

## What is a Disaster?

- A disaster is a result of natural or man-made causes that leads to **sudden disruption of normal life**, causing severe damage to life and property to an extent that available social and economic protection mechanisms are inadequate to cope.
- It is an **undesirable occurrence** resulting from forces that are largely outside human control. It strikes quickly with little or no warning and requires major efforts in providing statutory emergency service.

## Classification of Disasters

- Disasters are classified as per origin, into natural and man-made disasters. **As per severity**, disasters are classified as minor or major (in impact).
- **Natural disasters are sudden ecological disruptions** or threats that exceed the adjustment capacity of the affected community and require external assistance.
  - Natural disasters can be broadly classified into categories including **geophysical** such as earthquakes and volcanic eruptions; **hydrological** such as floods; **meteorological** such as hurricanes; **climatological** such as heat and cold waves and droughts; and **biological** such as epidemics.
- **Man-made disasters can include hazardous material spills, fires, groundwater contamination, transportation accidents, structure failures, mining accidents, explosions and acts of terrorism.**

## Causes for Occurrence of Disaster

- **Environmental degradation:** Removal of trees and forest cover from a watershed area have caused, soil erosion, expansion of flood plain area in upper and middle course of rivers and groundwater depletion.
- **Developmental process:** Exploitation of land use, development of infrastructure, rapid urbanization and technological development have caused increasing pressure over the natural resources.
- **Political issues:** War, nuclear power aspirations, fight between countries to become super power and conquering land, sea and skies. These have resulted into wide range of disaster events such as

Hiroshima nuclear explosion, Syrian civil war, growing militarisation of oceans and outer space.

- **Industrialization:** This has resulted into warming of earth and frequency of extreme weather events has also increased.

### **Impacts of Disaster**

- Disaster **impacts individuals physically** (through loss of life, injury, health, disability) as well as **psychologically**.
- Disaster results in **huge economic loss** due to destruction of property, human settlements and infrastructure etc.
- Disaster **can alter the natural environment**, loss of habitat to many plants and animals and cause ecological stress that can result in biodiversity loss.
- After natural disasters, food and other natural resources like water often becomes scarce resulting into **food and water scarcity**.
- The disaster results in **displacement of people**, and displaced population often face several challenges in new settlements, in this process poorer becomes more poor.
- Disaster **increases the level of vulnerability** and hence multiply the effects of disaster.

### **Vulnerability Profile of India**

- India is vulnerable, in varying degrees, to a large number of disasters. **Around 59% of the landmass is prone to earthquakes** of moderate to very high intensity.
- **About 12% (over 40 million hectares) of its land is prone to floods and river erosion.**
- Close to 5,700 kms, out of the 7,516 kms **long coastline is prone to cyclones and tsunamis.**
- **68% of its cultivable area is vulnerable to droughts;** and, the **hilly areas are at risk from landslides and avalanches.**
- Moreover, India is also **vulnerable to chemical, biological, radiological and nuclear (CBRN) emergencies** and other man-made disasters.
- Disaster risks in India are further compounded by increasing vulnerabilities related to **changing demographics and socio-economic conditions, unplanned urbanization,** development within

high-risk zones, **environmental degradation, climate change, geological hazards, epidemics and pandemics.**

- Clearly, all these contribute to a situation where disasters seriously threaten India's economy, its population and sustainable development.

