of Medical Sciences</td>
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<td>ATLS</td>
<td>Advanced Trauma Life Support</td>
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<td>BLS</td>
<td>Basic Life Support</td>
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<tr>
<td>CARE</td>
<td>Cooperative for Assistance and Relief Everywhere</td>
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<td>CBDP</td>
<td>Community Based Disaster Preparedness</td>
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<tr>
<td>CBO</td>
<td>Community Based Organization</td>
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<tr>
<td>CBRA</td>
<td>Community Based Risk Assessment</td>
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<tr>
<td>CBRN</td>
<td>Chemical Biological Radioactive Nuclear</td>
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<tr>
<td>CCF</td>
<td>Community Contingency Fund</td>
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<tr>
<td>CIMS</td>
<td>Crisis Information Management System</td>
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<td>DM</td>
<td>Disaster Management</td>
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<td>DMHP</td>
<td>District Mental Health Programme</td>
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<td>DRDO</td>
<td>Defence Research and Development Organization</td>
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<td>EOC</td>
<td>Emergency Operations Centre</td>
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<td>GP</td>
<td>Gram Panchayat</td>
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<td>IEC</td>
<td>Information Education Communication</td>
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<td>Indira Gandhi National Open University</td>
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<td>NCRMP</td>
<td>National Cyclone Risk Mitigation Project</td>
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<td>NDMA</td>
<td>National Disaster Management Authority</td>
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<td>NDICN</td>
<td>National Disaster Information and Communication Network</td>
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<td>NDRF</td>
<td>National Disaster Response Force</td>
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<td>NERMP</td>
<td>National Earthquake Risk Mitigation Project</td>
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<td>NFRMP</td>
<td>National Flood Risk Mitigation Project</td>
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<tr>
<td>NGO</td>
<td>Non-Governmental Organization</td>
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<tr>
<td>Acronym</td>
<td>Full Form</td>
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<td>NIDM</td>
<td>National Institute of Disaster Management</td>
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<td>NLRMP</td>
<td>National Landslide Risk Mitigation Project</td>
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<td>National Mental Health Programme</td>
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<td>National Service Scheme</td>
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<td>National School Safety Pilot Project</td>
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<td>Nehru Yuva Kendra Sangathan</td>
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<td>OCHA</td>
<td>Office for the Coordination of Humanitarian Affairs</td>
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<td>PDS</td>
<td>Public Distribution System</td>
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<td>PRA</td>
<td>Participatory Rural Appraisal</td>
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<td>PRI</td>
<td>Panchayati Raj Institution</td>
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<td>PSFA</td>
<td>Psycho-Social Support for Affected</td>
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<td>PSSMHS</td>
<td>Psycho-Social Support for Mental Health Sciences</td>
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<td>RCC</td>
<td>Reinforced Concrete Cement</td>
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<td>SAR</td>
<td>Search and Rescue</td>
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<td>State Disaster Response Force</td>
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<tr>
<td>SOPs</td>
<td>Standard Operating Procedures</td>
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<td>ULB</td>
<td>Urban Local Body</td>
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<td>UNDRO</td>
<td>United Nations Disaster Relief Office</td>
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<tr>
<td>VDMC</td>
<td>Village Development Management Committee</td>
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<tr>
<td>WAN</td>
<td>Wide Area Network</td>
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<tr>
<td>ZP</td>
<td>Zila Parishad</td>
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</table>
DISASTER PREPAREDNESS AND MITIGATION

‘A Stitch in Time Saves Nine’ ...

(Famous Proverb)

It is believed that prevention is better than cure. Likewise, disaster preparedness is better than disaster management. The United Nations Disaster Relief Office (UNDRO) uses the following definition of Disaster Preparedness:

“It may be described as (a series of) measures designed to organize and facilitate timely and effective rescue, relief and rehabilitation operations in cases of disaster.... Measures of preparedness include among others, setting up disaster relief machinery, formulation of emergency relief plans, training of specific groups (and vulnerable communities) to undertake rescue and relief, stockpiling supplies and earmarking funds for relief operations”.

Preparedness planning for disaster management is quite useful. The preparedness plans can either be short-term or long-term encompassing the organizational aims and objectives, structure for tackling disasters, preparedness measures, communication system, warning arrangements, community disaster operations, operational aspects of implementation of plans, post-disaster review, training and public awareness. A Disaster Preparedness Plan made at any level:

- Provides for hazard identification and risk analysis
- Indicates basic information about the resources, demography, existing organizational set up, administrative facilities at the state, district and local levels
- Describes preparedness and mitigation measures as well as response mechanisms
- Defines specific roles and responsibilities for various actors at different levels
- Ensures networking/coordination with the media, NGOs, international agencies and other stakeholders

DID YOU KNOW?

Any disaster preparedness programme should essentially include:

- Perceptions that need to be examined, and opportunities, which need to be created for people to modify their perceptions where necessary
- Strategies that need to be created to rouse the curiosity of the members of vulnerable affected community, and instill in them a desire for change
- Individuals and communities that need to be helped to compare the existing practices with proposed innovations
Educational methods/strategies that lay focus on community involvement and participation

Learning by doing and participation in various activities related to disaster preparedness

Role of the family and other social groups to be recognized as determining factors

Motivation, to be acknowledged as the inner drive that propels human beings towards attaining a desired goal

Preparedness behaviour with focus on changes in knowledge and attitude towards the ultimate goal of disaster preparedness

Psychological factors, which are not the only determinants in behaviour, and combine/interact with physical and social factors

1.1 COMPONENTS OF PREPAREDNESS

Key Components of Disaster Preparedness Framework are to:

- Strengthen policy, technical and institutional capacities in regional, national and local disaster management, including those related to technology, training, as well as human and material resources.
- Promote and support dialogue, exchange of information and coordination, with the aim of fostering a holistic approach towards disaster risk reduction
- Strengthen and when necessary develop coordinated regional approaches, prepare or review and periodically update disaster preparedness plans and policies at all levels, with a particular focus on the most vulnerable areas and groups
- Promote the establishment of emergency funds, wherever needed, to support preparedness measures
- Develop specific mechanisms to engage the active participation and ownership of relevant stakeholders including the communities, with the spirit of volunteerism

Preparedness involves several activities such as:

- Understanding the vulnerability profile in terms of social, economic and physical vulnerability, and formulating preparedness plan accordingly.
- Developing and institutionalizing disaster preparedness plan, which is comprehensive, and indicates the roles and responsibilities of several stakeholders before, during and after the occurrence of disasters
- Strengthening warning systems and meteorological studies
- Evolving appropriate Information Education and Communication (IEC) activities for community
- Keeping ready Rapid Response Teams, Search and Rescue personnel along with Emergency Medical Teams
Setting up secure and safe shelters to house the rescued

Putting in place emergency evacuation procedures

Making available relief activities including emergency shelters, medical, food, first aid services, and security arrangements

Disaster Preparedness facilitates the following processes:

<table>
<thead>
<tr>
<th>Objective</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarifying Authority, Responsibility and their Relationship</td>
<td>Describing as to who is responsible for ensuring that the work gets done, distributing decision-making authority among the team members, and the existing organizational units, as well as establishing formal lines of communication</td>
</tr>
<tr>
<td>Establishing the Control System</td>
<td>Streamlining the line of command and control under a broad preparedness plan</td>
</tr>
<tr>
<td>Obtaining Resources</td>
<td>Obtaining the funds, personnel, supplies and equipment necessary for doing the project activities</td>
</tr>
<tr>
<td>Establishing Information System</td>
<td>Determining the nature of information, which is necessary for carrying out the activities, identifying sources of such information and setting up reporting systems for the project</td>
</tr>
<tr>
<td>Directing and Controlling</td>
<td>Motivating project staff, executing project activities, and obtaining information for control, and taking corrective action as necessary</td>
</tr>
<tr>
<td>Monitoring and Evaluation</td>
<td>Monitoring the Preparedness Plan from time to time and updating it</td>
</tr>
</tbody>
</table>

Source: IGNOU, PGDDM Course, MPA-004 on Disaster Preparedness.

**EXERCISE 1**

IN KEEPING WITH THE TOPOGRAPHY AND DISASTER PROFILE OF YOUR AREA, PREPARE A NOTE ON THE OBJECTIVES OF DISASTER PREPAREDNESS PLAN

1.2 CONCEPTS TO REMEMBER

*Awareness Campaign*

A massive awareness campaign is necessary to support the community in preparation of disaster management plans. These campaigns are carried out through various means like rallies, street plays, competitions in schools, distribution of IEC material, and wall paintings on do’s and don’ts for various hazards. Meetings with key persons of a village such as the village head, health worker, school teachers, elected representatives, and members of the youth clubs and women also motivate the villagers to carry forward these campaigns for a safer living.
Building Codes
Ordinances and regulations controlling the design, construction, material, alteration and occupancy of any structure to ensure human safety and welfare. Building codes include both technical and functional standards.

