3

Approach

National Response Approach

Most of the disaster situations are to be managed at the State and District levels. The Centre will play a supporting role and provide assistance when the consequences of a disaster exceed District and State capacities. The Centre will mobilise support in terms of various emergency teams, support personnel, specialized equipment and operating facilities depending on the scale of the disaster and the need of the State or District.

Although active assistance to an affected State/District will be provided only after the declaration of a national level disaster (L3), the National response mechanism has to be prepared and any impending State or District disaster has to be monitored in order to provide immediate assistance whenever required. For this purpose the National response mechanism has to be pre defined in terms of process, related handbooks, and checklists that will have to be used during a disaster.

Although the Centre plays a crucial role in managing disasters it only plays a supportive role to the State and District authorities. The Centre has to maintain and concentrate on monitoring, warning activities and step into action when a disaster situation exceeds the capacity of the State authorities. In order to formalize and give meaning to these procedures, new concepts of Trigger Mechanism, L concept, etc. have been developed as an integral part of the National Disaster Response Plan.

Legal Framework

There is no enactment either of the Union or of any State Government to deal with the

management of disasters of all types in a comprehensive manner. The Environment (Protection) Act, 1986 was passed for the 'protection and improvement of environment and the prevention of hazards to human beings, other living creatures, plants and property.' The Ministry of Environment and Forests prepared and published the Rules on 'Emergency Planning, Preparedness and Response for Chemical Accidents' in 1996 only. These rules pertain to toxic and hazardous chemicals, and provide a reference mechanism for the Central, State, District and Local levels.

The concept of Trigger Mechanism has been incorporated by the HPC as an emergency quick response mechanism, which would spontaneously set the vehicle of management into motion on the road to disaster mitigation.

The Public Liability Insurance Act, 1991 casts a responsibility on the owner of a unit producing hazardous substance, as defined in the Environment (Protection) Act, 1986, to provide immediate relief where death or injury to any person or damage to any property results from any accident to the extent indicated in the Schedule to the Act. The owner has been required to make one or more insurance policies so that the liability for providing relief is covered by a policy.

In absence of an enactment, the HPC has prepared a "National Calamity Management Act"; a draft of which has been circulated to all the States as well as all the concerned ministries of the Government of India for their comments. The Act aims at ensuring efficiency and effective management of natural and other calamities, for achieving greater coordination and responsiveness with respect to prevention and mitigation of disasters as also to provide better relief and rehabilitation of victims of disasters.

The proposed National Calamity Management Act envisages the formation of a National Centre for Calamity Management for the purpose of effective management of all disasters arising out of calamities.

A Committee to prepare a Model State Disaster Management Act was constituted by the HPC. This Committee had the mandate to prepare the draft Act within two months' time, under the chairmanship of Shri P.K. Mehrotra, Director General, Madhya Pradesh Academy of Administration, Bhopal. The Committee perused disaster-related legislation in several countries such as the Robert T. Stafford Disaster Assistance and Emergency Relief Act of USA and decided to adopt relevant aspects suitable to Indian conditions. The Committee also decided to take into account available codes and relief manuals and the relevant Acts related to Disaster Management in India in preparing the Model Act. The Committee met on two more occasions and finalised the draft of the Model State Disaster Management Act. A copy of this draft Act was also circulated to the State Chief Secretaries and Relief Commissioners of all States and DGs of all State ATIs for their comments, suggestions and further follow-up actions. It was submitted as part of Interim Report I, was accepted by the Central Government, and circulated to all Chief Ministers.

Building Codes and Bye-Laws: Proper conceptualization, risk evaluation, designing, construction and maintenance of houses and buildings are all disaster reduction measures. Compliance to building guidelines and codes covering all aspects of disasters needs to be addressed by building codes and bye-laws and these need to be uniform as far as possible. The situation warrants a high degree of coordination between the organisations involved in the formulation of the building codes and for the same, setting up of "Disaster Hazard Mitigation Codes Coordinating Group" is required that would look into the existing gaps and fill them. It has been suggested that 'Building Code Formulators and Administrators Conference of India' (BUCFAC) be created to discuss common problems and concerns and provide feedback on code enforcement, implementation problems and gaps.