### **Worst Disasters in India**

- **Kashmir Floods (2014)** affected Srinagar, Bandipur, Rajouri etc. areas of J&K have resulted into death of more than 500 people.
- **Uttarakhand Flash Floods (2013)** affected Govindghat, Kedar Dome, Rudraprayag district of Uttarakhand and resulted into death of more than 5,000 people.
- **The Indian Ocean Tsunami (2004)** affected parts of southern India and Andaman Nicobar Islands, Sri Lanka, Indonesia etc., and resulted in the death of more than 2 lakh people.
- **Gujarat Earthquake (2001)** affected Bhuj, Ahmedabad, Gandhinagar, Kutch, Surat, Surendranagar, Rajkot district, Jamnagar and Jodia districts of Gujarat and resulted in death of more than 20,000 people.
- **Odisha Super Cyclone or Paradip cyclone (1999)** affected the coastal districts of Bhadrak, Kendrapara, Balasore, Jagatsinghpur, Puri, Ganjam etc., and resulted into death of more than 10,000 people.
- **The Great Famine (1876-1878)** affected Madras, Mysore, Hyderabad, and Bombay and resulted into death of around 3 crore people. Even today, it is considered as one of the worst natural calamities in India of all time.
- **Coringa Cyclone (1839)** that affected Coringa district of Andhra Pradesh and **Calcutta Cyclone (1737)** are some other instances of natural calamities faced by the country in the past.
- **The Bengal Famine** in the years **1770** and **1943** affected Bengal, Odisha, Bihar very badly and resulted into death of nearly 1 crore people.
- **Bhopal Gas tragedy (December, 1984)** is one of the worst **chemical disasters** globally that resulted in over 10,000 losing their lives (the actual number remains disputed) and over 5.5 lakh persons affected and suffering from agonizing injuries.
- In recent times, there have been
  - **cases of railway accidents** (Dussehra gathering on the railway tracks crushed by the trains in 2018),

- **fire accidents in hospitals** due to negligence and non implementation of existing mandatory fire safety norms,
- **collapse of various infrastructure constructs like flyovers, metro tracks and residential buildings** due to poor quality of construction, illegal addition of floors and recurring floods.
- **Stampede at large public gathering** like Kumbh Mela caused by poor people management and lack of adequate infrastructure to monitor and manage large crowd gathering.

### Stages in Disaster Management



- Disaster Management efforts are geared towards **disaster risk management**.
- Disaster Risk Management implies the systematic **process of using administrative decisions, organisation, operational skills, and capacities to implement policies, strategies and coping capacities** of the society and communities to lessen the impact of natural hazards and related environmental and technological disasters.
- These comprise all forms all activities including structural and non-structural measures to avoid (prevention) or to limit (mitigation and preparedness) adverse effects of hazards.
- There are **three key stages** of activities in disaster management:
  1. **Before a disaster:** to reduce the potential for human, material, or environmental losses caused by hazards and to ensure that these losses are minimised when disaster strikes;

2. **During a disaster:** to ensure that the needs and provisions of victims are met to alleviate and minimise suffering; and
3. **After a disaster:** to achieve rapid and durable recovery which does not reproduce the original vulnerable conditions.
  - The different phases of disaster management are represented in the disaster cycle diagram.

### **Disaster Risk Reduction (DRR)**

- Disaster risk reduction is the concept and practice of reducing disaster risks through systematic efforts to analyse and reduce the causal factors of disasters.
- Pre-Disaster risk reduction includes-
  - **Mitigation:** To eliminate or reduce the impacts and risks of hazards through proactive measures taken before an emergency or disaster occurs.
  - **Preparedness:** To take steps to prepare and reduce the effects of disasters.
- Post-Disaster risk reduction includes-
  - **Rescue:** Providing warning, evacuation, search, rescue, providing immediate assistance.
  - **Relief:** To respond to communities who become victims of disaster, providing relief measures such as food packets, water, medicines, temporary accommodation, relief camps etc.
  - **Recovery:** This stage emphasises upon recovery of victims of disaster, recovery of damaged infrastructure and repair of the damages caused.

### **Disaster Risk Reduction in Sustainable Development Goals**

- **Goal 1:** Target 1.5, which relates to building the resilience of the poor, further strengthens the position of disaster risk reduction as a core development strategy for ending extreme poverty.
- **Goal 2:** Target 2.4 supports the immediate need to advance actions in mainstreaming disaster risk reduction and **climate adaptation into agriculture sector planning** and investments in order to promote resilient livelihoods, food production and ecosystems.

