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**DISASTER MANAGEMENT: MANAGING THE RISK  
OF ENVIRONMENTAL CALAMITY**

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# Disaster Management: Managing the Risk of Environmental Calamity

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**Abstract – “The author dedicates this study to all innocent pilgrims and residents who have become victims of recent past natural calamity which we have witnessed in Uttarakhand, India”. All communities and countries are vulnerable to disasters, both natural and man-made. India’s geo-climatic conditions as well as its high degree of socio-economic openness, makes it one of the most disaster prone country in the world to suffer very often from various natural disasters, namely drought, flood, cyclone, earth quake, landslide, forest fire, hail storm, locust, volcanic eruption, etc. Which strike causing a devastating impact on human life, economy and environment? Various disasters like earthquake, landslides, volcanic eruptions, fires, flood and cyclones are natural hazards that kill thousands of people and destroy billions of dollars of habitat and property each year. The rapid growth of the world’s population and its increased concentration often in hazardous environment has escalated both the frequency and severity of natural disasters. With the tropical climate and unstable land forms, coupled with deforestation, unplanned growth proliferation non-engineered constructions which make the disaster-prone areas mere vulnerable, tardy communication, poor or no budgetary allocation for disaster prevention, developing countries suffer more or less chronically by natural disasters. Asia tops the list of casualties due to natural disaster. Among various natural hazards, earthquakes, landslides, floods and cyclones are the major disasters adversely affecting very large areas and population in the Indian sub-continent. The perception about disaster and its management has undergone a change following the enactment of the Disaster Management Act, 2005.**

## 1. INTRODUCTION

Disaster management is the discipline of dealing with and avoiding both natural and manmade disasters. It involves preparedness, response and recovery in order to lessen the impact of disasters. All aspects of emergency management deal with the processes used to protect populations or organizations from the consequences of disasters, wars and acts of terrorism. Disaster management doesn't necessarily avert or eliminate the threats themselves, although the study and prediction of the threats is an important part of the field. The basic levels of emergency management are the various kinds of search and rescue activity.

Disaster management can be defined as the organization and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies, in particular preparedness, response and recovery in order to lessen the impact of disasters.

### DEFINITION :

Disaster is an event or series of events, which gives rise to casualties and damage or loss of properties, infrastructures, environment, essential services or

means of livelihood on such a scale which is beyond the normal capacity of the affected community to cope with. Disaster is also sometimes described as a “catastrophic situation in which the normal pattern of life or eco-system has been disrupted and extraordinary emergency interventions are required to save and preserve lives and or the environment”

## TYPES OF DISASTERS

There is no country that is immune from disaster, though vulnerability to disaster varies. There are four main types of disaster.

### 1. Natural disasters

These disasters include floods, hurricanes, earthquakes and volcano eruptions that can have immediate impacts on human health, as well as secondary impacts causing further death and suffering from floods causing landslides, earthquakes resulting in fires, tsunamis causing widespread flooding and typhoons sinking ferries.

These emergencies include technological or industrial accidents, usually involving hazardous material, and occur where these materials are produced, used or

transported. Large forest fires are generally included in this definition because they tend to be caused by humans.

**2. Complex Emergencies**

These emergencies involve a break-down of authority, looting and attacks on strategic installations. Complex emergencies include conflict situations and war.

**3. Pandemic Emergencies**

These emergencies involve a sudden onset of a contagious disease that affects health but also disrupts services and businesses, bringing economic and social costs.

**4. Man-made Disaster**

Disasters caused by chemical or industrial accidents, environmental pollution, transport accidents and political unrest are classified as “human-made” or “human-induced” disasters since they are the direct result of human action.

**INSTITUTIONAL AND LEGAL ARRANGEMENTS OF DISASTER MANAGEMENT**

The Act lays down institutional, legal, financial and coordination mechanisms at the national, state, district and local levels. These institutions are not parallel structures and will work in close harmony.

