

Disaster Management Class 01

19th June, 2024 at 1:00 PM

GENERAL DISCUSSION ABOUT DISASTERS AND INTRODUCTION (01:07 PM)

- Looking at PYQs and discussion around them to get an idea of the topics.

DISASTER MANAGEMENT PYQ DISCUSSION (01:27 PM)

- Discussion of PYQs of Disaster Management
- 2011 - NDMA - Its National Executive Committee
- 2013 - Disaster and pre-disaster management. Keywords - vulnerability and risk assessment.
- 2014 - Preparedness, El Nino and La Nina events.
- 2015 - Important Words - Earthquakes, Preparedness, Mitigating, significant gaps. Keywords - Preparedness, mitigation, and the gaps in it.
- 2016 - Important words - Urban floods, high-intensity rainfall, Keywords - Reasons for urban floods, the mechanism for preparedness to reduce risk.
- 2017 - Keywords - Tsunami, NDMA guidelines, Preparedness to reduce risk, cause, and factors responsible.
- 2018 - Important words - Measures taken by India for DRR, before signing the Sendai Framework, Different from the Hyogo Framework. Keywords - Disaster Risk Reduction, Sendai Framework, and Hyogo Framework.
- 2019 - Important words - Vulnerability. How and in what ways can vulnerability to disasters be characterized?
- 2020 - Keywords - Preparedness, Disaster management, Hazard zonation mapping, disaster mitigation in case of landslides.
- 2020 - Important words - Disaster management, earlier reactive approach. Keywords - Disaster management, Reactive approach.
- 2021 - Keywords - Vulnerability, Earthquake, hazards zonation mapping.
- 2022 - Keywords - Hazard, Coastal Management Techniques.
- 2023 - Keywords - Dam Failures, life and property, causes of dam failure.

DISASTER AND DISASTER MANAGEMENT (02:34 PM)

- Under this, we shall be studying - 1) Geographical Events, Natural and Man-made; 2) Concepts; 3) Structure - Indian and International Structures for Disaster Management
- Concepts -
- 1) Hazard;
- 2) Vulnerability;
- 3) Risk;
- 4) Disaster;
- 5) Management. A proactive approach to Disaster management deals with Pre-Disaster. Post-disaster is a reactive approach and fits in Post-Disaster. Mitigation is a Pre-Disaster scenario.

HAZARD (03:02 PM)

- Hazard has the potential to cause harm if not used properly. When we use the word **hazard** and **disaster** management, we broadly classify it as events that have a higher potential of causing harm and they can be classified into natural hazards or man-made hazards.

| Aspect | Hazard | Disaster |
|-------------------|--------------------------------|--|
| Definition | A potential threat | Actual event causing destruction |
| Effect | May or may not cause damage | Causes serious harm and disruption |
| Stage | Pre-event or risk stage | Post-event, impact stage |
| Example | A cyclone forming in the ocean | Cyclone hitting the coast and destroying homes |

In Short: Hazard is the danger; disaster is the damage.

Natural Hazards (03:17 PM)

- There are 5 categories of natural hazards. These are-
- 1) Geophysical Disasters - Earthquake/ Mass movement of earth materials -

| Family | Main Event | Short Description/Secondary Disaster |
|-----------------|--|---|
| 1) Geophysical | Earthquake/Mass movement | <p>Landslide following earthquake;</p> <ul style="list-style-type: none"> • Urban fires triggered by earthquakes; • Liquefaction - the transformation of (partially) water-saturated soil from a solid state to a liquid state caused by an earthquake. <p>- Mass movement of earth materials, usually down slopes</p> <p>Surface displacement of earthen materials due to ground shaking triggered by volcanic eruptions</p> |
| | Volcano | <p>A type of geological event near an opening/vent in the Earth's surface including volcanic eruptions of lava, ash, gas, hot vapor, and pyroclastic material.</p> |
| | Tsunami | <p>Tsunamis are difficult to categorize they are essentially an oceanic process manifested as a coastal water-related hazard. Tsunami waves travel at very high speed across the ocean but as they begin to reach shallow water they slow down, and the wave grows steeper.</p> |
| | | <p>Avalanche, a large mass of loosened earth material, snow, or ice that slides, flows or falls rapidly down a mountainside under the force of gravity</p> |
| 2) Hydrological | <ul style="list-style-type: none"> - Flood • Landslides • Wave Action | <p>Coastal Erosion - The temporary or permanent loss of sediments or landmass in coastal margins due to the action of waves, tides, or anthropogenic activities.</p> <p>Flash Flood Hydrological - Heavy or excessive rainfall in a short period of time produces immediate runoff,</p> |

| | | |
|----------------|--|---|
| | | creating flooding conditions within minutes or a few hours. |
| | | Cyclone, Storm Surge, Tornado, Convective Storm, Extra-Tropical Storm, Wind |
| 3) | Hazard is caused by short-lived, micro- to mesoscale extreme weather | Cold Wave, Derecho |
| Meteorological | and atmospheric conditions that may last from minutes to days. | Extreme Temperature, Fog, Frost, Freeze, Hail, Heatwave |
| | | Lightning, Heavy rain |
| | | Sandstorm, Dust-storm |
| | | Snow, Ice, Winter Storm, Blizzard |
| | | |
| 4) | Unusual, extreme weather conditions related to long-lived, meso to macro-scale atmospheric processes ranging from intra-seasonal to multi-decadal climate variability. | Drought |
| Climatological | | Extreme hot/cold conditions |
| | | Forest/Wildfire fires |
| | | GLOF |
| | | Subsidence |
| | | |
| 5) Biological | Exposure to germs and toxic substances | Epidemics: viral, bacterial, parasitic, fungal or prion infections |
| | | Insect infestations |
| | | Animal Stampedes. |

VULNERABILITY (03:43 PM)

- Hazard is with respect to the factors causing the effect whereas vulnerability is with respect to the affected by the hazardous event.
- Vulnerability includes the effect on life, property, and environment.
- Vulnerability is the characteristics and circumstances of a community, asset, or environment that make it susceptible to the damaging effects of a hazard.

Factors Increasing Vulnerability (03:56 PM)

- 1) Rapid population growth
- 2) Spread of humans to all corners of the earth
- 3) Degradation of the environment
- 4) Agriculture
- 5) Industrialisation and Urbanisation
- 6) Deforestation
- 7) Mining
- 8) Services like transportation
- 9) Creation of a large population of poor - poor living conditions
- 10) Blind adherence to cultural practices
- 11) War and internal security problems
- 12) Gender inequality
- 13) Lack of awareness and lack of development planning

TOPIC FOR NEXT CLASS - TYPES OF VULNERABILITY

1. Natural



Non-Living
Ex: Environment

Living
Ex: Biodiversity

2. Manmade

↓
Property