

KEY TERMS:

HAZARD:

*is a situation that poses a level of threat to life, health, property or environment.

*A hazard becomes a disaster when it hits an area affecting the normal life.

DISASTER:

*Disasters occur when hazards meet vulnerable situations.

*A disaster is a natural, man-made or technological event that causes significant physical damage or destruction, widespread loss of life or drastic change to the environment.

*Disasters can destroy the economic, social and cultural life of people.

Three types of disasters are:

- Natural - Hurricanes, tornadoes, earthquakes, floods, volcanoes, etc.
- Technological - Chemical releases, power outages, natural gas explosions, etc.
- Man-made - Terror attacks, race riots, mass shootings, etc.

MITIGATION:

*is an effort to reduce loss of life and property by reducing the impact of disasters.

*Mitigation is taking preventive actions before the next disaster happens in order to reduce human and financial consequences.

NATURAL DISASTER:

*is an event that is caused by natural hazards and leads to loss of life and damage to physical infrastructure and environment.

Examples are 2005 Muzaffarabad earthquake, 2005 Waltengo snow avalanche, 2010 cloudburst in Leh, Landslides etc.

MAN MADE DISASTERS:-

*cause serious damage to life, property, and environment due to human induced activities.

*Examples are 1984 Bhopal Gas tragedy, 1994 Kumbakonam school fire, terrorist attack, bomb blasts, road and rail accidents, global warming etc.1

EARTHQUAKES:

*An earthquake is the shaking of the surface of the Earth resulting from a sudden release of energy in the Earth's lithosphere that creates seismic waves.

*Earthquakes can range in size from those that are so weak that they cannot be felt to those violent enough to propel objects and people into the air, and wreak destruction across entire cities.

*Earthquakes are usually caused when rock underground suddenly breaks along a fault. When two blocks of rock or two plates are rubbing against each other, they stick a little. They continue to move until they get stuck again. The spot underground where the rock breaks is called the focus of the earthquake. The place right above the focus (on top of the ground) is called the epicenter of the earthquake.

*The safety measures that should be adopted during an earthquake are:

- a. Remain calm.
- b. If you are inside a building, watch for falling plaster. Light fixtures.
- c. Stay away from glass, window, mirrors and chimneys.
- d. if in danger get under a table, desk or bed in a corner.
- e. If outside avoid high building walls, power poles and other objects that could fall.
- f. If surrounded by buildings take shelter in the nearest strongest one.
- g. If in an automobile, stop in a safe place available, preferably an open area.
- h. Don't use elevators while coming out of a building instead use stair cases

LANDSLIDES:

*The term landslide or less frequently, landslip, refers to several forms of mass wasting that include a wide range of ground movements, such as rockfalls, deep-seated slope failures, mudflows, and debris flows.

*A landslide is any geologic process in which gravity causes rock, soil, artificial fill or a combination of the three to move down a slope.

*Several things can trigger landslides, including the slow weathering of rocks as well as soil erosion, earthquakes and volcanic activity.

*Landslides cause property damage, injury, and death and adversely affect a variety of resources. For example, water supplies, fisheries, sewage disposal systems, forests, dams, and roadways can be affected after a land slide.

*Landslides are aggravated by human activities, such as:

- deforestation, cultivation and construction;

- vibrations from machinery or traffic;
- blasting and mining;
- earthwork (e.g. by altering the shape of a slope, or imposing new loads);
- in shallow soils , the removal of deep-rooted vegetation that binds colluviums to bedrock;
- agricultural or forestry activities (logging), and urbanization, which change the amount of water infiltrating the soil.

*There are also various direct methods of preventing landslides; these include modifying slope geometry, using chemical agents to reinforce slope material, installing structures such as piles and retaining walls, grouting rock joints and fissures, diverting debris pathways, and rerouting surface and underwater drainage.

SNOW AVALANCHES:

*An avalanche is a rapid flow of snow down a hill or mountainside. Although avalanches can occur on any slope given the right conditions, certain times of the year and certain locations are naturally more dangerous than others.

