

A

Seminar report

On

Disaster Management

Submitted in partial fulfillment of the requirement for the award of degree
Of Civil

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Preface

I have made this report file on the topic **Disaster Management**; I have tried my best to elucidate all the relevant detail to the topic to be included in the report. While in the beginning I have tried to give a general view about this topic.

My efforts and wholehearted co-corporation of each and everyone has ended on a successful note. I express my sincere gratitude towho assisting me throughout the preparation of this topic. I thank him for providing me the reinforcement, confidence and most importantly the track for the topic whenever I needed it.

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What is Disaster Management?

Disaster management (or **emergency management**) is the creation of plans through which communities reduce vulnerability to hazards and cope with disasters. Disaster management does not avert or eliminate the threats, instead it focuses on creating plans to decrease the impact of disasters.

Failure to create a plan could lead to damage to assets, human mortality, and lost revenue. Currently in the United States 60% businesses do not have emergency management plans. Events covered by disaster management include acts of terrorism, industrial sabotage, fire, natural disasters (such as earthquakes, hurricanes, etc.), public disorder, industrial accidents, and communication failures.

Classifications of Disaster Management

Researchers have been studying disasters for more than a century, and for more than forty years disaster research. The studies reflect a common opinion when they argue that all disasters can be seen as being human-made, their reasoning being that human actions before the strike of the hazard can prevent it developing into a disaster.

All disasters are hence the result of human failure to introduce appropriate disaster management measures. Hazards are routinely divided into natural or human-made, although complex disasters, where there is no single root cause, are more common in developing countries. A specific disaster may spawn a secondary disaster that increases the impact. A classic example is an earthquake that causes a tsunami, resulting in coastal flooding.

Earthquake

Earthquakes refer to shaking of earth. There is continuous activity going on below the surface of the earth. There are several large plates (size of continents) below the surface of the earth, which move (at a very slow speed). As a part of this movement, sometimes, they collide against each other. And, after the collision, they might still continue to push each other. As they continually keep pushing each other, there is a pressure building up – across these plates below the surface. And, then, at a certain time, one of the plates might slide over another. This causes an earthquake.

Some earthquakes might be caused by activity above the surface. For example in a mountainous region, there might be a heavy landslide. Due to a huge mass of land falling, at the point of the fall, there could be a minor shaking of earth, due the impact of fall. However, usually, such earthquakes are not very major.

Volcanos

Volcanoes refer to eruption of hot molten lava from below the surface of the earth. As plates move away from each other, at certain places, the surface might get stretched and thinner. In such a situation, the hot molten lava and gaseous substances below this thinned surface could open up a fissure and come out.

Typically, these eruptions are always accompanied by discharge of huge amount of gaseous substances, which are various compounds of high toxicity. All eruptions (gaseous or liquid) from a volcano is at high temperature, and, the mouth of a volcano might look like, as if it's spewing fire.

The area around Pacific Ocean is characterized by higher volcanic activity. In fact, the entire rim along the Pacific Ocean is called as the "Ring Of Fire", because of volcanic activity along this zone.

There are a lot of volcanic activities taking place on a continuous basis, across the globe, however, not all of these are serious enough to be termed as disasters. In fact, for most of these – just a moderate level of precaution might be sufficient.

Floods

Floods refer to huge amount of water reaching land in a short span of time, causing land surface to be submerged under water – at places, where, land surface is usually not covered with water.

Floods could be caused due to natural causes, or, human activities, or, a combination of both. Floods are caused by discharge of huge volume of water in a short span of time, at a rate, such that the water can not be carried away from the scene of discharge.

Some of the possible reasons for such huge discharge of water could be:

- A. very heavy rainfall (say: due to cyclones, typhoons etc.) in a short span of time. It should be noted that the amount of rainfall itself is not a sufficient cause, the duration within which the rainfall is receive is equally important contributor
- B. breach in levy, dams etc
- C. very high tidal waves (sometimes in the aftermath of a seismic activity, e.g. earthquakes) etc. – also called tsunamis

Usually, flooding impacts a large area, wherein entire district or states might be flooded. However, sometimes, flooding is very local, i.e. limited to just one city, or, parts of it. Most often, the localized flooding is caused due to human activities, rather than natural phenomenon. A natural phenomenon might seem like the immediate trigger, but, in reality, this is caused by human activity.

There are some places, which get flooded almost every year. One such example is Bangladesh. Some of the other places which had incidents of bad flooding in the recent past include:

- Florida, in the aftermath of hurricane Katrina (2005)
- Myanmar (2008)
- Portions of Coastal India get flooded almost each year

Among various kinds of disasters, flooding is unique in the sense that it has a very high degree of predictability, both in the short term, as well as long term. In most situations, flood prone areas are quite known – in the sense that they have a history of flooding. Only in very rare situations, a place might be flooded – without having any past history of flooding. Even in such cases, a careful study of the area could give an indication of possible flooding.