- **Goal 3:** Target 3.d, relates to **strengthening early warning and risk reduction of national and global health risks** presents an opportunity to further actions to promote resilient health.
- **Goal 4:** Target 4.7 focusing on building and upgrading education facilities and **promoting education** for sustainable development, contribute significantly to resilience-building in the education sector.’
- **Goal 6:** Target 6.6, which relates to **protecting and restoring water-related ecosystems**, will significantly contribute to strengthening the resilience of communities to water-related hazards.
- **Goal 9:** Targets 9.1 related to **developing sustainable and resilient infrastructure development** are vital not only to protect existing infrastructure but also future infrastructure investments.
- **Goal 11:** Action targets under this goal (11.1, 11.3, 11.4, 11.5, 11.b and 11.c) focusing on upgrading urban slums, integrated urban planning, reducing social and economic impacts of disaster risk, **building the resilience of the urban poor, adopting and implementing urban policies in line with the Sendai Framework** and building sustainable and resilient urban infrastructure, are strategic opportunities to ensure increased capacity to support cities, to protect current and future development prospects and to build safer, more resilient cities throughout the world.
- **Goal 13:** Target actions under this goal, focusing on **strengthening resilience and adaptive capacity**, capacity building and integrating climate change measures into policies and plans, awareness raising on climate adaptation and early warning (Targets 13.1 to 13.3 and 13.a to 13.b) provide opportunities to **strengthen the integration between disaster and climate resilience** and to protect broader development paths at all levels.
- **Goal 14:** Target action 14.2, focusing on the sustainable management and protection as well as **strengthening resilience of marine and coastal ecosystems**, can contribute to reducing disaster risk and increase in demand for healthy marine and coastal ecosystems.
- **Goal 15:** Target actions 15.1 to 15.4 and 15.9, focus on **managing and restoring forests**, combating land degradation and desertification, conserving mountain ecosystems and their biodiversity and integrating ecosystem and biodiversity values into national and local planning, development processes, poverty reduction strategies.

- **These targets are also in line with the Sendai Framework** focus on building environmental resilience through the inclusion of ecosystems in risk analysis and planning.

### **Challenges in Disaster Risk Reduction**

- There are **insufficient levels of implementation** for each monitored activity. For example, Disaster risk management plans or a risk sensitive building codes exist but they are not enforced because of a lack of government capacity or public awareness.
- There is **lack of local capacities** to implement disaster risk management. Weak capacity at the local levels undermines the implementation Disaster preparedness plans.
- **Absence of integration of climate change into Disaster risk management plans.**
- There is **divergence of obtaining political and economic commitments** due to other competing needs and priorities such as poverty reduction, social welfare, education etc. require greater attention and funding.
- **Due to poor coordination between stakeholders,** there is inadequate access with respect to risk assessment, monitoring, early warning, disaster response and other Disaster related activities.
- **Insufficient investment in building disaster resilient strategies,** also private sector are least contributors in the share of investment.

## Organisations related to Disaster Management Framework at Global level

- In 1994 the **World Conference on Natural Disaster Reduction** was held in Yokohama, Japan.
  - The conference adopted the **Yokohama strategy** and declared the **decade 1990-2000 as the International Decade for Natural Disaster Reduction (IDNDR)**.
- **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.
- **The Sendai Framework for Disaster Risk Reduction 2015-2030**, is the successor instrument to the Hyogo Framework.
  - It is a **non-binding agreement**, which the signatory nations, including India, will attempt to comply with on a voluntary basis.
- There are three international agreements within the context of the post- 2015 development agenda. These are:
  - The Sendai Framework.
  - Sustainable Development Goals 2015-2030
  - The Paris agreement (COP 21) on Climate Change.
- These three agreements recognize the desired outcomes in Disaster Risk Reduction as a product of interconnected social and economic processes, which overlap across the agendas of the three agreements.

### Sendai Framework





## **Organisations and Policies related to Disaster Management Framework at National level**

### **National Disaster Management Authority of India (NDMA)**

- **It was established in 2005**, under the Disaster Management Act 2005.
- The objective of NDMA is, **to build a safer and disaster resilient India** by a holistic, proactive, technology driven and sustainable development strategy.
- The NDMA is **chaired by the Prime Minister of India** and has a vice chairman with the status of Cabinet Minister and eight members with the status of Ministers of State.
- The NDMA Secretariat is headed by a Secretary and deals with mitigation, preparedness, plans, reconstruction, community awareness and financial and administrative aspects.

### **National Disaster Management Plan (NDMP)**

- It was **released in 2016**, it is the first ever national plan prepared in the country for disaster management.
- With National Disaster Management Plan (2016) India has aligned its National plan with the Sendai Framework for Disaster Risk Reduction 2015-2030, to which India is a signatory.
- The objective of the plan is to make India disaster resilient, achieve substantial disaster risk reduction. It aims to significantly decrease the losses of life, livelihoods, and assets in terms of economic, physical, social, cultural, and environmental. To maximize the ability to cope with disasters at all levels of administration as well as among communities.

