

Disaster Management

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Introduction

Disaster has been defined in the Webster dictionary as "*Grave occurrence having ruinous results*", while World Health Organisation (WHO) defines disaster as "*Occurrence that causes damage, economic destruction, loss of human life and deterioration of health and health services on a large scale, sufficient to warrant an extraordinary response from outside the affected community area*".

Each of the natural elements such as, sun and shine, temperature, cloud, rainfall, rivers, lakes, springs, ocean, tides, waves, winds, mountain, valley, earthquake, volcano, different types of soil, human being, different species of animals, trees and plants etc. has its own shape, forms, and properties. Each of the element or a group of elements interact each-other in certain situation and create various natural situations. These situations may be called as natural events; such as cloud and heavy rainfall may create flood, while the interaction of mountain with these two elements may create flash flood and the interaction of high wind with the same two elements may create flood with cyclone or typhoon etc. Normally the bigger event triggered in the nature is called the *natural calamity* or *natural hazards*. Human beings have hardly any hand or role in creating these natural hazards or calamities. However, some of our activities may accelerate the trigger or advance some of these natural events to a certain extent. The impact of these natural events on the human beings are largely functions of our alertness to respond, preparedness to face and precautions to safeguard. Natural Events or Natural Hazards or Natural Calamities often becomes Natural Disasters. The major factors that contribute the disastrous consequences of natural hazards are as follows:

- Human vulnerability resulting from poverty and social inequality
- Environmental degradation resulting from improper land & water use
- Rapid population growth, especially among the poor
- Lack of preparedness

The disaster may occur in the nature due to predictable or unpredictable natural disturbances and even due to human interferences to the nature, knowingly or unknowingly. Some of the disaster happens slowly and doesn't cause casualty of human being, while the other happens so rapidly that the human being becomes helpless and lot of casualty occurs. But occurrence of disaster in both the cases destroys the existing establishment in the affected zone. Some of the large-scale disaster may be named as earthquake, cyclone, storm surges, tornado, hurricane, tsunami, flood, draught etc.

Natural hazards are unavoidable though disasters can certainly be reduced if not entirely prevented. Natural disasters are caused where interaction between nature and human activities exists. There is a tendency to equate natural hazards with natural disasters. The correct notion emerges only when natural disaster and/or hazard are considered in the context of vulnerabilities. Even if the scale of natural phenomenon is great when it occurs in a place where there is no human activity it causes no problem. On the other hand, when hazard of lesser magnitude hit thickly populated area, the impact takes the form of a disaster. A natural disaster can, however be defined as a natural phenomenon or a combination of phenomena of unprecedented scale having catastrophic consequences, causing injury, loss of lives or input on a large scale. The need for preparation and protection from natural hazards are of outstanding importance because most of the populated areas of the country are affected by these hazards. Moreover, from economic aspect, the damages cause by disasters may amount to significant percentage of gross national product. In the developing countries, such damages of such a scale may cancel out much of the progress made in improving the standard of life of the people.

Disasters are global features and are detrimental to global development. Disasters have multidimensional effects in several sectors. Disasters have proved extremely costly to any national economy. Not only the developing countries but the developed countries are also susceptible to disasters.

The disaster normally affects the primary resources such as life and gender, water, land and biomass, which causes damage to the forest and greeneries, livestock and wildlife, population, and properties and negatively impacts on economy, education, infrastructure, health & sanitation, employment etc.

Definition of Disaster Management

The disaster management is the process of strengthen the capacities related to disaster mitigation, prevention, preparedness to reduce the risk of an area and subsequent development, at local, state and national level. Disaster management focuses on the sustainable environmental development. Disaster management also focuses on the public awareness generation. The disaster mitigation may be aimed at ensuring a sustainable recovery in the aftermath of a disaster, as well as, reducing people's vulnerability to natural disaster.

Disaster Management Cycle

Proper prediction of disaster is necessary to achieve the goal of disaster management. The prediction of each of the disaster is dependent on some other parameters, which may not come in the limelight always. Though the prediction of the natural events becomes very difficult, it may be possible upto a reasonable scale. Even if there is no prediction system for the disaster, a management system may work in such a case to minimise the casualty of the human being. The chronological phases of disaster management are as follows:

1. Disaster Strikes
2. Emergency Response
3. Rehabilitation
4. Reconstruction
5. Development
6. Disaster Mitigation Measures while developing
7. Disaster Preparedness runs concurrently and
8. Warning for next disaster

The next disaster comes and the process starts from the step 2 again, which makes a cycle of disaster management and becomes a never ending process.

Essentials in Disaster Management

Proper disaster management may be carried out by aiming the following points also, in addition to the above:

- To avoid panic, confusion, tension, fear and be at PEACE while waiting for disaster
- To remain organized, streamlined, focused and cool headed
- To make ourselves more resilient, sturdy and determined
- To sharpen our skills, instincts and presence of mind
- To be mentally, physically and organizationally ready to face the disaster
- To prepare meticulous plans to save life, health, property and the environment and minimize the damages during incoming and impending disasters
- To mobilize money and resources and to train the concerned manpower to meet the objectives
- To remain calm and act according to the plan and training received, before the disaster

The Life Line Networks are to be protected as a part of preparedness

- **Road network**, with roads, bridges, road cuts and retaining walls, elevated roads, drainage works.
- **Water system**, with surface intakes, wells, pipelines, treatment plants, pumping stations, storage tanks or reservoirs, water mains, and distribution network.
- **Electricity system**, with generating plant, transmission lines, substations, transformers, and distribution network.
- **Telecommunication**, with ground station, exchanges, microwave transmission towers, aerial and underground cables, and open line distribution network.
- **Sanitation system**, with collector network, treatment plant and sewage fallout; public washrooms and toilet facilities; solid waste collection and disposal.

Micro Level Task for Disaster Preparedness

- Collection of historical data on past disasters: Maps, Charts, Archeological Evidences, Data on Losses (human, environmental, infrastructural) etc.
- Preparation of time series maps/ charts on different aspect on disasters
- Preparation of hazard maps from time series analysis and identification of disaster prone areas
- Critical Assessment of Environmental Resources, Population Density, Commercial Investments and other Infrastructures
- Vulnerability Assessment
- Identification of safe area for distressed people during evacuation
- Conservation Policy of Critical Environmental Resources and Policy for critical use of Environmental Resources
- Provision of Livelihood Security for the Poor/ distressed people
- Economic, Social and Infrastructural Development
- Ecology Management
- Public Awareness on Disaster and Its Management
- Training and Skill Enhancement on Emergency Responses

Public Awareness Programme

Public awareness is very important to develop a self-operated warning system for disaster mitigation/ risk minimisation. Public awareness programme may be developed and monitored by the Federal, state agencies through the local emergency management agencies. The collaborative effort may develop more consistent tsunami awareness and mitigation strategies among the communities at risk. Awareness programme may be initiated through different media including Internet, organising seminars, broadcasting, documentary film, signboards etc.