**1. Institutional Framework under the Disaster Management Act**

**A. National Disaster Management Authority (NDMA)**

The NDMA, as the apex body for disaster management, is headed by the Prime Minister and has the responsibility for laying down policies, plans and guidelines for DM (and coordinating their enforcement and implementation for ensuring timely and effective response to disasters). It will approve the National Disaster Management and DM plans of the Central Ministries/Departments. NDMA has the power to authorize the Departments or authorities concerned, to make emergency procurement of provisions or materials for rescue and relief in a threatening disaster situation or disaster.

**B. The National Executive Committee**

The National Executive Committee (NEC) comprises the Union Home Secretary as the Chairperson, and the Secretaries to the GOI in the Ministries/Departments of Agriculture, Atomic Energy, Defense, Drinking Water Supply, Environment and Forests, Finance (Expenditure), Health, Power, Rural Development, Science and Technology, Space,

Telecommunications, Urban Development, Water Resources and the Chief of the Integrated Defense Staff of the Chiefs of Staff Committee as members. Secretaries in the Ministry of External Affairs, Earth Sciences, Human Resource Development, Mines, Shipping, Road Transport & Highways and Secretary, NDMA will be special invitees to the meetings of the NEC.

**C. State Disaster Management Authority (SDMA)**

At the State level, the SDMA, headed by the Chief Minister, will lay down policies and plans for DM in the State. It will, inter alia approve the State Plan in accordance with the guidelines laid down by the NDMA, coordinate the implementation of the State Plan.

**D. District Disaster Management Authority (DDMA)**

The DDMA will be headed by the District Collector, Deputy Commissioner or District Magistrate as the case may be, with the elected representative of the local authority as the Co-Chairperson. DDMA will act as the planning, coordinating and implementing body for DM at District level and take all necessary measures for the purposes of DM in accordance with the guidelines laid down by the NDMA and SDMA.

**E. National Disaster Response Force (NDRF)**

The DISASTER MANAGEMENT Act, 2005 has made the statutory provisions for the constitution of the National Disaster Response Force (NDRF) for the purpose of specialized response to natural and man-made disasters. According to Section 45 of the Act, the Force has to function under the general superintendence, direction and control of the National Disaster Management Authority (NDMA) and .6 National Institute of Disaster Management (NIDM)

The National Institute of Disaster Management constituted under the Disaster Management Act 2005 has been entrusted with the nodal national responsibility for human resource development, capacity building, training, research, documentation and policy advocacy in the field of disaster management. Upgraded from the National Centre for Disaster Management of the Indian Institute of Public Administration on 16th October, 2003, NIDM is steadily marching forward to fulfill its mission to make a disaster resilient India by developing and promoting a culture of prevention and preparedness at all levels. The NIDM, in partnership with other research institutions has capacity development as one of its major responsibilities, along with training, research, documentation and development of a national level information base. It will network with other knowledge-based institutions, and function within the broad policies and guidelines laid down by the NDMA.

## **INTERNATIONAL ORGANIZATIONS OF DISASTER MANAGEMENT**

### **A. International Association of Emergency Managers**

The International Association of Emergency Managers (IAEM) is a non-profit educational organization dedicated to promoting the goals of saving lives and protecting property during emergencies and disasters. The mission of IAEM is to serve its members by providing information, networking and professional opportunities, and to advance the emergency management profession.

It currently has seven Councils around the World, Asia, Canada, Europe, International, Oceania, Student and USA

The Air Force Emergency Management Association ([www.af-em.org](http://www.af-em.org), [www.3e9x1.com](http://www.3e9x1.com), and [www.afema.org](http://www.afema.org)), affiliated by membership with the IAEM, provides emergency management information and networking for US Air Force Emergency Managers.

### **B. International Recovery Platform**

The International Recovery Platform (IRP) was conceived at the World Conference on Disaster Reduction (WCDR) in Kobe, Hyogo, Japan in January 2005. As a thematic platform of the International Strategy for Disaster Reduction (ISDR) system, IRP is a key pillar for the implementation of the Hyogo Framework for Action (HFA) 2005–2019: Building the Resilience of Nations and Communities to Disasters, a global plan for disaster risk reduction for the decade adopted by 178 governments at the WCDR.

