

# Disaster Management in India

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## ABSTRACT

India is vulnerable to various natural disasters due to its varied geo-climatic conditions. The natural disasters such as droughts, floods, cyclones, earth quakes, tsunamis, landslides, forest fires, hail storms, volcanic eruptions, locusts etc cause great destruction to human life, environment and economy. Although the natural disasters cannot be controlled and ceased when occurred, efforts can be made to avoid them and decrease the affect of the natural disasters on human lives, properties and infrastructure. Disaster management requires continuous effort of being alert and it should be attempted to bring all the disasters under the vision of management. The response to disaster is not merely sufficient as it yields only temporary results at very huge cost. It is important to define various preventive measures to avert disasters. Prevention and mitigation of disasters improves the safety of human lives and environment. Disaster prevention, mitigation and preparedness are considered to be better than disaster response in achieving the goals and objectives of vulnerability reduction. The paper highlights on various relief elements of disaster management which contribute to sustainable development of the country.

## 1. Introduction

Disaster is a quick, calamitous happening which brings great damage, loss, destruction and devastation to human life and properties. It may also be termed as a major disruption for the society, causing extensive human, environmental and property losses which overreaches the capability of the affected society to cope up utilizing its own resources. The damage created by disasters is inestimable and varies with the geographical location, climate and the type of the earth surface. This influences the mental and socio-economic state of the affected area. The features of disaster are unpredictability, unfamiliarity, urgency, uncertainty and threat. Thus, in simple terms we can define disaster as a hazard causing heavy loss to human life, property and livelihood. For example, a cyclone named 'Hudhud' which occurred in October, 2014 triggered a huge loss to Andhra Pradesh of Eastern India and Nepal by causing death of approximately 124 people and estimated damages were Rs.21,908 crore as per the reports of Andhra Pradesh state government can be termed as a disaster. The extent of damage in a disaster depends on the impact, intensity and characteristics of the phenomenon and the degree at which people, environment and infrastructures are affected by the phenomenon. Though it may not be feasible to control nature and to stop the development of natural phenomena, immense efforts could be made to avoid disasters and lessen their effects on human lives, infrastructure and property.

## 2. Types of Disasters

In general terms, disasters can be classified into two types namely, natural disasters and man-made disasters. Based on the destruction, these are further divided into major/minor natural disaster and major/minor man-made disasters. Major natural disasters are droughts, floods, cyclones, tsunamis and earthquakes. Minor natural disasters are cold waves, thunderstorms, heat waves, mud slides and storms. Major man-made disasters are setting of fires, epidemics,

deforestation, pollution due to prawn cultivation, chemical pollution and wars. Minor manmade disasters are road/train accidents, riots, food poisoning, industrial disaster/ crisis and environmental pollution.

## 3. Disasters in India

Disaster threatens sustainable economic development in India. In the past few years, tsunamis, earthquakes, floods, droughts, tropical storms and other calamities have killed millions of people, inflicted serious injuries and diseases, made many people homeless and created great misery to people. These have caused damage to infrastructure and properties worth millions of rupees. Disaster ruined decades of human effort and funding, thereby leaving new demands on society for reconstruction and rehabilitation. Disaster completely disrupted the normal day to day life, and negatively influenced the emergency systems. The basic needs like food, shelter, health, etc. are blown away and deteriorated depending on the intensity and severity of the disaster. The issues covered under disaster management are hazards like droughts, floods, earthquakes, tsunamis, wild fires, cyclones, landslides, avalanches, accidents (road, railroad, and air), extreme climate, dam failures, urban disasters and nuclear, biological, chemical and industrial disasters. The three phases include under disaster management are *before disaster phase* which includes preparedness, mitigation, prevention, early warning, awareness, etc. Second phase includes *during disaster* emergency response, relief and rescue *after disaster phase* includes response, rehabilitation or reconstruction and recovery.

## 4. Objective of Disaster Management

The main objective of disaster management is to minimize the vulnerability and also to reduce the destruction caused by all the types of disasters, be it natural or man-made which is not an easy task. Though it is almost impossible to fully recoup the damage caused by the disasters, it is possible to manage

the disaster by minimizing the potential risks, by developing early warning strategies, by preparing and implementing developmental plans to provide resilience to such disasters, by mobilizing resources including communication and tele medicinal services, and by helping in rehabilitation and post-disaster reconstruction.

