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**AWSM NOTES**  
**DISASTER MANAGEMENT**

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**DISASTER MANAGEMENT AWSM NOTES**

**DEFINITIONS**

- **Section 2 (d)** of the DM Act states that a **disaster means a “catastrophe, mishap, calamity or grave occurrence in any area, arising from natural or man made causes.**
- Disaster management is a critical process that involves planning, organizing, and coordinating efforts to prepare for, respond to, and recover from natural or man-made disasters. It includes activities such as risk assessment, emergency response planning, mitigation strategies, and providing aid to affected communities. Effective disaster management can help save lives, reduce damage, and facilitate recovery in the aftermath of disasters.
- **Disaster risk reduction (DRR)** is a systematic approach to minimizing the impact of disasters on people, property, and the environment. It involves a range of measures and strategies aimed at reducing the vulnerability of communities and enhancing their resilience to disasters. DRR encompasses activities like hazard assessment, early warning systems, land-use planning, building codes and construction practices, and public education and awareness. The goal of DRR is to prevent or reduce the negative effects of disasters by addressing the underlying risk factors and improving preparedness and response capabilities.
- A hazard is any source of potential harm or danger that has the capacity to cause harm, damage, or adverse effects to people, property, the environment, or society in general. Hazards can be natural, such as earthquakes, hurricanes, floods, or wildfires, or they can be human-made, like chemical spills, industrial accidents, or nuclear incidents. **Identifying, assessing, and understanding hazards is a crucial step in disaster risk reduction and management, as it allows for the development of strategies and measures to mitigate their impact and enhance preparedness.**
- Hazard plus risk equals the potential for harm or adverse consequences ie; Disaster.