Tornadoes, Typhoons, Cyclones

These are winds of high-speed, many times accompanied by heavy rainfall. These cause structural damage, snapped overhead wires, and, possibility of floods.

Because of damage to structure and overhead wires, utility services could be disrupted. Heavy rainfall could cause flooding also.

Many times, these could last for a few days. In such cases, any restoration and relief activities can not even start till these few days when the activities start subsiding.

The only thing good about these kinds of natural disasters is that they can be predicted to a reasonable degree - thanks to the advancement of metrological sciences. And, in most cases, its possible to get a warning of up to several days. Usually, it is possible to take at least some preventive measures - during these few days of warning. In most cases, the preventive measure would include:

- Moving into places which are safer, e.g. buildings which are structurally sound, and, are not prone to flooding
- Not venturing out to sea etc for sports, fishing etc.

However, in spite of these warnings, damage to property can not be mitigated much, as, immovable structures can not be relocated.

Another important thing about these kinds of strong winds and rainfall is that they don't appear totally at will. There are well-defined geographical areas, which tend to see incidents of typhoons and cyclones. This means that, people inhabiting these areas could take some fundamental care, while, building homes etc. These are:

- Sturdy home, with very strong foundation and structure.
- Typically, most people build basements. These basements provide good shelter, and, storage space for food and water to last for a few days for the entire household.
- Proper embankments to prevent flooding etc.
- Storage of cement-bags and plastic sheets to prepare additional embankments against flooding, if required.

The people who suffer the most are poor people, because:

- they don't have the means to build very strong houses, and hence, these houses get blown off/damaged
- they don't have the means to buy and store food and provisions for several days, causing them to take risks of venturing out during heavy winds/rainfalls to make some money
- In coastal areas of poor country, fishermen have been known to venture out to sea, even during cyclones etc.

Natural hazard

A natural hazard is a natural process or phenomenon 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.

Various phenomena like earthquakes, landslides, volcanic eruptions, floods, hurricanes, tornadoes, blizzards, tsunamis, and cyclones are all natural hazards that kill thousands of people and destroy billions of dollars of habitat and property each year. However, the rapid growth of the world's population and its increased concentration often in hazardous environments has escalated both the frequency and severity of disasters. With the tropical climate and unstable land forms, coupled with deforestation, unplanned growth proliferation, non-engineered constructions which make the disaster-prone areas more vulnerable, tardy communication, and poor or no budgetary allocation for disaster prevention, developing countries suffer more or less chronically from natural disasters. Asia tops the list of casualties caused by natural hazards.



Airplane crashes and terrorist attacks are examples of man-made disasters: they cause pollution, kill people, and damage property. This example is the September 11 attacks in 2001 at the World Trade Center in New York.

Human-instigated disasters

Human-instigated disasters are the consequence of technological hazards. Examples include stampedes, fires, transport accidents, industrial accidents, oil spills and nuclear explosions/radiation. War and deliberate attacks may also be put in this category. As with natural hazards, man-made hazards are events that have not happened—for instance, terrorism. Man-

made disasters are examples of specific cases where man-made hazards have become reality in an event.

Features of Disaster Management

The following are some of the important features of disaster management:

- 1. Disaster Management Teams:** - World wide, governments, business and non-business organisation are setting up disaster or crisis management teams in order to manage the disaster. The disaster management teams are broadly divided into three parts namely (1) The Policy Team (2) The management Team (3) The Liaison Team.
- 2. Systematic Planning:** - Disaster management involves systematic planning to avert a disaster, and if it occurs, then systematic planning is required in order to overcome the crisis arising out of disaster, Disaster planning indicates, what to do, when to do, how to do and who is to do certain activities to manage and overcome the problems of disaster.
- 3. Organising of Resources:** - Disaster Management requires proper organising of resources such as manpower, materials, funds, etc., in order to deal with the calamity. Proper organizing of resources will help the disaster management personnel to overcome the problems caused by the calamity or disaster.
- 4. Training to Manpower:** -To manage a disaster effectively, there is a need to provide proper training to the disaster management personnel. The training will help to develop and improve Disaster Management skills in the personnel. Training may help to avert a disaster effectively.
- 5. Suitability:** - Disaster Management is required before and after a disaster. It is suitable before a disaster in order to avert a disaster, or to caution the people and to take proper appropriate measures before the disaster strikes. Disaster Management is also very much required after a disaster takes place in order to undertake rescue, relief and rehabilitation measures at the time of floods, earthquakes.
- 6. Stability:** -Normally, disaster management teams lack stability. They are formed just prior to a disaster in order to avert it, whenever possible. However, in advanced countries such as in USA, UK, Japan, etc., some organisations form more or less permanent Disaster Management

teams.