Building codes and standards need to be made a part of the building byelaws and regulations thereby forcing developers, engineers, architects and engineers to adhere to them.

Concepts Used in the Document

Trigger Mechanism

Trigger mechanism is a concept that has been developed in order to ensure the smooth flow of response activities after disaster.

The concept of Trigger Mechanism has been incorporated by the HPC as an emergency quick response mechanism, which would spontaneously set the vehicle of management into motion on the road to disaster mitigation process.

The Trigger Mechanism has been envisaged as a preparedness plan whereby the receipt of a signal of an impending disaster would simultaneously energise and activate the mechanism for response and mitigation without loss of crucial time. This would entail all the participating managers to know in advance the task assigned to them and the manner of response. Identification of available resources, including manpower, material, equipment and adequate delegation of financial and administrative powers are prerequisites to successful operation of the Trigger Mechanism.

The Trigger Mechanism is in essence, the Standard Operating Procedure (SOP) in which the implementation of efforts on ground is well laid down. Activities such as evacuation, search and rescue, temporary shelter, food, drinking water, clothing, health and sanitation, communications, accessibility and public information, that are important components of disaster management, would follow on the activation of the Trigger Mechanism. These activities are common to all types of disasters and require sub-division and preparation of sub-action plans by each specified authority. Each sub-group has been requested to work out the trigger mechanism relevant to their group of disasters.

Trigger Mechanism requires the disaster managers to:

- Evolve an effective signal/warning mechanism.
- Identify activities and their levels.
- Identify sub-activities under each activity/level of activity.
- Specify authorities for each level of activity and sub-activity.
- Determine the response time for each activity.
- Work out individual plans of each specified authority to achieve activation as per the response time.
- Have Quick Response Teams for each specified authority.
- Have alternative plans and contingency measures
- Provide appropriate administrative and financial delegation to make the response mechanism functionally viable.
- Undergo preparedness drills.

To understand the concept of Trigger Mechanism and incorporate it in the plans to be prepared by each sub-group, a committee had been set up under the Chairmanship of Shri M.K. Shukla, Director General, Civil Defence, which included all five Convenors of Sub-Groups, experts from ATIs and NCDM and Member Secretary, HPC. The sub committee has given its recommendations on which further follow-up action will be required.

L Concept

The L concept has been developed to define the different levels of disaster in order to facilitate the assistance to States, and the Centre. It has four levels, which are as follows:

L0 level denotes normal times which

will be utilized for close monitoring, documentation and preparatory activities. Training of search and rescue teams, rehearsals, evaluation and inventory updations for response activities will be carried out during this period.

L1 level is denoted when the disaster can be managed at the District level where the State and the Centre need to be on guard in case assistance is required for disaster relief operations.

L2 Level disaster situations are those that require assistance and active participation of State resources for management of the disaster.

L3 level disaster situation arises in case of large scale disasters that have a noticeable impact on a number of districts or states and when the State and District authorities have been overwhelmed with the disaster and require assistance from the Centre for reinstating the State and District machinery as well as rescue and relief operations.

Declaration of L3

In many cases the scale and intensity of the disaster as determined by the technical agency are sufficient for the declaration of L3 disaster. The designated technical agency/authority (IMD, etc.) has to pre-determine the parameters of intensity of each disaster by virtue of which it would be declared as L3, triggering off all necessary and subsequent actions without prior meetings or notifications during the response phase of a disaster situation.

Officially, the declaration of L3 will be the responsibility of Central Relief Commissioner for natural disasters in consultation with the concerned ministries.

In spite of the declaration of L3, the activities to be carried out by the Centre are largely dependent on the capacity of the State authorities to manage the disaster.

The parameters for each disaster are to be set by the designated authority (IMD, etc.). It has been recommended that the concerned authority should recommend a system for the declaration of L3 that includes scientific parameters and the time for the declaration of an L3 event.

Alerts (Pre-event)

In case of any impending disaster for a specific area, the District/State and the Center need to initiate action as soon as the designated authority issues a warning. In cases where disaster warning is possible, the District/State/Center can initiate pre-disaster preparedness activities immediately after the warning is issued. In most situations the role of the Center would be to monitor preparedness activities and send information to the concerned central departments. However, the estimated scale and extent of damage is the determining factor for a District, State or Center alert.