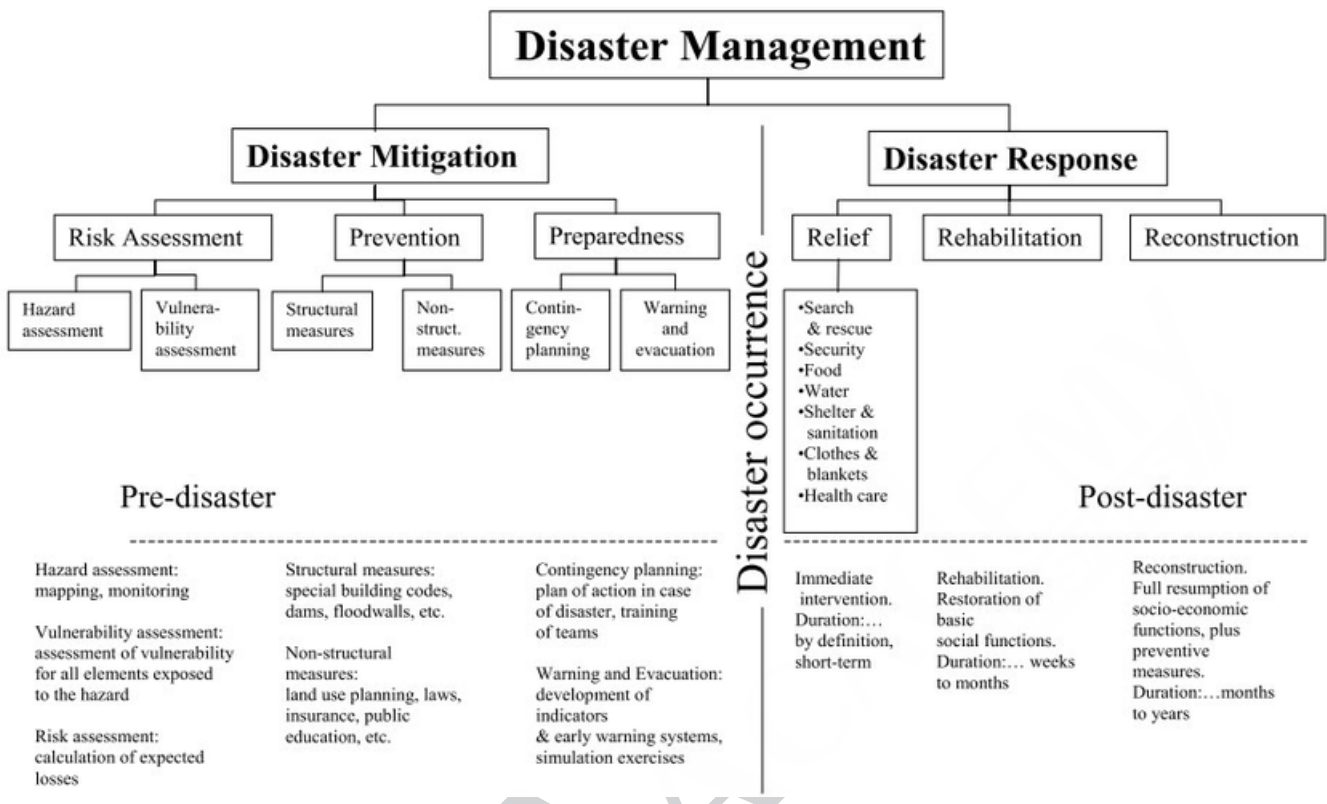
**INTRODUCTION**

Disasters can be categorized into three main types based on their causes: natural disasters, man-made disasters, and hybrid disasters, which can involve elements of both natural and man-made causes. Here’s a brief overview of each type:

<b>Natural Disasters:</b>	<b>Man-Made (or Anthropogenic) Disasters:</b>	<b>Hybrid Disasters (Complex Emergencies):</b>
<p>These disasters are primarily caused by natural forces and phenomena, with little or no human influence in their origin.</p> <ul style="list-style-type: none"> <li>➤ Examples include earthquakes, floods, hurricanes, tornadoes, tsunamis, wildfires, droughts, volcanic eruptions, and heatwaves.</li> <li>➤ While human activities may exacerbate the impact of some natural disasters (e.g., deforestation leading to increased susceptibility to landslides or climate change intensifying certain events), the initial cause is natural</li> </ul>	<p>These disasters are entirely or predominantly caused by human actions or negligence, with little or no direct influence from natural forces.</p> <ul style="list-style-type: none"> <li>➤ Examples include industrial accidents (e.g., chemical spills), nuclear accidents, oil spills, transportation accidents (e.g., plane crashes or train derailments), and cyberattacks.</li> <li>➤ Human factors, such as engineering flaws, human error, or deliberate actions, play a central role in the occurrence of man-made disasters.</li> </ul>	<p>Hybrid disasters combine elements of both natural and man-made causes, often resulting in complex and multifaceted crises.</p> <ul style="list-style-type: none"> <li>➤ Examples include the impact of a natural disaster (e.g., an earthquake or hurricane) triggering secondary effects, such as industrial accidents (e.g., a chemical plant explosion) or conflict escalation.</li> <li>➤ Human responses to natural disasters can also lead to hybrid situations, such as social unrest or conflicts arising from disputes over resources or relief aid distribution.</li> </ul>

Hybrid disasters pose unique challenges for disaster management because they require addressing both the immediate impacts of the natural event and the man-made consequences or conflicts that may follow.

Effective disaster preparedness and response strategies should consider the potential for hybrid disasters and incorporate comprehensive planning and coordination to mitigate their effects.



**IMPORTANT FEATURES OF DISASTER MANAGEMENT ACT**

- The Act designates the **Ministry of Home Affairs** as the nodal ministry for steering the overall national disaster management.
- The Act also contains provisions for financial mechanisms including creation of funds for emergency response like the National Disaster Response Fund.

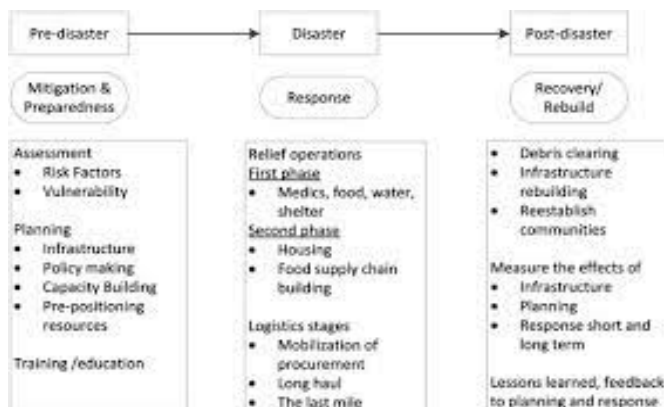
**Role Players : Legal-institutional Framework**

