



# Disaster Management

# Disaster Management

# Notes Making

# Syllabus

**Disaster and Disaster  
Management**

# Syllabus Deciphered from Previous Year Papers

1. Introduction
2. Disaster Management Cycle
3. DM Architecture and Institutions in India
4. International conventions on Disaster Management
5. Types of Disasters and Mechanisms to Manage Them

# Previous Year Questions

- What is disaster management? Discuss the steps required to tackle natural disasters.
- Discuss the recent measures initiated in disaster management by the Government of India departing from the earlier reactive approach.
- Disaster preparedness is the first step in any disaster management process. Explain how hazard zonation mapping will help disaster mitigation in the case of landslides.

- Describe various measures taken in India for Disaster Risk Reduction (DRR) before and after signing 'Sendai Framework for DRR (2015-2030)'. How is this framework different from 'Hyogo Framework for Action, 2005'?
- How important are vulnerability and risk assessment for pre-disaster management? As an administrator, what are key areas that you would focus on in a Disaster Management System?
- Vulnerability is an essential element for defining disaster impacts and its threat to people. How and in what ways can vulnerability to disasters be characterized? Discuss different types of vulnerability with reference to disasters.



# Flow of this Disaster Management Module

Basics of DM

Keywords used in DM

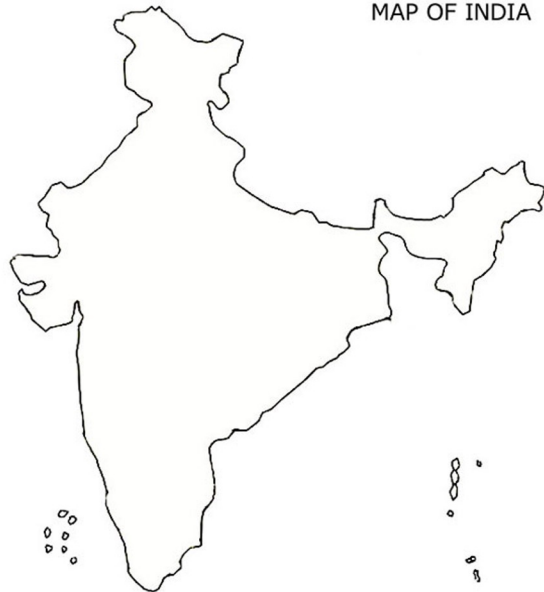
DM policies in India and  
International Conventions

Types of Disaster and Ways to  
Manage them

# Introduction to Disaster Management

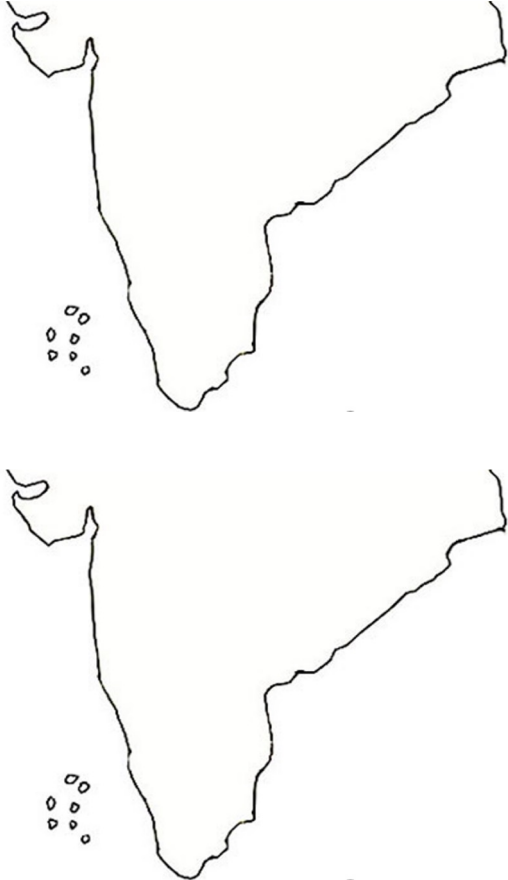
# What is Disaster?

- Disaster is a major disruption in society's functioning which causes major social, economic and ecological losses.



# What is Disaster?

- According to Disaster management Act 2005:
  - ❑ A Disaster is an event, which gives rise to casualties and damages to properties, infrastructure, environment, essential services or means of livelihood on such a scale which is beyond the normal capacity of the affected community to cope with.



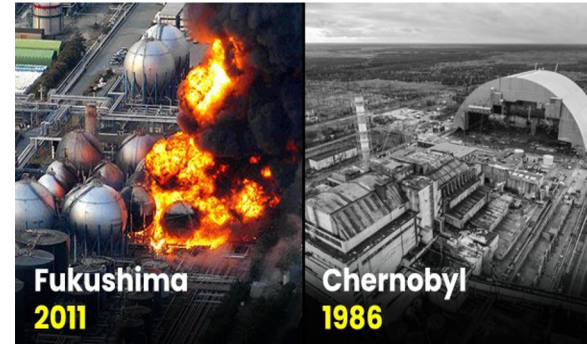
# Classification of Disaster

1. Natural Disaster: by Natural Forces (Meteorological, Geological Origin).



1. Man-made Disaster: by some Human Activities.

- Eg: Bhopal Gas Tragedy, Chernobyl Nuclear Disaster.



# Factors of Disaster

- A disaster occurs with a combination of hazard, vulnerability and poor capacity.
- Hazard
- Vulnerability
- Capacity

$$\text{Disaster} = \frac{\text{Hazard} \times \text{Vulnerability}}{\text{Capacity}}$$

# What is Hazard?



- Any phenomenon / Event that has the ability to cause disruption by affecting the livelihood and loss of life & property .
- Hazardous Phenomena:
  1. Floods
  2. Earthquake etc.

# Types of Hazard

- Geological Hazard
- Hydrological Hazard
- Meteorological Hazard
- Anthropogenic Hazard





# Hazard Vs Disaster

Hazard	Disaster
A hazard is a dangerous physical condition or event that pose threat to life.	Disaster is a consequence of a hazard which causes damages to human life.
Natural hazard are inevitable.	Disasters are preventable.

# What is Vulnerability?

- The degree of susceptibility of a community to the impact of hazards. i.e., people's inability to withstand the impact of a hazard.