Capacity Assessment
Capacity assessment is the process to determine what people do in times of crisis to reduce the damaging effects of a hazard, and to secure the sustainability of their livelihood by:
- Understanding people’s experiences with hazards and their shaping into coping strategies
- Analyzing the resources that are available and used by the community to reduce risk
- Gauging who has access to these resources and who controls them
- Assessing capacities of people at risk is a very important step in choosing strategies for community disaster risk reduction, and capability or capacity building

Graphic 1

Capacity Building
It is referred to as a complex, long-term phenomenon that requires the development of human resources, establishment of well-functioning organizations within a suitable work environment, and a supportive socio-political environment for improving the performance of institutions and personnel for planning and implementation. Available level of training and knowledge is required for adequate capacity development.

DID YOU KNOW?
NDMA has launched multi-pronged initiative to introduce disaster management into the education curricula in higher and technical education. Also to sensitize the various functionaries at the state and the district levels, NDMA has launched this as joint initiative with the Sardar Vallabhbhai Patel National Police Academy, Hyderabad and
Lal Bahadur Shastri National Academy for Administration, Mussorrie. In these programmes, capsules are being run jointly with these institutions in the basic foundation courses as well as specially organized workshops for the field level officers at the state and district levels. A pilot project on capacity building in disaster management for Government Officials, representatives of the PRIs and ULBs at the district level has been formulated. NDMA is implementing this programme with the overall objective of institutional strengthening, awareness generation and capacity building for disaster risk reduction.

Communication

Communication involves information exchange between two or more groups/individuals. It could be applied to both, education as well as emergency communication management. In terms of disaster education and preparedness, communication is a process of knowledge transfer to the community regarding disaster risks, preparedness and mitigation measures. In the process, the system is about flow of information from an individual or group of individuals to a mass group, i.e., the community. In case of disasters, both horizontal and lateral communication is needed, before as well as after disasters.

Community Based Organizations (CBOs)

These are organizations which are formed by people (community), operated by them and monitored and controlled by them, with least interference of public or private organizations. The CBOs offer:

- Immense volunteer capacity
- Understanding of community needs and awareness of the most vulnerable populations
- Built-in credibility with the community
- Access to social and population groups that may avoid interaction with government officials
- Power of persuasion and community influence; and
- Ability to make decisions outside of government processes

Community Empowerment

If disasters affect the communities most, they are also the first responders to disasters and constitute what is referred to as “disaster fronts”. Being at the forefront, communities need to have necessary capacities to respond to threats themselves. With respect to communities, we have moved from ‘victim’ or ‘receiver’ oriented approach to active ‘participator’ approach. Participation in governmental programmes (Formulation, Implementation and Monitoring Levels), risk assessment, mitigation planning and capacity building have ensured their stake.
**Community Risk Assessment**

It is a participatory process of determining the nature, scope and magnitude of negative effects of hazards, which can be anticipated during a specified period, and be reduced by employing local capacities. It involves a participatory analysis and combination of both scientific and empirical data concerning the probabilities of hazards at community level, the negative effects expected to result in each element at risk (vulnerability analysis) for each particular hazard, and consideration of coping mechanisms of the community (capacity analysis).

As per Asia Disaster Preparedness Centre (ADPC), Community-Based Risk Assessment (CBRA) provides a systematic process for identifying, estimating, and ranking community risks. Community Risk Assessment is done for the purpose of risk reduction planning to:

- Examine the community’s prioritized risks that need to be reduced
- Ensure that the risk reduction is going to be adequate and appropriate
- Make certain that risk reduction will be cost-effective and sustainable
- Ensure a balance between preparedness and long-term mitigation measures
- Identify if there are other activities that would have a more positive development impact
- Determine existing capacities to assist in risk reduction, both externally and within communities
- Assess if risk is being reduced

**Community Contingency Fund (CCF)**

Availability of resources for various activities to be carried at different phases of the cycle is very crucial. To cater to this, each household in the village needs to be motivated to contribute resources in the form of funds and/or food grains, which becomes a reserve for the village. A very nominal amount based on the affording capacity of the inhabitants (household) is collected and kept as the Community Contingency Fund (CCF) or Village Emergency Fund. Utilization of this fund is decided during the annual meeting as per the requirements of the village and its developmental plans.

<table>
<thead>
<tr>
<th>EXERCISE 2</th>
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</thead>
<tbody>
<tr>
<td><strong>WRITE IN YOUR OWN WORDS THE MEANING OF THE FOLLOWING CONCEPTS AND BRIEFLY HIGHLIGHT THEIR ROLE IN DISASTER PREPAREDNESS:</strong></td>
</tr>
<tr>
<td>- COMMUNITY BASED ORGANIZATIONS</td>
</tr>
<tr>
<td>- COMMUNITY CAPACITY BUILDING</td>
</tr>
<tr>
<td>- COMMUNITY RISK ASSESSMENT</td>
</tr>
</tbody>
</table>

**Community Profiling**

Profiling of the community is based on Community Database, which should include:

- Total population and the vulnerable population in view
- Age distribution
- Gender distribution
- Socio-economical, educational and cultural distribution in the population/community is also considered.
- Cattle and pet animal population

**Crisis Information Management System (CIMS)**

Major feature of CIMS is the ability to provide a distributed and seamless service across the range of teams. The key focus and approach is on distribution of information services. CIMS builds on open standards, allowing for easier integration with other software that is already in place, and removing the requirement for all organizations involved in disaster response and recovery activities to adopt the same software. A framework for CIMS should focus on:

- Incident Management
- People / Human Resource Management
- Material /Resource Management
- Information Management, and
- Situational Awareness Management

**DID YOU KNOW?**

The Delhi government observes disaster preparedness month with activities designed to convert the challenge of making Delhi a safer city by actively involving every stakeholder in disaster mitigation and preparedness. GOI-UNDP Disaster Risk Management Programme is one of the major initiatives undertaken by the Delhi Disaster Management Authority to facilitate disaster preparedness, mitigation and response in the state.

**Early Warning**

The provision of timely and effective information, through identified institutions, which allows individuals exposed to a hazard to take action to avoid or reduce their risk and prepare for effective response. Early warning systems include a chain of concerns, namely: understanding and mapping the hazard; monitoring and forecasting impending events; processing and disseminating understandable warnings to political authorities and general population, and undertaking appropriate and timely actions in response to the warnings.

**Emergency Operations Centre - EOC**

The Emergency Operations Centre provides a secure location to coordinate actions and make critical decisions at the time of emergency and disaster situations. It would include the following components:

- EOC Operations Room – also called the Control Room. It is the main room where all disaster management operations are planned, managed and executed
- EOC Analysis Room – is meant for analyzing the information received from the EOC operations room by the GIS experts, statisticians and data analysts
- Emergency Information Centre (EIC) – is meant for the collection and dissemination of the disaster related information to the media and the general public
**Forecast**

Forecast is a definite statement or statistical estimate of the occurrence of a future event. This term is used with different meanings in different disciplines. Wikipedia describes forecasting as the process of making statement about events whose actual outcomes have not been observed.

**Gender Analysis**

Gender analysis helps to clarify the specific and often different capacities, vulnerabilities, needs and coping strategies of men and women. It indicates where opportunities for targeting effective strategies lie. Established patterns of gender inequality and inequity can be explored, exposed and addressed. This may provide opportunities and entry points to develop programmes that support efforts to build more equitable gender relations. Gender analysis essentially:

- Examines the differences in women’s and men’s lives, including those which lead to social and economic inequity for women, and applies this understanding to policy development and service delivery
- Is concerned with the underlying causes of these inequities
- Aims to achieve positive changes for women

**Gender Mainstreaming**

It is a strategy of making women’s as well as men’s concerns and experiences an integral part of the design, implementation, monitoring and evaluation of policies and programmes, in all political, economic and societal spheres, so that men and women benefit equally, and inequality is minimized. The ultimate goal is to achieve gender equality. Gender mainstreaming is a process that:

- Goes beyond focusing on women in isolation, to look at both women and men as actors in and beneficiaries of development, and how their rights are defined relative to each other
- Ensures that women and men have equal access and control over resources, development benefits and decision-making, at all stages of the development process, project, programmes and policy
● Results in improved human development that is development, which both enhances gender equality and removes gender related impediments

**EXERCISE 3**

**WRITE DOWN THE MEANING OF THE FOLLOWING CONCEPTS IN YOUR WORDS:**

- COMMUNITY PROFILING
- GENDER MAINSTREAMING
- EARLY WARNING

**Information**

Information addresses the questions of *What, When, Where, How and How Much* with respect to the anticipated disaster. It also deals with the issue of probability of the occurrence of the disaster, more easily understandable in terms of extent of risk, and risk being the cumulative effect of hazards and vulnerabilities. Preparing the community for disaster management through information implies the transfer of basic knowledge by means of data, practices and processes to the community, so as to increase their awareness.