## 5. Steps in Disaster Management Plan

The different prevention and mitigation measures are useful to build up capabilities for dealing with disasters. Response to disaster, in the absence of a well-defined plan would be ineffective, leading to excess emphasis on impractical actions and absence of critical actions. A formal plan for managing disaster is absolutely necessary. Thus disaster management plan has a strong preventive focus which aims at reducing the frequency of occurrence of such disasters meanwhile at the same time, it includes an action plan for earthquakes, floods, cyclones, tsunamis, epidemics, chemical accidents, road accidents and fires. Keeping in view, all the possible aspects of the above-stated problem and preparing in all possible ways to respond properly to various disaster situations, a proper disaster management plan should be proposed. The steps in disaster management plan are as follows.

- *Prevention of Disaster:* The first step in disaster management plan is to prevent the disaster. It can be done by visualizing and ensuring that the preventive actions have been taken well in advance to avert any disaster situation. For this purpose, appropriate warning system, patrolling of vulnerable areas has to be intensified during the disaster prone times.
- *Containing of Disaster:* The second step in disaster management plan involves experts' advices from various sources within the district and outside the district. The help from Army or State Level Disaster Management Committee will also be taken when needed. This step will also involve establishing of control rooms as per requirements.
- *Rescue Operations:* Simultaneously, with the second step, rescue operations will also start. This would include evacuation of people from affected areas and transportation of evacuees etc. The identification of evacuee centers for this purpose should be made well in advance.
- *Relief, Shelter & Restoration:* The step would involve carrying out relief operations like providing food, shelter and clothing, first aid and medical aid to the evacuees and also to the livestock. This operation would also include restoration of the same status as it was, before the disaster.
- *Establishing Control Room:* During any disaster, all activities of disaster management shall be conducted from the 'Central Control Room'. From the control room, the necessary commands shall be issued, coordinated actions are taken and the information shall flow down the line. Police Control Rooms

located in the district police office are manned round the clock. The information / messages are received by the assigned police department people and the same are sent to concerned higher authorities.

The mode, degree and extent of response to fight out any disaster depends upon the nature, degree and extent of disaster while some points being common for all kinds of situations. For example, first and foremost, it is to be ensured that in all types of disasters, appropriate prevention steps are to be taken. Secondly, preparedness is required to restrict the damages and casualties resulting from the disaster. Thirdly, steps for reclamation and restoration of community life within a reasonable time have to be taken care of.

Prevention and Mitigation embraces measures taken to reduce the effect of the hazard and the vulnerable conditions in order to reduce the scale of a future disaster. So, the mitigation activities shall focus on the hazard itself or the elements exposed to the threat. Examples of mitigation measures which are hazard specific include; water management in drought prone areas, relocating people from the hazard prone areas and by strengthening structures to reduce damage when a hazard occurs etc. In addition to these physical measures, mitigation should also aim at reducing the economic and social vulnerabilities of potential disasters. Preparedness is a protective process that embraces the measures which enable governments, communities and individuals to respond rapidly to disaster situations to cope up with them effectively. Preparedness includes the formulation of viable emergency plans, the development of warning systems, the maintenance of inventories and the training of personnel. It also adopts search and rescue measures as well as evacuation plans for areas that may be at risk from a recurring disaster. Preparedness therefore encompasses those measures taken before a disaster occurs which aim at minimizing loss of life, disruption of critical services, and damage due to disaster. Restoration of casualties include; maintaining of security, protecting law and order during evacuation, helping in emergency evacuations containing panic behavior, maintaining orderly movement towards community shelters (safe zones) and taking preventive steps to avoid injuries and accidents, organize cultural and recreational activities, encouraging self-help, contributing labor (loading, unloading, distribution, temporary constructions, salvage and restoration of water supplies, Feeding centers, relief camps, cattle camps etc.) and maintaining standards in sanitation and disposal of waste.

## 6. Suggestions

So in order to implement the disaster management plan successfully and to minimize the hazards caused because of disasters some suggestions were made.