# Types of Vulnerability

- Economic Vulnerability
- Physical Vulnerability



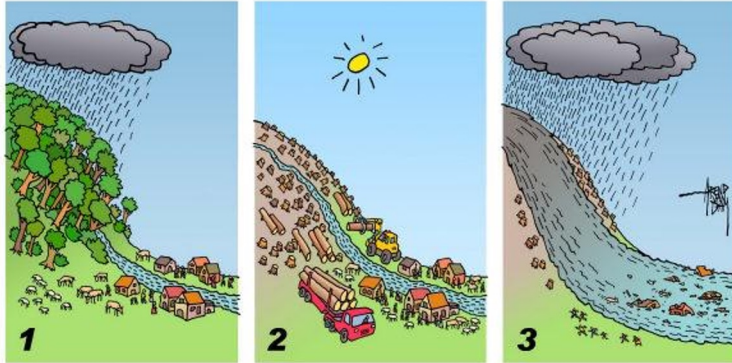
# Types of Vulnerability

- Social Vulnerability

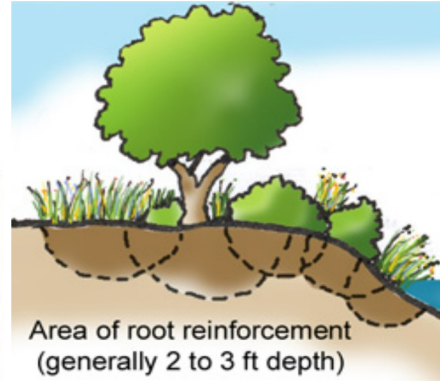
The image displays two screenshots of The Guardian website. The top screenshot shows a news article titled "Four times as many women died in tsunami" by John Aglionby in Jakarta, categorized under "Global development". A yellow banner indicates "This article is more than 16 years old". The bottom screenshot shows an article titled "Why gender disaster data matters: 'In some villages, all the dead were women'" by Philippa Ross in Suva, dated Mon 8 Sep 2014 16:23 BST, categorized under "Working in development". Both screenshots include navigation menus, search bars, and "Most viewed" sections.

# Types of Vulnerability

- Environmental vulnerability



*deforestation and flooding*



## TOP STORIES

**Mangaluru: Destruction of Western Ghats reason for floods in Kodagu and Kerala - NEPC**

Sun, Aug 19 2018 09:18:27 PM

# Capacity

- Capacity is the strengths, qualities, and resources available to manage and decrease disaster risks.

# Equation in Brief

$$\text{Disaster} = \frac{\text{Hazard} \times \text{Vulnerability}}{\text{Capacity}}$$

# What is Disaster Management?



# What is Disaster Management

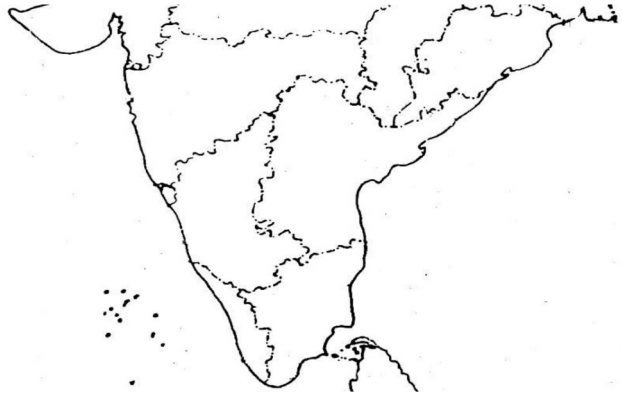


# Approaches to Disaster Management

- Reactive and Relief Centric



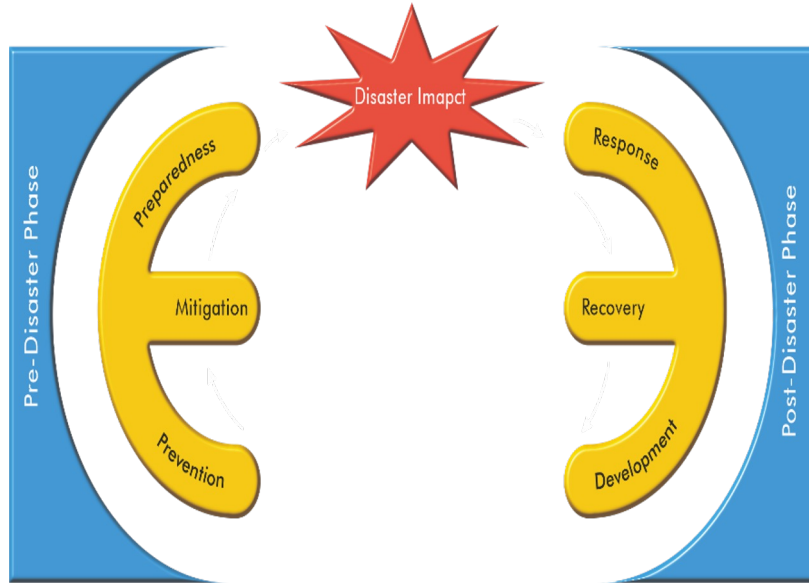
# Approaches to Disaster Management



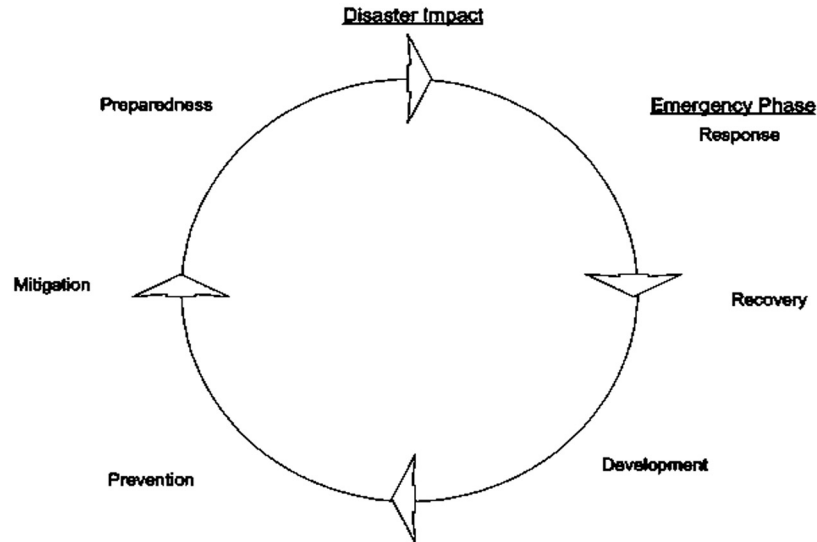
- Holistic Approach --> Proactive and Reactive Approach
- Integration of Pre-Disaster and Post Disaster Efforts



