

# An Overview of Disaster Management in India

Prof. R A Belsare, Vedant Wasu, Viraj Raut,

Atharv Shirse, Sumit Dalu, Zaid Khan, Adnan Mohd

Dr. Rajendra Gode Institute of Technology and Research, Amravati, Maharashtra, India

**Abstract:** *India is one of the hazard prone countries in South Asia. Floods, droughts, landslides, snowstorms, hurricanes and cyclones occur regularly. Among these earthquakes, floods and drought risk are extremely high. These hazards threaten millions of lives and cause large scale financial, infrastructure, agriculture and productivity losses that seriously hinder India's overall development. In India, as in the United States, the primary responsibility for responding to disaster lies at the state and the central level. The GOI have a national emergency plan for disaster management, some of the state also has a disaster management plan. It can be, and is called upon to assist when necessary, but there is a lack of awareness in the public. Many Indian States have limited resources and lack their own disaster management plans. Considering these problems, this paper attempts to throw light on a more integrated and responsive disaster management system in India. This paper will provide important information in three mutually reinforcing areas viz. disaster preparedness, response and rehabilitation management. The various case studies for disaster management will be discussed.*

**Keywords:** disaster, mitigation, hazards, risk, safety management, India, Gujarat, Surat, Gir, students

## I. INTRODUCTION

### What is disaster?

Disaster is a sudden, calamitous event bringing great damage, loss, and destruction and devastation to life and property. The damage caused by disasters is immeasurable and varies with the geographical location, climate and the type of earth surface/degree of vulnerability.

Generally, disasters have the following effects in the concerned areas

- i) It completely disrupts the normal day-to-day life.
- ii) It negatively influences the emergency systems.
- iii) Normal needs and processes like food, shelter, health, etc. are affected and deteriorate depending on the intensity and severity of the disaster. It may also be termed as “a serious disruption of the functioning of society, causing widespread human, material or environmental losses which exceed the ability of the affected society to cope using its own resources.” Thus, a disaster may have the following main features: Unpredictability, Unfamiliarity, Speed, Urgency, Uncertainty, and Threat. Thus, in simple terms we can define disaster as a hazard causing heavy loss to life, property and livelihood, e.g. a cyclone killing 10,000 people, or a crop loss of one crop can be termed as disaster.

### Types of disaster

Generally, disasters are of two types – natural and manmade. Based on the devastation, these are further classified into major/minor natural disaster and major/minor manmade disasters. Some of the disasters are listed in Table 1 below.

### Risk

Risk is a measure of the expected losses due to a hazardous event of a particular magnitude occurring in a given area over a specific time period. Risk is a function of the probability of particular occurrences and the losses each would cause.

### Vulnerability



It is defined as “the extent to which a community, structure, service, and/or geographic area is likely to be damaged or disrupted by the impact of particular hazard, on account of their nature, construction and proximity to hazardous terrain or a disaster prone area”

Table 1: Types of disaster.

Major natural disasters	Minor natural disasters
<ul style="list-style-type: none"> <li>▪ Flood</li> <li>▪ Cyclone</li> <li>▪ Drought</li> <li>▪ Earthquake</li> </ul>	<ul style="list-style-type: none"> <li>▪ Cold wave</li> <li>▪ Thunderstorms</li> <li>▪ Heat waves</li> <li>▪ Mud slides</li> <li>▪ Storm</li> </ul>
Major manmade disaster	Minor manmade disaster
<ul style="list-style-type: none"> <li>▪ Setting of fires</li> <li>▪ Epidemic</li> <li>▪ Deforestation</li> <li>▪ Pollution due to prawn cultivation</li> <li>▪ Chemical pollution.</li> <li>▪ Wars</li> </ul>	<ul style="list-style-type: none"> <li>▪ Road / train accidents, riots</li> <li>▪ Food poisoning</li> <li>▪ Industrial disaster/ crisis</li> <li>▪ Environmental pollution</li> </ul>

### Hazards

Hazards are defined as “Phenomena that pose a threat to people, structures, or economic assets and which may cause a disaster. They could be either manmade or naturally occurring in our environment.” The extent of damage in a disaster depends on: i) The impact, intensity and characteristics of the phenomenon and ii) How people, environment and infrastructures are affected by that phenomenon. This relationship can be written as an equation: Disaster Risk = Hazard + Vulnerability

### Overview of the Disaster Risk Management Programme

The Government of India (GOI), Ministry of Home Affairs (MHA) and United Nations Development Programme (UNDP) signed an agreement in August 2002 for the implementation of “Disaster Risk Management” Programme to reduce the vulnerability of the communities to natural disasters, in identified multi-hazard disaster prone areas. Goal: “Sustainable Reduction in Natural Disaster Risk” in some of the most hazard prone districts in selected states of India”. The four main objectives of this programme are: 1. National capacity building support to the Ministry of Home Affairs. 2. Environment building, education, awareness programme and strengthening the capacity at all levels in natural disaster risk management and sustainable recovery. 3. Multi-hazard preparedness, response and mitigation plans for the programme at state, district, block and village/ward levels in select programme states and districts. 4. Networking knowledge on effective approaches, methods and tools for natural disaster risk management, developing and promoting policy frameworks.

## II. CASE STUDIES AND CONCLUSION DERIVED

Management of earthquake India high earthquake risk and vulnerability is evident from the fact that about 59 per cent of India’s land area could face moderate to severe earthquakes. During the period 2000 to 2010, more than 25000 lives were lost due to major earthquakes in India, which also caused enormous damage to property and public infrastructure. All these earthquakes established that major casualties were caused primarily due to the collapse of buildings. These emphasise the need for strict compliance of town planning bye-laws and earthquake resistance building codes in India. These guidelines have been prepared taking into account an analysis of critical gapes responsible for specific risk. These guidelines emphasise the need for carrying out the structural safety audit of existing lifelines structures and other critical structures in earthquake prone areas, and carrying out selective seismic strengthening and retrofitting. The



earthquake guidelines rest on the following six pillars of seismic safety for improving the effectiveness of earthquakes management in India. The following are the 6 pillars: • Earthquake resistant construction of new structures. • Selective seismic strengthening and retrofitting of existing priority structures and lifeline structures. • Regulation and enforcement. • Awareness and preparedness. • Capacity development of education, training, R & D, capacity building and documentation. • Emergency response.

### **Conclusion**

Disasters are inevitable. The fact lies in stating “we must all be prepared to try to survive the current and the forthcoming disasters.” We cannot rule the nature but we can at least be watchful and vigilant. The structured and preplanned preparedness and the healthy response to the disaster will help save the lives. Our success lies in, as is preached by the great people that existed and exist on earth “unity and unanimity devoid of discords.”

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