

2020

# DISASTER PREPAREDNESS

PAPER: CC 14, UNIT: 1.3

**Study materials for Semester VI**

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04/05/2020



## **Initiatives for Disaster Preparedness:**

It is state of readiness to deal with a threatening disaster situation or disaster. Preparedness is aimed to reduce casualties, damage to and destruction of property, damage to subsistence and cash crops, disruption of services, damage to national infrastructure, economic loss, and loss of livelihood through effective response. It tends to be strongly oriented towards action by individual organizations and community at large.

Preparedness includes following steps:

### **A) Government Preparedness:**

Almost all governments maintain a relatively universal set of systems and tools that address the risk posed by natural, technological, and intentional hazards. The diverse range of government preparedness actions may be grouped into five general categories, even though all of them must be covered by general planning activities:

#### **1. Planning:**

The most comprehensive methodology used by the governments at every level (from local to national) to plan for disasters is the creation of a community or national Emergency Operation Plan (EOP). These plans can be scaled up or down depending on event-specific disaster response and recovery requirements. According to the preparedness strategy, EOPs should be develop as a generic preparedness plans or as a hazard's specific preparedness plan; single agency or multi-agency; local, regional or national and/or as business continuity plans.

#### **2. Contingency Planning:**

Developing a contingency plan involves making decisions in advance about the management of human and financial resources, coordination and communications procedures, and being aware of a range of technical and logistical responses. Such planning is a management tool, involving all sectors, which can help ensure timely and effective provision of humanitarian aid to those most in need when a disaster occurs.

#### **3. Resource and Equipments:**

The set of tools, technology, and other equipment to assist in disaster response and recovery has helped response agencies to drastically reduce the numbers of injuries and deaths and the amount of property damaged and destroyed as a result of disaster events. The equipment means to buy or to mobilize in case of disasters, vehicles, communication equipment, equipment for medical care, personal protective equipment etc.

#### **4. Exercise:**

A major part of the preparedness in pursuit of response capability is a disaster exercise regimen. Exercises should be designed to engage team members and get them working together to manage the response to a hypothetical incident. Exercises enhance knowledge of plans, allow members to improve their own performance and also help discover any unforeseen problems in the plan in a non-emergency situation. Five kinds of exercises can be conducted in the name of emergency preparedness:

##### **a) Walkthroughs, workshops or orientation seminars:**

Walkthroughs, workshops and orientation seminars are basic training for team members.

b) **Tabletop exercise:**

Tabletop exercises are discussion-based sessions where team members meet in an informal, classroom setting to discuss their roles during an emergency and their responses to a particular emergency situation.

c) **Drill:**

A drill is a controlled, supervised method by which a single disaster management operation or function is practiced or tested.

d) **Functional exercise:**

Functional exercise is tested and practiced the capabilities of disaster managers by simulating (in time depending manner) an event to which they must respond.

e) **Full-scale exercise:**

The full-scale exercise is a scenario-based event that seeks to create an atmosphere closely mimicking an actual disaster.

**5. Training:**

Training is an Important component to government preparedness. It goes without saying that disaster response officials are more effective if they are trained to do their jobs. First-response officials, namely police, fire, and emergency medical services (EMS), are likely to have some basic standard of introductory training no matter where they are located, the specialized instruction required for disaster response is much more technical. Several nations have established centralized or regional training facilities/centers that provide these skills. The most important specialized training modules that aim to improve the skills primarily of fire, police, and EMS officials, include evacuation, mass care, mass fatalities management, debris management, flood-fighting operations, warning coordination, hazardous materials, weapons of mass destruction, radiological response, crowd control, response to terrorist attacks, wildfire and wild land fire response.

**6. Statutory authority:**

The final link in government emergency preparedness is the statutory authority. Government response actions involve a diverse range of government officials and agencies interacting with the public and businesses, and operating on public and private land.

**7. Development of Warning System:**

Early warning systems are intended for the provision of timely and effective information, through identified institutions, that allows individuals exposed to a hazards to take action to avoid or reduce their risk and prepare for effective response.

Early warning systems include the following components:

- Understanding, and mapping the hazard;
- Monitoring and forecasting impending events ;
- Processing and disseminating understandable warnings to political authorities and the population, and

- Undertaking appropriate and timely actions in response to the warnings

### **8. System of Forecasting:**

Forecasting relates to a scientific evaluation of an real time hazard event, leading to a general alert about hazardous conditions Five stages of forecasting /prediction and warning can be differentiated:

- Technological forecasting (by the scientific community)
- Scientific evaluation;
- Decision-making (to warn or not warn);
- Communications; (e.g. by radio/visual signals/sound signals)
- Public response.

### **9. Fast Communication System:**

For fast-breaking phenomena, there may be little time for the message to get out to the population; the delivery system, therefore, must be fast and reliable. It must permit the message to reach people directly and in such a manner that it is convincing because of a tendency to discount the validity of a warning or reluctance to part from home or other psychological factors.