Disaster Management Act, 2005



**Relevant Sections**

- **Section 6:** It gives NDMA the powers to prepare national plans for disaster management. It also ensures the implementation of the plan through the state disaster management authorities.
- **Section 10:** It allows the NEC to give directions to governments regarding measures to be taken by them.
- **Section 33:** It says that the District Authority may order any officer or any Department at the district level or any local authority to take such measures for the prevention or mitigation of disaster. Such officer or department shall be bound to carry out such order.
- **Penal Provisions:** Moreover, sections 51 to 60 of the Act lay down penalties for specific offenses. Anyone found obstructing any officer or employee from performing their duty will be imprisoned. The term of the punishment may extend to one year or fined, or be both.
- Further, if such an act of obstruction leads to loss of lives or imminent danger, then the person can be jailed for up to two years



The Disaster Management Act of 2005 in India has played a significant role in shaping the country's approach to disaster management. While it has several positive aspects, there are also criticisms and areas for improvement. Here's a critical examination:

**Positive Aspects:**

- 1 **Institutional Framework:** The establishment of the NDMA, SDMA, and DDMA has improved coordination and governance in disaster management, enabling a more organized response.
- 2 **Legal Framework:** The Act provides a legal basis for disaster management, enabling authorities to take necessary actions during disasters and ensuring accountability.
- 3 **National Disaster Response Fund (NDRF):** The creation of NDRF and SDRF has enhanced financial resources for immediate relief and response, reducing dependency on external aid.
- 4 **Focus on Mitigation:** The Act emphasizes disaster risk reduction and mitigation, promoting a proactive approach to disaster management.
- 5 **Capacity Building:** It encourages capacity-building efforts, which have led to better-trained disaster response teams and increased public awareness.
- 6 **Community Involvement:** The Act promotes community participation, recognizing the importance of local knowledge and resources in disaster management.

**Criticisms and Areas for Improvement:**

- 2 **Absence of a provision for declaration of 'disaster-prone zones'.**
- 2 **The Act portrays every disaster as a sudden occurrence and completely fails to take into account that disasters can be progressive in nature as well.**  
For eg. In 2006, over 3,500 people were affected by **dengue**, a disease with a history of outbreaks in India, yet no effective mechanism has been put in place to check such an ordeal. Or **Tuberculosis** is known to kill thousands of people in the country each year but since its occurrence is not sudden or at once, it has not found a place in the Act.
- 3 **Uneven implementation of the Act:** Some states have been more successful in implementing its provisions than others.
- 4 **Inadequate accountability and transparency in the utilization of disaster funds and resources.**
- 5 **Despite the presence of NDRF and NDRF teams, the response time during disasters can still be slow,**

especially in remote areas, highlighting the need for more efficient deployment mechanisms.

- 6 **Overlapping Functions:** The Act calls for establishment of multiple- national level bodies, the functions of which seem to be **overlapping, making coordination between them cumbersome.**
- 7 The **local authorities**, who have a very valuable role to play in the wake of any disaster as first responders, **barely find a mention at all.** There are no **substantive provisions to guide them**, merely a minor reference to taking ‘necessary measures’.
- 8 **Procedural Delays and** Added to that, Inadequate technological capacity for accurate prediction and measurement of the disaster **result in large scale damage.**
- 9 Limited Focus on Urban Areas: which are vulnerable to various types of disasters.
- 10 Inadequate Investment in Mitigation: While the Act promotes mitigation, there has been limited investment in long-term risk reduction measures, such as infrastructure improvements and zoning regulations.
- 11 Data and Research Gaps: need for better data collection, research, and forecasting capabilities to improve disaster preparedness and response.
- 12 Climate Change Adaptation: The Act could benefit from a stronger emphasis on climate change adaptation strategies, as climate-related disasters are becoming more frequent and severe.
- 13 Public Awareness: While the Act promotes public awareness, more efforts are needed to educate and engage the general population in disaster risk reduction.