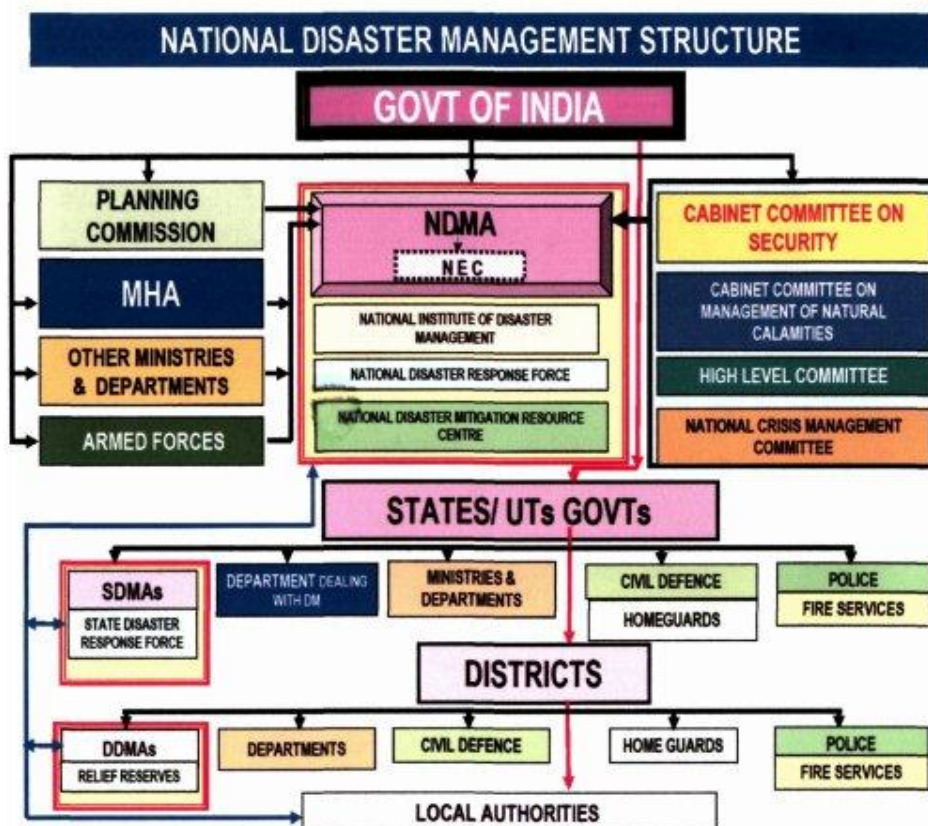
### **State Disaster Management Authority (SDMA)**

- At State level, State Disaster Management Authorities are established under Disaster Management Act 2005.
- **SDMA is chaired by the Chief Minister of the State** and has not more than eight members who are appointed by the Chief Minister.
- The SDMA prepares the state disaster management plan and implements the National Disaster Management Plan.

### **District Disaster Management Authority (DDMA)**

- Under Disaster Management Act 2005, every State government shall establish a DDMA for every district in the State.
- The DDM Authority shall consist of:
  - **Chairperson** - the Collector or District Magistrate or Deputy Commissioner act as Chairperson of DDMA.
  - **Co-Chairperson** - is the elected representative of the local authority. In the Tribal Areas, the Chief Executive Member of the district council of autonomous district is the co-chairperson.
- There are not more than seven other members in DDMA.
- The Disaster Management Committee governed under District Magistrate will **formulate village level disaster management plans** for concern villages.
- The DDMA makes District Disaster Management Plan and implements the state Disaster Management Plan.

**ORGANISATION TREE OF NATIONAL DISASTER  
MANAGEMENT STRUCTURE, INDIA**



\*Planning Commission no longer exists.

