

**MOCK DISASTER DRILL AND EXERCISE MANUAL  
FOR FULL SCALE/FIELD EXERCISES**

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# MOCK DISASTER DRILL AND EXERCISE MANUAL FOR FULL SCALE/FIELD EXERCISES

## I. INTRODUCTION

A **disaster** is defined as “a serious disruption of the functioning of a society, causing widespread human, material, or environmental losses which exceed the ability of the affected society to cope using its own resources.” A disaster is the product of a hazard such as an earthquake, flood or windstorm coinciding with a vulnerable situation in a community, village, city or geographic area.

India has been traditionally vulnerable to the risk of natural disasters due to the unique geo-physical profile of the country. Approximately 85% of the country’s land area i.e. 22 States are prone to various forms of natural disaster including floods, cyclones and earthquakes. In the past decade, India has witnessed a number of major natural disasters including the cyclone in Orissa (1999), the earthquake in Gujarat (2001), and the tsunami in Tamil Nadu (2004), causing massive losses to lives, property and precious resources.

Disaster management is very essential in India due to this unique vulnerability profile of the country. **Disaster management** is a set of policy, administrative decisions and operational activities which pertain to the various stages of a disaster at all levels. It can serve to reduce or mitigate the risks associated with natural disasters.

### **Phases of a disaster**

Disasters can be viewed as a series of phases on a time continuum. There are three key stages of activity that are taken up within disaster management (Figure I)–

- I. **Pre-Disaster** (Before a disaster strikes): In this stage, risk reduction activities known as **mitigation and preparedness activities** are carried out. These activities are undertaken to reduce human and property losses caused by the hazard and to ensure that these losses are minimized when the disaster strikes. Mock drills are carried out in this phase of the disaster cycle (Box 1).
- II. **Disaster Response** (During a disaster): In this stage, **emergency response activities** are carried out. These are activities undertaken to ensure that the immediate needs of the community are met and suffering is minimal.
- III. **Post-Disaster** (After a disaster): **Response and recovery activities** are carried out at this stage to achieve early recovery and to prevent exposure to the earlier vulnerable conditions.

## MOCK DISASTER DRILL AND EXERCISE MANUAL FOR FULL SCALE/FIELD EXERCISES

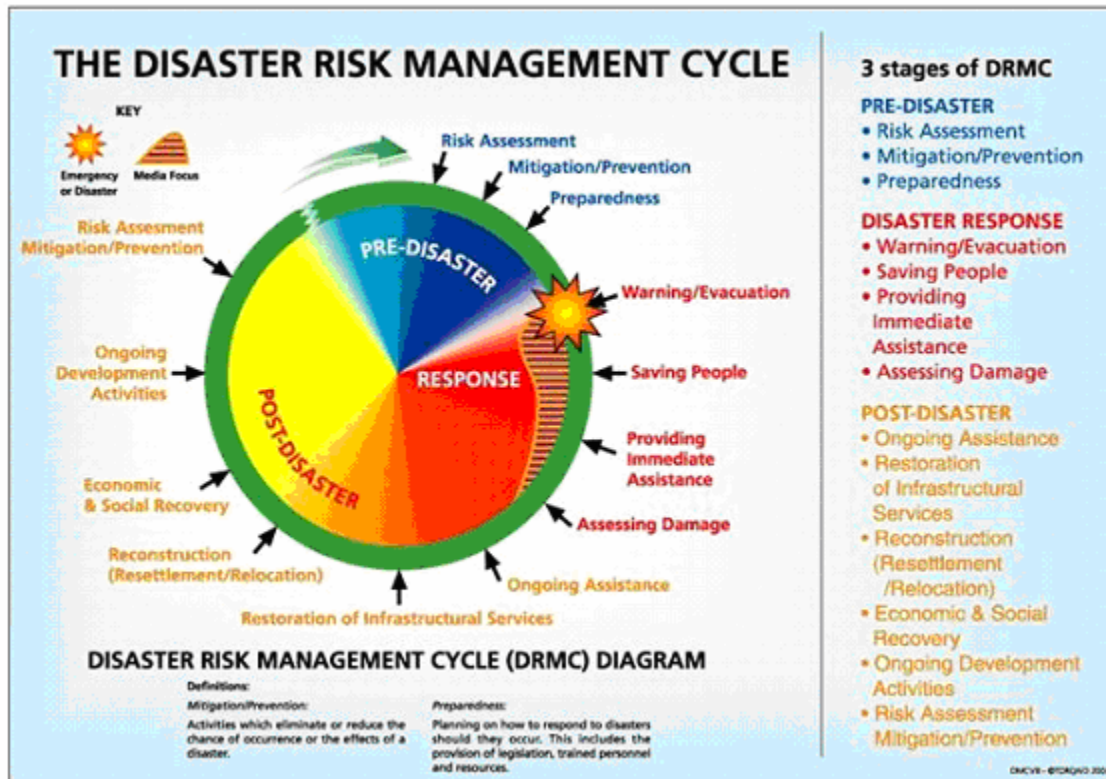


Figure 1: Phases of the Disaster Risk Management Cycle

### Box 1: Pre Disaster Phase of the Disaster Management Cycle

- Awareness Generation about disaster preparedness, prevention and mitigation measures
- Plan Preparation at various administrative levels i.e. States, Districts and Communities
- Training and Capacity Development
- Conduction of Mock Drills

An effective disaster management policy is crucial for India's development as it is the poor and underprivileged that form the most vulnerable groups and are the worst affected by natural disasters. The Government's earlier approach was to focus mainly on disaster relief and recovery measures, while largely ignoring the pre-disaster phase of the disaster cycle. However, in the wake of the recent devastating disasters in the country, and the gradual realization that disasters serve to further retard socio-economic development, there has been a growing shift in the Government's approach to disaster management. This new approach emphasizes disaster preparation, mitigation and preparedness to reduce people's vulnerability to the risk of disasters.

## **MOCK DISASTER DRILL AND EXERCISE MANUAL FOR FULL SCALE/FIELD EXERCISES**

Effective response to challenging situations and conditions is vital for ensuring personal safety and protecting lives, property, facilities, equipment, infrastructure and the environment. Personnel, communities, departments, incident commanders etc must be able to take immediate actions necessary to safely mitigate the consequences of an unexpected or abnormal and potentially dangerous condition. The process presents a challenging management problem and becomes even more complex when all emergency management disciplines come together into one integrated system for managing emergencies. Drills and exercises focus on those actions which are necessary to respond to an emergency. Regular drills and exercises can help communities, governments, industrial bodies, corporate sectors and other sectoral agencies to test, evaluate and continually improve their emergency management systems. Drills and exercises should ideally test all the phases of disaster management.

## **MOCK DISASTER DRILL AND EXERCISE MANUAL FOR FULL SCALE/FIELD EXERCISES II. NEED FOR A MOCK DISASTER DRILL MANUAL**

The manual has been prepared to facilitate the effective design and implementation of drills and exercises specifically intended for testing emergency preparedness and response. It is based on a detailed examination of over 400 drills which have been organized by various Government agencies, private sector, communities and schools across different multi-hazard prone areas.

This manual has been prepared under the Government of India-UNDP Disaster Risk Management Programme. The programme aims at sustainable disaster risk reduction through capacity building focusing on the pre-disaster phase of the Disaster Management cycle. Some of the processes and structural frameworks described in this manual are being established under the DRM Programme for effective disaster risk management, for e.g., the Disaster Management Committees and Task Forces at various levels are part of the systems that are being put in place under the DRM programme. However, the manual is designed to be a general guideline and resource material.

The approaches outlined in this manual are not regulatory requirements, but rather recommendations for emergency planning and response. The manual also provides guidance for the development of new drills and exercise programmes that will play a role both in training as well as evaluating emergency operations across different sectors.

### **Overview of the Manual**

The following sections contain information on the necessity for mock drills in disaster management including guidelines for design, conduction and evaluation of the drills. The manual also provides case studies for conducting mock drills in specific settings – Urban, Rural, Industrial, Educational and Health Care.

### **Scope and Purpose of the Manual**

- To provide information and guidance for development or redesign of drill programmes
- To assist with training and testing for disaster management through mock drills
- To suggest processes for the preparation, conduct and evaluation of mock drills and exercises

### **Applicability of the Manual**

In order to respond effectively to emergencies, a multi-sectoral approach is needed. All sectors including urban, rural, industrial, corporate, health and education sectors should develop and implement disaster management programmes, plan detailed disaster response procedures, and provide adequate training and access to emergency equipment. The recommendations contained in this manual are intended to assist in reviewing and supplementing the procedures for mock disaster drills including sector specific requirements. The information provided can be applied to a variety of situations. Regardless of the method used or the particular setting, the drill scenario should meet the needs of the operating personnel.

# **MOCK DISASTER DRILL AND EXERCISE MANUAL FOR FULL SCALE/FIELD EXERCISES III. INTRODUCTION TO MOCK DRILLS**

## **Purpose of Mock drills and Exercises**

Mock-drills help in evaluating response and improving coordination within various government departments, non-government agencies and communities. They help in identifying the extent to which the SOPs and Plans are effective and also aid in revising these if required. These drills enhance the ability to respond faster, better and in an organized manner during the response and recovery phase.