**Land-use Planning**

A branch of physical and socio-economic planning; it:

- Determines the means and assesses the values or limitations of various options in which land is to be utilized, with the corresponding effects on different segments of the population or interests of a community, taken into account in resulting decisions
- Involves data studies and mapping; analysis of environmental and hazard data
- Formulates alternative land-use decisions and design of a long-range plan for different geographical and administrative scales
- Helps to mitigate disasters by discouraging high-density settlements and construction of key installations in hazard-prone areas, control of population density and expansion
- Facilitates charting of service routes for transport, power, water, sewage and other critical facilities.

*Source: Build into Land Use Plans/pcj.typepad.com*
Mapping Exercises

One of the most important activities of the CBDP is the mapping of risk, vulnerabilities and capacities of the village by the community itself; because it is a very simple and cost-effective tool to collect ground level data. This is done through Participatory Rural Appraisal (PRA) exercise. Before the mapping exercise starts, the community members discuss among themselves their experiences/observations of previous disasters they have faced or the disasters they may face in future. It:

- Provides a pictorial base to the planning process, especially for the semi-literate populace and ensures maximum community involvement across gender, caste and other divides
- Is found to be very effective in raising awareness among the community, and thereby enhancing participation of the community in problem identification
- Makes use of locally available resources rather than depending on the external agencies for help and support
- Encourages villagers/community members to draw the maps on the ground using locally available materials such as stone, sand and various colour powders for different items and indicators

Mapping is of various types:

a) Safe Mapping

It is called safe or opportunity mapping. It includes:

- Road, alternative route, boats, communication centres
• Safe shelter
• Elevated lands, high land (mounds)
• Alternate route for safe evacuation
• Safe Primary Health Centres, Fire Stations, Police Stations
• Safe place for evacuees
• Godown, food stock availability, fodder availability etc.
• Site for storing foodstuff
• Identification of Disaster Management Teams
• Temporary camp sites

b) **Social and Resource Mapping**

Resource mapping focuses on identifying locally available assets and resources that can be utilized for building the capacities of the community during and after disasters. Apart from infrastructure and funds, it could be individuals with specific skills, local institutions and people’s knowledge, as all these have the capacity to create awareness and bring about changes in the community. A resource map is therefore not limited to a map depicting the available resources alone, but also its distribution, access and utilization within the village. It includes keeping a record of:

• Safe shelters (*pucca* houses, community centres)
• Drinking water sources
• Water bodies
• Agricultural land
• Forest land
• Dispensary and Primary Health Care Units
• Road
• Power installations
• Telephone Office
• Post Office and other structures
• School and college buildings
• Godowns (both government and private)
• Dealers of dry food, kerosene etc
• Tent house (generators, tarpaulins, utensils required in case of community cooking)
c) **Risk Mapping**

The purpose of a risk map is to identify and classify areas, taking into account the probable damages that could occur as a result of a disaster. It:

- Allows the identification of the location of risks and threats
- Offers authorities and organizations with ideas, shared with the community and experts, to make decisions and know about the existing dangers and threats
- Promotes participation of local stakeholders to analyze, and make way for understanding their perception of the situations
- Registers historical events that have negatively affected the community

d) **Vulnerability Mapping**

The group preparing the vulnerability map needs to select those risks that are found in the area to be mapped and decide which risks will be addressed. The risks would include:

- Seismic activity
- Landslide / slope failure
- Windstorm, cyclone, tornado, typhoon
- Floods
- Excessive precipitation, flash floods
- Extreme drought
- Industrial activities
- Commercial activities
- Road / Boat / Air accidents
- Terrorist attack
- Fire accidents

Once the risks have been selected, the group including political and community representatives should then discuss the types of scenarios where one of these risks becomes an actual event. The scenarios will describe the date, the day of the week, the time of the day, the intensity of the event, the weather conditions, season etc., in order to determine an adequate picture of how the natural or human-caused event will take shape. They will help in:

- Identifying Objectives within Risk Zones
- Defining the Area that will be Mapped
- Determining the most Severe Risks in the Area and the Potential Consequences

**DID YOU KNOW?**

There are many benefits of Vulnerability Mapping:

- Improved communication about risks
- Better visual presentations and understanding of the risks and vulnerabilities
- Mitigation of measures to prevent or reduce loss of life, injury and environmental consequences
- Notifying the landowners and informing them of government subsidies or other support available to guard against potential damage to their houses
- Use of vulnerability maps to avoid high risk zones when developing areas for housing, commercial or industrial use
- Advising technical experts who can be alerted about places where the infrastructure can be affected in case of a disaster
- Facilitating Fire Department to plan for rescues before a potentially dangerous event actually strikes
Helping rescue crews to use the map to determine where to respond first to save human lives, or property

Testing of evacuation routes to determine their effectiveness for saving large numbers of residents and tourists, and moving special groups such as senior citizens, children and disabled to safer places.

Updation of operations officer about the disaster situation and the need for zeroing in on location of sensitive areas

Assistance in assessing how well the emergency could be managed

**Modified Mercalli Scale**

Earthquakes are generally measured by their intensity and magnitude. Their seismic intensity differs in appropriate locations, depending upon the distance of the location from the epicentre of the earthquake. The ranking system used to measure seismic activity is called Modified Mercalli Scale.

**Mock Drill**

Mock Exercise on Chemical (Industrial) Disaster in Mumbai, 13 May 2008

Source: NDRF News Letter

Mock Exercise on Cyclones in Prakasham, Nellore District, Andhra Pradesh, 04 June 2008

Source: NDRF News Letter

Mock drill is an integral part of the village CBDP plan, as it helps to prepare the community by increasing its alertness level through practice. With this in mind, drills are organized in all villages to activate the disaster management teams and carry out modifications, if any, in the disaster management plan. Being a simulation exercise, if practiced regularly, it can help in improving the bonding of the community during an emergency.

To inculcate a culture of preparedness amongst the government functionaries, industries, and other stakeholders, and to reach out to the community, a number of Table Top and Mock Exercises have been conducted throughout the country on various types of disasters – earthquakes, cyclones, floods, fire and chemical (industrial) disasters etc. As per the NDMA Annual Reports, these mock exercises have been very well-received and have evinced large scale participation at the grassroots level. Critical gaps in preparedness and response have been identified for remedial actions by the stakeholders. This has also helped to sensitize the stakeholders about their role, enhancing coordination and synergizing various Emergency Support Functions.
We Need Mock Drill:

1. To inculcate a culture of preparedness
2. To examine the plans and SOPs of identified stakeholders
3. To evaluate the resource status of various departments
4. To coordinate the activities of various agencies for their optimum utilization
5. To use the feedback to identify the gaps and improve the resource capabilities to face actual disasters

Objectives of Drill are to:

- Review Disaster Management Plan of the state
- Evaluate the Emergency Response Plan and Standard Operating Procedures of the Industry/District/s selected for Mock Exercise
- Highlight the roles and responsibilities of various stakeholders
- Enhance coordination among emergency support functions of various stakeholders at district level
- Generate public awareness by involvement of local government, NGOs and public.
- Identify the gaps in resources, manpower and communications

DID YOU KNOW?

The NDMA is coordinating mock exercises in the states in order to prepare the state governments and other stakeholder groups for efficient response. These drills are integral to training in disaster management, as they emphasize and ensure the coordination aspects in disaster management. One of the major areas of success has been the creation of disaster management facilities within industries and emphasis on off-site evacuation plans.


A Search and Rescue (SAR) Team of NDRF Battalion Greater Noida participated in table top and mock exercise on Chemical (Industrial) disaster in Indian Oil Corporation, Panipat Refinery in May 2010. The NDRF Personnel carried out Search and Rescue,
Medical First Response and decontamination operations at the site. Earlier, in April 2010, such mock exercises were conducted by NDRF in Lakshadeep.

Mock Exercise Cyclone, Porbander, 19 June 2009

Graphic 4

Participatory Rural Appraisal (PRA)

PRA can be defined as an approach and method for learning about rural life and condition, for, with and by the rural people. This is a tool used to carry out the Village Disaster Management Planning at the community level. It enables local people to make their own appraisal, analysis and plans. It uses group animation and exercise to facilitate information sharing, analysis and sharing among stakeholders.

This tool can help the Gram Panchayat/District Management Committee (DMC) in preparing the Multi-Hazard Gram Panchayat Disaster Preparedness and Mitigation Plans. PRA:

- Is an exercise in communication and transfer of knowledge
- Uses “a basket of techniques” from which those most appropriate for the project can be selected to gather correct information from the community
Focusses on transparent procedures and team spirit. For that reason, a series of open meetings generally form a part of PRA activities.