# Holistic Approach in Disaster Management



- Pre-Disaster → Prevention, Mitigation and Preparedness.
- Post-Disaster → Response, Recovery and

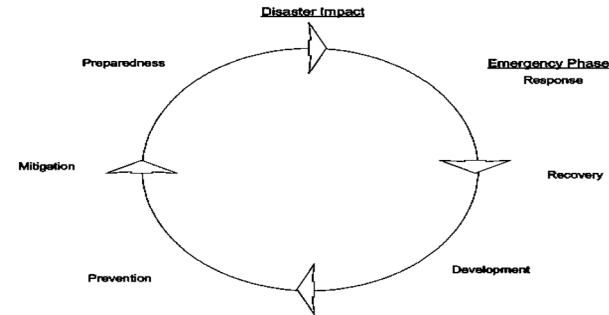


# What is Disaster Management According to DM Act 2005?

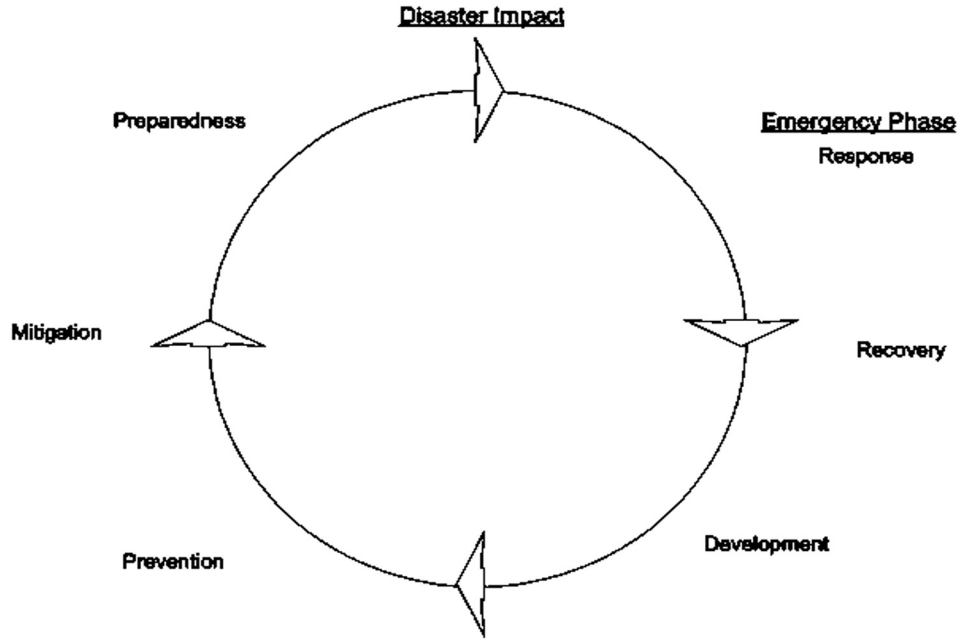
# Disaster Management According to DM Act 2005

- As per the Disaster Management Act, 2005, "Disaster Management" means a continuous and Integrated process of planning, organizing, coordinating and implementing measures which are necessary for:

1. Prevention of any disaster.
2. Mitigation or reduction of risk of any disaster.
3. Preparedness to deal with any disaster.
4. Prompt response to any threatening disaster situation or disaster
5. Assessing the severity or magnitude of effects of any disaster; evacuation, rescue and relief
6. Rehabilitation and reconstruction
7. Capacity-building



# Crux



# Pre-Disaster Phase

- **Prevention:** Actions to prevent the occurrence of disasters.

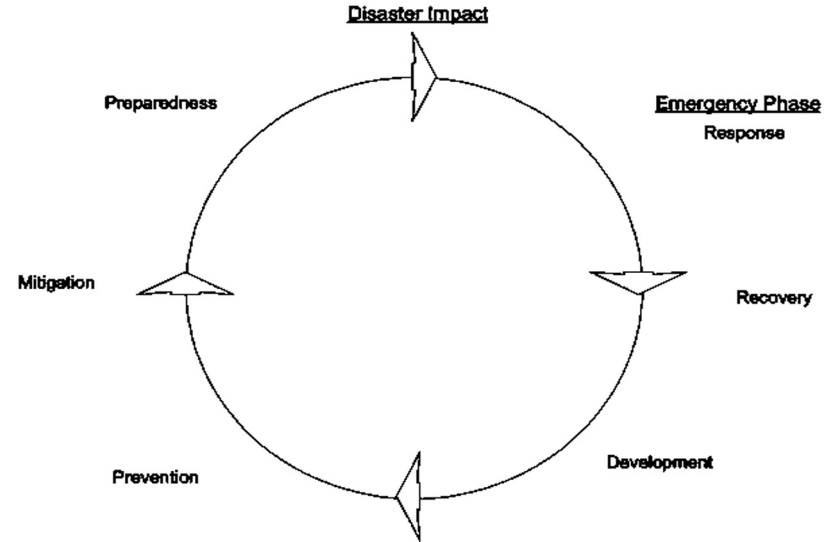
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## Kolkata flyover collapse: A disaster that was waiting to happen

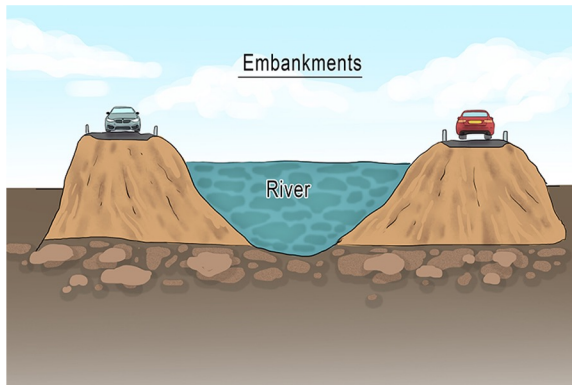




# Pre-Disaster Phase



- Mitigation: Measures taken to reduce both the effects of the hazard and vulnerable conditions.



# Pre-Disaster Phase

- Preparedness: are plans undertaken ahead of disaster to help individuals & communities respond to disasters.