In conclusion, the Disaster Management Act of 2005 has laid the foundation for a more organized and proactive approach to disaster management in India. However, there are implementation challenges, accountability issues, and areas where further improvements are needed to enhance the country’s resilience to disasters, especially in the face of evolving threats like climate change.

**DISASTER RISK REDUCTION**

Disaster Risk Reduction (DRR) is a systematic approach to minimize the risk of disasters and reduce their impacts on communities, individuals, and infrastructure. It involves a range of activities and strategies aimed at understanding, managing, and mitigating the risks associated with natural and human-made hazards. Here are key elements of Disaster Risk Reduction:

1. Risk Assessment: DRR begins with the assessment of risks, which involves identifying and understanding the potential hazards, vulnerabilities, and exposures that a community or region faces. This assessment helps in prioritizing actions and allocating resources effectively.
2. Hazard Identification: Identifying natural hazards such as earthquakes, floods, hurricanes, and human-made hazards like industrial accidents or conflicts is essential. This step helps in understanding the specific threats a location faces.
3. Vulnerability Analysis: Evaluating the vulnerabilities of people, infrastructure, and ecosystems is crucial. Vulnerabilities can include poorly constructed buildings, inadequate emergency response systems, poverty, and lack of access to education and healthcare.
4. Capacity Building: DRR involves strengthening the capacity of individuals, communities, and institutions to prepare for and respond to disasters. This includes training, education, and the development of local response mechanisms.
5. Early Warning Systems: Implementing effective early warning systems is vital to alert communities about impending disasters, allowing them to take timely and appropriate actions to protect lives and property.
6. Infrastructure Resilience: Ensuring that critical infrastructure, such as hospitals, schools, and transportation networks, is designed and built to withstand the impacts of disasters.
7. Land Use Planning: Proper land use planning and zoning regulations can reduce the exposure of vulnerable areas to hazards, such as avoiding construction in flood-prone zones.
8. Climate Change Adaptation: As climate change increases the frequency and intensity of certain hazards (e.g., extreme weather events), DRR strategies need to incorporate climate change adaptation measures.
9. Community Engagement: Involving local communities in decision-making and planning processes is crucial. Communities often possess valuable traditional knowledge and can actively participate in risk reduction efforts.
10. Policy and Governance: Establishing clear policies and governance structures at local, regional, and national levels is essential for effective DRR implementation. This includes the development of laws and regulations related to disaster management.
11. International Cooperation: Many disasters transcend

national borders, making international cooperation and information sharing critical for addressing global challenges like pandemics and climate-related disasters.

12. **Monitoring and Evaluation:** Regular monitoring and evaluation of DRR efforts help assess their effectiveness and adapt strategies to changing risks.

Overall, Disaster Risk Reduction aims to create a safer and more resilient environment by reducing the underlying factors that contribute to disaster risk and by enhancing preparedness and response capabilities. It is an integral part of sustainable development and a key component of ensuring the well-being of communities in the face of various hazards.

**VARIOUS APPROACHES**

Disaster risk reduction (DRR) encompasses **various approaches** to minimize the impact of natural or man-made disasters. Some key approaches include:

1. **Preparedness and Early Warning Systems:** Developing and maintaining systems to provide early warnings of impending disasters, such as hurricanes or tsunamis, so that people and authorities can take appropriate action.
2. **Mitigation:** This involves actions to reduce the likelihood and severity of disasters. It can include measures like building codes, land-use planning, and infrastructure improvements.
3. **Resilience Building:** Strengthening communities' ability to withstand and recover from disasters. This involves improving infrastructure, enhancing social cohesion, and supporting livelihoods.
4. **Education and Training:** Raising awareness and providing training to individuals and communities on disaster preparedness, response, and recovery.
5. **Risk Assessment:** Identifying and assessing vulnerabilities, hazards, and exposure to risks to make informed decisions about risk reduction strategies.
6. **Community Involvement:** Encouraging active participation of local communities in planning and decision-making processes related to disaster risk reduction.
7. **Government Policies and Regulations:** Implementing and enforcing policies and regulations that promote safety and resilience, such as building codes and zoning laws.
8. **Insurance and Risk Transfer:** Using insurance mechanisms and risk transfer strategies to share the financial burden of disasters among different stakeholders, including governments, insurers, and

individuals.