7. **Organisation Structure:** -Robert F. Littlejohn in his paper on 'Crisis Management' suggested a matrix organisation structure to deal with disaster or crisis in the organisation or in the city or country. The disaster management team is to be headed by a crisis manager.

Principles of Disaster Management

The principles of disaster management are:

Disaster management is the responsibility of all spheres of government.

No single service or department in itself has the capability to achieve comprehensive disaster management. Each affected service or department must have a disaster management plan which is coordinated through the Disaster Management Advisory Forum.

2. **Disaster management should use resources that exist for a day-to-day purpose.**

There are limited resources available specifically for disasters, and it would be neither cost effective nor practical to have large holdings of dedicated disaster resources. However, municipalities must ensure that there is a minimum budget allocation to enable appropriate response to incidents as they arise, and to prepare for and reduce the risk of disasters occurring.

3. **Organisations should function as an extension of their core business.**

Disaster management is about the use of resources in the most effective manner. To achieve this during disasters, organisations should be employed in a manner that reflects their day-to-day role. But it should be done in a coordinated manner across all relevant organisations, so that it is multidisciplinary and multi-agency.

4. **Individuals are responsible for their own safety.**

Individuals need to be aware of the hazards that could affect their community and the counter measures, which include the Municipal Disaster Management Plan, that are in place to deal with them.

5. **Disaster management planning should focus on large-scale events.**

It is easier to scale down a response than it is to scale up if arrangements have been based on incident scale events. If you are well prepared for a major disaster you will be able to respond very well to smaller incidents and emergencies, nevertheless, good multi agency responses to incidents do help in the event of a major disaster.

6. Disaster management planning should recognise the difference between incidents and disasters.

Incidents - e.g. fires that occur in informal settlements, floods that occur regularly, still require multi-agency and multi-jurisdictional coordination. The scale of the disaster will indicate when it is beyond the capacity of the municipality to respond, and when it needs the involvement of other agencies.

7. Disaster management operational arrangements are additional to and do not replace incident management operational arrangements

Single service incident management operational arrangements will need to continue, whenever practical, during disaster operations.

8. Disaster management planning must take account of the type of physical environment and the structure of the population.

The physical shape and size of the Municipality and the spread of population must be considered when developing counter disaster plans to ensure that appropriate prevention, preparation, response and recovery mechanisms can be put in place in a timely manner.

9. Disaster management arrangements must recognise the involvement and potential role of non-government agencies.

Significant skills and resources needed during disaster operations are controlled by non-government agencies. These agencies must be consulted and included in the planning process.

Impact of Disasters

Displaced Populations

One of the most immediate effects of natural disasters is population displacement. When countries are ravaged by earthquakes and other powerful forces of nature, many people have to abandon their homes and seek shelter in other regions. A large influx of refugees can disrupt everything from accessibility of health care and education to food supplies and basic hygiene. Large-scale evacuations are common in light of the power of tsunamis and other natural disasters, and those fortunate enough to survive face a range of challenges following widespread destruction.

Health Risks

Aside from the obvious danger that natural disasters present, the secondary effects can be just as damaging. Typhoons, hurricanes and tsunamis often cause severe flooding, which can result in the spread of waterborne bacteria and malaria. As a result, health complications can be prevalent among survivors of natural disasters, and without the help of international relief organizations, death tolls can rise even after the immediate danger has passed.

Food Scarcity

After natural disasters, food can become scarce. Thousands of people around the world go hungry as a result of destroyed crops and a loss of agricultural supplies. The impacts of hunger following an earthquake, typhoon or hurricane can be tremendous, but fortunately, there are ways you can help. ChildFund's Child Alert Emergency Fund provides people affected by natural disasters with the food and nutritional support they need. Your donation of \$25, \$50 or \$100 will be used to fulfill immediate needs on the ground.

Emotional Aftershocks

Natural disasters can be particularly traumatic for young children. Confronted with scenes of destruction and the deaths of friends and loved ones, many children develop post-traumatic stress disorder (PTSD), a serious psychological condition resulting from extreme trauma. Left untreated, children suffering from PTSD can be prone to lasting psychological damage and emotional distress. ChildFund works in countries around the world affected by natural disasters to help children receive the psychosocial care they need following these traumatic events.

Although nobody can prevent natural disasters, we can help people in need in their wake. By making a donation to ChildFund's Child Alert Emergency Fund, you can help us provide food, clean water, health care and emotional support to children and communities displaced by natural disasters.

Reference

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