Drills/Simulations/Exercises are based on a set of assumptions about the circumstances during a disaster:

- A high level of tension and anxiety under which the concerned personnel would operate both at the central and field levels
- Highly unreliable information which requires critical assessment
- Criticality of time where rapid decisions must be taken
- Necessity for coordination among technical personnel and government officers, who do not usually interact
- Prominence of political and social factors in the aftermath of a disaster

Therefore, the emphasis is not on specific solutions, but on the approach to organizing information and establishing priorities which would lead to efficient solutions.

The approach for conducting a mock-drill varies as per the complexity of scenario depending upon the potential hazards, response system of the institution and the target community. Therefore, to ensure proper implementation of a drill programme, roles and responsibilities (SOPs) of the concerned personnel, departments, corporate bodies, stakeholders, and mechanisms for conducting the drill should be delineated clearly.

Regardless of the size, complexity and risk involved in the implementation of the drill, an effective drill/exercise programme should have the following essential elements as pre-requisites:

- Emergency Response Plan: explaining institutional response structure, emergency response functions and standard operating procedures for various departments
- Team personnel at head quarter and field level trained on their standard operating procedures
- Trained quick response teams in various possible operations like search and rescue, law and order, fire-fighting, medical, water arrangements, relief and shelter and electricity restoration etc
- Updated database of resources<sup>1</sup>, equipment and manpower available
- Updated Emergency Directory with important contact details of members of Incident Management Team and Emergency Response function
- Mock-drill Scenario and detailed action plan for Mock-drill
- Evaluation formats for concerned departments and definite criteria for evaluation
- Observers and Qualified evaluators

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<sup>1</sup> For guidelines on resource inventories refer to [www.idrn.gov.in](http://www.idrn.gov.in)

## **MOCK DISASTER DRILL AND EXERCISE MANUAL FOR FULL SCALE/FIELD EXERCISES**

Lessons learnt from the actual drills and exercises would be useful to revise operational plans and serve as a basis for the training of various stakeholders across different sectors. The drills and exercises will help to -

- Identify planning gaps
- Revise SOPs to enhance coordinated emergency response
- Increase public awareness and community readiness
- Enhance capacities of professionals, departments and trained volunteers
- Test plans and systems in simulation exercises

### **Types of Drills and Exercises**

There are several different types of drills and exercises.

1. **Drill:** A drill is a supervised activity with a limited focus to test a procedure that is a component of the overall emergency management plan. That is, drills usually highlight and closely examine a limited portion of the overall emergency management plan. For example, a disaster management unit might conduct a drill for the use of a radio system with those responsible for communicating on it. Drills are designed to impart specific skills to technical personnel (e.g., search and rescue, ambulance, firefighting). A perfect drill is one that leads to a flawless repetition of the intended task under any circumstance.
2. **Tabletop Exercise:** A tabletop exercise uses written and verbal scenarios to evaluate the effectiveness of the emergency management plan and procedures and to highlight issues of coordination and assignment of responsibilities. Tabletop exercises do not physically simulate specific events, do not utilize equipment, and do not deploy resources. In a tabletop exercise, a facilitator usually coordinates discussion.
3. **Functional Exercise:** A functional exercise simulates a disaster in the most realistic manner possible without moving real people or equipment to a real site. A functional exercise utilizes a carefully designed and scripted scenario, with timed messages and communications between players and simulators. The emergency operations center (EOC)—the facility or area from which disaster response is coordinated—is usually activated during a functional exercise and actual communications equipment may be used.
4. **Full-Scale Exercise or Field Exercise:** It tests the mobilization of all or as many as possible of the response components, takes place in “real time,” employs real equipment, and tests several emergency functions. Full-scale exercises are generally intended to evaluate the operations capability of emergency management systems in a community and to evaluate interagency coordination. While these exercises cannot realistically reproduce the dynamic and chaos of real life disasters, they are useful when intended to detect the inevitable errors, lack of coordination, or deficiencies of the simulated response. A critical evaluation is the essential conclusion of these exercises.

## **MOCK DISASTER DRILL AND EXERCISE MANUAL FOR FULL SCALE/FIELD EXERCISES**

This manual deals with the design, conduction and evaluation of Full Scale Exercises/Field Exercises.

### **Important Players in a Full Scale Drill/Exercise**

The Incident Command System (ICS)<sup>2</sup> is an emergency management framework, adaptable to any scale of natural or man-made emergencies. The ICS seeks to strengthen the existing disaster response management system by ensuring that designated controlling/responsible authorities at different levels are backed by trained Incident Command Teams whose members have been trained in the different facets of disaster response management.

#### **Basic Functions of IC system:**

- Maintain integrated communication flow during emergency
- Manage the incident scene
- Facilitate procedure and protocols to be followed by ESF departments
- Adopt a comprehensive resource management approach
- Monitor functional areas during the post- disaster phase

The ICS has an integrated organizational structure with the following five command functions<sup>3</sup>:

- i) Incident Commander
- ii) Operations
- iii) Planning
- iv) Logistics
- v) Finance/Administration

During a mock drill, the key players in ICS would be the following:

**Incident Commander** – The incident commander’s role is to supervise the simulation or overall conduct of the exercise, to make sure that the exercise proceeds as planned and that the objectives are achieved. The incident commander monitors the sequence of events, supervises the inputs of messages received and conducts a de-briefing and critique (verbal & written) with all personnel involved. At the village level, the head of the village is in charge.

**Simulators** – Simulators “act as” and on behalf, of the agencies and services that would normally interact with the players at the Emergency Operating Centre (EOC). The method of interaction is normally pre-scripted but responses could be spontaneous.

**Participants** – The participants should be from community volunteers, DMT members and ESFs, led by decision makers from various departments.

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<sup>2</sup> Text extracts taken from ‘Basic Incident command system (ICS)’ FEMA and ‘Guide for all hazard emergency operations planning’, FEMA, 1996

<sup>3</sup> The ICS will not put in place any new hierarchy or replace the existing system but it will reinforce it. When an ICT is deployed for an incident, all concerned agencies of the Government will respond as per the assessment of the Team

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**Observers/Evaluators** – Their role is to observe the actions and decisions of the players, in order to later report what went well and what did not. The main focus is on the performance of functions and or/agencies, institutions and facilities being tested, keeping in mind the objectives of the exercise.

**Quick Response Teams:** Quick response teams are technically trained teams formed by the nodal authority of disaster management. These teams are resourceful and perform several emergency response actions at the incident site for immediate recovery of the affected areas.

**Community Task Forces** - Disaster Management teams (DMTs) /community task forces (CTFs) are the community volunteer groups, which perform their roles as per the simulated disaster scenario during the drill.

The DMTs/CTFs should consist of the following groups:

- i. Early Warning/Communication
- ii. Evacuation and Temporary Shelter Management
- iii. Search & Rescue
- iv. Damage Assessment
- v. First-Aid/Medical Health/ Trauma Counseling
- vi. Water & Sanitation
- vii. Relief (Food & Shelter) Coordination

*Note: The number of teams may vary as per the multi-hazard scenario in the area*

The community themselves are the first responders for carrying out rescue and emergency services. Community taskforces initiate responses at field level where specialized quick response teams join them for faster recovery. The field level team leaders of ESFs and local incident commander coordinate with community taskforces and quick response teams to understand the requirements of the situation and provide essential assistance to perform operations.

**Plan for Emergency Support Functions** – The ESF Plan document outlines the objective, scope, organization, setup and Standard Operating Procedures (SOPs) for each ESF that is to be followed by the respective ESF agencies when the response plan is activated. SOPs provide a basic concept of the operations and responsibilities of Disaster Management Teams, Nodal and Secondary Agencies.

The **Emergency Support Function Teams (ESFs)** could be as follows:

- i. Communication
- ii. Evacuation
- iii. Search and Rescue
- iv. Medical Health/Trauma
- v. Equipment Support
- vi. Helplines, Warning Dissemination (Media)
- vii. Drinking Water
- viii. Electricity
- ix. Relief (Flood and Shelter)
- x. Debris and Road Clearance

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- xi. Law and Order
- xii. Transport
- xiii. Other Functions

Prior to conducting the drill, the drill team members should be trained in the duties, responsibilities and activities related to their respective positions in the conduct of the drill. Training may also be accomplished during the pre-drill briefing where each team member's duties should be individually addressed. In addition to training of these teams, additional people should be trained to account for any mishap.

A checklist of activities to be carried out by each of the task forces during various phases of the disaster is attached as **Annexure I**. A checklist for each of the Emergency Support Function (ESF) Teams is also provided in **Annexure II**.

## **MOCK DISASTER DRILL AND EXERCISE MANUAL FOR FULL SCALE/FIELD EXERCISES IV. GUIDELINES FOR DRILL DESIGN**

All drills should be conducted in accordance with a drill scenario as approved by the implementing agencies of Disaster Management; members of the EOCs; ESFs of all line departments; voluntary agencies such as Civil Defence, NSS, NYKS, Bharat Scouts and Guides, Red Cross; Industrial Safety Managers/Technical Experts; and groups or individuals specifically identified to conduct the drills. The number of controllers, simulators and evaluators are decided based on the type of drill to be conducted, the scenario and the resources available to conduct the exercise (personnel, equipment, funding etc).