Planning Assumptions

In disaster situations, effective utilization of resources can be ensured if the conditions of the disaster are assessed and taken into consideration during the planning phase. Disasters cause loss of property, injury and disruption of normal life and have an impact on social and physical infrastructure.

The extent of casualties and damage will reflect factors such as the time of occurrence, severity of impact, weather conditions, population density, building constructions and possible triggering of secondary events such as fires and floods. When planning a response for disasters, these assumptions can benefit in planning effective response for crisis situation.

Primary and Secondary Agencies

The designated primary agency, acting as the

Central agency will be assisted by one or more support agencies (secondary agencies) and will be responsible for managing the activities of the ESF (Emergency Support Functions) and ensuring that the mission is accomplished. The primary and secondary agencies have the authority to execute response operations to directly support the State needs.

Emergency Support Functions

During the period immediately following a major disaster or emergency requiring central response, primary agencies when directed by NCCM will take actions to identify requirements and mobilise and deploy resources to the affected area to assist the State in its response actions under fourteen ESFs (Emergency Support Functions). Each ESF is headed by a primary agency, which has been selected based on its authorities, resources and capabilities to support the functional area.

The ESF will coordinate directly with their functional counterpart State agencies to provide the assistance required by the state.

Request for assistance will be channelled from the District level through the designated State agencies for action. Based on the state identified response requirements, appropriate central response assistance will be provided by an ESF to the State or at the State's request, directly to an affected area.

Situation Reports

A situation report provides an update of relief operation at regular intervals. These reports are crucial for planning out response actions to the affected areas. Situation reports are required to be issued at the Centre through the Nodal Ministry, Ministry of Agriculture – EOC/NDM Control Room, provides these reports as well to the state through the concerned department. These reports are an important means of communication between the concerned officials at the State and the Centre. The intervals of the reports are determined according to situation needs and at the discertion of the CRC. The situation reports provide information on the following:

- Disaster status
  - Weather condition (which determine relief operation)
  - Name and number of affected districts
  - Affected area (population, no. of villages, no. of gram panchayats, blocks, urban local bodies)
- Casualties
  - Types of casualties according to the specific disaster
  - First Aid
  - Communication and infrastructure status (each ESF according to the checklist)
  - Operational status of airport, port, railways, national highways and state roads and other nodal points
- Status of flow of relief materials
  - Food and materials
  - Through air droppings
  - Through surface transport (ship, road)
  - Through rail
  - Medical and health
- Arrivals/Departure of teams
  - Central team
  - International team
  - Defence deployment
  - Central forces

Quick Response Teams

The quick response teams at the Centre should leave for the affected site within six

hours of the event after the declaration of L3. They have to be adequately briefed by their respective department heads and Central Relief Commissioner. The teams should be self-sufficient in terms of their own survival kit and for the disaster response work.These teams should be all-hazard teams that are prepared for all disasters. The teams can be divided into two broad categories:

- Assessment teams
- Medical Response teams

1. National Quick Assessment Teams

Assessment and prioritisation of response activities requires pre-conditioning and skills to manage disaster situations effectively. Therefore there is a need for specialised teams that can work during crisis situations. These teams will have to be trained to handle multiple hazards and specialised equipment. The three primary groups for quick assessment are:

Quick Damage Assessment teams, Medical Response teams and Search and Rescue teams

Quick Damage Assessment teams

- Consist of four groups – Joint Secretaries, Area Officers, Technical Officers, Medical Officers
  a. Joint Secretaries from the concerned ministries - Assessment of situation
  b. Area Officers of the State - To assess and then, if required, to assist/ supplement local administration needs
  c. Pool of Technical Officers
     c.1. Disaster Assessment Team – Power
     c.2. Disaster Assessment Team – Telecom
  d. Disaster Medical Assessment Team

2. Quick Response Teams

Medical Response

a. Medical first (aid) response
b. Disaster Mortuary Assessment team

Search and Rescue and other teams

a. Urban search and rescue
b. Collapsed structure search and rescue
c. Specialised sniffer dog teams

Quick Response for Rescue and Relief in Major Disasters

In situations such as the Orissa cyclone and Bhuj earthquake, the Central Government has to respond appropriately at the earliest. To meet situations like this, perhaps there may be a need to institutionalize a Standing Committee of a Group of Ministers, comprising Ministers from the Ministries of Defence, Health, Agriculture, Railways, Surface Transport, Power, etc., to be chaired by the Home Minister. This Group of Ministers would have the benefit of the presence of the Cabinet Secretary, the three Chiefs of Staff (Army, Air Force and Navy), Secretaries of concerned Departments and all DGs of Paramilitary forces.