The NEWS  
Minute

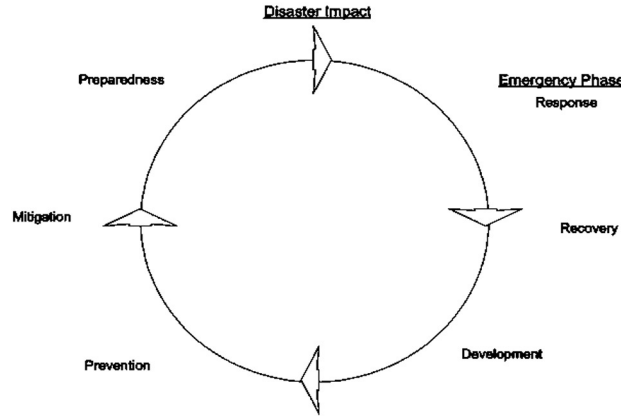
## 6,500 people evacuated along Andhra coast as part of mock drill for tsunami

The disaster management department office located in Krishna district monitored the mock drills in the state.



# Post-Disaster Phase

- Response:
  1. Search & Rescue
  2. Evacuation
  3. Medical Aid
  4. Food & Water



## DISASTER OPERATIONS

Before

During

After

Response

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Cyclone Jawad: IMD issues red alert in 4 districts of Odisha; advises fishermen not to venture into sea from Dec 3 to 5

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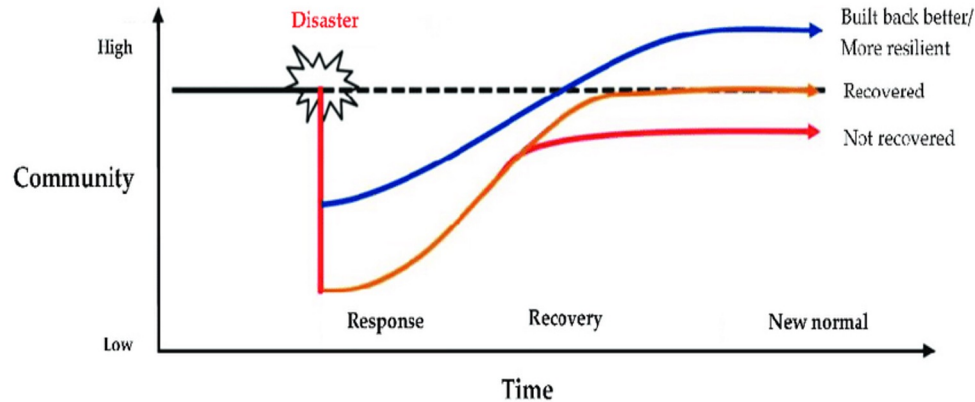
ANI | 02 Dec 2021, 08:49 PM IST

Post a Comment

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# Post-Disaster Phase

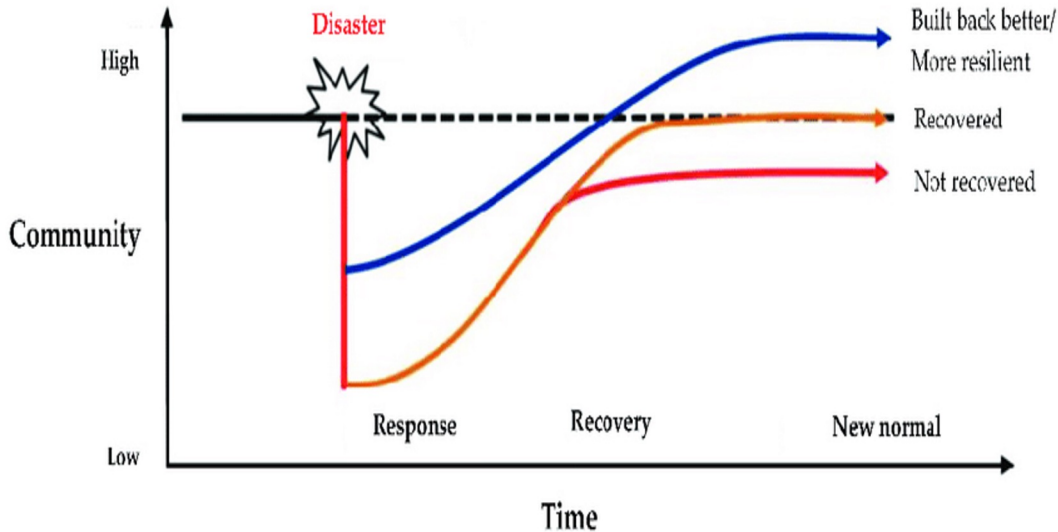
- **Recovery:** refers to the process of assisting communities in resuming normal operations following a disaster. Involves rehabilitation and reconstruction.



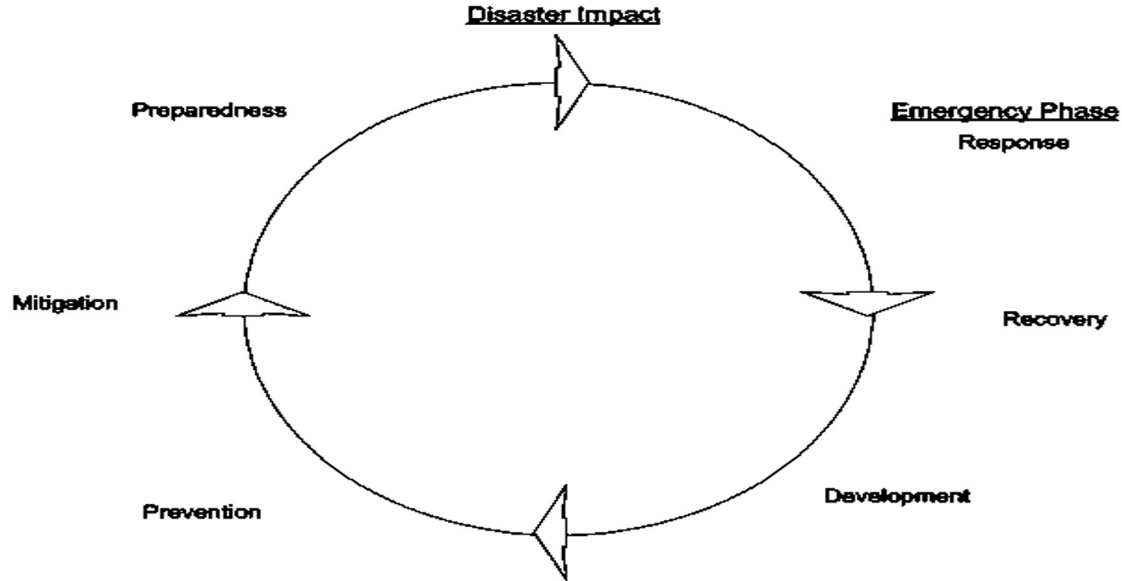
# Post-Disaster Phase

- **Development:** It is an ongoing activity.