**Predictability**

Predictability of a disaster is the key to understanding its nature and thereby assessing the chances of its occurrence and the fury of the event. Predictability is an attribute that is actually applicable to natural disasters. For human-induced disasters, it is the human error or mechanical fault or organizational failure that is responsible. Therefore, there is no concept of predictability as such in human-induced disasters. Mock drills, regular inspections and updating of precautionary measures take the place of predictability, forecasting and warning in case of human-induced disasters.

**Rainwater Harvesting**

![Graphic 5](image)

It is the process of collecting water that is running away, from rooftops, driveways, and other surfaces and utilizing it for various purposes. The intercepted water is used for toilet flushing, vehicle washing, plant watering, garden and lawn irrigation. There are a number of systems to harvest rainwater ranging from very simple to the complex. The rate at which water can be collected from either system is dependent on the plan of the system, its efficiency and also the intensity of rainfall.

**DID YOU KNOW?**

The traditional water harvesting methods bequeathed to us were quite scientific in their own ways:

- The ‘Virdas’ were principal means of water harvesting practiced by nomadic Maldharis in Gujarat. There were also shallow wells dug in low depressions called ‘Jheels’ to collect water.

- The ‘Kundis’ of Rajasthan were unique structures that looked like huge concrete saucers on the landscape. They were used for collecting rainwater to meet the needs of the local people and animals.
- The ‘Kuis’ were found in Bikaner and Jaisalmer. These were kuchcha structures dug near tanks to collect seepage and were usually covered with planks of wood.
- Rajasthan also had ‘Rapats’ and ‘Tobas’ which were effective water harvesting techniques.
- The Spiti area of Himachal Pradesh has been dependent on diversion channels called ‘Kuhls’ for irrigation for a long time. They have carried water from glaciers to villages.
- The ‘Khasis’ used to practice a ‘Bamboo Drip’ irrigation system. Maharashtra had a ‘phad’ system and Bihar had ‘Ahars’ and ‘Pynes’.
- ‘Pallyials’ or stream diversions were common in Kerala.

Resource

A resource is something a person, household, community or country has, and something it can use to protect or increase its well-being and wealth. It also means a power or ability to do a particular thing. Resources include land, tools, seeds, livestock, working animals, cash, jewelry, and other items of value that can be sold and stored.

Richter Scale

The Richter magnitude scale, also known as the local magnitude scale, assigns a single number to quantify the amount of seismic energy released by an earthquake. The Richter magnitude of an earthquake is determined from the logarithm of the amplitude of waves recorded by seismographs.

Threat

A threat is defined as the probability that a potentially destructive or damaging phenomenon or event may occur (earthquakes, floods, landslides, tsunamis, droughts, epidemics etc.), and that it would impact on determined vulnerability conditions.

Low : Expresses minimal values and does not constitute a potential threat

Medium : Expresses intermediate values and could constitute a potential threat

High : Expresses high values and constitutes a threat

Very High : Expresses very high values and constitutes an extreme threat

Traditional/ Indigenous Knowledge

As per the definition given by Asia Pacific Techiconitor LIN ESCAP, indigenous knowledge or local traditional knowledge is defined as “the unique, traditional, local knowledge existing within and developed around the specific conditions of women and men indigenous to a particular geographic area”. It is “the information base for a society, which facilitates communications and decision-making, based on experience,
long-term use, in a given community, adapted to local culture and environment, dynamic and changing.”

Thus, indigenous knowledge is:

- Locally bound, indigenous to a specific area and community
- Culture-and context-specific
- Non-formal knowledge
- Orally transmitted, and generally not documented
- Dynamic and based on innovation, adaptation, and experimentation; and
- Closely related to survival and subsistence for many people worldwide

**Universal Design**

As per the United Nations Convention on Persons with Disabilities, 2006, “Universal Design” means the design of products, environments, programmes and services to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design. “Universal Design” shall not exclude assistive devices for particular groups of persons with disabilities where this is needed. Key issues involved are the inclusion of ‘Persons with Disabilities’ in the consultation process.

**Village Disaster Management Committee (VDMC)**

VDMC is formed in each village and is responsible for initiating disaster preparedness activities. It consists of:

- Locally elected representatives, grassroots government functionaries
- Local NGOs/Community Based Organizations (CBOs)
- Members of youth groups such as the National Service Scheme (NSS) and Nehru Yuva Kendra Sangathan (NYKS), women groups, youth club members, grassroots level government functionaries, etc.

The size of a VDMC is based on the population and need of the villagers. The Head of the VDMC takes a lead in mobilizing the community for preparation of the CBDP plans.

**EXERCISE 4**

IN YOUR NOTE SHEETS, TRY PENNING DOWN THE MEANING OF THE FOLLOWING CONCEPTS:

- UNIVERSAL DESIGN
- RAINWATER HARVESTING
- RESOURCE MAPPING
- PARTICIPATORY RURAL APPRAISAL
- MAPPING EXERCISES
1.3 ROLE OF NDMA IN MITIGATION AND PREPAREDNESS

Mitigation, an integral component of preparedness, is one of the most important ways of preparing for disasters. Disaster mitigation is any action taken to eliminate or minimize the impact of a disaster on people, property and environment. Since mitigation takes many forms, all stakeholders in disaster management must get engaged with disaster impact minimization processes.

The NDMA has initiated the steps for launching national level mitigation projects for the management of earthquakes, cyclones, floods, droughts and landslides. It strives for strengthening the disaster communication network up to the last mile connectivity, and for setting up national disaster mitigation reserves. The work on risk assessment and vulnerability analysis, micro-zonation and hazard-zonation mapping, etc. has also been initiated with the involvement of various stakeholder groups.

The most important activities in strengthening disaster preparedness include the preparation of Guidelines, the improvement in risk assessment, vulnerability analysis and early warning systems, capacity building, public awareness, mock drills, etc. NDMA has already prepared and released National Disaster Management Guidelines for the Management of Earthquakes, Floods, Cyclones, Chemical Disasters, Biological Disasters, Radiological and Nuclear Emergencies, Medical Preparedness, Mass Casualty Management, Landslides, etc. Guidelines have also been prepared for the National Institute of Disaster Management (NIDM) and for the preparation of State Disaster Management Plans. Several other Guidelines on the Management of Tsunami, Psycho-Social Trauma and Care, Community Based Disaster Preparedness, Minimum Standards of Relief, Role of NGOs in Disaster Management, etc., are in the process of getting finalized.

The following are the Projects taken up by the NDMA:

**National Cyclone Risk Mitigation Project (NCRMP)**

In order to mitigate the adverse impact of cyclones, this Project has been drawn up with World Bank Assistance to cover all 13 cyclone-prone Coastal States and Union Territories. The major objectives of the Project are to strengthen the structural and non-structural cyclone mitigation efforts. It focuses on the improvement of early warning and dissemination system, investments on mitigation measures such as shelterbelt plantation, construction of cyclone shelters, mangrove regeneration; and extension of technical assistance for hazard management and capacity building. The first phase of NCRMP is being implemented in Andhra Pradesh and Orissa as a Centrally Sponsored Scheme. More than one million people living in the coastal areas of these two districts will benefit from the Project. In the second phase, the states of Maharashtra, Kerala, West Bengal, and Gujarat are proposed to be covered. Other states/UTs would be covered in the last phase.

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

The Project covers 22 high seismic risk states and Union Territories with 229 districts in seismic Zones IV and V for structural measures; and for capacity building, all districts in Zones II to V will be covered. The Project also envisages training of masons in earthquake resistant construction. Besides, assistance will be provided under this Project to the State Governments to put in place an appropriate techno-legal regime. NGOs can support in the local outreach of these projects and can play a facilitation role in linking the techno-legal dimension of the projects with local community needs through mobilization, advocacy and direct implementation of activities.

**National Disaster Information and Communication Network (NDICN)**

It aims at providing fail safe communication channels with multiple redundancy and last mile connectivity for assured information and IT dissemination to disaster-prone communities and districts.
National School Safety Pilot Project (NSSPP)

It is proposed to be launched to strengthen the earthquake preparedness of schools in high seismic risk areas in Zones IV and V. Checklists and Formats for school safety are being prepared. The Project aims at carrying out school safety awareness campaigns, undertaking safety audit of school buildings; and retrofitting of weak structures.

National Landslide Risk Mitigation Project (NLRMP)

The main activities undertaken by the NDMA for this Project pertain to developing a strategy for mapping and assessing landslides, proposing a monitoring mechanism for active landslides, formulating parameters for assessing losses, capacity development and awareness generation.

National Flood Risk Mitigation Project (NFRMP)

In order to minimize the losses to life, property, agriculture and other infrastructure due to floods, the Project proposes the strengthening of flood preparedness, mitigation and management measures.