Special Disaster Relief Unit may be located in the Home Ministry under the charge of a Secretary level officer who would be the Secretary to the Group of Ministers referred to above. The committee is of the view that all the Armed Forces should have a dedicated component of personnel and equipment at the battalion level for disaster management.

The five Army Commands may have fully equipped centres in the five command regions at appropriate locations, which may have heavy equipment necessary to carry out relief and rescue activities in the region at short notice, with trained personnel to operate them. The details of such a set-up would be worked out in due course for incorporation into the Disaster Management Plan in

consultation with the Ministry of Home Affairs and the Ministry of Defence. An appropriate organizational set-up at the state level to cope with incoming relief and rescue measures is an urgent necessity, so that in disaster situations of colossal magnitudes, no time is lost in directing incoming relief and rescue measures to the exact locations where they are required. This too would be worked out and incorporated in the Disaster Management Plan in due course.

Special Emphasis (Policies for the same to be covered in Section II)

- Building bye-laws for each disaster
- Minimum standards and layouts for EOC relief camps and SOPs for the same
- Insurance policies for disasters
- Facilities in disaster situations for women, children and physically challenged
- Provision of maps and integration of GIS in the response plan

Emergency Operations Centre

In a disaster situation, variable factors of intensity, affected population and severity of damage need to be quickly assessed based on which government agencies can allocate and deploy relief. Therefore, in the absence of normal circumstances, an Emergency Operation Centre becomes a nodal point for the overall coordination and control of relief work. In case of an L3 disaster EOCs at the Centre, State and District have to be activated. The primary function of these EOCs is to facilitate smooth inflow and outflow of relief and other disaster response related activities. These EOCs act as bridges between the Centre, State and District. The EOCs have to be equipped with state-of-the-art communication technology and a GIS enabled system for quick and effective decision making. The structure in which EOCs are housed should also be disaster-resistant as far as possible. The EOC Incharge who has had substantial expertise in the area of disaster management and is familiar with the area of disaster should head the EOC. Since the EOC functions and activities require quick and spot decisions, the EOC equipment as well as manpower is required to be periodically evaluated and tested. Therefore the core nucleus of the EOC will remain functional throughout the year.

Incident Command System

The Incident Command System was first established in 1970 after a wild fire outbreak in Southern California. Since then it has been widely accepted and adapted in many other states of America and now in many other parts of the world too. The Incident Command System can also be effectively adapted to the Indian system of disaster response as it is a model tool for command, coordination and use of resources at the site of the incident. It is based on the management and direction tools that experts and managers are already aware of. The Incident Command System has considerable flexibility and can grow or shrink to meet different needs. This makes it a very cost-effective and efficient management system. The system can be applied to a wide variety of disaster situations. The organization of the Incident Command System is built around five major management activities. They are:

Command

- Sets objectives and priorities
- Has overall responsibility of the incident or event

Operations

- Conducts tactical operations to carry out the plan
- Develops tactical objectives
- Organization
- Directs all resources

In the absence of normal circumstances, an Emergency Operation Centre becomes a nodal point for the overall coordination and control of relief work. In case of an L3 disaster, EOCs at the Centre, State and District have to be activated. The primary function of these EOCs is to facilitate smooth inflow and outflow of relief and other disaster response related activities.