**Example:** Long term disaster reduction measures.



# Summary



# Need for Disaster Management

- Climate Change
- Haphazard Urbanization
- Improper Land Use
- Poverty

# Mains Questions



# Mains Questions

Q. Vulnerability is an essential element for defining disaster impacts and its threat to people. Discuss different types of vulnerability with reference to disasters.

# Flow of this Disaster Management Module



Basics of DM

keywords used in DM

DM policies in India and  
International Conventions

Types of Disaster and Ways to  
Manage them

# Syllabus

**Keywords in  
Disaster  
Management**

# Keywords in Disaster Management

- **Structural Measures:** This refers to the numerous physical infrastructure and amenities that are required to manage a disaster.



# Keywords in Disaster Management

- **Non-Structural Measures:** This refers to the Rules and Laws that aid the governance aspect of the Disaster Management.



# Keywords in Disaster Management

$$\text{Disaster} = \frac{\text{Hazard} \times \text{Vulnerability}}{\text{Capacity}}$$

- Disaster Risk Reduction (DRR): Is a 'systematic development and application of policies, strategies and practices to minimize vulnerabilities, hazards and disaster impacts in a region'.



# Keywords in Disaster Management

- Disaster Preparedness: Is “the knowledge and capacities developed effectively to anticipate, respond to, and recover from, the impacts of hazard events ”



The  
NEWS  
Minute

## 6,500 people evacuated along Andhra coast as part of mock drill for tsunami

The disaster management department office located in Krishna district monitored the mock drills in the state.



# Keywords in Disaster Management

- **Disaster Response:** Response measures that are taken as soon as possible after receiving an early warning or immediately after a disaster.





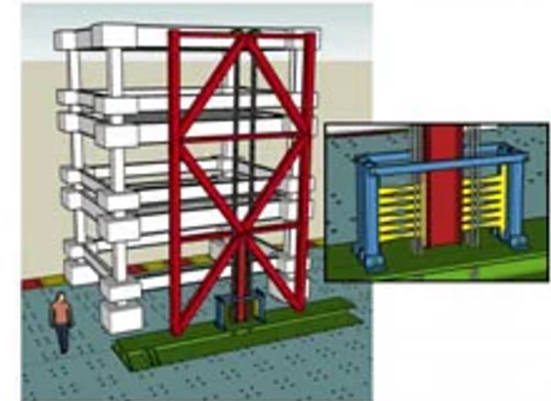
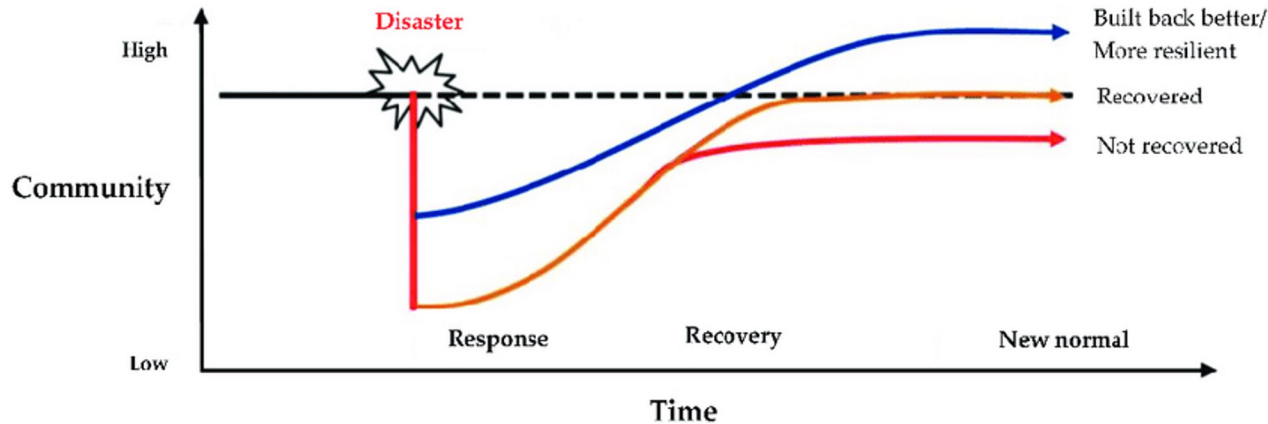
# Keywords in Disaster Management

- **Disaster Risk Governance:** Is the process by which government officials, media, commercial sector and civil society work together at various levels to manage and mitigate disaster risks.
- It requires having adequate capacity and resources in place to prevent and prepare for disasters.



# Keywords in Disaster Management

- **Build Back Better:** To have a better and resilient infrastructure in the recovery and restoration phase is considered as “Build Back Better” (BBB).



# Keywords in Disaster Management

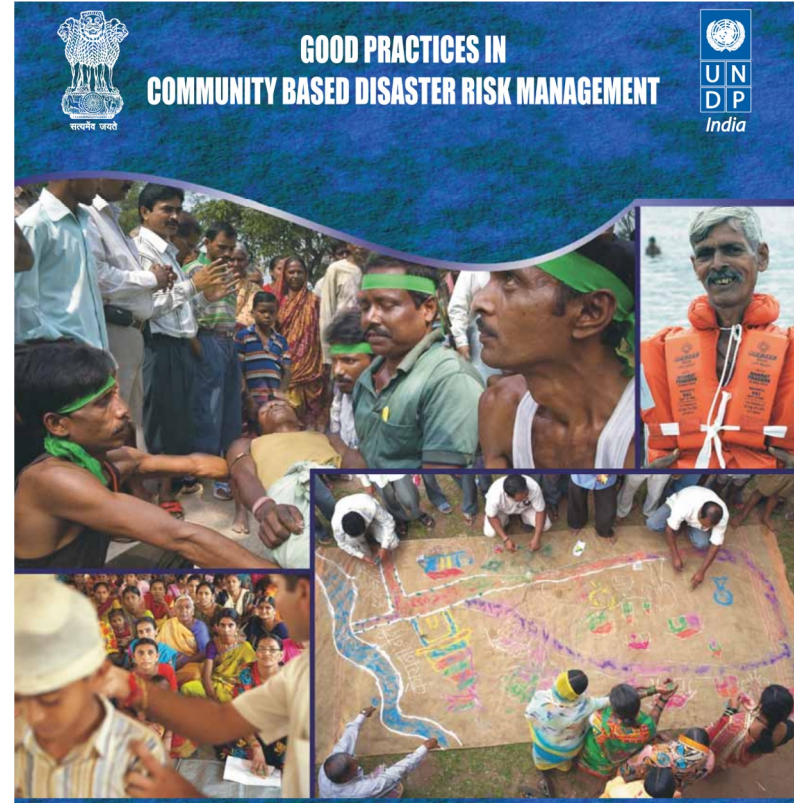
- **Capacity Development:** The need for governments and communities to improve their technological, financial, and administrative skills in order to deal with the Hazards at multiple levels.