1.4 ROLE OF NGOs IN PREPAREDNESS

NGOs play a pertinent role in all phases of disaster management. The NDMA has brought about detailed guidelines on the role of NGOs in disaster management. There are many types of NGOs:

- NGOs with large field operations and substantial resource base such as Red Cross Society, CARE India, OXFAM
- NGOs that deal with development technology such as disaster management institutions run by non-governmental control
- Interest Groups such as environment groups
- Local occupation groups of traders, doctors, etc.
- Resident Welfare Associations
- Education and training bodies run by NGOs
Role of NGOs in Disaster Preparedness

NGOs:

- Facilitate formation of and participation in State and District level task forces
- Advocate for formal and institutionalized engagement, and develop protocols for consultative status with NDMA, Planning Commission, Finance Commission, National Executive Committee, SDMA, State Planning Boards, State Executive Committees and such other bodies, including nodal ministries/departments/agencies, on mainstreaming disaster management concerns
- Initiate appropriate mechanisms for mainstreaming DM concerns with corporate, financial and insurance bodies, professional associations, academic bodies, media and such other networks/associations
- Establish community level coordination mechanisms. Assist in developing and participating in GO- NGO Inter-Agency Coordination Mechanisms
- Participate in NDMA's NGO Advisory Committee
- Encourage Contingency Planning at community levels
- Assist in development, piloting, validation and updating of the district level contingency and preparedness plan
- Promote and support national projects on risk mitigation

Thus, the tasks they are engaged in focus on:

- Creating awareness
- Early warning dissemination
- Resource mobilization
- Capacity building at different levels
- Promotion of alternative technology for housing/agriculture sectors etc.
- Linkage between service providers and end users in disaster affected regions
- Sensitizing community/other stakeholders
- Resolution of Conflict
- Facilitation of the process of Contingency Plan
- Vulnerability and Risk Assessment

Source: The Business of NGOs/economyindia.co.in
- Development of Resource Inventory
- Facilitation of Mock Drills
- Provision of services to the vulnerable areas
- Setting up of Grain/Seed Banks/ or avenues for alternative income generation activities
- Establishing network among services providers
- Promoting alternative technology and traditional wisdom in reduction of vulnerability
- Creating linkages between research and development programmes
- Promoting community based institutions to sustain the activities
- Helping in Advocacy/Policy Formulation
- Supplementing modern coping mechanism strategies with traditional knowledge

### 1.5 TYPES OF PREPAREDNESS

Preparedness can be studied under three specific categories:

1) **Target-Oriented Preparedness**

2) **Task-Oriented Preparedness**

3) **Disaster-Oriented Preparedness**

Though the tasks under different disasters would specifically serve the target groups; for a better understanding, let us divide preparedness into these three broad categories, and learn what you all can do.

#### 1.5.1 Target-Oriented Preparedness

Preparedness plans are also target specific, for instance, we may require different types of planning for the vulnerable groups of women, children, elderly and disabled. Livestock would need a specific preparedness plan. Then there could be health preparedness plans, risk reduction preparedness plans, and awareness generation plans. Let us look at some of these:

**a) Livestock Preparedness Plan**

This would include:

- Database that provides information with regard to hazards, community profile, livestock profile and animals at risk
- Assessment of resources including veterinary personnel, drugs and equipment, mobile veterinary units, veterinary hospitals etc.
- General awareness amongst the community,

*Source: Baby Elephant Rescue in India/3 news.co.nz*
and volunteers about the livestock management aspects including their recovery, rehabilitation, and control of diseases

- Construction of livestock shelters
- Contingency Plan for movement of livestock to safer places; and
- Creation of community awareness on livestock safety and management

b) **Composite, Long-term Disaster Health Preparedness Plan**

A composite plan for mitigation of medical and health related problems arising out of any natural disaster should cover the following:

- Community Profile
- Plan of Action
- Resource Planning
- Training Plan
- Allied Planning
- Periodical Practice
- Evaluation of plan and its consequent modification; and
- Collaboration and coordination with allied agencies and neighbourhood areas

These health preparedness components would include:

**Disaster Scenario** describing the incidence, periodicity, magnitude, epicentres and vulnerable areas

**Population at Risk** highlighting the age distribution of the population at risk, the incidence and mortality rate of the vulnerable population

**Disease Profile** giving the endemic nature of certain diseases, past history of disease breakout or their aggravation in the wake of disasters

Once the plan is prepared, it needs to be broken into tasks. These are:

- Prevention of Risk
- Promotion of Health
- Specific Treatment
- Medical Rehabilitation
- Disposal of the Dead
- Resource Planning
- Health Planning
- Medical Stores and Equipment
- Logistical Requirements
- Medical Facilities
- Food and Water
- Training of Manpower
- Health Education

Along with resource planning, other allied tasks pertain to ensuring:
- Availability of local administrative support (municipal, panchayat)
- Involvement of NGOs and voluntary groups
- Commitment and allocation of funds
- Involvement of educational institutions, industrial establishments and local banks
- Formation of area level functional bodies and earmarking of their specific tasks and responsibilities
- Establishment of communication channels
- Establishment of alternate sources of energy
- Cooperation of media for publicity and promotion of public awareness
- Plan for potential rehabilitation
- Testability of plan for preparedness and evaluation

**DID YOU KNOW?**

*NDMA is doing substantial work in the area of medical preparedness. An international Seminar on ‘Pandemic Preparedness beyond Health’ was held in April 2008, in collaboration with the United Nations Disaster Management Team, Pandemic Influenza Contingency Team and the Office for the Coordination of Humanitarian Affairs (OCHA).*

*Training programmes on Basic Life Support and Advanced Trauma Life Support for the Medical Officers are being conducted on a regular and periodic basis in collaboration with JPN Apex Trauma Centre, AIIMS*

*Training on Medical Preparedness for Emergency Medical Response to CBRN Casualties for Medical Officers has been initiated in collaboration with Defence Research and Development Organization (DRDO), Ministry of Defence and Bhabha Atomic Research Centre.*

*The NDMA has also proposed 2 Pilot Projects*

- *Project for Mobile Hospitals for Mass Casualty Management at disaster sites*
- *Creation of 2 model CBRN Casualty Centres at Delhi*
EXERCISE 5

VISUALISE A SCENARIO WHERE YOU HAVE TO PROTECT YOUR LIVESTOCK FROM FLOODS. LIST THE MEASURES THAT YOU WOULD TAKE TOWARDS PREPAREDNESS

c) Community Based Disaster Management Plan

Communities, as we know, are the first responders. Community Based Disaster Management plans to safeguard lives, livelihood and property, and involvement of community or people are integral to disaster preparedness. This is because people can:

- Be sources of useful ideas, such as those based on indigenous and technical knowledge and skills
- Help adopt technical inputs emanating from outside, in order to assimilate various innovations, which can be more pertinent under local conditions
- Set an example to others by testing new knowledge, skills, techniques that they have gained, besides institutional interventions formulated by government
- Increase the possibility of coordinated action to help in mitigating disasters, but also bring them together to address the issue collectively
- Be more appropriately (tangibly) reflected in development programmes

Community-based Disaster Preparedness (CBDP) has to incorporate certain important components. These include:

- Risk assessment and vulnerability analysis
- Resource analysis and mobilization
- Warning system and its dissemination
- Organizing community response mechanisms
- Construction and maintenance of cyclone/flood shelters
- Mock exercises and drills
- Strengthening of community self-help capacities
- Specification of roles and responsibilities of various functionaries and agencies

Source: Google Images
Formation of disaster management committees for decision making, planning and effective implementation of preparedness activities

Review and analysis of past disasters

Prediction of disasters in different seasons by drawing seasonality calendars

Mapping exercises to identify vulnerable places, resources available and safe places for taking shelter, and

Setting up of different Disaster Management Teams to perform specific tasks

The aims of CBDM are to:

- Reduce vulnerabilities and increase capacities of households and communities to withstand damaging effects of disasters
- Contribute to people’s participation and empowerment
- Enable the vulnerable members of a community to obtain the benefits that they desire
- Gain from their collective participation in the identification, planning, implementation and risk reduction processes
- Put communities on the forefront
- Promote a bottom-up approach working in harmony with the top - down approach, to address the challenges and difficulties.