1. *Use of Space technology:* Space technology plays a crucial role in efficient mitigation of disasters. While the communication satellites help in disaster warning, relief mobilization and tele medicinal support; the earth observation satellites provide required database for pre-disaster preparedness programs, disaster response, monitoring activities and post-disaster damage assessment, reconstruction and rehabilitation. Suitable strategy should be proposed

for disaster preparedness and operational framework for monitoring, assessment and mitigation of disasters by using space technology.

2. *Disaster Awareness in School Curriculum:* Disaster management as a subject in Social Sciences is to be introduced in the school curriculum. Teachers are to be trained to teach disaster management syllabus. An academic course in disaster management shall be introduced at the high school level so as to equip students with the necessary knowledge and skills in disaster management. Students trained in disaster management may become the best asset of the administration during an emergency. Various competitions may also be organized to spread awareness among the students about disasters and techniques to manage it. The college students can also be given specialized training in disaster management issues under the NSS or NCC schemes. The opportunities to conduct research on disaster management can be provided to the students.
3. Apart from the use of print and electronic media, it is proposed to utilize places with high public visibility viz. hospitals, schools, railway stations and bus terminals, airports and post offices, commercial complexes and municipality offices etc. to make people aware of these disaster causing vulnerabilities and promote creation of a safe living environment.
4. A novel method such as the use of government stationery viz. postal letters, bank stationery, railway tickets, airline boarding cards and tickets etc. for disseminating the slogans and messages regarding disaster risk reduction have to be developed. The mass media campaign will help to build the knowledge, attitude and skills of the people in vulnerability reduction and sustainable disaster risk management measures. Disaster management thus, requires multi-disciplinary and proactive approach. The community, civil society organizations, media and the proverbial man on the street has to play a active role in such emergency cases.
5. *Conduct of Training Programs:* The Government should conduct training programs which includes material for capacity building and upgradation of skills of policy makers, administrators, trainers, engineers etc. in planning for and mitigating against natural disasters. Basic and detailed training modules in disaster preparedness should be incorporated along with training methodologies for trainers, for community preparedness and manuals for training at district, block, panchayat and village levels.
6. *Community level Initiatives:* The goal of any disaster management initiative is to build a disaster resistant/resilient community equipped with safer living and sustainable livelihoods to serve its own development purposes. The community is also the first responder in any disaster situation, thereby

emphasizing the need for community level initiatives in managing disasters. To encourage such initiatives, creating awareness through disaster education and training and information dissemination are necessary steps for empowering the community to cope up with the disasters.

7. *Special care and attention:* Within a vulnerable community, there exist groups that are more vulnerable like women and children, aged and physically challenged people who need special care and attention especially during disaster situations. Efforts are required for identifying such vulnerable groups and providing special assistance in terms of evacuation, relief, aid and medical attention to them in disaster situations.
8. *Creating awareness and educating the people about disaster Insurance:* Insurance is a potentially important mitigation measure in disaster-prone areas as it brings quality in the infrastructure and consciousness and a culture of safety by its insistence on following building codes, norms, guidelines, quality materials in construction etc. Disaster insurance mostly works under the premise of 'higher the risk higher the premium, lesser the risk lesser the premium', thus creating awareness towards vulnerable areas and motivating people to settle in relatively safe areas.
9. *Research and strengthening of research pedagogy:* Lot of research is to be carried on disaster management activities and there is also an urgent need for strengthening the disaster management pedagogy by creating disaster management faculties in universities, rural development institutes and other organizations of premier research.

## 7. Conclusion

State Governments and Central Government has to make full use of the existing disaster management plan schemes and give priority to implementation of such schemes that will help in overcoming the conditions created by the calamity. In some cases there should be a possibility of diversion of the funds from other schemes to the disaster management schemes that help in meeting the situation. There is a need for re-appropriations/reallocations among the different departments during the crisis. Thus disaster management requires continuous effort of constant alertness and attempt to bring in all the possible disasters under the vision of management. Further, efforts should be made to improve the disaster management and make it comprehensive. Disaster response is not merely sufficient as it yields only temporary results at a huge cost. It is equally important to define preventive measures to alert any disaster. Prevention and mitigation contribute to the improvement in safety and they are essential to integrate disaster management. Disaster prevention, mitigation and preparedness are considered to be better than disaster response in achieving the goals and objectives of vulnerability reduction by co-ordinating all efforts.

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