# Keywords in Disaster Management

- Community-based disaster management (CBDM) is a strategy for enhancing communities' ability to assess their vulnerability to both human-caused and natural hazards, as well as develop strategies and resources to prevent and/or mitigate the impact of identified hazards, as well as respond, rehabilitate, and rebuild after they occur.

# Keywords in Disaster Management

- **Community Based Disaster Management:**  
Participation of locals by using their traditional knowledge and skills to manage disasters and considering them as a first line of response.



# Flow of this Disaster Management Module



Basics of DM

keywords used in DM

DM policies in India and  
International Conventions

Types of Disaster and Ways to  
Manage them

# DISASTER MANAGEMENT





**EVOLUTION OF  
DISASTER  
MANAGEMENT  
IN INDIA**



# Evolution of Disaster Management in India

- The International decade for disaster reduction (1990-2000) prompted India's Government to pay attention to Natural disasters.

# Evolution of Disaster Management in India

- The Government of India set up a High-Powered Committee (HPC) in August 1999 and a National Committee after the Gujarat earthquake in 2001, for making recommendations on the preparation of Disaster Management plans and suggesting effective mitigation mechanisms.
- Until 2001, the Ministry of Agriculture was in charge of disaster management. It was transferred to the Ministry of Home Affairs in 2002.

# Evolution of Disaster Management in India

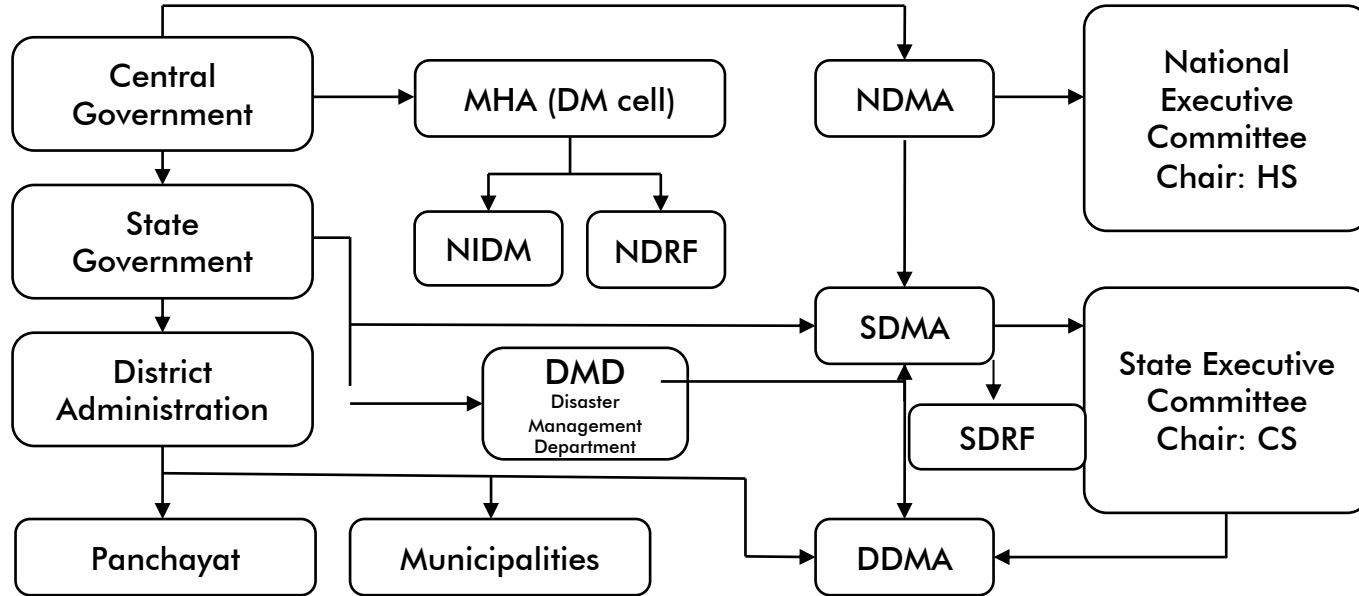
- After 2004 Tsunami, the Disaster Management Act was passed in 2005.

# Before Disaster Management Act 2005

# NDMA

## DISASTER MANAGEMENT ACT 2005

# National Disaster Management Act 2005



**LEGAL  
INSTITUTIONAL  
FRAMEWORK  
OF DM act 2005**

# National Disaster Management Authority (NDMA)

- Apex body for disaster management.
- It is headed by the Prime Minister.



# Functions of NDMA

- NDMA allows departments to undertake emergency procurement of items for rescue and relief during a disaster.
- Approves the National Disaster Management Plans and DM plans of the Central Ministries/Departments.
- Lays down policies, plans and guidelines.



# Functions of NDMA

NDMA gives general directions and orders for:

- National Disaster Response Force (NDRF)
- National Institute of Disaster Management (NIDM)



The logo for NIDM is located at the bottom center of the slide. It consists of the lowercase letters 'nidm' in a green, sans-serif font. A small red circle is placed above the letter 'i'.

Resilient India - Disaster Free India

# National Disaster Response Force (NDRF)

- NDRF was constituted under the DM Act 2005.
- NDRF has strength of 15 battalions.



# National Disaster Response Force (NDRF)

## Role of NDRF

- To provide man-power during rescue and relief in case of disasters.
- Assistance to civic authorities in the delivery of relief materials.
- Coordination of rescue efforts with local agencies.

### NEPAL EARTHQUAKE -APR. 2015

On 25<sup>th</sup> April 2015, Nepal was rocked by a devastating Earthquake of magnitude 7.8, resulting in massive loss of lives and infrastructure and raised the fear of a humanitarian disaster across the Himalayan nation. The tremors were also felt across the areas in whole of Northern India.