9. **Climate Change Adaptation:** Recognizing the link between climate change and increased disaster risk and implementing strategies to adapt to changing climate conditions.
10. **International Cooperation:** Collaborating with other nations and organizations to share knowledge, expertise, and resources for disaster risk reduction, especially in the face of transboundary and global hazards.

These approaches can vary in importance and application depending on the specific context and the types of hazards a region faces. An integrated approach that combines several of these strategies is often the most effective in reducing disaster risk.

**What was the Yokohama Strategy.**

In the 1990s, when the UN declared **the decade as International Decade of Natural Disasters Reduction**, a gradual evolution of new approach started. One of the most important steps to give a concrete shape to new approach in disaster management was the Yokohama Conference in 1994.

At the end of this conference a new Yokohama Strategy for Disaster Reduction was adopted aimed at minimizing the losses to human lives and property due to disasters.

**This strategy inter alia included the following:**

- 1 A global culture for prevention of disasters must be cultivated
- 2 The vulnerable countries and communities should frame and implement policies of self reliance.
- 3 Education and training mechanisms should be strengthened
- 4 The Community participation to reduce vulnerabilities should be emphasized
- 4 NGOs should be given broader platform to work
- 5 UN agencies should be strengthened.
- 6 In 1994 the **World Conference on Natural Disaster Reduction** was held in Yokohama, Japan.
  - a The conference **adopted the Yokohama strategy** and declared the **decade 1990-2000 as the International Decade for Natural Disaster Reduction (IDNDR)**.
- 7 **United Nations Office for Disaster Risk Reduction (UNISDR)** is the successor to the secretariat of IDNDR and was **created in 1999** to implement UN Disaster Risk Reduction strategy.



- ❖ **The Hyogo Framework for Action (HFA) is a 10-year plan (2005-2015)** to make the world safer from natural hazards. Priorities such as, Disaster risk reduction, identification, assessment through legal and policy frameworks, disaster preparedness and use of innovation was adopted.

**Sendai Framework for Disaster Risk Reduction**

It was approved at the 3rd World Conference on Disaster Risk Reduction in March 2015, held in Sendai, located in Japan. It is the successor to the **Hyogo Framework** that came into effect from 2005 and ended in 2015, with the approval of Sendai Framework.

- 1 The framework has a time frame of 15 years, i.e., 2015-2030.
- 2 United Nations International Strategy for Disaster Reduction (UNISDR) is tasked with the implementation, follow-up, support and review of the Sendai Framework.
- 3 The predecessor to Sendai Framework for Disaster Risk Reduction was the Hyogo Framework for Action (2005-2015), an all-inclusive international accord on disaster risk reduction. The Hyogo framework was successful in galvanizing many stakeholders including the commercial sector, NGOs, scientists and governments in making progress towards disaster risk reduction.

**SFDRR – Objectives**

- 1 SFDRR aims at achieving a substantial reduction of disaster risk and disaster losses in lives, livelihoods and health; in the environmental, cultural, social, physical-economic assets of people, communities, businesses over the next 15 years.
- 2 The framework comprises of a set of standards, an all-encompassing framework containing achievable targets and an instrument with a legal basis for disaster risk reduction.
- 3 The framework calls for the sharing of responsibility among the stakeholders including the private sector, the government and the other stakeholders.
- 4 It highlights the concerns on human health and well-being that are common to disaster risk reduction, climate change and sustainable development.

**Sendai Framework – High Priorities**

- 1 Understanding the disaster risk.
- 2 Strengthening the governance of disaster risks for managing disaster risks.
- 3 Investments in disaster risk reduction for resilience

- 4 Improving the disaster preparedness to ensure effective response, recovery, reconstruction and rehabilitation.

