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AN OUTLINE OF DISASTER MANAGEMENT IN INDIA

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ABSTRACT

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 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; 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.

KEY-WORDS: *disaster, mitigation, hazards, risk, safety management, India,*

INTRODUCTION

A Disaster is an event that occurs in most cases suddenly and unexpectedly, causing severe disturbances to people, objects and environment, resulting in loss of life, property and health of the population. Such a situation causes disruption in normal pattern of life, generating misfortune, helplessness and suffering affecting the socio-economic structure of a region/country to such an extent that there is a need for assistance or immediate outside intervention. 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. This influences the mental, socio-economic, political and cultural state of the affected area. 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.

Disaster (as per DM Act, 2005)

Disaster means a catastrophe, mishap, calamity or grave occurrence affecting any area from natural and manmade causes, or by accident or negligence, which results in substantial loss of life or human suffering or damage to, and destruction of property, or damage to, or degradation of environment and is of such a nature and magnitude as to be beyond the capacity of the community of the affected areas.

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.

TABLE 1: TYPES OF DISASTER.

Major natural disasters

- Flood
- Cyclone

Minor natural disasters

- Cold Wave
- Thunder Storm

- Drought
- Earthquake
- Heat waves
- Mud slides
- Storm

Major manmade disaster

- Setting of fires
- Epidemic
- Deforestation
- Pollution due to prawn cultivation
- Chemical pollution.
- Wars

Minor manmade disaster

- Road / train accidents, riots
- Food poisoning
- Industrial disaster/ crisis
- Environmental pollution

Ingredients of a disaster

- A phenomenon or event which constitutes a trauma for a population/environment
- A vulnerable point/area that will bear the brunt of the traumatizing event
- The failure of local & surrounding resources to cope with the problems created by the phenomenon

TERMINOLOGY

Disaster Risk: The potential disaster losses, in lives, health status, livelihoods, assets and services, which could occur to a particular community or a society over some specified future timeperiod.

Disaster Risk Management: The systematic process of using administrative directives, organizations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster.¹

Disaster Risk Reduction: The concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.

Risk: The combination of the probability of an event and its negative consequences. **Risk Assessment:** A methodology to determine the nature and extent of risk by analysing potential hazards and evaluating existing conditions of vulnerability that together could potentially harm exposed people, property, services, livelihoods

¹ www.witpress.com › Secure › elibrary › papers › DMAN11

and the environment on which they depend.

□ **Risk Management:** The systematic approach and practice of managing uncertainty to minimize potential harm and loss. **Risk Transfer:** The process of formally or informally shifting the financial consequences of particular risks from one party to another whereby a household, community, enterprise or state authority will obtain resources from the other party after a disaster occurs, in exchange for on-going or compensatory social or financial benefits provided to that other party.

Adaptation: The adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities. **Capacity:** The combination of all the strengths, attributes and resources available within a community, society or organization that can be used to achieve agreed goals. □ **Capacity Development:** The process by which people, organizations and society systematically stimulate and develop their capacities over time to achieve social and economic goals, including through improvement of knowledge, skills, systems, and institutions.

□ **Climate Change:** A change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcing, or to persistent anthropogenic changes in the composition of the atmosphere or in land use².

□ **Contingency Planning:** A management process that analyses specific potential events or emerging situations that might threaten society or the environment and establishes arrangements in advance to enable timely, effective and appropriate responses to such events and situations.

□ **Coping Capacity:** The ability of people, organizations and systems, using available skills and resources, to face and manage adverse conditions, emergencies or disasters. □ **Emergency Management:** The organization and management of resources and responsibilities for addressing all aspects of emergencies, in particular preparedness, response and initial recovery steps

□ **Hazard:** A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage. □ **Mitigation:** The lessening or limitation of the adverse impacts of hazards and related disasters □ **Preparedness:** The knowledge and capacities developed by governments, professional response and recovery organizations, communities and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent or current hazard events or conditions.²

² southwestkhasihills.gov.in › disaster-management

□ **Prevention:** The outright avoidance of adverse impacts of hazards and related disasters. **Structural Measures:** Any physical construction to reduce or avoid possible impacts of hazards, or application of engineering techniques to achieve hazard-resistance and resilience in structures or systems;

Non-structural Measures: Any measure not involving physical construction that uses knowledge, practice or agreement to reduce risks and impacts, in particular through policies and laws, public awareness raising, training and education.