**Scope** – Defines the boundaries of the drill<sup>4</sup>. While conducting the mock drill, the scope could also include the possible collateral<sup>5</sup> hazards associated with the main hazard that triggers other events. The following five aspects should be considered while defining the scope -

1. Hazards – Identify one specific hazard/collateral hazards for the exercise
2. Geographic area – Identify a defined location for the event and identify a hazard impact scenario
3. Agencies and personnel – Identify which agencies will participate and the personnel required
4. Exercise type – Identify the type of exercise to be conducted based on realistically achievable results within the drill scenario
5. Operating Procedures – Identify SOPs as per the scenario to test emergency response functions and coordination

**Statement of Purpose** – It is a statement to communicate the scope of the exercise to the entities participating in the mock drill.

**Objectives** – Objectives should be clear, concise, specific, performance based and attainable. The number of objectives needed for an exercise may vary according to the scale and expected output of the exercise. Objectives can be classified into “general/functional/specific”. General objectives will provide the overall scope of the exercise with reference to the community, agency, institution, industry or organization (for example: the community of Nari village will respond and recover from the flash floods).

Functional or specific objectives form the core of the mock drill. These further define the statement of purpose for the exercise by clearly describing the expected outcomes (performance) of the disaster management functions being tested.

**Scenario narrative** –The scenario narrative describes the events leading up to the time the exercise begins. It sets the scene for later events and also captures the attention of the participants. It could include answers to questions such as:

- What event
- How was the information relayed

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<sup>4</sup> The scope could vary depending on the hazard scenario

<sup>5</sup> For instance, collateral seismic hazards which could result in consecutively occurring events such as fault rupture, liquefaction, soil differential compaction, landslides, and flooding

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- What damages have been reported
- What was the sequence of events
- Was there any advance warning issued and how long before the event
- What factors influence emergency procedures

**Drill Activity** – Activities should be planned in such a way that it should provide sufficient scope to test the pre-identified Standard Operating Procedures (SOPs), drill scenario and the needs of the identified participants (e.g. members of ESF teams, schools, industries, public/commercial settings).

**Termination** – States the event(s) that indicate when the drill should be concluded once all the required and expected actions have been completed. In case of safety problems, procedure violation or an emergency, the drill may be prematurely terminated.



*Planning meeting in action at the District Emergency Operation Centre for disaster response*

**Expected actions/roles and responsibilities** – Describes the expected response to actions undertaken. Each ESF and its respective team members should be listed by name so that there is no confusion as to who is responsible for each function.

**Expected response/evaluation criteria** – The expected response is already pre-identified and defined in a procedure. Specific areas need to be identified for evaluation in the design stage of the mock drill. Details of the procedure must be included so that evaluation is properly carried out. The criteria for evaluation should focus on response recovery based on the hazard scenario stimulated and emergency functions conducted.

## **MOCK DISASTER DRILL AND EXERCISE MANUAL FOR FULL SCALE/FIELD EXERCISES V. GUIDELINES FOR DRILL CONDUCTION**

When conducting drills, a set process should be followed in order to minimize risks of injury to personnel, damage to equipment or the environment. Participating organizations such as the fire department, police, traffic authorities, hospitals and emergency response units should be informed. They should be notified before the commencement of the drill, and should respond accordingly as required by the drill scenario. They should also be informed as to how they will be notified in the event of an actual emergency.

### **Pre-drill Briefing**

The drill coordinator should hold a pre-drill briefing with the participating agencies, observers/evaluators to explain the scene and the ground rules for executing the drill. Operational procedures should be reviewed and safety precautions should be considered and reviewed with the participants. The pre-drill briefing should include the outline of the drill procedure and should clearly specify the inputs required by the participating agencies in terms of human resource support/equipment support. In a scenario which has a potential to cause damage to the habitat, it is important to involve the community and discuss the possible chain of events with them.

### **Drill Initiation**

The drill should be initiated by the incident commander in accordance with the planned drill scenario. The exact actions (such as alarm or announcement) for the initiation should be identified.

### **Drill Activity**

After the drill is initiated, every activity and response should be carried out according to the scenario and respective SOPs. Methods for receiving and delivery of messages can be verbal or written; on paper, by telephone, radio or fax. These messages are directed specifically to individuals/primary agencies that are responsible for coordinating responses with secondary agencies. From the message input, participants should determine the expected response and consequently coordinate internally and externally with the concerned agencies/individuals to take the necessary actions.

During the drill, evaluators document all activities based on the criteria of the drill scenario. Each drill should have specified areas of evaluation so that all actions required are observed and evaluated. Necessary evaluation formats should be circulated in advance to the concerned participating agencies.

The drill scenario should be allowed to continue till completion of the stated objectives or as stated by the incident commander. An abnormal termination is possible when actions taken by operating personnel would adversely affect the safety of the participants or cause damage to the facility, equipment or environment.

## **MOCK DISASTER DRILL AND EXERCISE MANUAL FOR FULL SCALE/FIELD EXERCISES VI. GUIDELINES FOR DRILL EVALUATION**

Evaluation process is an important component of the drill. It is the act of observing and recording mock drill activity, by comparing the performed actions against the drill objectives.

Evaluation serves three functions:

- To evaluate personnel actions
- To evaluate the ability of the responding agencies to implement a plan
- To check the effectiveness of the standard operating procedures

During the pre-drill briefing, the drill planner, incident commander and evaluation team will review the drill activity and SOPs. An evaluation worksheet outlining the action processes to be observed as per the set timeline decided in the scenario exercise should be circulated. After the drill, an evaluation report will be prepared and the comments can be incorporated into the SOPs.

**Evaluation Team** – The team members may be identified from within or outside the participating agencies. The incident commander may also serve as an evaluator. The size of the evaluation team will depend on the complexity and scale of the drill. Evaluators should be familiar with the local emergency management system, have expertise and knowledge of the plan and have analytical skills in keeping with the exercise design.

### **Elements for Evaluation**

The evaluators should consider the following elements in their evaluation

1. Notification, alerting and mobilization of disaster response personnel
  - Adequacy of alerting procedures
  - Timely activation and staffing of response facilities
  - Accurate and timely assessment of emergency situation
2. Emergency response facilities
  - Timely activation
  - Adequate personnel as per the Response Plan
  - Adequate response equipment
3. Disaster preparedness plans and procedures
  - Assigned task forces, personnel's demonstrated familiarity with the plans and standard operating procedures
  - Following the set process of the procedures and plans
4. Communications capabilities between response facilities
  - Adequate timely communication with field teams
  - Use of primary and back-up communication systems
  - Satisfactory handling of messages and communication from the EOC to the field site and vice-versa
  - Adequate communications between emergency support functions

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5. Situation assessment
  - To be able to demonstrate timely and coordinated information exchange between response facilities
  - To be able to assess the emergency situation, classify the situation and develop initial mitigation/restoration activities in a timely and accurate manner
6. Overall adequacy of the drill scenario to assess the response plan, facilities, resources, personnel/task forces according to functional areas and standard operating procedures

### **Critiquing Mock drills**

Following the drill, the incident commander will hold a session to critique the drill along with the evaluators and drill team. The critical analysis highlights the successes, shortcomings of the drill scenario, personnel's actions, equipment accessibility etc. The critique includes an analysis of the expected versus the actual operating actions including a critical evaluation of the response mechanisms and response time. The process should first involve self-evaluation by the participants, then a discussion of the evaluation notes, checklists, actions taken and the overall drill performance. Lessons learnt should be generated and shared with all the participating agencies to ensure maximum training and for future reference. The incident commander shall make the final determination of whether the drill objective was met or not.

### **Mock Drill Evaluation Report**

The evaluation report summarizes the development, conduct and results of the drill/exercise. The report should present an overall evaluation of the exercise, state whether the exercise objectives were achieved, and cite any areas of noteworthy performance, discoveries, determinations, problems, and solutions identified as a result of the exercise. A template of the evaluation report is given in **Annexure III**.

## **MOCK DISASTER DRILL AND EXERCISE MANUAL FOR FULL SCALE/FIELD EXERCISES VII. CASE STUDIES FOR MOCK DRILLS IN SPECIFIC SETTINGS**

Five specific settings will be covered in this section. A structural framework for each setting is briefly outlined, which enlists the main bodies responsible for undertaking the mock drill in each setting. A case study for each type of mock drill has also been provided for a better understanding of the processes involved in the conduction of a drill.

