

National Policy on Disaster Management 2009

- The Disaster Management Act, 2009 was enacted on 22nd October, 2009.
- The Disaster Management Act, 2009 consists arrangement of power, prevention, risk and finance for Disaster Management.
- The policy has 13 Chapter (social security and social insurance) as under. This will have the advantage that it will permit the States also to have their own legislation on disaster management.

Chapter-1 Preamble (Disaster Risks in India)

EARTHQUAKES ZONES, FLOOD ZONES IN INDIA, WIND AND CYCLONE ZONES IN INDIA, LANDSLIDE AFFECTED STATES

1.1.1 The Context

1 1.2.1–1.2.2 Disaster Risks in India

1 1.3.1 Paradigm Shift in Disaster Management (DM)

Chapter-2 Approach and Objectives

2.1.1 Vision

2.2.1–2.2.2 Disaster Management (DM) cycle

2.3.1 Approach

- Community based DM,
- Capacity development in all spheres.
- Consolidation of past initiatives and best practices.
- Cooperation with agencies at National and International levels.

2.4.1 Objectives

- Promoting a culture of prevention, preparedness and resilience at all levels through knowledge, innovation and education.
 - Encouraging mitigation measures based on technology, traditional wisdom and environmental sustainability.
- Mainstreaming disaster management into the developmental planning process.
 - Establishing institutional and techno legal frameworks to create an enabling regulatory environment and a compliance regime.
- Ensuring efficient mechanism for identification, assessment and monitoring of disaster risks.
- Developing contemporary forecasting and early warning systems backed by responsive and fail-safe communication with information technology support.

- Ensuring efficient response and relief with a caring approach towards the needs of the vulnerable sections of the society.
- Under taking reconstruction as an opportunity to build disaster resilient structures and habitat for ensuring safer living.
- Promoting a productive and proactive partnership with the media for disaster management.

Chapter-3 Institutional and Legal Arrangements

3.1.1 Disaster Management Act, 2005

Institutional Framework under the Act

3.2.1–3.2.3 National Disaster Management Authority (NDMA)

3.2.4–3.2.5 National Executive Committee (NEC)

3.2.6–3.2.7 State Disaster Management Authority (SDMA)

3.2.8 District Disaster Management Authority (DDMA)

3.2.9 Local Authorities

3.2.10 National Institute of Disaster Management (NIDM)

3.2.11 National Disaster Response Force (NDRF)

3.2.12 Mitigation Reserves

Existing Institutional Arrangements

3.3.1 Cabinet Committee on Management of Natural Calamities (CCMNC) and the Cabinet Committee on Security (CCS)

3.3.2 High-Level Committee (HLC)

3.3.3 Central Government

3.3.4 Role of Central Ministries and Departments

3.3.5 National Crisis Management Committee (NCMC)

3.3.6–3.3.7 State Governments vi Contents

3.3.8 District Administration

3.3.9 Management of Disasters Impacting more than one State 13 Other Important Institutional Arrangements

3.4.1 Armed Forces

3.4.2 Central Paramilitary Forces

3.4.3 State Police Forces and Fire Services

3.4.4 Civil Defence and Home Guards

3.4.5 State Disaster Response Force (SDRF)

3.4.6 Role of National Cadet Corps (NCC), National Service Scheme (NSS) and Nehru Yuva Kendra Sangathan (NYKS)

3.5.1 International Cooperation

Chapter 4 Financial Arrangements

4.1.1 Approach

4.2.1 DM to be in-built in Developmental Plans

4.3.1–4.3.2 National Disaster Response and Mitigation Funds

4.4.1 Responsibilities of the Central Ministries and Departments

4.4.2 State and District Level Arrangements

4.4.3 Mitigation Projects

4.5.1 Techno-Financial Regime

Chapter 5 Disaster Prevention, Mitigation and Preparedness

5.1.1 Disaster Prevention and Mitigation

5.1.2–5.1.3 Risk Assessment and Vulnerability Mapping

5.1.4 Increasing Trend of Disasters in Urban Areas

5.1.5 Critical Infrastructure

5.1.6 Environmentally Sustainable Development

5.1.7 Climate Change Adaptation

Preparedness

5.2.1–5.2.3 Role of Central Ministries and Departments, and States

5.2.4 Forecasting and Early Warning Systems

5.2.5–5.2.6 Communications and Information Technology (IT) Support

5.2.7 Strengthening of the Emergency Operations Centres

5.2.8–5.2.9 Medical Preparedness and Mass Casualty Management

5.2.10 Training, Simulation and Mock Drills

Partnerships for Mitigation and Preparedness

5.3.1–5.3.2 Community Based Disaster Preparedness

5.3.3 Stakeholders' Participation

5.3.4 Corporate Social Responsibility (CSR) and Public-Private Partnership (PPP)

5.3.5 Media Partnership

Chapter 6 Techno-Legal Regime

6.1.1 Techno-Legal Regime

6.2.1 Revision of Municipal Regulations

6.3.1 Land Use Planning

6.4.1–6.4.2 Safe Construction Practices

6.5.1 Compliance Regime

6.6.1 Enforcement

Chapter 7 Response

Chapter 8 Relief and Rehabilitation

Chapter 9 Reconstruction and Recovery

Chapter 10 Capacity Development

Chapter 11 Knowledge Management

Chapter 12 Research and Development

Chapter -13 National road map

NDMA guidelines on Cyclones

Classifications

Cyclones are classified as extra tropical cyclones (also called temperate cyclones); and tropical cyclones.