**DID YOU KNOW?**

The NDMA is doing a good deal of work in the area of community awareness. The NDMA through its Projects aims to strengthen local responses to disasters to prevent and address the issue of community neglect. This it does through:

- Prevention through Community-based Responses by NGOs
- Raising community awareness to identify and protect vulnerable children
- Increasing skills training and economic alternatives for youth and families
- Providing psycho-social support
- Encouraging community reintegration
- Providing for access to basic services
- Promoting Advocacy Campaigns, including that of Media
- Making way for equity and equality in access to services and benefits
- Special awareness on the rights of dalits, minorities, disabled and ethnic groups; and
- Access to basic services, by creating barrier free physical and social environment
The PRIs through the institution of Gram Sabha and Village Committee on Disaster Management:

- Establish links with the community, CBOs and other players in the field
- Facilitate and regulate the activities of community based disaster preparedness
- Act as catalysts to social mobilization process
- Tap the traditional wisdom of the local communities to complement the modern practices in disaster mitigation efforts
- Integrate the development plan with disaster management

**d) Coordination Plan**

In a disaster situation, it is pertinent that coordination between all the institutions/ agencies (governmental and non-governmental) takes place systematically. Even though, coordination has to be established between the central, state and local levels, the majority of disaster information for the purpose of coordination is processed at the state level, depending on the intensity and scale of disaster event. The State Level Coordination Committee (SLCC) is replicated at the District Level Coordination Cell (DLCC), and again at Local/Block Level Disaster Coordination Cell (BLCC).

**EXERCISE 6**

**MAKE NOTES ON:**

- **COORDINATION PLAN**
- **HEALTH PREPAREDNESS PLAN**
1.5.2 Task-Oriented Preparedness

TASKS TO DO

Through preparedness planning, you and the communities can assist and support the agencies involved in preparedness to carve out the following tasks:

- **Mapping**
  
  Hazard mapping and zoning identification of hazard specific mitigation activities; Mapping risks, vulnerability and capacities of the village by the community; Undertaking vulnerability assessment and risk assessment by assessing the risks and vulnerabilities of the community-physical, social and human; Undertaking village profile analysis; Developing village maps for disaster management.

- **Planning**
  
  Reviewing of past disasters; Identifying hazard specific mitigation activities, Formulating Community Preparedness and Contingency Plans; Conducting Participatory Rural Appraisal, Formulating preparedness plan at the community level; Developing a Village Disaster Mitigation Plan; Consolidating mitigation plans with the changes in the context; Preparing evacuation plans and alternate routes of affected areas; Trying to arrest bottlenecks/lacunae in the contingency plan.

- **Forming Disaster Task Forces**
  
  Identifying village volunteers; Setting up of Village Disaster Management Committee; Block Disaster Management Committee and District Disaster Management Committee; Constituting Disaster Management Teams, such as Warning Team, Rescue and Evacuation Team, Shelter Management Team, Vigilance/Patrolling Team, Sanitation Team, First Aid Team, Carcass Disposal Team, Damage Assessment Team, Counseling Team, Relief Team, Team for Coordination/Rehabilitation/Linkages.

- **Training of Members of Task Force and other Volunteers**
  
  Conducting training, Preparing seasonality disaster calendar by the community; Capacity building of the members of Task Force; Arranging Mock Drills at the village and block levels; Training of Gram Panchayat/Block Members

- **Creating Structures for Coordination**
  
  Networking with NGOs and CBOs; Keeping contact with block administration and other related agencies; Helping communities work alongside the local government; Introducing different methods/forms of communication; Identifying village volunteers and their training; Appointing Relief Coordination Officers for liasoning with Aid Agencies; Coordinating with Disaster Response Network and Hazard Safety Cells, Maintaining required documentation and resource inventories; Establishing linkages with development programmes

- **Promoting Awareness Campaigns**
  
  Arranging sensitization meetings at Village and Community Level; Orienting the community towards the nature and effects of the disasters to which they are vulnerable; Specifying the role of community in handling the disaster; Taking stock of the resources of the community through data collection and mapping, Involving Panchayati Raj Institutions; Constitution of Community Contingency Fund (CCF); Managing information with the media.

*Source: Rabies Awareness Campaign/flickr.com*
 Operationalizing Disaster Management

Developing Worst Case Scenarios; Activating Mobile Hospitals; Medical and Veterinary Departments, Making advance arrangements for army assistance; police deployment and fire-brigade personnel; Ensuring availability of rescue kits and relief material

 Recruiting Personnel for Relief and Distribution Tasks

Documenting cargo material; Determining costs and expenditure of disaster prevention work; Preparing Time Schedules etc; Integrating disaster management in development planning

For people with disability, tasks would be specific and would include:

- Consulting persons with disabilities while identifying resources needed for them
- Documenting the participatory exercise
- Registering persons with disabilities in disaster prone areas to ensure that they are assisted in consultation process
- Identifying resources such as drinking water and sanitation facilities accessible to persons with disabilities after a disaster takes place
- Recording names of inclusive schools, special educators/teachers to make the process of inclusion easier
- Enlisting schemes and institutes providing assistance devices
- Identifying and preparing a list of therapists.professionals (audiologist, speech therapists, occupational therapists, psychotherapist, sign language interpreters, mobility instructors, counselors, etc.) who can render services during emergencies
- Making use of Organizations, Parents’ Associations/Self-Help Groups of Persons with Disabilities (if present) to make a list of disabled persons
- Identifying government and non-government schemes, which provide support to persons with disabilities for treatment, education, training, economic empowerment, social integration, transport, etc.
Tasks to be Performed by 3-tier Panchayat Bodies are quite specific for Preparedness Planning

Gram Panchayats/Block Panchayat Samitis/Zilla Parishads

1. Convening meetings of ward members to ensure proper information regarding the warning signals being given to the people through all types of media.
   - Supervising preparedness of the Gram Panchayats
   - Attending meetings of District Collector, all District Heads of different sectors and departments, and the Members of the Zila Parishad for preparedness

2. Updating information on civic amenities, population, government and panchayat properties
   - Consolidating village wise information on items listed under GP
   - Coordinating all the concerned departments, specially Roads & Buildings, Major and Minor Irrigation, PDS, Communication Police, Revenue Electricity, etc., to take up necessary repair and maintenance related works for preparedness to counter disasters.

3. Selection of location for shifting people/ livestock to safer places
   - Stocktaking with respect to Primary Health Centres, preparedness of medical staff, medicines, etc.
   - Arranging for transport to assist Gram Panchayats for evacuation
   - Maintaining cyclone shelters/ safer buildings like schools in ready condition for temporary shelter for the people
   - Arranging for establishing relief and rehabilitation centres and materials required thereof
   - Providing for supply and storage of food and other items of basic necessities
   - Organizing ‘Task Force’ at District, Block and Village levels
   - Making special arrangements for evacuation of handicapped, children and pregnant women.
   - Encouraging engineering staff at the Block/Mandal level to repair drainage/canal/ roads etc.

4. Medical/sanitation requirements in relief camps
   - Contacting ex-army / security forces personnel / volunteers to organize a task force to assist people in emergency
   - Checking the inventories of items required at a short notice for rescue and relief operations during disasters

1.5.3 Disaster-Oriented Preparedness

Disaster Preparedness, thus, takes place at two different levels, structural and non-structural:

Non-structural preparedness measures include:
   - Administrative and Regulatory Legislation
   - Insurance Schemes
   - Information, Education and Training
Community Participation

Community Action Groups

Responding to Warning Systems

Institution Building

Provision of Incentives

Creation of Public Awareness

**Structural Preparedness Measures** are proactive and reactive measures. These are used to arrest the adverse impact of disasters. These measures would vary from disaster to disaster. Let us see how, and determine where you all need to focus your attention on:

**a) EARTHQUAKES**

As per the Sustainable Environment and Ecological Development Society, *Earthquake preparedness or vulnerability minimization would focus on:*

- Identification of weak structures
- Assessment of houses in earthquake-prone areas that do not comply with building norms
- Monitoring the compliance of renovations with the Building Codes
- Adherence to Building Byelaws and Structural Engineering
- Upgradation of Design Specifications
- Skills for retrofitting and reinforcement of old and weak structures
- Qualified advice to make sure houses are secured to its foundations
- Repair deep plaster cracks in ceilings and foundations. Get advice from experts if there are signs of structural defects
- Use of Seismic Bands at Plinth (Base) and Lintel (Beam) levels
- Secure falling and blocking objects
- Removal of heavy items of furniture to the floor
- Moving of heavy items such as pictures and mirrors away from places where people sit
- Storage of heavy objects, breakable items such as bottled foods; glass etc in low, closed cabinets with latches
- Storage of chemical products and flammable products in closed cupboards with latches at the bottom shelves
- Development of a Household Emergency Plan (what to do at the time of an earthquake, where to hide, what not to do)
- Elaboration of an evacuation plan for your family
- Identification of safe places within your home, school or workplace
- Procurement of household insurance policy for damage cover
- Preparation of an Emergency Survival Kit
- Emergency telephone numbers (doctor, hospital, police, etc.)
- Learning and training others on life saving skills like first aid, search and rescue etc.
- Chalking out plans for helping Public Works Department (PWD) at the time of disaster
- Construction of seismically strong infrastructure
- Use of RCC bands
- Following simple box shaped architectural designs
- Avoiding protruding structures like huge and fancy canopies, sunshades and balconies