## Government Initiatives

- India is a **signatory to the Sendai Framework for Disaster Risk Reduction** and is committed to achieve the priorities and objectives through systematic and institutional efforts.
- With multi-dimensional initiatives and expertise, India is taking a leading role in strengthening regional cooperation among South Asian countries for reducing disasters.
- India is one of the participating countries and **works closely with the United Nations International Strategy for Disaster Reduction (UNISDR)**. India has been working closely with many countries for the exchange of ideas and expertise in disaster management.
- **National Disaster Management Plan (NDMP)** defines the roles and responsibilities of various stakeholders including Central Ministries/ Departments, State Governments, UT Administrations, District Authorities and local self Governments.
- **Primary responsibility of disaster management rests with the States.** The Central Government conducts regular mock drill, community training and awareness programme to prepare the civilian populations for disasters.
- **National Disaster Management Services (NDMS)** was conceived by NDMA during 2015-16 for setting up of **Very Small Aperture Terminal (VSAT) Network** connecting MHA, NDMA, NDRF etc. to provide the failsafe communication infrastructure and technical support for Emergency Operation Centre (EOC) operations across the country.
- NDMA has taken an initiative on **Earthquake Disaster Risk Indexing (EDRI)** for 50 important cities and 1 District in Seismic Zone IV & V areas.
  - This kind of indexing will be helpful in comparing the overall risk across large number of cities or region and also in prioritization of cities to implement appropriate disaster mitigation measures.
- NDMA through **Building Materials & Technology Promotion Council (BMTPC)** has prepared **Upgraded Earthquake Hazard Maps and Atlases** for the country for better planning and policies.
- Leveraging the technology of geographic information system (GIS), NDMA have taken up a project for **disaster risk management by establishing GIS Server** and creation of database to integrate data

obtained from various stakeholders to increase disaster preparedness, mitigation, damage assessment, response and relief management efforts.

- Under the **National School Safety Programme (NSSP)**, 8600 schools (with 200 schools in 43 districts in 22 States/UTs falling seismic zones IV and V) have been selected for providing training on school safety and disaster preparedness.
- **The Aapdamitra scheme of NDMA** has provision for training 6000 community volunteers in disaster response in 30 most flood prone districts (200 volunteers per district) in 25 States.
- The government has set up **National Crisis Management Committee and Crisis Management Group**.
- The state governments have set up **state crisis management groups headed by chief secretaries**, institutes of relief commissioners and state/district contingency plans.
- The disaster management policy of the government stresses on forecasting and warning using advanced technologies, **contingency agricultural planning** to ensure availability of food grains, and preparedness and mitigation through specific programmes.
- Project on **deployment of Mobile Radiation Detection Systems (MRDS)** to handle Radiological Hazards in Metros/Capital Cities/Big Cities in India to detect unclaimed radioactive materials/substances and save public from its hazardous effects.
- **Landslide Risk Mitigation Scheme (LRMS)** envisages financial support for site specific Landslide Mitigation Projects recommended by landslide prone States, covering disaster prevention strategy, disaster mitigation and R&D in monitoring of critical Landslides thereby leading to the development of Early Warning System and Capacity Building initiatives. The Scheme is under preparation.
- Core Group has been formed for Preparation of Guidelines to avert Boat Tragedies in India.

### **Disaster Management in India: Success stories**

- The Indian government's "**zero casualty**" **policy for cyclones** and the pinpoint accuracy of the India Meteorological Department's (IMD) early warning system has helped reduce the possibility of deaths from **cyclone Fani in Odisha**.

- India's policy of **minimising fatalities from cyclones** has been proven by past performances as in **cyclone Phailin in 2013**, when famously the casualty rate was kept to as low as 45 despite the intensity of the storm.
- In August 2010 during the **flash floods due to cloudburst in Leh in Ladakh** region by the Indian Army. The **Army's immediate search, rescue, and relief operations** and mass casualty management effectively and efficiently mitigated the impact of flash floods, and restored normal life.
- Bihar suffers from floods almost every year during the monsoon season, predominantly due to the Ganges and its tributaries. The State has successfully scaled up disaster preparedness and mitigation efforts since 2011.

## Issues

- There are significant **gaps in preparedness** on various aspects of risk management, particularly for catastrophic disasters like major earthquakes and floods.
  - Though all of India's states have **departments of disaster management** or relief and rehabilitation, they **are still poorly prepared** to lend support in times of disasters, according to the UN Development Programme (UNDP).
  - In a number of recent disasters, **2010 mudslides in Leh, Sikkim earthquake in 2011 and the Uttarakhand floods of 2013**, the level of preparedness was inadequate, leading to high levels of mortality and displacement of people.
- Facilities such as emergency operations centres, emergency communications, and search and rescue teams are being made available but these systems and facilities need to be strengthened.
- **In India Disaster management is yet to be seen as an essential part of good governance and integral to development planning.**
- The preparedness at various levels are **not people-oriented**.
- India's capacity to manage disaster risk is challenged by its **size and huge population**. The country is likely to have the greatest exposure of any nation in the world to extreme weather and natural disasters by 2030.