Planning

- Develops the action plan to accomplish the objectives
- Collects and evaluates information
- Maintains resource status

Logistics

- Provides support to meet incident needs
- Provides resources and all other services needed to support the incident

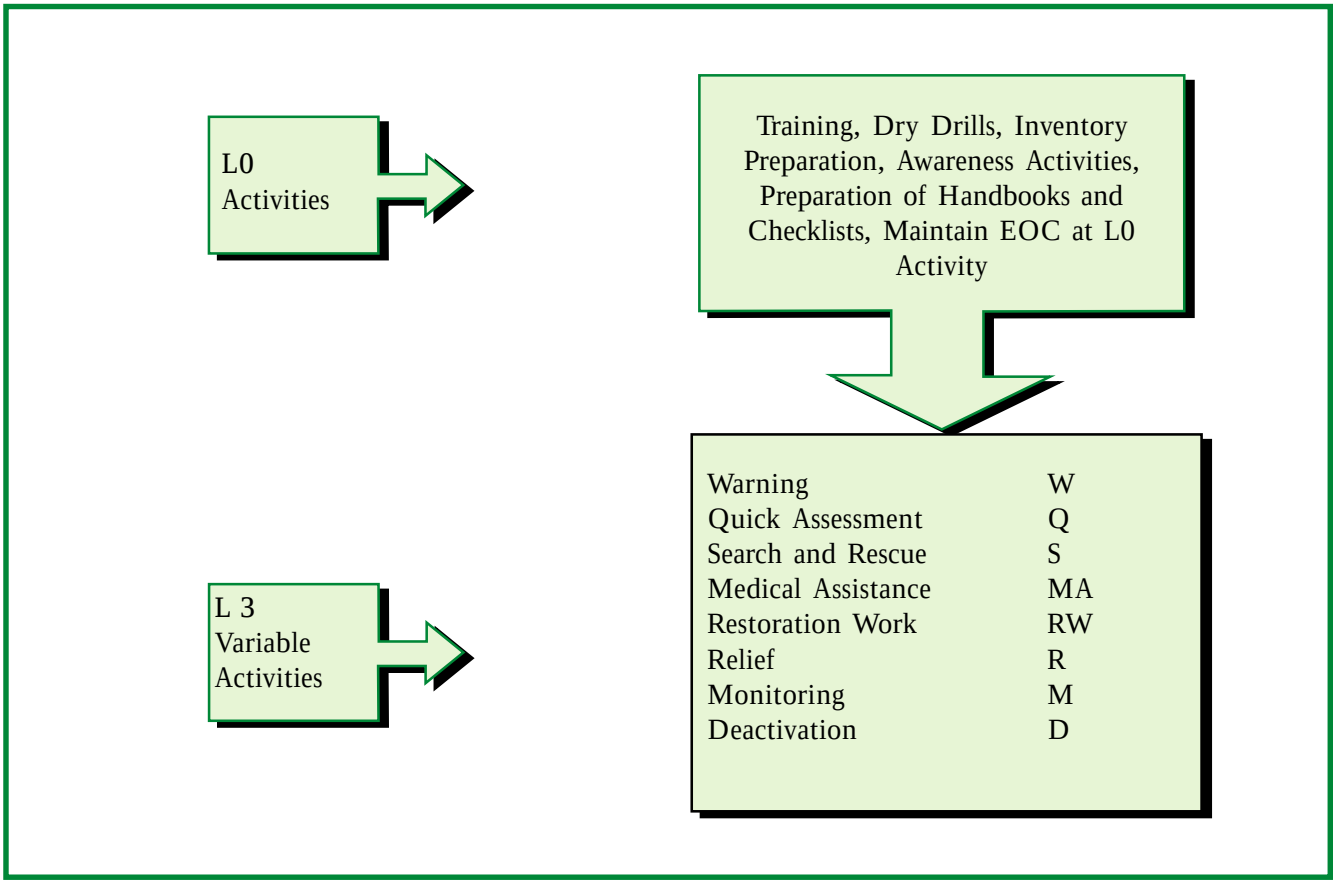
Finance/Administration

- Monitors costs related to incident
- Provides accounting
- Procurement Time
- Recording cost analyses

Disaster Specific Approach to Response Actions

All activities at the level of the Ministry of Agriculture, the Crisis Management Group and other ministries under the head of Emergency Support Functions should address all aspects of the thirty one disasters identified by the HPC. The following chart broadly summarizes the activities for response actions to a disaster and the