Sustainable Development: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Vulnerability: The characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard.³

- 57% land is vulnerable to earthquakes. Of these, 12% is vulnerable to severe earthquakes.
- 68% land is vulnerable to drought.
- 12% land is vulnerable to floods.
- 8% land is vulnerable to cyclones.
- Apart from natural disasters, some cities in India are also vulnerable to chemical and industrial disasters and man-made disasters.⁴

Major Earthquakes in India, 1988-2001

Date	Location	Magnitude
August 21, 1988	Bihar-Nepal Border	6.4
October 20, 1991	Uttarkashi, Uttar Pradesh	6.6
September 30, 1993	Latur- Osmanabad Maharashtra	6.3
May 22, 1997	Jabalpur, Madhya Pradesh	6.0
March 29, 1999	Chamoli, Uttar Pradesh	6.9
January 26, 2001	Bhuj, Gujarat	7.7

³ mausam.imd.gov.in › imd_latest › contents › pdf › cyclone_sop

⁴ niti.gov.in › docs › plans › planrel › fiveyr › volume1 › v1_ch7

Source: Indian Meteorological Department and US Geological Survey

MITIGATION AND PREVENTION

Mitigation and Prevention are used as synonymous. Some expert prefers to drop the term Mitigation and use only Prevention. Mitigation means to reduce the severity of the human and material damage caused by the disaster. Prevention is to ensure that human action or natural phenomena do not result in disaster or emergency. Primary prevention is to reduce - avert - avoid the risk of the event occurring, by getting rid of the hazard or vulnerability. For example, primary prevention is to avoid overcrowding, deforestation and to provide services: healthier people in a healthy environment will be less vulnerable to most hazards; immunizing people against smallpox made them less vulnerable to the virus, and slowly eradicated the disease. Secondary prevention means to recognize promptly the event and to reduce its effects, that is, by staying alert to possible displacements of population; by being ready to provide immunization, food, clean water, sanitation and health care to refugees: healthier people in a healthy environment will also be more capable to overcome the emergency.⁵

Various mitigation activities include:

- Reviewing building codes and building use regulations
- Vulnerability analysis updates
- Zoning and land-use management and planning
- Implementing preventative health measures.
- Educating businesses and the public on simple measures they can take to reduce loss or injury, for instance fastening bookshelves, water heaters, and filing cabinets to walls to keep them from falling during earthquakes.

Tools of mitigation

Four sets of tools that could be used to prevent or mitigate disasters include:

- Hazard management and vulnerability reduction
- Economic diversification
- Political intervention and commitment
- Public awareness

⁵ https://www.brainkart.com/article/Disaster-Management--Mitigation-and-Prevention_1171/

The first two apply exclusively to disasters caused by natural phenomena while the latter are used to mitigate any other hazards.⁶

Disaster Prediction and Warning

Although predictions are quite possible as to the nature of weather and climate, and even to a certain extent, hazards and disasters, it is rather difficult to predict accurately the disasters that occur periodically on the surface of the earth. Hence, the people and communities vulnerable to disasters must be helped and the first ever help we may render is the warning. The warnings must be comprehensive as to include the following activities:⁷

- Identify location where a hazardous event will likely occur.
- Determine probability that an event of a given magnitude will occur.
- Mitigate, Anticipate, Prepare.
- Observe precursor events
- Forecast the event.
- Warn the public.

There is a gap in the knowledge gained by hazards researchers and that of emergency planners and the general public. Why? It is because:

- Public are largely uneducated scientifically;
- Difficulty in communicating in a language, the general public can comprehend;
- Economic issues (lack of tourism if volcano expected to blow); and
- Liability.

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 pre planned 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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⁷ egyankosh.ac.in › bitstream › 1 › Unit-15

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