**DID YOU KNOW?**

*Doing Earthquake Drill is not easy. Before organizing a simulation exercise for any hazard, it is very important to find out the hazard that could be followed after the main hazard. For instance after an earthquake there is a possibility of a fire. So the simulation exercise should also incorporate the affects of the main hazards. Some of the steps that could be followed while doing an earthquake drill are listed below:*

- Prepare an evacuation map for the concerned institute, say for example, if it is a school then make a school evacuation map
- Prepare roles and responsibilities of the various stakeholders
- Chalk out the sequence of the mock exercise
- Provide training on life saving skills like first-aid, search and rescue methods etc.
- Remove objects or materials that might block the evacuation route and secure it properly
- Keep ready basic emergency resources and materials required at the time of disaster
- Practice simulation exercise. Review and update the whole exercise if needed.
**Exercise 7**

**Tick the Right Option**

<table>
<thead>
<tr>
<th>Structural Measure</th>
<th>Non-Structural Measure</th>
</tr>
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<tbody>
<tr>
<td>Adherence to Rules</td>
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<tr>
<td>Hazard Mapping</td>
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<tr>
<td>Promotion of Awareness</td>
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<td>Institutional Building</td>
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<tr>
<td>Land Use Planning</td>
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</tbody>
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**DID YOU KNOW?**

Traditional house building techniques have successfully stood the test of the time:

- The ‘Dhajji-Diwari’ buildings in Srinagar have stood the test of earthquakes and tremors many a time. The basic elements of these buildings make use of load-bearing masonry piers, infill walls, wooden tie-bands, and a combination of wood and reinforced masonry.

- The traditional ‘Kat-Ki-Kunn’ houses in Kullu Valley are structures constructed of timber, combining the weights and solidity of a stone building with the flexibility and earthquake-resistant qualities of a wooden building.

- ‘Pherols’ of Uttarkhand Region are multistoried buildings that use stone and wood with mud mortar. They have resisted many earthquakes.

- ‘Sumers’ (watchtowers) are traditional structures of Rajput families from Rajasthan. They have followed the principles of correct proportions of the height and width of a wall, multiple blocks on each floor and rectangular platform. The materials used have been well-dressed flat stones, double wooden logs, joist, slate ladders, stores and wooden ladders and beams.

**b) Droughts**

For droughts, preparedness measures would include:

- Practice of alternate cropping techniques, compensatory cropping schemes and crop diversification

- Practice of fodder cultivation

- Use of drought resistant crops

- Provision of grain and water banks

- Recourse to rainwater harvesting
- Water budgeting
- Drought proofing schemes
- Spread of awareness on use of traditional irrigation methods
- Use of methods to disinfect drinking water
- Rationing of food and storage of dry food in warehouses
- Upkeep of storage space
- Maintenance of buffer stocks
- Provision of Emergency Health Centres
- Setting up of Pani Panchayats
- Construction of dams and check dams
- Watershed management
- Water rationing
- Leveling, and other soil conservation techniques
- Reducing deforestation and fire wood cutting
- Herd management
- Checking of migration and providing alternate employment for people
- Proper selection of crops for drought affected areas
- Promotion of micro-credit and insurance schemes
- Setting up of seed banks, water banks and grain banks

**DID YOU KNOW?**

The success story of ‘Sukhomajri’ is an indicator of the power of traditional wisdom, people’s participation and community’s deep sensitivity to the environment. A crumbling hillock called Sukhomajri in Haryana is now a farmer’s paradise. The ash-ridden saline soil around the area is now yielding fruits and vegetables. Based on the Catch the Rain formula, it has three earthen dams built across natural gullies that store rain water.

e) CYCLONES

For cyclones, preparedness measures will include:

- Erection of Coastal Shelter Belts
- Setting up of Van Panchayats
• Encouraging local volunteers to take training in first-aid and participate in drills
• Provision of Safety Boats and Rescue Equipment
• Establishment of Depots in all vulnerable areas, their stocks rotate to prevent spoilage
• Mangrove Plantation and Sustenance of Green Cover along Coastal Areas
• Awareness creation on mangrove varieties and their possible ecological and social impacts
• Prevention of Tree Felling
• Provision of emergency medical teams that include nutritionists, public health workers, and sanitary specialists
• Exploration of options for house and crop insurance if available
• Research in medical needs of cyclone victims
• Erection of shelters for livestock
• Engineering structures to withstand wind forces
• Suitable building codes for the area
• Better cyclone-resistant design of buildings
• Construction of strong wind-resistant shelters for the community

DID YOU KNOW?

Use of Traditional Wisdom in Cyclone Preparedness means:

• Wrapping of all available seeds, rice, paddy and burying them underground before moving to safer places
• Doing away with planting of big huge trees near houses
• Collecting of important papers, documents and other valuables and burying it underground before leaving the houses
• Houses are constructed on higher plinth; whereby the water cannot enter the house
• If the clouds move towards north, there is an indication that there will be floods in three or four days

Source: Orissa Cyclone/Google Images
Some people, while looking at the colour of the clouds and their formation, can predict about floods.

The fishermen nets catch a particular small plantation which they never get otherwise. This also indicates that a cyclone is approaching.

People grow banana trees around the houses as the banana stems are used for floating. Something similar to a boat is made out of banana stems and is used as barge.

Banana leaves are used for fodder during cyclones and floods.

People identify nearby villages and inform them before hand on their temporary migration and shelter in those villages in case of floods.

People store foodstuff, dry food, coconut, pumpkins, etc., to be used immediately after the disaster.

Beating of drums for dissemination of warning.

The continuously blowing wind from east indicates that the cyclone is approaching; more so if within two hours the wind starts becoming hot. Indication is that the intensity of cyclone will be more.

If the wind changes its direction from east to south and gets cooler, it indicates that the cyclone has changed its direction.

Barking of village dogs without any provocation during the daytime is indicative of an unusual event like cyclone approaching in the immediate future.

Untying of animals just before the onset of cyclone.

Storing of foodstuff, dry food, coconut, pumpkins in seasons when cyclones occur the most.

d) FLOODS

Flood preparedness measures would be more or less on the lines of cyclone preparedness. They would include:

- Prevention of over-bank spilling
- Improvement in drainage
- Reservoir construction
- Provisions for stabilization of flow conditions
- Awareness on flood forecasts
- Preparation of Evacuation Plan
- Adherence to flood warnings
• Listening to your local radio station for information and following the advice and instructions from State/District/Local administration
• Erection of livestock shelters at a higher plane
• Awareness on closest high ground and how to get there
• Updating insurance
• Land-use control planning
• Construction of reservoirs, dams, dykes, alternate drainage sources
• Construction of structures over stilts, and elevated flood levels

e) **TSUNAMI**

Tsunami preparedness would include the following measures:

• If you live in a coastal area, check with your concerned department about the level of risk a tsunami would pose to you and your family
• Check with your local Emergency Management Group to find out what warning procedures you should expect
• Develop a Household Emergency Escape Plan, and ensure you have a Getaway Kit; should you need to leave in a hurry
• If you are buying land, investing or building in a coastal area, talk to your council about the risks of a tsunami, coastal storm surge and erosion
• Grow more trees like mangroves around sea shore
• Know where the nearest high ground is and how you will reach it. Higher ground should be at least 35m above sea level or at least 1km inland.

f) **FIRES**

Fire preparedness measures would include:

• Adherence to fire safety homes
• Getting fire safety approval from necessary authorities
• Periodically renewing safety challans
• Participating in Mock Fire Drills
• Placement of fire extinguishers in all areas of a building
• Keeping a first-aid kit ready
DID YOU KNOW?

Generally, all preparedness measures should aim at focusing on the fact that prevention is better than cure. Adherence to rules and safety measures, being alert and aware; as well as taking recourse to traditional wisdom and alternative techniques are integral to all preparedness plans. As government’s and people’s representatives, you all must ensure that:

- All families in your area are safe
- Periodically arrange meetings to assess preparedness measures of leaders/representatives from all community groups
- Decide on a common community response for those who are most in need regardless of race, colour, creed, or political or religious affiliation
- Publicize funding needs immediately in the name of preparedness
- Arrange to generate resources, liaison persons to attend meetings called by the NGOs, Government and International Agencies
- Learn what NGOs, Red Cross, and Government (if the disaster is declared) will provide survivors, and do not duplicate services. Look for unmet needs and match them with resources
- Plan for people with disabilities, women, aged and children, specifically and separately
- Generate awareness on evacuation plans, insurance, traditional knowledge, by-laws and institutional set-up

1.6 OVERCOMING CONSTRAINTS IN PREPAREDNESS

There are several constraints in formulation of preparedness measures such as:

- Traditional outlook
- Cost worries
- Mismatched priorities
- Political issues
- Developmental problems
- Burden of local, social and cultural issues
- Lopsided disaster management activities
- Public apathy
- Top-down approach
- Resource crunch

You have to thus ascertain the constraints in preparedness and develop alternatives. Some ways of overcoming the constraints are:
- **Awareness Generation**: Adequate time, attention and resources need to be spent on generating awareness in community on the relevance of preparedness, and how and why it is more relevant than effective response.