ACTIVITIES FOR RESPONSE ACTIONS TO A DISASTER



LEGEND

• Activities to be Undertaken

■ No activity

III. 2 SUBGROUP I - WATER AND CLIMATE RELATED HAZARDS

Disasters	L0	Concept of operation during L3							
		W	Q	S	MA	RW	R	M	D
Floods and Drainage Management	•	•	•	•	•	•	•	•	•
Cyclones Tornadoes Hurricanes	•	•	•	•	•	•	•	•	•
Hailstorm Cloud burst Snow Avalanches Heat & Cold Waves Thunder & Lightning	•	•	•	•	•	•	•	•	•
Sea Erosion	•			•	•		•	•	
Droughts	•	•	•		•	•		•	

III. 3 SUBGROUP II - GEOLOGICALLY RELATED HAZARDS

Disasters	L0	Concept of operation during L3							
		W	Q	S	MA	RW	R	M	D
Earthquakes	•		•	•	•	•	•	•	•
Landslides Mudflows	•		•	•	•	•	•	•	•
Soil Erosion	•		•				•	•	
Dam Bursts & Dam Failures	•		•	•	•	•	•	•	•
Mine Fires	•		•	•	•	•	•	•	•

III. 4 SUBGROUP III – CHEMICAL, INDUSTRIAL & NUCLEAR RELATED DISASTERS

Disasters	L0	Concept of operation during L3							
		W	Q	S	MA	RW	R	M	D
Chemical and Industrial Disasters	•		•	•	•	•	•	•	•
Nuclear Disasters	•		•	•	•	•	•	•	•

III. 5 SUBGROUP IV– ACCIDENT RELATED DISASTERS

Disasters	L0	Concept of operation during L3							
		W	Q	S	MA	RW	R	M	D
Road, Rail and other Transportation accidents including Waterways	•		•	•	•	•	•	•	•
Mine Flooding	•		•	•	•	•	•	•	•
Major Building Collapse	•		•	•	•	•	•	•	•
Serial Bomb Blasts	•		•	•	•	•	•	•	.
Festival related Disasters	•		•	•	•	•	•	•	•
Urban Fires	•		•	•	•	•	•	•	•
Mine Flooding	•		•	•	•	•	•	•	•
Oil Spill	•		•	•	•	•	•	•	•
Village Fires	•		•	•	•	•	•	•	•
Boat Capsizing	•		•	•	•	•	•	•	•
Forest Fires	•		•	•	•	•	•	•	•
Electrical Disasters & Fires	•		•	•	•	•	•	•	•

III. 6 SUBGROUP V – BIOLOGICALLY RELATED DISASTERS

Disasters	L0	Concept of operation during L3							
		W	Q	S	MA	RW	R	M	D
Biological Disasters	•	•	•		•		•	•	•
Epidemics	•	•	•		•		•	•	•
Food Poisoning	•	•	•		•		•	•	•
Cattle Epidemics/ Pest Attacks	•	•	•		•		•	•	•

