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	<p style="text-align: center;"><u>LESSON PLAN : DM 2</u></p> <p style="text-align: center;"><u>TYPES OF NATURAL DISASTERS</u></p> <p>Period - One Type - Lecture Code - DM 2 Term - I (SD/SW)</p> <p>Training Aids</p> <p>3. Computer Slides, Charts, Pointer, Black Board & Chalk Time Plan</p> <p>4. (a) Introduction - 05 Min (b) Classification of Disasters - 15 Min (c) Types of Natural Disasters - 15 Min (d) Conclusion - 05 Min</p> <p><u>INTRODUCTION</u></p> <p>3. Since the dawn of civilization, human society, natural environment and disasters have been closely interlinked. Natural disasters and the increasing environment degradation world-wide are serious threats to development. Natural disasters threaten all three dimensions of development to include economic, social and environmental. In the past twenty years, earthquakes, volcanic eruptions, landslide, floods, tropical storms, droughts and other natural calamities have killed over three million people, inflicted injury, disease, homelessness and misery on one billion others, and caused billions of dollars of material damage. 90 percent of the natural disasters and 95 percent of the total disaster-related deaths world-wide, occur in the developing countries.</p> <p>4. The term disaster is commonly used to denote any odd event 'natural or man-made' which brings about immense misery to a region and it becomes difficult to cope with the situation through local resources.</p> <p><u>AIM</u></p> <p>5. To acquaint the NCC Cadets about the types of Natural Disasters.</p> <p><u>PREVIEW</u></p> <p>6. The lecture will be conducted in following parts:-</p> <p>(a) Part I - Classification of Disasters. (b) Part II - Types of Natural Disasters.</p>

(a)

PART I : CLASSIFICATION OF DISASTERS

7. Disasters can be classified based on nature of onset (rapid/ slow), natural and manmade disasters as under:-

(a) Natural Disasters. These are of the following types :-

- (i) Wind Related. Storms, Cyclones, Tornados, and Tidal Waves.
- (ii) Water Related. Floods/Flash Floods, Cloudburst, Excessive Rains and Drought.
- (iii) Earth Related. Earthquakes, Tsunamis, Avalanches, Landslides and Volcanic Eruptions.

(b) Man Made Disasters. These can be classified as under :-

- (i) Accidents. Road, rail, air, sea accidents or building collapse.
- (ii) Industrial Mishaps. Gas leaks, explosion, sabotage and safety breaches.
- (iii) Fires. In buildings, coal fields or oil / gas fields and oil / gas storage depots.
- (iv) Forest Fires. In tropical countries, forest fires are often manmade.
- (v) Contamination/Poisoning. Incidents of mass food poisoning, water contamination, illicit-liquor poisoning and epidemics.
- (vi) Terrorists Activities. Serial Blasts / explosions in public transport or markets.
- (vii) Ecological. Pollution of air, water, noise, soil degradation, loss of biodiversity, global warming, sea level rise, toxic wastes and nuclear accidents.
- (viii) Warfare. Conventional, chemical, biological or nuclear.

(b)

PART II : TYPES OF NATURAL DISASTERS

8. **Volcanoes.** The word “volcano” comes from the Latin word Vulcan, the Roman god of fire. Volcanoes erupt when the lower levels of the earth’s crust push up on hot magma causing the volcano to burst through the top layer of the earth. When a volcano erupts, magma, ashes, and other gases are released and pushed upward from beneath the earth’s surface. The melted molten rock is called lava when above the surface, and is referred to as magma when below the surface.

When a volcano erupts, the molten rock that is spewed from the volcano builds up and begins to form a mountain-like structure. Because the molten lava is so hot, sometimes reaching over 2,000 degrees Fahrenheit, anything that it comes in contact with it can burn or melt. The volcano can spew lava, dust, ashes, and deadly gases. After the molten lava cools down, it hardens and turns into hard molten rock. The ash that is sent from the top of the volcano can be carried hundreds of miles by the wind. Volcanoes can be both, active or dormant volcanoes and can be found both, on land or under the sea.

9. **Landslides.** Landslides are mostly caused by movement in the ground and the force of gravity pulling down on all earthly objects. Landslides can also be caused by heavy rain, earthquakes, and even some man-made causes such as road work. Landslides usually consist of falling rocks and sliding earth in addition to failure in the Earth's surface. Landslides often occur in conjunction with other natural disasters such as volcanic eruptions, earthquakes, and other faults in the earth. Effects of landslides include collapsing buildings, collapsing roads and even sometimes causing death.

10. **Earthquakes.** Earthquakes are one of the many powerful natural disasters caused when there is a shift, collision, or sudden release of energy in the Earth's crust. Sometimes called tremors and temblors, earthquakes usually occur on the boundaries of, or near, the lines where the Earth's tectonic plates collide and slide past each other. This is called a fault line. Changes in the Earth's surface usually result in earthquakes. Earthquakes consist of shaking and displacement of the ground. Depending on the intensity of the earthquakes, they can cause buildings to collapse, which sometimes results in fatalities. The Richter Magnitude Scale is used to classify and measure the magnitude of earthquakes. The Richter Scale was invented by Charles F. Richter in 1935, and it has a scale from 1-9.

Earthquake Zone : India Wind & Cyclone Zone : India

11. **Tsunamis.** "Tsunami" is a Japanese word meaning "harbor wave." Tsunamis usually take place in the ocean, but can also occur in large lakes. Caused by an underwater earthquake, volcano, landslide, or other type of explosion, tsunamis are giant waves that can destroy entire cities. Tsunamis can range anywhere from a few inches to several yards high. Some large tsunamis have been as tall as 100 feet while some have been less than 20 feet tall and still caused extensive damage. These great walls of water can gain speed as they approach the shore, sometimes up to 500 miles per hour. Tsunamis have tremendous destructive power and can destroy hundreds of lives and homes each year.

12. **Hurricanes.** Sometimes called Tropical Cyclones, Typhoons, or Willy-Willies. Hurricanes can rip up trees, destroy crops, and flatten buildings. Torrential rain causes flooding and coastal regions may be swamped by huge waves whipped up by winds that blow as fast as 300 km/h (185 mp). Hurricanes start to form when the Sun's heat stirs up moist air over the oceans, where the temperature at the centre of the storm, called the eye, can be more than 300 km (185 miles) across and the winds only gale force. But as the eye narrows to about 50 km (30 miles) across, the winds begin to swirl around it at hurricane force. Cyclones pose a major threat to lives and property in many parts of the world.

13. **Floods.** It can arise from abnormally heavy precipitation, dam failures, rapid snow melting, river blockages or even burst water mains. It is usually sudden in onset. Types of floods can further be classified into Inland and Coastal floods. Major floods result in physical

damage, deaths and injuries, problems in drinking water supply and food shortages and displacement of population.

14. **Droughts.** If, over about two weeks, there is less than 0.2 mm (1/100in) of precipitation, there is said to be a drought. Without reservoirs, there is not enough water for people and crops. Some places have extreme drought which lasts for many Terms. Droughts have disastrous and long term impact on the economy and can affect a large segment of the society which may last for months and in some cases several Terms. Generally, drought situation may be defined as a temporary reduction in water or moisture availability significantly below the normal or expected amount for a specific period. Drought is a slow onset phenomenon.

CONCLUSION

15. Natural disasters and the increasing environment degradation world-wide are serious threats to development. Natural disasters threaten all three dimensions of development to include economic, social and environmental. Natural calamities have killed over three million people, inflicted injury, disease, homelessness and misery on one billion others. It is therefore important for all of us to be fully aware of the various types of Natural Disasters and take measures to minimize losses of all types.