National Disaster Response Force (NDRF) deployed its 16 USAR teams (03 teams of 08Bn, 04 teams of 07 Bn, 03 teams of 08 Bn, 03 teams of 02 Bn and 03 teams of 09 Bn) comprising of more than 700 rescuers along with 18 dogs trained in USAR operation with latest gadgets at various earthquake hit areas of Nepal on the directions of the Government of India.



# National Institute of Disaster Management (NIDM)

- For Human Resource Development and Capacity Building in DM.
- Research and Development.



# National Executive Committee (NEC)

- The NEC comprises the Union Home Secretary as the Chairperson.
- Secretaries of all relevant ministries including the NDMA are a part of it.
- The NEC is the executive committee of the NDMA.
- It is the Coordinating and monitoring body for disaster management.

# State Disaster Management Authority (SDMA)

It is headed by  
the Chief  
Minister.

It lays down  
policies and  
plans for DM in  
the State.

# State Executive Committee (SEC)

The State Government shall constitute a State Executive Committee (SEC) to assist the SDMA in the performance of its functions.

The SEC will be headed by the Chief Secretary.

# State Disaster Response Force (SDRF)

- States have their own SDRF.





# District Disaster Management Authority (DDMA)

It is headed by the  
District Collector.

# DM Act Funds



- Funds
  - Response fund
  - Mitigation fund

# DM Act Funds

- National Disaster Response Fund



- State Disaster Response Fund

# DM Act Funds

- National disaster mitigation fund.
- For projects exclusively for the purpose of mitigation.

## NOTIFICATION

New Delhi, the 5th February, 2021

**S.O. 564(E).**—In exercise of the powers conferred by sub-section (3) of section 1 of the Disaster Management Act, 2005 (53 of 2005), the Central Government hereby appoints the 5th day of February, 2021 as the date on which the provisions of sub-section (1) of section 47 of the said Act shall come into force.

[F. No. 32-04/2020-NDM.I]

SANJEEV KUMAR JINDAL, Jt. Secy.

- State Disaster Mitigation Fund



**CHALLENGES  
IN DM ACT  
2005**

# Challenges in DM Structure in India

- NDMA Issues



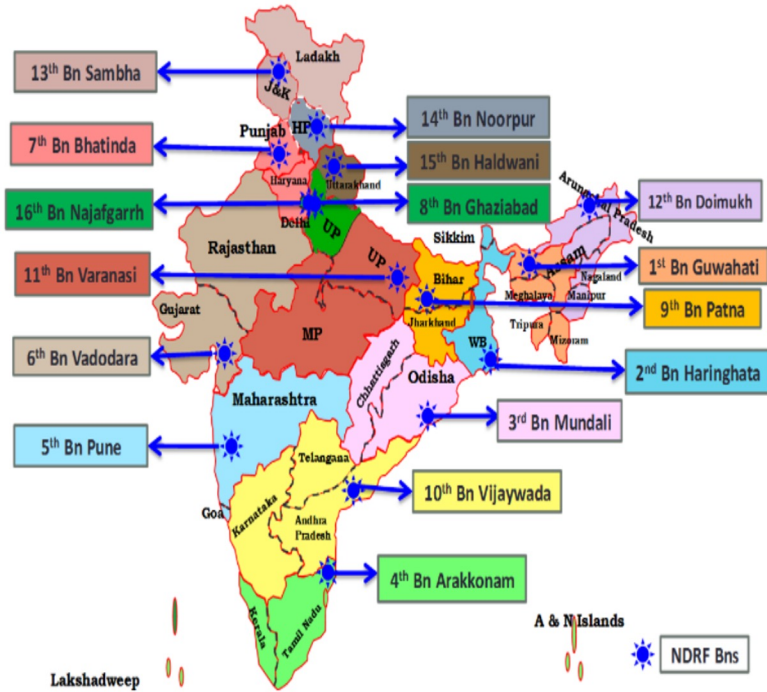
# Challenges in DM Structure in India

- NEC

Issues

- NIDM Issues

LOCATION OF NDRF BNs



Map showing NDRF Bns locations and their respective area of responsibility

Src: ndma.gov.in

# Challenges in DM Structure in India

- NDRF Issues



# Challenges in DM Structure in India

- Improper implementation of the structure.

Goa	▼
<b>SDRF yet to be raised ▲</b>	
Gujarat	▼
Haryana	▼
Himachal Pradesh	▼
Jharkhand	▼
<b>SDRF yet to be raised ▲</b>	

# Challenges in DM Structure in India

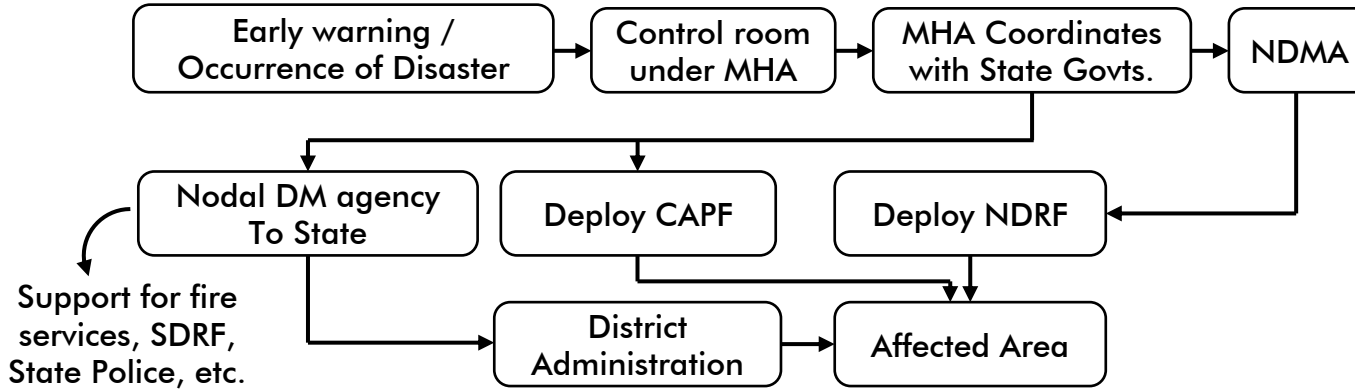
- Funding Issues



firstpost.com

# DM Standard Operating Procedure

How is Disasters managed in India.