### **10. Equipped with Information Technology:**

Emergency scenario reaction teams require anywhere from hundreds to thousands of people all working in sync to prepare necessary emergency information which will be distributed to the public as quickly and accurately as possible. A task of that size requires preparation and planning for how critical information is handled before, during, and after an emergency situation, and the Internet, IoT, Web Portal, Web GIS, Apps and social media play a vital role in that information management.

### **11. Evacuation and Shelters:**

The preparedness plan includes detailed instructions and guidelines for evacuating or sheltering in-place in the event of an emergency. In developing an evacuation plan, safety managers should keep a few key considerations in mind. For starters, it is important to have a clear chain of command through which an evacuation can be ordered. A well thought-out evacuation plan should also include detailed diagrams showing all evacuation routes and exits within the affected area. These routes should be well-lit and unobstructed at all times. Rescue centre must be placed in such places which are less affected by hazards and have proper communications.

### **12. Relief Storage:**

Relief materials like – food grains, dry foods, cooking utensils, drinking water, garments should be kept in storage facility to combat with disaster situation.

### **13. Surveillance and Monitoring:**

Surveillance systems provide information for monitoring the trend of communicable diseases, early detection of outbreaks, and help to identify risk factors, and need for interventions. They provide information for priority setting, planning, implementation and resource allocation for preventive programs and for evaluation and control measures.

### **14. Public Health Emergencies:**

Public health emergencies are multidimensional, dynamic situations that overwhelm existing healthcare and public health infrastructure resulting in adverse community health effects (Clements, 2009). The ensuring of the security of a population's health entails preventing, protecting, mitigating, responding to, and recovering from a wide range of hazards and possible health related consequences. In an emergency, the capacities of all sectors are used to mitigate the acute event. These are the essential duties of health system:

**a) Rapid detection:**

It is essential with every public health threat to rapidly identify and confirm the agent involved. Every plan should address the identification of unknown agents, confirmation of known agents, and provision of surge capacity for a Member State facing a laboratory burden.

**b) Emergency departments and intensive health care:**

Emergency departments in most hospitals might be confronted to a spontaneous influx of victims in case of a large scale incident. Generic preparedness plan ought to cover all aspects related to the work of Intensive Care Units (ICUs) in many different emergency scenarios.

**c) Fatality management:**

Multi-sectoral (health, law enforcement, civil protection, forensic agencies) and multi-cultural approaches are mandatory in case of the fatality management during mass incidents.

**d) Infection control/personal protective equipment:**

With many of the agents to consider when planning for a public health event, there are additional concerns about personal protective measures and infection control. Special precautions may be needed to reduce the likelihood of transmission and for certain diseases additional isolation requirements may be needed.

**e) Isolation/Quarantine procedures:**

For a number of agents, which are considered as public health hazards, isolation of patients is an important countermeasure as well as quarantine measures.

**f) Decontamination:**

In some cases of chemical or radiological health emergency, the decontamination of the patients/victims should be necessary to ensure the safety of patients and staff while providing care.

**g) Transport of samples and patients:**

Preparedness plans should pay special attention to transport of dangerous pathogens in the country and, if needed, out of the country as well.

**h) Infrastructure safety:**

The health care infrastructure has become increasingly dependent on other infrastructure systems, so preparedness within the health care sector must cover those dependencies. Especially systems for supply of electric power, water, medical gas and information systems should be taken into account.

**15. Research:**

Future research is necessary in terms of equipments to make it more skill and time-effective to combat with disaster situations. As ultimate outcomes of disasters are not known to us,

funding in research activities are pertinent to innovate modern equipments for unwated situations.

**B) Public Preparedness:**

Public preparedness (individuals and business community) can be considered as actions taken to empower ordinary citizens to help themselves, their families, their neighbors, and complete strangers.

**1. Education:**

Educational policy can be used to create awareness of hazards and the risks caused by the hazards, what can be done both by the public and the emergency authorities to prepare for the impact and reduce its effects; and what can be done after a disaster. Education on disaster risk and risk reduction can be given at all levels of education.

**2. Training:**

Activities can be training for disaster preparedness, earthquake drills, flood evacuation, participation in community based hazard mapping vulnerability mapping etc.

**3. Public Awareness:**

Public Awareness relates to the processes of informing the general population, increasing levels of consciousness about protection, safety, self rescue, providing community support.

**4. Community Participation:**

Preparedness for Community-Based Disaster Management (CBDM) initiates a process involving sequential stages that is manifested to reduce disaster risk. CBDM operates at the local Panchayats, ward or village level with the intention of generating confidence, awareness, knowledge, partnership, and ownership for planning and rolling out local disaster management plans encompassing all levels of disaster management continuum. Equity and inclusion of marginalized segments of the society and bringing the vulnerable groups to the center stage of planning and implementation of the CBDM have to be prioritized to make the programme participatory and inclusive. Disasters affect the entire community. However, persons with disability, women and children, underprivileged, older persons, and pregnant women need special attention at the programme implementation level.