- The northeast region is most at risk from earthquakes and **lacks seismically secure infrastructure and buildings**. It is also vulnerable to landslides, floods and erosion.
- Flooding on the country's plains is a regular occurrence, and although communities are resilient, the **intensity of floods has reduced their capacity to adapt**.
- The local adaptation efforts driven solely by communities are no longer sufficient and **additional, scientifically planned adaptation is needed**, which will require government support.
- The division of responsibilities under the Disaster Management Act is not very clear, resulting in its poor implementation. There also exists an overlap between the implementing agencies
- Intense public and media scrutiny after disasters automatically leads to a **higher priority being given to response, rather than risk reduction**.
- Furthermore, where risk-reduction activities are described, State Disaster Management Plans (SDMPs) does not institutionalise accountability mechanisms to ensure that departments follow these considerations in their own planning.
  - As a result, risk-reduction activities are driven by schemes and external projects, rather than by guidelines in SDMPs.
- Because risk-reduction needs are locations specific, this gap is an opportunity for stronger, locally led risk-reduction planning by Strengthening disaster risk management in India

## **Suggestions**

- A clearer demarcation of national and state-level responsibilities is needed, especially regarding who is responsible for risk-reduction activities.
- It is vital for state disaster management authorities to focus on the continued **capacity-building of district disaster management authorities** and CSOs that are responsible for managing disaster risk.
  - Capacity-building should support the planning and implementation of actions across the full disaster management cycle.
- There is a **need to revise the SDMPs** to include a much greater emphasis on risk reduction, rather than just preparedness and response.
- Existing rules and regulations that impede the inclusion of measures for risk reduction need to be amended.

- **Build partnerships** with and draw lessons from forerunner states such as Bihar and Gujarat on how to include risk reduction in plans more effectively.
- **Accountability mechanisms** need to be specified. This will ensure that departments follow disaster risk-reduction considerations in their own development planning.
- **There is an urgent need to put the National Disaster Mitigation Fund and state disaster management funds into operation.** States such as Bihar, which are leading in this regard, should share lessons on how to realise this at the state level.
- States should have decision-making power regarding whether state disaster management authorities control funds for risk reduction, or whether these are distributed to government departments.
- **Public-private partnerships** should be looked at more seriously as alternative modes of financing. Models such as the **Surat Climate Change Trust**, a collaboration between the private sector and the urban local body in Surat, Gujarat, should be studied and, if suitable, replicated.
- **Risk-transfer mechanisms and insurance** should be scaled up to support risk reduction.
- States should include downscaled climate projections into SDMPs, so that future and evolving risks can be taken into account.
- Using data that are already being uploaded onto platforms such as the Open Government Data Platform can help to synthesise a clearer understanding of vulnerability.
- There is a need to **expand capacity-building activities** on disaster management within departments, so that they include all stages of the disaster cycle, rather than the current emphasis on emergency response.
- It is important to ensure the participation of nodal officials from all key state government departments while revising SDMPs; working with technical institutions and NGOs to train nodal officials is also useful.
- The needs of women and other marginalised groups must be considered across all types of disaster risk management activity, rather than only response and relief activities, as is currently the case.
- **Publicly available census data on sex, age and disability need to be included in vulnerability analyses.**

- Clearer guidelines need to be issued for the genuine participation of vulnerable communities in processes to develop district disaster management plans.
- Officials from state disaster management authorities should be trained in gender-responsive budgeting and gender mainstreaming.
- Collaboration with state and central scientific institutions would help state disaster management authorities to **track changing risk and risk of losses through modelling**, rather than only measuring disaster impacts.
- The National Disaster Management Authority should prepare guidelines and/ or a framework to support subnational governments in aligning with the Sendai Framework.