# National Platform for Disaster Risk Reduction



# National Platform for Disaster Risk Reduction

- Multi-stakeholder Platform headed by HM.
- A platform for discussion and deliberation on DM.
- Give advice to the government on DM.



An aerial photograph of a city, likely New York City, showing a grid of streets and buildings. A large red circle is superimposed over the center of the image, containing the title text.

# International Conventions on Disaster Management

# UN and Disaster Management

- Prevalence of traditional approach prior to 1990s.
- In the 1990s, the UN declared the decade, 1990-2000 as International Decade of Natural Disasters Reduction.

# UN and Disaster Management

- World Conference on Disaster Risk Reduction gave birth to three crucial outcomes:
  - ❑ Yokohama Strategy - 1994
  - ❑ Hyogo Framework for Action - 2005
  - ❑ Sendai Framework for Action - 2015



# Yokohama Strategy for a Safer World

- A global culture for prevention of disasters must be cultivated.
- The vulnerable countries and communities should frame and implement policies of self reliance.
- Community participation to reduce vulnerabilities should be emphasized.
- NGOs should be given broader platforms to work.

# Hyogo Framework for Action

- India is a signatory to the Hyogo Framework for Action.
- Aims at global efforts to reduce socio-economic and environmental losses due to a disaster i.e. to focus on Disaster Risk Reduction.
- It has 3 strategic goals and 5 priority action.

# Hyogo Framework for Action

The Strategic Goals are:

- Integration of disaster risk reduction into sustainable development policies, planning and programming at all levels .
- **Capacity Development:** Development and strengthening of institutions, mechanisms and capacities at all levels in particular at the community level that can systematically contribute to building resilience to hazards.
- **Focus on pre-disaster measures:** Systematic incorporation of risk reduction approaches into the design and implementation of emergency preparedness, response and recovery programmes in the reconstruction of affected communities.

# Sendai Framework for Action (2015-2030)

- In 2015, UN Member States adopted the Sendai Framework for Disaster Risk Reduction 2015-2030 at the Third UN World Conference on Disaster Risk Reduction in Sendai City, Japan.
- It is the successor instrument to the Hyogo Framework for Action.

# Sendai Framework for Action (2015-2030)

- The Framework aims to achieve the substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries over the next 15 years.

# Sendai Framework for Action (2015-2030)

## 4 Priority Areas of Sendai Framework:

1. Understanding Risk.
2. Strengthening Risk Governance.
3. Investing in disaster risk reduction for resilience.
4. Improving capacities for disaster response as well as for building back better after disasters.

# Sendai Framework for Action (2015-2030)

## 7 Targets of Sendai Framework:

1. Substantially reduce global disaster mortality by 2030.
2. Substantially reduce the number of affected people globally by 2030.
3. Reduce economic loss due to disaster.
4. Reduce damage to critical infrastructure and disruption of basic services due to disaster.

# Sendai Framework for Action (2015-2030)

5. Increase the number of countries with national and local disaster risk reduction strategies.
6. Increase international cooperation and support to developing countries.
7. Increase the availability of multi-hazard early warning systems.



# Asian Ministerial Conference on Disaster Reduction

- The AMCDRR is a biennial meeting co-hosted by the United Nations Office for Disaster Risk Reduction and various Asian countries (UNISDR).
- It was established in 2005.

# Asian Ministerial Conference on Disaster Reduction

- At the AMCDRR, Prime Minister outlined a ten-point agenda, on Disaster Risk Reduction.
- In 2016, the Asian Ministerial Conference on Disaster Risk Reduction was organized in New Delhi with the goal of providing a platform for member countries to share the best practices in disaster risk reduction.

# Asian Ministerial Conference on Disaster Reduction

Two important outcomes of 2016 conference:

1. 'New Delhi Declaration'
2. 'Asian Regional Plan for Implementation of the Sendai Framework'.



**Prime Minister's  
10-Point Agenda**

# Prime Minister's 10-Point Agenda on Disaster Risk Reduction

1. All development sectors must imbibe the principles of disaster risk management.
2. Risk coverage must include all, starting from poor households to SMEs to Multinational corporations to nation states.
3. Women's leadership and greater involvement should be central to disaster risk management.

# Prime Minister's 10-Point Agenda on Disaster Risk Reduction

4. Invest in risk mapping globally to improve global understanding of nature and disaster risks.
5. Leverage technology to enhance the efficiency of disaster risk management efforts.
6. Develop a network of universities to work on disaster-related issues.

# Prime Minister's 10-Point Agenda on Disaster Risk Reduction

7. Utilize the opportunities provided by social media and mobile technologies for disaster risk reduction.
8. Build on local capacity and initiative to enhance disaster risk reduction.
9. Bring about greater cohesion in international response to disasters.
10. Make use of every opportunity to learn from disasters and to achieve that, there must be studies on the lessons after every disaster.



**National Disaster  
Management  
Plan, 2016**



# National Disaster Management Plan, 2016

- First ever national plan prepared by a country for disaster management.
- It aims to "Make India disaster resilient, achieve substantial disaster risk reduction, and significantly decrease the losses of life, livelihoods, and assets – economic, physical, social, cultural and environmental – by maximizing the ability to cope with disasters at all levels of administration as well as among communities."

# National Disaster Management Plan, 2016

NDMP Covers all Phases of Disaster Management:

1. Prevention
2. Mitigation
3. Response and Recovery

# National Disaster Management Plan, 2016

It has been aligned broadly with the goals and priorities set out in:

1. The Sendai Framework for Disaster Risk Reduction.
2. The Sustainable Development Goals 2015-2030.
3. The Paris Agreement on Climate Change at COP-21.

# National Disaster Management Plan, 2016

- It plans for short medium and long run respectively 5, 10, and 15 years to deal with disasters.
- NDMP also enables horizontal and vertical integration among all the agencies and departments of the Government.

# National Disaster Management Plan, 2016

## Major Highlights of the Plan:

1. Understanding Risk
2. Inter-Agency Coordination
3. Capacity Development
4. Investing in DRR – Structural Measures and Non-Structural Measures

# 2<sup>nd</sup> ARC 3<sup>rd</sup> Report - Crisis Management

# PREVIOUS YEAR QUESTIONS



**Q. Discuss the recent measures initiated in disaster management by the Government of India departing from the earlier reactive approach.**

**(15 Marks/250 Words)**



# Practice Questions

Q. Disaster risk reduction is an important component in Disaster Management. Discuss the importance of Disaster risk reduction in India and the constraints involved in it.

(15 Marks/250 Words)