The specific settings are as follows:

- A.** Urban Setting
- B.** Rural Setting
- C.** Industrial Setting (On-Site/Off-Site)
- D.** School Setting
- E.** Health Care Setting

The community being the first respondent to disaster, their participation in formulation of preparedness plans and sharing of disaster preparedness cost is pivotal in the community based disaster management planning process. **Community Based Disaster Preparedness** (CBDP) includes awareness generation; vulnerability analysis; assessment of available resources; capacity building of stakeholders including PRI members, NGOs, CBOs, local administration and line departments; and preparation of disaster management plans, which is required at all levels. **Community based disaster plan** should incorporate the following:

- Adoption of a participatory approach
- Preparation a resource inventory
- Increased coordination between disaster management committees and reduce communication gaps
- Formation of community task forces with sufficient knowledge of their specific roles
- Establishment of a chain of disaster management volunteers
- Coordination with other related institutions within the community

During the mock drill the community members should understand and learn how to use the disaster management plan. After the mock drill, the Disaster Management Committee should update the disaster management plan.

### **A. URBAN SETTING**

Urban communities are becoming increasingly vulnerable to various hazards due to growing population density, rapidly expanding commercial and industrial activity, deteriorating ecological and environmental conditions and changing lifestyle habits. These urban areas are also characterized by sub-standard construction and poor infrastructure such as health care and sanitation facilities. These factors coupled with natural and human made hazards put urban communities at further risk.

An urban community is formed of individual members and families placed at different levels i.e. home, neighbourhood and ward. Due to the large size and particular

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characteristics of the urban community, formation of community based disaster management committees would be difficult. Therefore, in order to strengthen preparedness disaster management committees are normally formed at both the City and Ward levels. At times at the ward level, committee members are replaced by Resident Welfare Association (RWA) representatives.

There are two levels at which mock drills can be conducted in urban communities: firstly, for ESF support teams at the city administrative level and secondly, for community response at the neighbourhood/ward level. These two types of mock drills can also be carried out in tandem.

### **A.1 At the City Administrative Level**

The City Disaster Management Committee (CDMC) is the key decision making body at this level. The committee is formed with representation from all emergency support function departments who work in coordination for effective action during an emergency.

The main functions of the CDMC are as follows

- To act as a source of information for hazard safety
- To review the hazard and risk related situations which may be experienced during the drill
- To prepare recommendations identified during the drill
- To inspect and coordinate the activities at all levels

Evaluation exercises may be undertaken to understand the perceptions about disaster response during the drill in terms of

- Adequacy of training
- Alert and warning system
- Control Room functions
- Communication plans
- Security
- Recovery procedures
- Monitoring

The CDMC is headed by the Municipal Commissioner, Mayor, Divisional Commissioner or District Collector. There are four task forces which are convened to support the CDMC –

- i. Awareness Generation
- ii. Training and Capacity Building
- iii. Techno-legal Regime
- iv. Emergency Response

The emergency response task force is responsible for coordinating the Emergency Support Function (ESFs) Teams (Refer to Annexure II).

### **A2. At the Neighbourhood/Ward level**

The Ward Disaster Management Committee (WDMC) will be the emergency coordinator during the drill at this level. The Councilor will be the chairperson of this committee.

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Other members of this Committee include Civil Defense Personnel, Police Inspector, Fire officer, Assistant Engineer/ Junior Engineer Municipal Corporation, Retired Government Officers, Key volunteers from NGO's (Rotary Club, Nehru Yuva Kendra etc), RWA Representatives from each neighborhood zone etc.

The WDMC will perform the following functions during the drill:

- Monitor and manage the volunteers mobilised for disaster preparedness
- Update the information database of their respective ward plans
- Provide timely guidance to the neighbourhood/ward level disaster management team
- Coordinate with local bodies functionaries for carrying out emergency response
- Provide the required resources for conducting the drill

### ***Case Study for Mock Drill in an Urban Setting***

***Background:*** A State level mock drill on earthquake disaster was carried out in New Delhi on 4<sup>th</sup> August 2004. The duration was six hours. All emergency support function (ESF) teams of Government of Delhi along with NGOs and Indian Red Cross Society Agencies participated.

***Scenario:*** A massive earthquake struck North East Delhi on 4<sup>th</sup> August at 1:57 PM. A large scale building collapse was reported at Seelampur colony, around Shahadara Fire Station, around Seelampur Police Station and other parts of the district. Many feared dead/ injured and trapped under debris. Telecommunication, Electricity and water supply disrupted. Emergency declared and District and State Emergency Operation Centres activated. On site Emergency Operation Centres set up at SDM Office Seemapuri, Police Station Seelampur and Shahadara Fire Station. PCR Vans report tremors and building collapse.

***Objectives:*** The mock drill was aimed at accelerating the pace of development of response plans for the state, and promoting a culture of preparedness. The drill was also meant for bringing together different departments and agencies providing emergency support functions to promote better coordination.

***Drill Design:*** An initial meeting of ESF team leaders was held on 25<sup>th</sup> June, chaired by the Divisional Commissioner, to brief agencies on the mock drill and to discuss the ESF structure and proposed SOPs. SOPs were developed by the Divisional Commissioner's Office for each ESF and shared with all stakeholders. The Principal Secretary (Home) along with Divisional Commissioner, Joint Commissioner of Police, Chief Fire Officer and Director General (Home Guards & Civil Defence) visited the State EOC and Office of the Deputy Commissioner of district North-East to gauge the preparations at both State and district level. Subsequent meetings of the ESFs were held at the State and District level to draft the SOPs and the response plan.

### ***Drill Conduction:***

#### ***Proceedings at State EOC***

S.No.	Time	Event	Action By
1	14:05	Incident Commander receives information of incident from police wireless	Police

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2	14:10	Incident Commander declares an emergency	Incident Commander
3	14:15	Incident Commander activates the State EOC	Incident Commander
4	14:17	MHA Control Room informed through police wireless	Police
5	14:18-14:30	ESF Nodal agencies informed through wireless	Police
5	14:40	HAM operators reach State EOC and set up radio station within 15 mins to establish communication with District EOC/Incident Sites	HAM operators
6	15:00	Police provides 10 wireless sets for facilitating communication with ESFs MTNL installed 5 temporary landlines at EOC within 45 mins. Satellite phones also used	Police, MCD
7	15:00	MCD Nodal Officer reports to EOC	MCD Officer
8		State level helpdesk set up at EOC by Revenue Department	Revenue Dept.

- Along with the State EOC, the district EOC was also activated
- Three Incident Management Teams (IMTs) were set up at the affected areas
- Onsite EOCs were set up at these IMTs
- Emergency meetings of all ESFs was convened by the Incident Commander
- ESFs set up Quick Response Teams for prompt response
- All ESFs responded according to the pre-defined SOPs

**Evaluation:** The Deputy Commissioner (North East) was designated the Incident Commander. Deputy Commissioners from remaining districts were assigned the role of observers and were given a detailed evaluation form to gauge the effectiveness of the agencies.

Upon completion of the drill, a detailed evaluation report was prepared for each of the ESF teams, assessing them on the following criteria:

- Agencies reported
- Resources made available
- Awareness of responsibilities
- Nodal agency's ability to coordinate with support agencies
- Team leader's ability to coordinate with their respective agencies
- Overall coordination amongst various ESF agencies

### B. RURAL SETTING

Disaster Preparedness at the rural level is carried out through **Village Disaster Management Committees** (VDMCs). A VDMC is formed in each village and is responsible for initiating disaster preparedness activities. It consists of local elected

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representatives, grass root level government functionaries<sup>6</sup>, local Non-Government Organisations (NGOs)/Community Based Organisations (CBOs), members of youth groups<sup>7</sup>, women's self help groups etc. The representation of members in the committee would be decided based on the population size of the village. The VDMC would take the lead in mobilizing the community for formulating the CBDP Plan.

**Village level Disaster Management Teams (DMTs) /Task Forces** are formed to outline coordinated response during crisis situations. DMTs have sectoral focus such as early warning, shelter management, evacuation and rescue, medical and first aid, water and sanitation, carcass disposal, counseling, damage assessment and relief and coordination.

**Village Disaster Management Plans** prepared prior to the mock drill through the CBDP process entails the following information:

- *Physical/Social/Infrastructure Profile of village:* Demographics, Area Details, Housing Profile, Land Form, Livelihood, Occupation Pattern etc.
- *Resource Inventory of village:* Skilled Manpower, Health Care, Education, Water Facilities, Transportation, Communication Infrastructure etc.
- *Disaster Risk Profile of village:* History of Disaster, Elements at Risk, Hazard Assessment, Vulnerability of Area
- *Contact Information of village:* Village Disaster Management Committee, Village Task Force Members, Taluka Level officials, Village Level Skilled Personnel, Emergency Resource Owners etc.
- *Standard Operating Procedure of village task forces:* Operating Procedures and Methodology, Roles and Responsibilities in Pre, During and Post Disaster Period

*Note: At the village level, the mock drills can be based on the seasonality calendar of natural hazards.*

### **Case Study for Mock Drill in a Rural Setting**

**Background:** A mock drill was carried out in Panikata village, Khorda district of Orissa as a skill enhancement exercise with participation from all sections of the village.

**Scenario:** Panikata village has a population of 2000 and is vulnerable to floods during the monsoon season, due to the overflowing of the local river situated approximately 1 km from the village. The village is quite well connected through a road network and has electricity, telephone and postal services available. The local school building is used as a shelter place during disasters. There also some highlands situated half a kilometer away, which are used to shelter cattle in times of disaster.