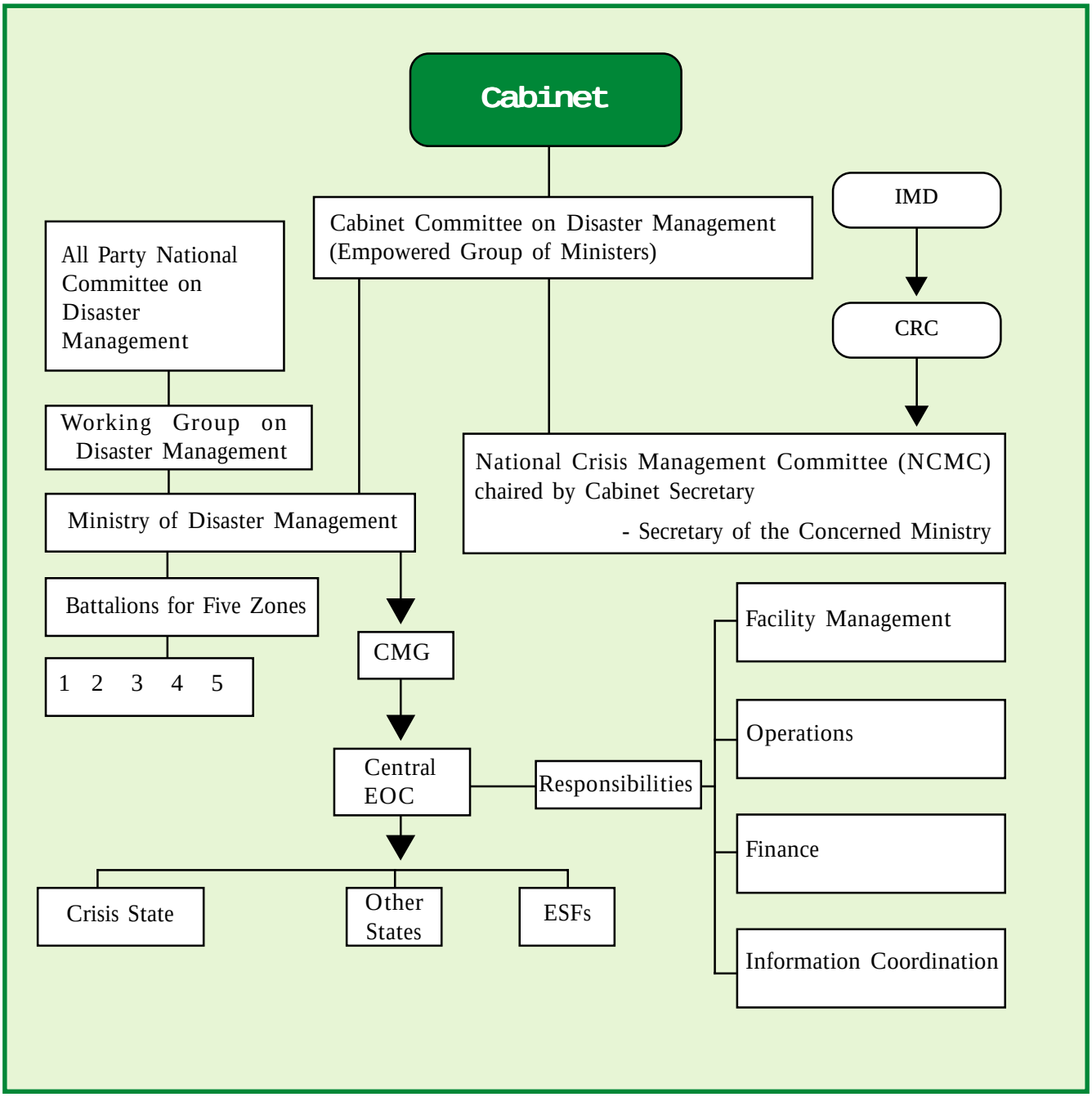
subsequent charts mark out the activities for each disaster under each sub-group.

Concept of Operation for an L3 Disaster at the Centre

1. Flow Chart – Information

The effective management of an L3 disaster largely depends upon the coordination and proper flow of information through specialised channels and networks. After the declaration of an L3 disaster, NCMC, in consultation with the technical support of IMD for natural disasters and respective nodal agencies for other disasters, becomes instrumental in mobilizing a nationwide support and network. The same has been shown in the chart below:

III.7

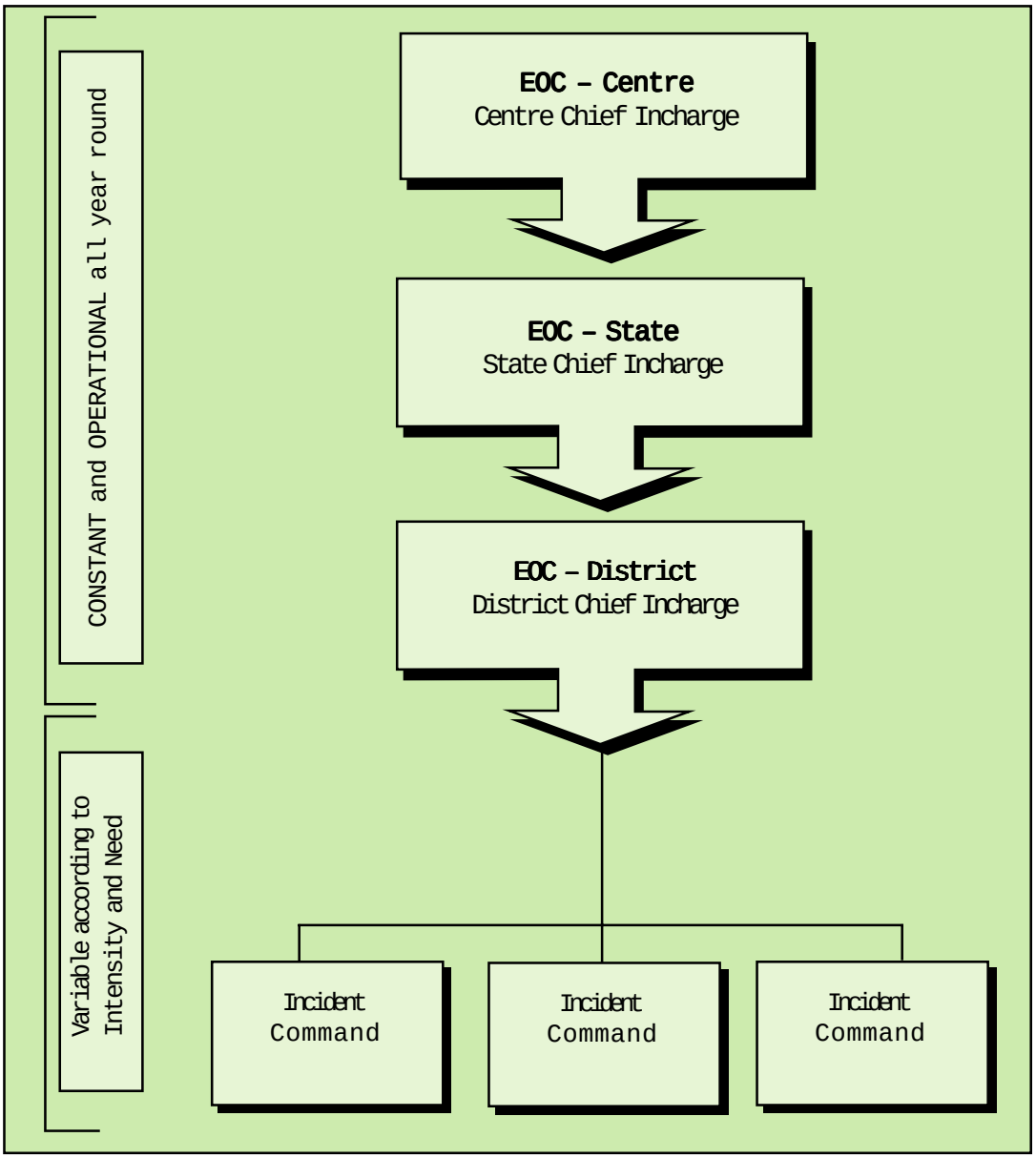


Flow Chart – Command of Coordination Activities for an L3 Disaster

The execution of response and relief activities should follow a systematic and well laid out action plan that ensures a bottom-up approach. The Incident Commanders take the most crucial and key decisions at the disaster, as they are aware of the ground realities. The District, State and subsequently the National EOC act as facilitators and overall agents of prioritising and mobilising resources from external sources in order to meet the demands of each incident command. The incident commands are headed by officers/ personnel who are experienced and have the following broad qualifications

- Considerable experience in the field of disaster management especially in the specific disaster that has occurred.
- Have spent a few years in the field of disasters and are familiar with the physical as well as

III.8



administrative set-up of the disaster affected area.

Emergency Information Disknet

The ESF (Emergency Support Function) on Information and Planning should maintain a database of all disaster related information in the form of a GIS enabled 'Disknet' that will allow easy access and retrieval of information during a disaster. The Disknet will be the hub /storage point for activities that should be carried out for response activities and at the same time continue to update itself during the L0 phase. It would enable and speed up the transfer of digital information and prepare a mammoth knowledge base that can be tapped for assistance during a disaster. The database at the Centre can be linked with nodal knowledge institutions for various disasters. These institutions, in turn, can be linked to the State Level and subsequently the local level information institutions in order to form a well-networked countrywide database.

During the response phase of a disaster, all EOCs and each ESF can be directly linked to the disknet in order to access and know the status of relief and other requirements throughout the country.