*The effects and impact of avalanches causes physical damage such as blockage of roads, streams, damage to buildings, electric and communication lines and loss of life.

*Avalanches can be caused by many things. Some of them are natural. For example, new snow or rain can cause built up snow to loosen and fall down the side of a mountain. Earthquakes and the movement of animals have also been known to cause avalanches.

*Artificial triggers can also cause avalanches. For example, snowmobiles, skiers, gunshots, and explosives have all been known to cause avalanches.

*Snow avalanches can be mitigated by shifting people and property from the areas which are prone to avalanches or by protecting the people and property by using engineered sheds, walls, berms and deflectors to absorb, dissipate or redirect moving avalanches

FLOODS:

*Floods are temporary inundation of large regions as a result of rivers overflowing their banks because of heavy rain, high winds, cyclones, storm surges along coast, tsunami, melting of snow or cloudburst,

*Floods are common natural disasters that can affect millions of people around the world. They destroy houses and buildings, and carry soil away from valuable farming land. Floods can also contaminate drinking water and lead to diseases.

*Floods are caused by many factors: heavy precipitation, severe winds over water, unusual high tides, tsunamis, or failure of dams, levees, retention ponds, or other structures that contained the water.

*Some methods of flood control have been practiced since ancient times. These methods include planting vegetation to retain extra water, terracing hillsides to slow flow downhill, and the construction of floodways (man-made channels to divert floodwater).

DROUGHT AND FAMINE:

*Drought can be defined as a lack or shortage of water for an unusually long period. It can have a substantial impact on the ecosystem and agriculture of the affected region..Famine is a widespread scarcity of food, caused by several factors including crop failure, population unbalance etc.

*A situation of drought occurs generally when a region receives consistently below average precipitation.

*Drought results in shortage in the agricultural production thereby causing food shortage that can lead to famine.

*Droughts can have significant impact on environment, agriculture, health, economy and social aspects.

CLOUD BURST:

*A cloudburst is an extreme amount of precipitation in a short period of time, sometimes accompanied by hail and thunder, which is capable of creating flood conditions.

*The cloudbursts in India occur during monsoon season in Himalayan region, North-eastern states and the Western Ghats.

*Cloud bursts cause huge damage to buildings, infrastructure, communication links etc.

*The cloud burst lead to sudden flash floods, mudslides, and debris slides. It is , therefore necessary to follow the same mitigation measures as are to be followed in case of floods.

MITIGATION:

*Mitigation is an effort to reduce loss of life and property by reducing the impact of disasters.

*It means elimination or reduction of the frequency, magnitude, or severity of exposure to risks, or minimization of the potential impact of a threat or warning. Some

examples of mitigation measures are:

a. For earthquake:

- i. Enforcement of building codes
- ii. Retrofitting of existing buildings
- iii. Verification of building plans

b. For landslide and snow avalanches:

- i. Retaining walls
- ii. Plantation
- iii. Mapping
- iv. Drainage management.
- v. Stop indiscriminate mining

c. For floods:

- i. Embankments
- ii. Construction on higher areas
- iii. Flood Zonation Mapping
- iv. Land using planning

d. For drought and famine:

- i. Rain Water Harvesting
- ii. Construction of dams
- iii. Desalination
- iv. Awareness.

FOUR ELEMENTS OF EMERGENCY DISASTER MANAGEMENT:

1.PREPAREDNESS: is the measure to ensure that communities and services are capable of coping with the effect of disaster. Structural changes towards community initiatives ensure better success rate of services available to cope with disasters. Community initiatives also allow various options to choose from.

2.RESPONSE: includes measures taken in anticipation of, during, and immediately after a disaster to ensure that the effects are minimized.

3.RECOVERY : is a set of measures, which support emergency affected communities in the reconstruction of the physical infrastructure and restoration of economic and emotional well-being.

4.PREVENTION: consists of those measures which are taken to eliminate or reduce the incidence of severity of emergencies/disasters.