**Drill Design:** The drill was planned by the villagers in consultation with the District Project Officer, DRM Programme.



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### Sequence of Events

S. No.	Event	Action By
1	10 youth relaxing in local community centre at around 9:30 am	
2	NGO volunteer informs youth group that there have been heavy downpour in the upper catchments of the river and the village may get flooded  Youth group listens to special bulletin on radio confirming the same	NGO volunteer
3	Youth group informs head of the ward committee and advise him to conduct a VDMC meeting immediately	Youth Group
4	VDMC meeting is convened to discuss the prevailing situation. Community Task forces are activated	Ward Committee
5	Task forces present their actions plans on how to tackle the forthcoming disaster to the committee	Task Forces
6	Early warning team disseminates information about impending disaster and alerts villagers. Establishes contact with Block Office/Gram Panchayat Office for latest information on weather and flood situation. Three rounds of early warning are carried out to inform each villager of situation	Early Warning Team
7	At the same time, village vigilance team members are instructed to keep vigil on weak points on the embankments and on low lying areas of village	Village Vigilance Team
8	Villagers start moving to the safe shelter i.e. school building, with their essential belongings. Male members shift cattle to highlands	Community
9	Sanitation team makes necessary arrangements to store three day's supply of drinking water, provide separate toilet facilities for men and women and obtain adequate stock of bleaching powder, lime powder as disinfectants	Sanitation Team
10	Relief team makes arrangements for a	Relief Team

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	community kitchen centre	
11	First aid team position themselves at shelter to provide medical care if needed. Rescue team evacuate sick/ill people and shift them to shelter	First Aid Team/Search and Rescue Team
12	Message is received that the village has been flooded and two children are sinking in the nearby pond. Search and rescue team rush to the site with the necessary equipment and rescue the children who are given first aid and shifted to the shelter	Search and Rescue Team
13	Counseling team present at the shelter to reduce emotional distress of the villagers	Counseling Team
14	De-warning message sent by Early Warning Team that weather conditions are improving and people can move back to their houses	Early Warning Team
15	Task forces convene for a de-briefing meeting	Ward Committee/Task Forces
16	Assessment team carries out damage assessment and presents its report	Damage Assessment Team
17	Update the village disaster management plan on the basis of the evaluation report	Evaluation Team

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### **C. INDUSTRIAL SETTING (ON SITE/OFF SITE)**

Recognizing that natural disasters constitute the biggest threat to financial viability, economic well-being and production processes for the industrial sector; development of on-site and off-site disaster management plans for industrial establishments is essential. Periodic conduction of mock-drills in industrial settings to enhance preparedness levels is critical.

Due to the exponential nature of industrial disasters, industrial units are not only mandated to develop on-site DM Plans to respond to and to meet any emergency within their premises but also establish working relationships, linkages and coordination with the surrounding communities.

Every industrial unit needs to develop an on-site and off-site disaster management plan on the basis of hazards and vulnerabilities likely to affect the community. On-site emergency plans are prepared for dealing with accidents that occur on sites where industrial activities are carried on, while Off-site emergency plans are prepared in anticipation of events spreading outside the boundary of the industry. The plans would assess the probability of occurrence, the severity and the possible consequences of industrial disasters in vulnerable zones.

Mock drills in an industrial set-up are carried out at the following levels –

#### **C1. On-Site**

Mock drills which simulate an internally contained disaster are managed by the Incident Command System which is headed by the Safety Officer.

#### **C2. Off-Site**

Large scale mock drills which simulate the effect of an industrial disaster on the community (e.g. a chemical leak due to an earthquake) can be carried out by the District Commissioner/District Magistrate's Office with participation by the ESFs of all line departments and the community itself.

The possible structure of an **Industrial Disaster Management Committee** is as follows:

##### *At the District Level*

- District Collector (Chairman)
- Inspector of Factories
- District Energy Officer
- Chief Fire Officer
- District Information Officer
- Controller of Explosives
- Chief Civil Defence
- Trade Union Representative
- Deputy Superintendent, Police
- District Health Officer/Chief Medical Officer

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- Commissioner, Municipal Corporation
- Representative of Public Health Engineering Department
- Industrial Safety and Health Experts
- Commissioner, Transport
- Industry Representative
- Chair Person/Member Secretary of Local Crisis Groups

### *At the Local Level*

- Sub Divisional Magistrate/District Emergency Authority (Chairperson)
- Inspector of Factories
- Representatives of Local Industries
- Hazardous Chemical Transporters
- Fire Officer
- Station House Officer (Police)
- Block Development Officer
- Representative, Civil Defence
- Primary Health Officer
- Editor of Local Newspaper
- Community Leader/Sarpanch
- NGO Representative
- Local Doctors

### **Case Study for Mock Drill in an Industrial Setting (Off-Site)**

**Background:** Gujarat Narmada Fertilizer Corporation (GNFC) in association with District Administration, Bharuch, District Crisis Group (DCG), Local Crisis Group (LCG) and Department of Industrial Health and Safety conducted a mock drill on Ammonia leakage on 30th September 2005.

**Scenario:** The scenario of the incident was leakage of ammonia from the valve of high pressure pump. The rate of leakage was 1.5 Kg per second. The duration of the drill was two hours.

**Objectives:** The main objectives of the drill were as follows:

- Testing the Off-Site District Emergency Plan
- Verifying the Preparedness level of various line departments and mutual aid groups
- Assessing the level of community preparedness
- Identifying gaps and suggesting appropriate revisions in the plan

**Drill Design:** A series of five meetings were conducted both at the District Collectorate's Office and GNFC where members from different industries, district and local crisis groups actively participated. An action plan was prepared and distributed to all the participants.

### **Action Plan**

S.No	Time	Event	Action by
1	10:30	Leakage started from valve of high pressure pump transporting Ammonia from storage	As per GNFC On-site Emergency

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		tank	Plan
2	10:35	On site-declaration and On-site siren will be blown	GNFC Ltd.
3	10:36  10:40	Call for mutual aid – NCPL & others  Information to : 1. District Control Room 2. Bharuch Fire Brigade 3. Disaster Prevention and Management Centre (DPMC), Ankleshwar 4. Civil Hospital, Bhauruch 5. Police Station, Bharuch 6. SDM, Bharuch 7. Dy.DISH, Bharuch 8. GPCB, Bharuch 9. A.R.T.O 10. T.D.O 11. Mamlatdar	Local Crisis Group Control Room, G.N.F.C Ltd.
4	10:40	Contact one / two designated persons from LCG to inform them of the situation	G.N.F.C Ltd.
5		The designated person is known as 'Communication In-charge' for the purpose of this mock drill	
6	10:40	Communication In-charge will first inform the Expert Group	Communication In-charge
7	10:50	Expert group will review the situation	Expert Group
8	10:55	Expert Group will discuss the situation with LCG Chairman – SDM	Expert Group
9	11:00	LCG-Chairman will declare Off-Site Emergency	LCG-Chairman
10	11:00	Off-site siren will be blown	Bharuch
11	11:00	LCG will inform the DCG Chairman & DCG Control Room about the Off-site emergency.	LCG-Chairman
12	11:05	Communication In-charge will inform all group leaders of LCG regarding off-site emergency	Communication In-charge
13	11:05	LCG leaders will inform their team members for starting of their work as per the plan	LCG Leaders
14	11:12	Heads of all groups will start for LCG Control Room and depute their members to designated places for continuous review of the situation	All members
15	11:15	As per opinion of the expert group the affected area will be approximately 500 meters	Expert Group
16	11:15	Site Main Control – LCG will alert the transportation & rehabilitation team	Chairman - LCG
17		Each person entering affected area will wear gas mask & switch off his/her mobile phone.	
18	11:15	Police will cordon off GNFC crossing & N.H.8. GNFC security personnel will help the police	Police

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		in evacuation and traffic control.	
19	11:20	Toxicity monitoring team will start monitoring	Toxicity Monitoring Team
	11:20	20 people will be affected due to gas exposure and require primary first aid treatment at local OHSC Centre.	Fire & Rescue Team
20	11:20	Police will inform the LCG control room about nearby affected areas.	Police
21	11:25	Police will announce the incident over the public address system	Police and Mamlatdar
22	11:35	Transportation-In-charge will arrange for evacuation of affected persons	Transportation In-charge
23	11:35 to 12:00	GNFC Mutual Aid members, LCG & DCG members fight to controlling leakage.	Incident Control Team
24	12:05	Vulnerable persons (in nearby industries & village) will be shifted to safe shelter at GNFC township	Evacuation Team
25	12:10	Arrangement for refreshment for affected persons shifted to the shelter	Rehabilitation In-charge
26	12:15	Toxicity Monitoring team will inform the LCG that the situation is under control	Toxicity Monitoring Team
27	12:20	Expert Group will verify that the situation is under control	Expert Group
28	12:25	Expert Group will inform the Chairman – LCG	Expert Group
29	12:30	Chairman – LCG will inform the Chairman - DCG	Chairman – LCG
30	12:30	Chairman – DCG will declare an ‘all clear’	Chairman – DCG
31	12:30	All clear siren will be blown	GNFC
32	12:45	Debriefing Meeting at Corporate Auditorium G.N.F.C Ltd.	