**ROLE OF FIRST RESPONDER**

First responders play a crucial role in disaster management. They are the individuals or teams who are among the first to arrive at the scene of a disaster. Their roles include:

1. Search and Rescue: First responders locate and rescue individuals who are trapped or injured due to the disaster. This can involve firefighters, paramedics, and specialized search and rescue teams.
2. Medical Care: Paramedics and medical professionals provide essential medical care to the injured, stabilizing their conditions and ensuring they receive proper treatment.
3. Evacuation: First responders help evacuate people from danger zones, ensuring their safety during disasters like hurricanes, wildfires, or industrial accidents.
4. Firefighting: Firefighters combat fires that can result from various disasters, such as earthquakes, wildfires, or building collapses.
5. Law Enforcement: Police officers maintain order, secure affected areas, and assist with traffic control and crowd management.
6. Communication: First responders establish and maintain communication networks to coordinate relief efforts, share information, and ensure the safety of responders and the public.
7. Logistics: They manage logistics, including the distribution of resources, such as food, water, and shelter, and the deployment of additional personnel and equipment.
8. Psychological Support: Mental health professionals and counselors provide psychological first aid to survivors, helping them cope with trauma and stress.
9. Coordination: First responders collaborate with local, state, and federal agencies, as well as non-governmental organizations, to ensure a coordinated and effective response.
10. Assessment and Reporting: They assess the extent of damage, casualties, and resource needs, reporting this information to higher authorities for resource allocation and decision-making.

First responders play a vital role in saving lives, reducing suffering, and helping communities recover from disasters. Their actions are often a matter of life and

death in the immediate aftermath of such events.

**RELATIONSHIP BETWEEN DISASTER AND DEVELOPMENT**

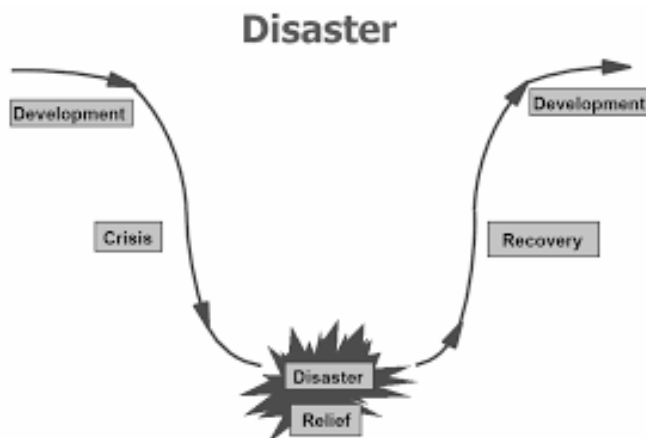
Disasters and development are closely linked. Disasters can both destroy development initiatives and create development opportunities.

Development schemes can both increase and decrease vulnerability.

In the traditional approach to disasters, the attitude was that the disasters, especially natural ones, were an act of god and as such were beyond human control; accepting death and damage to property was part of the costs.

With such an attitude, most development plans were designed without consideration for the effect disasters would have on community plans and vice versa. When a disaster did occur, the response was directed at meeting emergency needs and cleaning up.

In the current approach, it has been realized that much more can and need to be done to reduce the severity of hazards and disasters.



**Model of a Disaster Cycle**

A growing body of knowledge on the relationships between disasters and development indicates four basic themes as follows:

- 1 Disasters set back development programming, destroying years of development initiatives.
- 2 Rebuilding after a disaster provides significant opportunities to initiate development programmes.
- 3 Development programmes can increase an area's susceptibility to disasters.
- 4 Development programmes can be designed to decrease the susceptibility to disasters and their negative consequences.

In order to clarify the ways in which disasters and development interact, it is helpful to distinguish between economic and social elements of development. These social and economic development work directly or indirectly to decrease or increase disaster risk. The table below outlines the relation between social and economical development with disasters

	Economics Development	Social Development
<b>Disaster limits development</b>	Destruction of fixed assets. Loss of production capacity, market access of material inputs. Damage to transport, communications or energy infrastructure. Erosion of livelihoods, savings and physical capital	Destruction of health or education infrastructure and personnel. Death, disablement or migration of key social actors leading to an erosion of social capital
<b>Development causes disaster risk</b>	Unsustainable development practises that create wealth for some at the expense of unsafe working or living conditions for others or degrade the environment	Development paths generating cultural norms that promote social isolation or political exclusion
<b>Development reduces disaster risk</b>	Access to adequate drinking water, food, waste management and a secure dwelling increase people's resiliency. Trade and technology can reduce poverty. Investing in financial mechanisms and social security can cushion against vulnerability	Building community cohesion, recognising excluded individuals and social groups (such as women), and providing opportunities for greater involvement in decision-making, enhanced educational and health capacity increases resiliency

Source: UNDP (2004: 20)

Thus, the policy makers cannot ignore the relationship between the disaster and development. Projects are thus being designed to include disaster recovery programmes and with long term development needs in mind. Disasters can significantly impede the effectiveness of development resource allocation.