The key role of IRP is to identify gaps and constraints experienced in post disaster recovery and to serve as a catalyst for the development of tools, resources, and capacity for resilient recovery. IRP aims to be an international source of knowledge on good recovery practice.

### **C. Red Cross/Red Crescent**

National Red Cross/Red Crescent societies often have pivotal roles in responding to emergencies. Additionally, the International Federation of Red Cross and Red Crescent Societies (IFRC or “The Federation”) may deploy assessment teams, e.g. Field Assessment and Coordination Team – (FACT) to the affected country if requested by the national Red Cross or Red Crescent Society. After having assessed the needs Emergency Response Units (ERUs) may be deployed to the affected country or region. They are specialized in the response component of the emergency management framework.

### **D. United Nations**

Within the United Nations system responsibility for emergency response rests with the Resident Coordinator within the affected country. However, in practice international response will be coordinated, if requested by the affected country’s government, by the UN Office for the Coordination of Humanitarian Affairs (UN-OCHA), by deploying a UN Disaster Assessment and Coordination (UNDAC) team.

### **E. World Bank**

Since 1980, the World Bank has approved more than 500 operations related to disaster management, amounting to more than US\$40 billion. These include post-disaster reconstruction projects, as well as projects with components aimed at preventing and mitigating disaster impacts, in countries such as Argentina, Bangladesh, Colombia, Haiti, India, Mexico, Turkey and Vietnam to name only a few.

Common areas of focus for prevention and mitigation projects include forest fire prevention measures, such as early warning measures and education campaigns to discourage farmers from slash and burn agriculture that ignites forest fires; early-warning systems for hurricanes; flood prevention mechanisms, ranging from shore protection and terracing in rural areas to adaptation of production; and earthquake-prone construction.

In a joint venture with Columbia University under the umbrella of the ProVention Consortium the World Bank has established a Global Risk Analysis of Natural Disaster Hotspots.

In June 2006, the World Bank established the Global Facility for Disaster Reduction and Recovery (GFDRR), a longer term partnership with other aid donors to reduce disaster losses by mainstreaming disaster risk reduction in development, in support of the Hyogo Framework of Action. The facilities helps developing countries fund development projects and programs that enhance local capacities for disaster prevention and emergency preparedness. .

### **INDIA**

The role of emergency management in India falls to National Disaster Management Authority of India, a government agency subordinate to the Ministry of Home Affairs. In recent years there has been a shift in emphasis from response and recovery to strategic risk management and reduction, and from a government-centered approach to decentralized community participation. The Ministry of Science and Technology, headed by Y. S. Chaudhary, supports an internal agency that facilitates research by bringing

the academic knowledge and expertise of earth scientists to emergency management.

A group representing a public/private has recently been formed by the Government of India. It is funded primarily by a large India-based computer company and aimed at improving the general response of communities to emergencies, in addition to those incidents which might be described as disasters. Some of the groups' early efforts

## CONCLUSIONS

Apart from loss of human lives, natural disasters inflict severe damage to ecology and economy of a region. With installation of new technologies and by adopting space technology as INSAT and IRS series of satellites, India has developed an operational mechanism for disaster warning especially cyclone and drought, and their monitoring and mitigation. However, prediction of certain events like earthquake, volcanic eruption and flood is still at experimental level. Disasters disrupt progress and destroy the hard-earned fruits of painstaking developmental efforts, often pushing nations, in quest for progress, back by several decades. Thus, efficient management of disasters, rather than mere response to their occurrence has, in recent times, received increased attention both within India and abroad. This is as much a result of the recognition of the increasing frequency and intensity of disasters as it is an acknowledgement that good governance, in a caring and civilized society, needs to deal effectively with the devastating impact of disasters.

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