**Drill Conduction:** Deputy Director, Industrial Health and Safety briefed participants on the planned chain of events. He presented an elaborate incident map of site locations, intensity of leakage and vulnerable areas likely to be affected. Information on various response groups, including SOPs and contact details were also provided.



**Evaluation:** Independent observers were deputed at various locations in groups of two or three people. They were deployed at LCG Control Room, DCG Control Room, incident

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site, at Vadadla village, Civil Hospital, Shelter Camp, GNFC Hospital, at important traffic junctions of the city and at N.H. 8.

After completion of the drill a debriefing meeting was conducted at GNFC auditorium where all the participants including District Collector & Chairman of District Crisis Group were present.

### General Observations made during the de-briefing meeting:

- Active participation and commitment observed at every level
- Communication between various response groups are excellent
- Some people in the surrounding areas seemed to be unaware of the event

### Outcomes:

- The most positive outcome of the drill was the active involvement of VDMC and VDMT members in early warning, communication, evacuation and search and rescue activities. For instance, the lady principal of the local school was actively involved in disseminating information and in mobilizing people to respond.
- Community members, women, and children were quite aware of what to do after receiving warning and cooperated well during evacuation. Over 500 people were evacuated.
- Traffic on the National Highway was successfully managed without causing any inconvenience.

## **D. SCHOOL SETTING**

School going children are among the most vulnerable groups during any disaster. A large number of public and private schools are built in congested areas, non-regulated land zones and housed in unsafe structures. They are therefore, exposed to various hazards.

The mock drill in a school setting is carried out by the School Disaster Management Committee. It is headed by the Principal who oversees the whole process. Members include administrative staff, teachers, students and members of the Parent Teacher Association (PTA). The teachers are further divided into sub-committees (task forces) to deal with different emergency functions such as Evacuation and First Aid.

The possible structure of a **School Disaster Management Committee** is as follows:

- Principal (Chairperson)
- Vice Principal
- Heads of primary and middle school
- Education Officer/District Education Officer for the zone
- Parent Teacher Association President
- 1-2 parents
- 4 Students (Disaster awareness group student leader, Disaster response group student leader, Head boy and Head girl)
- Representative of Relief/Revenue/Disaster Management Department/District Administration/Municipal Corporation
- Representative from Fire Service

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- Representative from Police
- Representative from Health Department
- Warden from Civil Defence
- Representative from Red Cross/St. Johns Brigade
- Administrative/Logistics Officer/Estate Manager from School Office
- Resident Welfare Association representative
- Local NGO representative
- Market Trade Association representative
- Local Doctors
- Volunteer Groups (NCC, NSS, Scouts and Guides, NYKS etc.)

The school setting has its own distinct structure of task forces. These can vary depending on the management structure of school (e.g. Government, Aided, Public etc), the location, capacity to house students (e.g. In-house boarding/day scholars) and school infrastructure (e.g. transportation facilities, sports and recreation facilities etc). A checklist for possible school task forces is included in **Annexure IV**.

The following different kinds of drills can be carried out at the school level:

- Duck, cover and hold--in which *everybody* gets under a desk or table for 60 seconds and holds on to it
- Evacuation--in which only that response is tested
- "Walk through"--in which actions and responsibilities of each team are discussed by all and coordinated
- "Shock"--in which first aid response to injuries is tested
- Full Scale--actual field test of a complete plan during a simulated disaster



### ***Case Study for Mock Drill in a School Setting***

**Background:** An evacuation mock drill was carried out Government Girls Senior Secondary School, Chabi Ganj, Kashmere Gate, New Delhi on 6<sup>th</sup> October 2004. The drill was organized by Office of the Deputy Commissioner, North District of Delhi.

**Scenario:** The district administration has undertaken school safety initiatives in all schools in the district. A school disaster management committee and disaster response teams were constituted. A school disaster management plan was prepared. A mock drill was undertaken as the next step in the school safety initiative. The school is housed in a four storey building with 500 students.

**Objective:** The main objective of the drill was to check the school's evacuation plan and preparedness levels.

**Drill Design:** Principals of identified 4 schools were asked to be present during the drill to enable them to take forward their school plans. The nodal teacher of the school for disaster management briefed them on the design of the school plan. A detailed floor-wise evacuation plan was included in the disaster plan. Class teachers sensitized students on how to react in a disaster situation and which evacuation routes to use during an emergency.

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***Drill Conduction:*** The drill was initiated with the ringing of a bell, which was different from the usual one. The school has only one main staircase, which is wide and centrally placed, enabling easy movement of children to the closest exit gate. During the evacuation, 2-3 students fell down. However, they gathered themselves quickly and were able to move out immediately. The total evacuation time for the whole school was 1 minute 7 seconds.



***Post Drill:*** Once the children were assembled outside, they were addressed by the Station Officer on basic dos and don'ts during a fire, The DPO requested the vice principal to address the students on earthquake safety tips during the morning assembly. The principals who were present during the mock drill were asked by the Education Officer to undertake further steps in their schools based on what they had learnt.

### **E. HEALTH CARE SETTING**

Health care is required for unexpected crises ranging from natural disasters, outbreaks of disease to vicious acts of terrorism. Emergencies may also be internally triggered (e.g. a small fire in the data center, a burst pipe in the emergency department or a hospital-wide labor strike). Regardless of the causal factors for an emergency, the implementation of a hospital's emergency management plan and activation of the Hospital Emergency Incident Command System (HEICS) is essential for response.

**Emergency drills in the Health Sector should incorporate the following elements:**

- Coordinated drills should be conducted at least every six months and include participation of external local emergency management agencies as well
- The emergency drill should simulate the response to varied emergency scenarios
- Participants should include professional, administrative, nursing and other health care facility personnel as well as the community
- The drill should be evaluated to identify and address any problems
- The health care facility should keep a copy of the evaluation report including evaluation of each department involved in the drill

#### ***Case Study for Mock Drill in a Health Care Setting***

## **MOCK DISASTER DRILL AND EXERCISE MANUAL FOR FULL SCALE/FIELD EXERCISES**

**Background:** A mock drill was conducted for a health crisis due to an earthquake in North East district of Delhi in October 2005. A total of 500 people participated including 300 community members and a 100 Government Officials in charge of health issues.

**Scenario:** The drill was held at a Government dispensary at Seelampur, Delhi. A massive earthquake had struck North East Delhi at 12:00 PM. A large scale building collapse was reported to Seelampur and other parts of the district. Many were feared dead/injured and trapped under debris. Most of the local dispensaries were partially or fully destroyed.

**Objectives:**

- To train the doctors and paramedical staff in disaster management
- To test the disaster management plan of the health department
- To check the efficiency of various teams and task forces in disaster management
- To check the utility of available disaster management equipment

**Drill Design:** Prior to the drill, the entire staff of Government dispensaries and hospitals in the North East district were given training on disaster management by the District Disaster Management Authority. A disaster management plan was prepared for the health sector. SOPs were also developed for various task forces in the health sector.

**Drill Conduction:**

The main departments, agencies and organizations who participated were as follows:

- District Emergency Operation Centre – For coordination
- Local Blood Bank
- MCD Dispensaries
- Fire Service – For Search and Rescue/Fire Fighting
- Civil Defence- For Search and Rescue/Fire Fighting
- Local Resident Welfare Association

The following task forces were functional:

- 4 Quick Response Teams
- 4 Field Response Teams
- 4 First Aid Teams
- 4 Mobile Clinic Teams

**Sequence of Events**

S.No.	Event
1	Health department control room receives message. Verification by Headquarter
2	Message is disseminated by Incident Commander to all functionaries and task forces
3	Incident Management Team reaches the site immediately and assesses the situation
4	Quick Response Teams and Field Response Teams are immediately deployed with necessary manpower and equipment to strategic locations. Reach within 10-30 mins. Respond according to pre-defined SOPs.
5	Activation of Disaster Specific Wards and logistical arrangements made in

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	hospitals
6	Primary damage assessment by Incident Management Team
7	Simultaneous search and rescue operations/ first aid treatment on-site in the mobile medical unit and transfer to local hospital
8	Treatment in the disaster ward at the hospital

Evaluation: Following the drill, an evaluation was carried out by all the participants and stakeholders so that every team/task force could share in the learning.