- **Community Participation**: Community needs to be treated as an active participant and not merely a beneficiary. Programmes for preparedness must take due cognizance of their needs, issues and sentiments. Mapping exercises should be done with community, and all local issues should be tackled with their consent and support. The most common elements of community involvement are partnership, participation, empowerment and ownership by the local people. Through the community–based activities, people should be encouraged to participate alongside PRI members, government officials and expert groups as the direct stakeholders of these activities. While people should own the problems, consequences and challenges of any mitigation and/or preparedness initiative, it is necessary to take people’s involvement further, into policy and strategy formulation.

- **Sustainability**: Preparedness measures need to be long-drawn, protracted, regular and sustained. They have to be ingrained in disaster management programmes.

- **Right Prioritization**: While preparing for disaster, right attention needs to be paid to prevention and mitigation. In disaster management cycle, if preparedness get more priority, the relief process gets streamlined.

- **Activating Insurance Schemes**: Role of insurance is very important in disaster preparedness. Micro level insurance promotion activities include:

  1. Baseline data collection to understand the extent of coverage, awareness building in vulnerable communities, orientation programmes for select local volunteers, linkages building between community disaster preparedness committees and insurance companies, creation of database of persons insured, and training on what to do and how.

  2. State level advocacy and lobbying engagements and network building, including discussion and dialogue on the insurance issue with a wide range of stakeholders, including civil society organizations, relief administration, officials of the line departments, and insurance companies also need to be taken up. The key policy issues to be pushed for include a separate policy on insurance, ensuring government backing for policies for community living in disaster prone areas, and removing bureaucratic bottlenecks in claim settlements, especially in the context of the central and state government sponsored Rashtriya Krishi Bima Yojana.

- **Psychological Preparedness**: The psycho-social support in the preparedness phase should be handled professionally to promote safety and protection of the survivors against the psycho-social trauma. It is the first line response that needs to be integrated with the general response and it can be given by any type of responders in disasters. The Psycho-Social Support for Affected (PSFA) training and skills could be given to hospital emergency para-medics, ambulance crew, community level workers, students and other first responders based on the modules prepared by the nodal agencies.

Effective psycho-social support and mental health intervention requires an inter-sectoral coordination with the various stakeholders. It is an integral part of emergency health response plan. An integrative
mechanism will be developed with the focus on integrating Psycho-Social Support for Mental Health Sciences (PSSMHS) with the general health-care to facilitate early identification, management, referral and follow up of PSSMHS problems, along with the medical problems, so that they can be dealt together in an integrated manner. The PSSMHS in disasters envisages long-term care and help to the survivors and special emphasis on referral in all the phases of disaster.

Development of ‘All Hazard’ Implementation Strategy outlines the requirements for development of a PSSMHS action plan by the nodal ministry, and suggests measures to implement and coordinate various related activities at the national, state and district levels. Adequate strategy need to be evolved to develop linkages and state support systems.

Following are the key highlights of Guidelines on Psycho-Social Support and Mental Health Services:

- Integration of Psycho-Social Support and Mental Health Services into various health programmes, National Mental Health Programme (NMHP), District Mental Health Programme (DMHP) and evolving of legal instruments necessary for implementation of such policies.
- Development of skilled and competent human resources at all levels with the help of academic and other nodal institutions through standardized training practices.
- Mainstreaming the knowledge on preventive and mitigation strategies for psycho-social effects of disasters, in the education system. Training of community level workers, NGOs and various professionals for providing PSSMHS in the aftermath of disasters.
- Normalization of survivor’s psychological impact could be hastened by providing psycho-social first aid, and subsequently psycho-social support in relief camps. Later provision of psycho-social support during rehabilitation and rebuilding phase would be integrated with the overall community development interventions.
- Research and development to develop effective interventions shall focus on community needs, integration of professional referral system with existing community best practices, vulnerability and epidemiological factors that compound the psycho-social impact on any emergency.
- Systematic documentation, procedures to enhance community participation, elements of psycho-social support and mental health services in deliverables like relief, transportation, care of vulnerable groups, psycho-social first aid supported by adequate infrastructure will be undertaken as planned objectives.
- Inclusion of PSSMHS in hospital management for disasters, effective communication and networking, counseling session areas, pooling of resources amongst network of health care services, and identification of all the critical issues in state/ district health management during disasters.

Source: 2004 Tsunami: superchefblog.com
• Identification of designated institutions for training under District Mental Health Programme (DMHP), and ensuring that models of Public-Private Partnership will be developed, tested and practiced.

• Long-term management of mental health interventions will be undertaken through standardized and structured need assessment tools followed by scientific studies, evaluation and development of specific intervention modules.

• Adoption of international best practices, provisions of special care to vulnerable groups, care to care givers in all phases of disaster management cycle based on ‘all hazard’ disaster management approach.

**DID YOU KNOW?**

Trauma Centres, of varying bed capacities, which were non-existent till recently, are being established that range from State Apex Trauma Centre to Zonal Trauma Centre (25 beds), Regional Trauma Centre (1015 beds) and District Trauma Centre (10 beds). In this arena, AIIMS has established state of the heart JPN Apex Trauma Centre with number of States/Union Territories like Chandigarh following suit.

Capacity building ventures that are being conducted under the aegis of NDMA are as follows:

a) Basic Life Support (BLS) and Advanced Trauma Life Support (ATLS) Courses are being conducted in collaboration with Ministry of Health and Trauma Centre AIIMS.

b) Training capsule on Emergency Medical Response to CBRN casualties for Medical Officers of Delhi Government in collaboration with Ministry of Defence (Army Medical Corps and Defence Research & Development Organization).

c) Introduction of Disaster Medicine in the medical curriculum is on the anvil.

d) Mock Exercises on various types of disasters are being conducted periodically in conjunction with the state governments and stakeholder groups, for efficient and effective response preparation.

• Recognizing the Role of Traditional Wisdom

People down the ages have had their own coping mechanisms for facing the wrath of disasters. They need to be revived and sustained. It needs to be remembered that we have to live in harmony with nature and keep the fruits of nature intact for future generations.

• Mainstreaming Disaster Related Works

Government runs various development programmes that have similar objectives as those of disaster mitigation programmes. It needs to be seen that disaster mitigation is part and parcel of other developmental programmes in the area to ensure better coordination and avoid duplication of resources and efforts.

• Conflict Resolution

One of the significant ways of overcoming constraints in disaster preparedness is conflict resolution between the individuals or agencies that are at the root of the conflict. The problems faced by rural
and urban representatives are not always directly related to obstacles in disaster preparedness. There are various issues that emanate from local politics, caste disputes, social taboos and cultural ethos. These are as pertinent as issues of faulty planning, resource crunch and lack of coordination. Conflict provides an opportunity to be comfortable with the underlying value assumptions of the populace and offers the chance of greater clarity, creativity and growth, as well as developmental relationships. People need to be made to see conflict as a constructive tool of problem resolution.

EXERCISE 8
- MAKE A LIST OF TRADITIONAL WATER HARVESTING TECHNIQUES
- PEN DOWN SOME OF THE TRADITIONAL EARTHQUAKE – RESISTANT HOUSING TECHNIQUES

DID YOU KNOW?
Conflicts are natural, pervasive and inevitable. They can be resolved constructively and maturely. Conflict resolution entails the process of negotiation, mediation, arbitration and adjudication. However, arbitration and adjudication are used mainly for resolving conflicts in organizations. Through following probing questions, we could analyze the conflicts:
- What is the issue causing conflict
- What are the secondary issues
- Who are the main parties involved
- What are the underlying interests in support of their goals
- How did the parties in conflict relate to each other before the issue arose
- How have the parties dealt with the conflicts in the past
- Which are the main and secondary parties involved in conflict
- Are the parties well-defined
- Are the parties capable of working with each other
- What is the substance of the problem
- What are the real and perceived differences
- Are the issues negotiable
- Which are the key interests of the involved parties

EXERCISE 9
- VISUALIZE A SCENARIO, WHERE YOU HAVE TO SOLVE A CONFLICT ARISING OUT OF WATER SHARING BETWEEN MEMBERS OF DIFFERENT COMMUNITIES DURING HEALTH PREPAREDNESS MEASURES.
- LIST THE TASKS THAT YOU WILL UNDERTAKE TO RESOLVE THE CONFLICT.
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