The World Meteorological Organisation (WMO, 1976) uses the term 'Tropical Cyclone' to cover weather systems in which winds exceed 'Gale Force' (minimum of 34 knots or 63 kph). Tropical cyclones are the progeny of ocean and atmosphere, powered by the heat from the sea; and driven by easterly trades and temperate westerlies, high planetary winds and their own fierce energy.

In India, cyclones are classified by:

- Strength of associated winds,
- Storm surges
- Exceptional rainfall occurrences.

Extra tropical cyclones occur in temperate zones and high latitude regions, though they are known to originate in the Polar Regions.

Cyclones that develop in the regions between the Tropics of Capricorn and Cancer are called tropical cyclones. Tropical cyclones are large-scale weather systems developing over tropical or subtropical waters, where they get organized into surface wind circulation.

Worldwide terminology

Cyclones are given many names in different regions of the world – They are known as typhoons in the China Sea and Pacific Ocean; hurricanes in the West Indian islands in the Caribbean Sea and Atlantic Ocean; tornados in the Guinea lands of West Africa and southern USA.; willy-willies in north-western Australia and tropical cyclones in the Indian Ocean.

Indian Meteorological Department

The criteria below has been formulated by the Indian Meteorological Department (IMD), which classifies the low pressure systems in the Bay of Bengal and the Arabian Sea on the basis of capacity to damage, which is adopted by the WMO.

Type of Disturbances	Wind Speed in Km/h	Wind Speed in Knots
Low Pressure	Less than 31	Less than 17
Depression	31-49	17-27
Deep Depression	49-61	27-33
Cyclonic Storm	61-88	33-47
Severe Cyclonic Storm	88-117	47-63
Super Cyclone	More than 221	More than 120

1 knot - 1.85 km per hour

Cyclones are classified into five different levels on the basis of wind speed. They are further divided into the following categories according to their capacity to cause damage:-

Cyclone Category	Wind Speed in Km/h	Damage Capacity
01	120-150	Minimal
02	150-180	Moderate
03	180-210	Extensive
04	210-250	Extreme
05	250 and above	Catastrophic

Storm surges (tidal waves) are defined as the rise in sea level above the normally predicted astronomical tide. Major factors include:

- A fall in the atmospheric pressure over the sea surface
- Effect of the wind
- Influence of the sea bed
- A funnelling effect
- The angle and speed at which the storm approaches the coast
- The tides

How Cyclones are formed

The development cycle of tropical cyclones may be divided into three stages:

Formation and Initial Development Stage

The formation and initial development of a cyclonic storm depends upon various conditions. These are:

A warm sea (a temperature in excess of 26 degrees Celsius to a depth of 60 m) with abundant and turbulent transfer of water vapour to the overlying atmosphere by evaporation.

Atmospheric instability encouraging formation of massive vertical cumulus clouds due to convection with condensation of rising air above ocean surface.

Mature Tropical Cyclones

When a tropical storm intensifies, the air rises in vigorous thunderstorms and tends to spread out horizontally at the tropopause level. Once air spreads out, a positive perturbation pressure at high levels is produced, which accelerates the downward motion of air due to convection. With the inducement of subsidence, air warms up by compression and a warm 'Eye' is generated. Generally, the 'Eye' of the storms has three basic shapes: (i) circular; (ii) concentric; and (iii) elliptical. The main physical feature of a mature tropical cyclone in the Indian Ocean is a concentric pattern of highly turbulent giant cumulus thundercloud bands.

Modification and Decay

A tropical cyclone begins to weaken in terms of its central low pressure, internal warmth and extremely high speeds, as soon as its source of warm moist air begins to ebb, or is abruptly cut off. This happens after its landfall or when it passes over cold waters. The weakening of a cyclone does not mean that the danger to life and property is over.

Recover and build

After 'All Clear' is issued for back movement by 'State' give attention to the following:

- Whether 'roads' for reaching home is recommended by authorities
- Whether power lines are safe
- Whether transport arrangement is approved by authorities
- Pure drinking water is available
- Sewage lines are working
- Any epidemic spread in the area
- Safety of neighbor(s) assured

Emergency Kit

- Battery operated torch
- Extra batteries
- Battery operated radio
- First aid kit and essential medicines
- Important papers (Ration card, Voter ID card, Aadhar card etc)
- Emergency food (dry items) and water (packed and sealed)
- Candles and matches in a waterproof container
- Knife
- Chlorine tablets or powdered water purifiers
- Cash, Aadhar Card and Ration Card
- Thick ropes and cords
- Shoes