General Observations:

- Overall team response was good. But response time needs to be reduced and clarity of roles needs to be better defined
- Overall coordination was good, but team leaders need to have better command over their teams

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### **IX. ANNEXURES**

#### ***Annexure I: Checklist for DMTs/ CTFs***

##### **Early Warning/Communication Community Task Force**

###### ***Pre Disaster***

- Ensure that communication equipment is in working order
- Maintain an emergency contact directory of key agencies like IMD, Office of the District Magistrate, CWC, Office of SP Police etc.
- Prepare a hazard map of the community demarcating the most vulnerable/safe areas and households
- Pay attention to local warning issued by departments
- Disseminate early warning using mega phone/mikes/sirens, door to door
- Assemble in a central location and listen to radio/TV news channels to determine the situation
- Verify the warning received on radio/TV news channels with the nearest emergency operating centre

###### ***During disaster***

- Remain in the pre-identified community shelters and provide the evacuees with regular updates
- Take necessary preparedness actions based on the alertness levels

###### ***After disaster***

- Get the de-warning message from the Emergency operating center
- Disseminate precautionary information on post disaster health hazards and remedies
- Provide immediate assessment details to damage assessment team
- Provide the search and rescue team with geographic information on the community
- Prepare and disseminate situation reports to other CTFs/ESFs

##### **Evacuation and Temporary Shelter Management Community Task Force**

###### ***Pre disaster***

- Stocktaking of infrastructure needs of the community such as roads, schools/community halls/community libraries for evacuation arrangements
- Coordinate with disaster management committee members to identify sites for setting up relief camps
- Check for required repairs in safe shelters
- Stock food items and essential supplies
- Ensure that shelters are easily accessible by well maintained all-weather roads

###### ***During disaster***

- In case supply runs short, move food stocks, fuels and medicines to community shelters
- Organize space to house evacuee families
- Guide the elderly, women, children and physically/mentally challenged to shelters
- Register the evacuees and give them identification slips/cards

###### ***Post disaster***

- Ensure that evacuees are fed and housed until the de-warning is received

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- Organize tents and materials for construction of temporary shelters
- Collect remaining stock of food, clothing and fuels
- Clean and disinfect the shelter
- Assist disaster management committees in organizing rehabilitation activities
- Conduct a head count of the community members

### **Search and Rescue Community Task Force**

#### ***Pre disaster***

- Have a detailed map of the community to get familiar with the geographical area
- Identify necessary S&R tools/equipment from local resources
- Regularly maintain the equipment
- Organize sub- teams (S&R) for rotation of personnel
- Carry out regular training programmes during the normal phase

#### ***During disaster***

- Organize a meeting of the CTF members/ESF members (S&R)
- Contact the local disaster committee members
- Identify vulnerable areas in which help is required and decide the action plan for carrying out search& rescue operations
- Mobilise the required equipment
- Assist the evacuation team in moving people to safer shelters
- Coordinate with first aid team to provide injured persons with medical attention

#### ***Post Disaster***

- Report the number of missing/dead/injured during S & R operations
- Conduct a head count of the community members
- Clear debris and fallen trees/rubble to reach trapped persons
- Communicate with first aid team for primary health care
- Coordinate with evacuation team to shift rescued persons to open spaces/tents /shelters

### **Damage Assessment Community Task Force**

#### ***Pre disaster***

- Obtain and keep a social map handy demarcating the most vulnerable/safe areas and households
- Prepare and keep handy a sufficient number of damage and needs assessment forms for various sectors

#### ***During disaster***

- Should coordinate with Search and Rescue and Evacuation and Temporary Shelter Management task forces to take stock of the current situation
- Call emergency meeting of the group and assign duties

#### ***Post disaster***

- Prepare a first hand damage assessment report on the preliminary damage to lives, livestock and property
- Prepare further detailed reports on various sectors
- Assist DM committees in organizing rehabilitation activities

### **First Aid and Trauma Counseling Community Task Force**

#### ***Pre disaster***

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- Maintain a list of elderly members, children below 5 years, pregnant women, disabled etc in the locality
- Keep first aid kits ready and ensure that expired drugs are replaced with new ones
- Keep stretchers/wheel chairs or other local alternatives ready to carry injured people
- Undertake combined training along with S&R team
- Coordinate with PHCs, CHCs and Municipal Hospitals

### ***During disaster***

- Ensure the contents of all first aid kits are in place
- Look after the medical needs of the evacuees
- Help in setting up medical camps

### ***Post Disaster***

- Attend to the injured people
- Counsel traumatized people
- Help doctors and paramedics in providing medical care to the injured
- Identify and isolate the cases of infectious diseases to prevent them from spreading
- Provide preventive medication if there is danger of cholera, dysentery
- Coordinate with the relief task force to ensure adequate medical supplies

## **Water and Sanitation community task force**

### ***Pre disaster***

- Ensure supply of chlorine tablets to disinfect drinking water
- Ensure sufficient stock of lime powder to disinfect water bodes/drain networks
- Ensure sufficient water is stored in proper tanks and jerry cans in safe shelters
- Obtain contact details of personnel at local water board/authority
- Set minimum standards in advance for distribution of water in emergencies
- Identify sufficient number of raised platforms, deep tube wells
- Prepare utility maps, distribution network maps

### ***During disaster***

- Assess the drinking water supply and available water resources and take adequate steps to prevent contamination
- Ensure that safe drinking water and sanitation facilities are available at the safe shelter

### ***Post disaster***

- Conduct damage assessment of water and sanitation facilities and inform the damage assessment team
- Restore water and sanitation facilities
- Conduct immediate repairs of broken or burst pipes
- Coordinate with the Municipal Cooperation for procurement of water tankers
- Disinfect large water bodies with lime powder
- Ensure water is available at relief camps/safe shelters
- Coordinate with first aid/search & rescue team for disposal of carcasses
- Maintain a list of dead who have been cremated

## **Relief Coordination Community Task Force**

### ***Pre disaster***

## **MOCK DISASTER DRILL AND EXERCISE MANUAL FOR FULL SCALE/FIELD EXERCISES**

- Get familiarized with the need assessment formats
- Assess the estimated requirements for relief material
- Check the stockpiling of food grains, fodder and medicines by Evacuation and Temporary Shelter Management and First Aid taskforces
- Stock materials like ropes, bamboos, tarpaulin etc in the safe shelter identified

### ***During disaster***

- Coordinate with evacuation and temporary shelter management team to distribute essential relief items to safe shelters
- Establish a distribution centre or community kitchen

### ***Post disaster***

- Conduct a need assessment in the locality
- Based on the preliminary need assessment, communicate to disaster management committee the relief items required and status of distribution
- Prioritize relief items and essential food items to men, women and children
- Maintain a list of relief items distributed to each household
- Keep a record of relief stock available

## ***Annexure II: Checklist for ESF Teams***

The steps for activation of the ESFs will be common to all teams and will generally be as follows:

- The Team Leader (TL) of Primary Agency will be informed to activate the ESF
- TL will call Nodal Officers of support agencies
- Quick Response Teams would be deployed to the affected site
- QRTs will assess and report the situation to EOCs

Specific Responsibilities of each ESF Team are as follows:

### **Communication**

- TL requests for detailed information on the status of equipment and infrastructure in the affected area
- TL decides on the need to launch an assessment mission
- TL works out a plan of action for telecommunication companies and convenes a meeting of all ESF members to discuss and finalise the modalities.
- TL issues orders to establish systems and reports to State and District EOCs on the action taken.
- HAM radio operators would be informed and coordination mechanisms shared with them
- Monitors the situation and arranges for emergency staff required to operate systems established
- Informs ESF on debris clearance of the work required
- Initiates temporary rehabilitation work required
- Launches rehabilitation work and arranges for repairs and relocation, if required

### **Evacuation**

## **MOCK DISASTER DRILL AND EXERCISE MANUAL FOR FULL SCALE/FIELD EXERCISES**

- Secretary Revenue will inform the concerned nodal officers
- Quick assessment of evacuation routes through aerial and ground surveys by Fire Service, Police and Civil Defence
- Nodal Officers would maintain contact with District EOC
- Nodal Officers will send teams of officers to help in evacuation operation
- Coordination with local CTFs and DMTs at affected sites
- Fire Officers and Civil Defence Officers to be active in uncovering people from rubble and uncovering openings requiring special expertise
- Survey teams should also inform about the alternative evacuation routes available

### **Search and Rescue**

- Home Secretary will inform the concerned nodal officers
- Quick assessment through aerial survey by Fire Service, Police and Civil Defence
- Nodal Officers would maintain contact with District EOC
- Nodal Officers will send teams of officers to help in evacuation operation
- Coordination with local CTFs and DMTs at affected sites
- Fire Service, Police and Civil Defence Officers to be active in uncovering people from rubble and uncovering openings requiring special expertise
- Medical aid to be given to injured people

### **Medical Health/Trauma**

- State EOC will call the TL to activate ESF and be operational within 2 hours
- Main hospitals given warning to activate their mass casualty management plans
- Triage done to prioritise treatment and determine who needs to be taken to hospital
- Patients stabilized before being transported to medical facilities
- Mobile hospitals deployed as needed

### **Equipment Support**

- Divisional Commander will inform concerned nodal officers
- Nodal officer of the primary agency will coordinate with the supporting agency's officers to mobilize equipment from warehouses through the IDRN database
- The respective supporting agencies will contact their respective personnel to move the equipment to a central ware house
- The identified equipment will be transported to the site