**DISASTER PROFILE AND VULNERABILITY OF INDIA**

India is susceptible to various natural and man-made disasters due to its diverse geographical and climatic conditions. Here's a profile of some of the major disaster types and vulnerabilities in India:

**1. Natural Disasters:**

- ❖ Floods: India experiences annual monsoon rains, leading to recurrent floods in many regions, causing significant damage and displacement.
- ❖ Cyclones: Coastal areas, especially in the Bay of Bengal, are vulnerable to tropical cyclones, which can result in storm surges and extensive damage.
- ❖ Earthquakes: India is seismically active, with several earthquake-prone zones, including the Himalayan region. The 2001 Gujarat earthquake and the 2015 Nepal earthquake are recent examples of the devastation earthquakes can cause.
- ❖ Droughts: Periodic droughts affect agricultural productivity and water availability in various parts of the country.

**2. Man-Made Disasters:**

- ❖ Industrial Accidents: India has a rapidly growing

industrial sector, and accidents, such as chemical spills or fires, can have severe consequences, as seen in cases like the Bhopal gas tragedy.

- ❖ **Urban Flooding:** Rapid urbanization, inadequate drainage systems, and poor waste management contribute to urban flooding in many cities.
- ❖ **Terrorism:** India has faced several instances of terrorism, including attacks in Mumbai in 2008 and various incidents in conflict-prone regions.
- ❖ **Nuclear and Radiological Hazards:** India's nuclear facilities pose a potential risk in the event of accidents or security breaches.

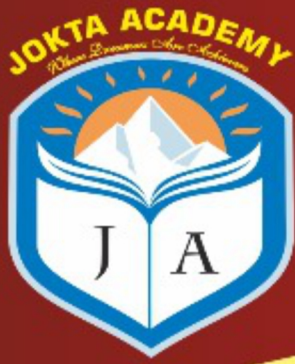
**3. Vulnerabilities:**

- ❖ **High Population Density:** India's large population density makes it challenging to manage and respond to disasters effectively, particularly in densely populated urban areas.
- ❖ **Poverty:** A significant portion of the population lives in poverty and is more vulnerable to the impacts of disasters due to inadequate housing and limited access to resources.
- ❖ **Climate Change:** India is susceptible to the impacts of climate change, leading to increased instances of extreme weather events like floods, droughts, and heatwaves.
- ❖ **Lack of Infrastructure:** Inadequate infrastructure, including housing, transportation, and healthcare facilities, hampers disaster preparedness and response efforts.

India has taken steps to address its vulnerabilities, including disaster management policies, early warning systems, and building resilience at the community level. However, the scale and diversity of the country make disaster management an ongoing challenge. Efforts are focused on improving disaster preparedness, response, and recovery to minimize the impact of these various disasters.

**Miscellaneous Topic**

<b>Disaster stage</b>	<b>Stage of Disaster Management</b>	<b>Role of Social Media</b>	<b>Implication in Practice</b>
Pre-Disaster	<b>Mitigation</b>	Incorporation of risk reduction activities and preventive activities	<b>Risk Reduction</b>
Pre-Disaster	<b>Preparedness</b>	Provide disaster warnings and implement crisis communication activities Signal and detect disasters	<b>Risk Reduction</b> <b>Early Warning</b>
Disaster	<b>Response</b>	Deliver and analyse news coverage of the disaster Provide and receive disaster response information Send and receive requests for help or assistance (Re)connect community members	<b>Information Dissemination</b>
Post-Disaster	<b>Recovery</b>	Raise donation, encourage volunteerism and develop awareness of an event Provide and receive information about (and discuss) recovery, and rebuilding	<b>Information Dissemination</b> <b>Community Empowerment</b>



# JOKTA ACADEMY

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