### **Helplines, Warning Dissemination**

- Divisional Commissioner will be in charge and will call all the support agencies for warning dissemination (E.g. Department of Information and Publicity, MTNL, AIR, Doordarshan etc) to ensure the flow of accurate information
- The support agencies should collect information from EOCs and send news flashes across the State. If donation is required, the details should be telecast
- Team should assist EOC in providing updated information at National and State level

## **MOCK DISASTER DRILL AND EXERCISE MANUAL FOR FULL SCALE/FIELD EXERCISES**

- Toll free numbers should be set up for emergency information assistance

### **Drinking Water**

- Set up 'water points' at key locations in relief camps
- Maintain water purity and provide chlorine tablets
- Provide clean drinking water in case water pipelines are damaged
- Locate drinking water facilities separate from sewer and drainage facilities

### **Electricity**

- Secretary Power will take charge of the Electricity Emergency Support function as the team leader of the Primary Agency for electricity
- Prime objective is to provide and coordinate state support until the local supporting agencies are prepared to handle all power related problems
- TL will communicate damage status to support agencies and request nodal officers to provide support of equipment and infrastructure in affected areas
- TL will establish radio communications with State EOC to assess equipment requirements
- Quick assessment of damage to equipment and infrastructure relating to power will be carried out
- The damage assessment report should be used to make a list of required resources
- The TL should inform EOC about the requirements and external aid required
- A nodal officer should be appointed for the affected area

### **Relief (Food and Shelter)**

- The TL of Primary Agency will be from the Revenue Department
- Quick assessment of functional and stable buildings will be carried out
- Locate relief camp sites based on the damage assessment report
- Clearing of the area for establishment of relief camps
- Set up relief camps using innovative and time saving measures
- Assist local authorities to set up telecom and other services facilities
- Initiate procurement of critical food supplies
- Supply food packets to families
- Account for special needs of pregnant women, infants, children, elderly and ill
- Make emergency food supplies available to population
- Develop alternative arrangements for population living in structures that might be affected even after the disaster

### **Debris and Road Clearance**

- Quick assessment on the of the damages of roads and structures reported at the site and surrounding areas
- Immediately start debris clearance operation to enable movement to the affected site
- Review of current situation to plan alternative routes for transportation ESF to be operational
- Inspection of road/rail network and structures within the disaster site and in surrounding areas

## **MOCK DISASTER DRILL AND EXERCISE MANUAL FOR FULL SCALE/FIELD EXERCISES**

### **Law and Order**

- Quick assessment of law and order situation in affected areas will be carried out
- Available forces will be immediately deployed
- Updates on the law and order situation will be prepared every 4-6 hours and the authorities will be briefed
- Prevent rioting and looting, and cordon off sensitive areas
- Protect of Vital Installations
- Central Paramilitary forces will be deployed if the need arises

### **Transport**

- Divisional Commissioner will inform the concerned nodal officers
- Objective is to provide transport for search, relief and evacuation teams
- Immediately upon notification of an disaster, the Transport department will establish necessary emergency operating facilities and establish communication with support agencies
- Establish communication with State EOC and Divisional Commissioner to assess location of damaged areas
- Supporting agencies will deploy their vehicles to support the relief operation
- DoT will coordinate with state and local agencies to facilitate the movement of people and goods to from and within the disaster area
- DoT will coordinate for providing immediate assistance such as regulating air traffic control and assisting in search and rescue and recovery

### ***Annexure III: Template for Evaluation of Mock Drills***

#### **A. Introduction**

#### **B. Scope and Objectives**

- Drill/exercise scope
- Participants/Participating agencies
- Mock drill objectives

#### **C. Scenario Summary**

- Initial conditions
- Sequence of events

#### **D. Critique**

- Scope of Evaluation
- Summary
- Notification and communications
- Operations and field responses
- Equipments and facilities
- Standard Operating Procedures
- Drill-related problems
- Other Observations

## **MOCK DISASTER DRILL AND EXERCISE MANUAL FOR FULL SCALE/FIELD EXERCISES**

### **E. Outcomes**

- Significant findings/successes
- Loopholes/Deficiencies/Omissions
- Opportunities for Improvement

### **F. Plan of action for corrective actions**

## ***Annexure IV: Checklist for School Task Forces***

### **Warning and Information Dissemination Team**

#### ***Pre Disaster***

- Monitor and maintain regular updates on the possible hazards that the school can face
- Inform the school authorities of any impending hazardous situation
- Maintain contact with district authorities and communicate any directions to the school authorities
- Post warning signs / flags of appropriate colour for different warning levels at prominent and designated places in the school
- Disseminate information to all staff and students
- Coordinate with the other teams and inform them about the latest weather / warning situation

#### ***During Disaster***

- Cross check the warning received from various sources
- Warn the school in case of an emergency by ringing a bell/siren/message over public address system/through messenger
- Inform the School Disaster Management Committee and Government ESFs
- In case of the school being used as a shelter, inform the shelter staff about the latest updates and weather reports

#### ***Post Disaster***

- Continue monitoring the various information sources
- Continue reporting on the post disaster situation to all concerned teams
- Disseminate safety tips in coordination with the Awareness Generation Team
- Work with the Incident Management Team from the district administration in preparing updates and disseminating information

### **Evacuation Team**

#### ***Pre Disaster***

- Check all exit routes
- Identify open areas where the staff and students can assemble after evacuation
- Ensure that necessary supplies are accessible
- Assist the Planning Committee in developing options in the event evacuation is required during severe weather conditions
- Account for requirements of students with special needs

#### ***During Disaster***

- Evacuate in an orderly fashion as practiced in the mock drills

#### ***Post Disaster***

- Ensure that emergency assembly area is accessible and safe

## **MOCK DISASTER DRILL AND EXERCISE MANUAL FOR FULL SCALE/FIELD EXERCISES**

- Determine if any additional assistance is required for evacuation
- Take roll call and report group status to EOC

### **Search and Rescue Team**

#### ***Pre Disaster***

- Ensure that needed supplies are available
- Ensure that team members are regularly trained

#### ***During Disaster***

- Commence Search and Rescue Operations

#### ***Post Disaster***

- According to pre-established pattern, check (visually, vocally, physically) every room in the building
- Report location of injured to First Aid Team
- Look for obvious structural problems/significant structural damage
- Report any damage to the School DMC and EOC

### **First Aid Team**

#### ***Pre Disaster***

- Ensure an adequate stock of first aid supplies
- Keep emergency cards and health cards up-to-date
- Ensure training for all new members and refresher training for existing members (every year)
- Take account of special medical needs of staff and students

#### ***During Disaster***

- Attend to medical needs of injured

#### ***Post Disaster***

- Administer first aid and maintain a record of all those treated
- Determine need for additional medical assistance
- Assign First Aid Team members to accompany Search and Rescue Teams during their operations

### **Fire Safety Team**

#### ***Pre Disaster***

- Ensure that fire fighting equipment is in working order and staff has received training on how to use it
- Ensure that all non-structural earthquake hazards that can be cause of fire (i.e. chemical laboratories, cafeteria, kitchens, hot water tank) are properly secured
- Coordinate with the SDMC in ensuring that a fire safety assessment of the school premises is conducted by the local fire department and that the recommendations are implemented

#### ***During Disaster***

- Check for and confirm existence of fire in building
- Inform EOC and State Security Team
- Control fire, if possible (ensure personal safety)
- In case of an electrical fire, turn of the electrical main switches

#### ***Post Disaster***

## **MOCK DISASTER DRILL AND EXERCISE MANUAL FOR FULL SCALE/FIELD EXERCISES**

- Look for conditions that may cause a fire to develop and seek Maintenance Staff's assistance in removal of condition

### **Site Security Team**

#### ***Pre Disaster***

- Work with the Planning Committee, the School Administrator and the District authorities to establish a release policy and communicate this policy to parents and staff
- Develop procedures for how release will be handled

#### ***Post Disaster***

- Lock all external gates and doors, and secure buildings. Ensure that locked doors can be opened from inside to prevent entrapment
- Station a team member at main gate/front door to deal with community/parents and guide police, fire, rescue and first aid teams to the affected area
- Keep the Administrator (EOC) informed of activities. Release students according to pre-arranged policy

### **Bus Safety Team (For each Bus)**

#### ***Pre Disaster***

- Know school policy for procedures in the event a damaging earthquake occurs while buses with students are enroute to or from school
- Assist SDMC in providing 2-way radio communication between buses and school Administrators
- Carry emergency cards with information on contact numbers for the school EOC, and important district contact numbers (district administration, police, fire, medical, etc.)
- Take first aid training
- Develop plans to assist special needs students

#### ***During Disaster***

- Pull over to side of road, in an open area if possible. (Not under an overpass or bridge or alongside buildings or trees)
- Instruct the passengers to crouch down between seats and in aisle until shaking has stopped
- Ensure special needs students are assisted

#### ***Post Disaster***

- Assist any injured students, providing First Aid if needed
- Establish communication with School EOC
- If bus and transportation routes are in usable condition, allow bus to proceed cautiously
- If crossing a bridge is necessary; stop bus, get out and physically inspect bridge. If the bridge is not safe for passage, follow established school policy regarding the continued movement/ release of the students