### Way Forward

- Disasters are no longer to be considered as occurrences that are to be managed through emergency response services. So, there is a need to foster a culture of prevention and identification of the key issues to be addressed especially in the development process.
- The path ahead for managing disasters is to bring in a **people-centered development strategy**.
- Strategies for disaster management should be accompanied by **strong political will**, keenness and commitment on the part of all concerned actors involved in the exercise.
- Educating people in Disaster Risk Reduction is the need of the hour and it can be done through **decentralised planning, implementation and monitoring and control**.
- The major strategies which should get prominence are **institutionalising national systems and capacities**, strengthening governance mechanisms at local level, building community resilience, reducing the vulnerabilities of the communities at risk and public private people partnerships etc.
- Disaster Management has to embark upon a strategy aimed at holistic human development **integrating the sustainable development goals**, policies and practices that harness people's strengths instead of vulnerabilities.



# **SENSITIZATION OF OFFICERS ON EFFECTIVE IMPLEMENTATION OF DISASTER MANAGEMENT ACT, 2005**

## **INTRODUCTION**

Mother nature is prone to disasters. History unfolds plenty of instances of disasters that caused extensive loss of life and property, extreme human sufferings, irreparable devastation, permanent changes in the environment and so on. Its effects are not only immediate affecting the present generation but also ongoing, mutilating the future generations as well.

Disasters disrupt progress and destroy years of painstaking development efforts, thereby pushing nations back by several decades. The impacts of disasters are particularly strong in case of developing nations in terms of recovery therefore, both pre disaster efforts in terms of preparedness, capacity building, awareness along with an efficient response mechanism, recovery and reconstruction would lessen the loss of lives and property.

Within the country, Rajasthan is one of the most drought prone states, due to its low average rainfall, coupled with erratic behaviour of Monsoons. The state has also witnessed some major disasters in the recent past, like the floods in Barmer (2006), IOC Depot Fire, at Jaipur (2009), the stampede at Jodhpur (2008), the serial bomb blasts, Jaipur (2008), and the collapse of Chambal bridge at Kota (2009) to name a few. Further, some parts of the state fall under seismic zones III and IV.

Looking at the large proportion of economically and socially weak sections that make up the total population of the state, vulnerability to disasters in the state is also very high. Within these vulnerable groups, elderly persons, women, and children – especially destitute women/orphaned children and physically challenged persons are exposed to higher risks.

Government of India passed the Disaster Management Act, 2005 and with it came a paradigm shift from response and relief centric approach to a proactive prevention, mitigation and preparedness-driven approach for preserving development gains and for minimizing loss to life, livelihood and property.

## **DISASTER MANAGEMENT**

- **Constitutional Perspective**

Constitution of India does not have any explicit provision on the subject of disaster management. Despite being one of the world's lengthiest constitutions, the non-inclusion of disaster management in the constitution may probably be explained by three interrelated reasons. Firstly, being the supreme law of the land, a constitution is usually a body of basic laws to outline the fundamental contours of a polity with elaborate provisions on fundamental rights and indicative division of legislative, administrative and financial competencies of different strata of governments. So, in such a scheme of things, the operative subjects like disaster management is not supposed to figure in the constitutional provision as they are left to the prudence and wisdom of the government of the day to evolve appropriate policy and administrative framework to deal with the issue in hand. Secondly, and more importantly, at the time of framing the constitution, disaster management was not considered such a significant subject as to merit the attention of the

constitution makers, and find a place in the provisions of the constitution. Finally, the prevalence of a number of colonial tools of disaster management such as Famine Code along with the existence of steel framed administrative machinery to conduct the rescue and relief operations in the times of disasters probably appeared sufficient for the national leaders to manage the disasters even in future as well. As a result, the subject of disaster management failed to secure a place in the elaborate scheme of division of vital subjects between the centre and states.

In the absence of any constitutional stipulation, for a long time, disaster management had conventionally been considered as falling within the competence of the states as per the colonial practice. Given the location of disaster prone areas in the geographical jurisdictions of the states, no doubt, make the state the first responders to the crisis situations created by the vagaries of nature. At the same time, most of the activities involved in the course of management of a disaster are of local nature to be carried out by the district and sub-district level officials working under the administrative control of the state government. However, in the course of time with the subject gaining significance in the governance paradigm of the country, questions began to be raised on the appropriate legislative locale of the subject in order to not only bestow the responsibility for evolving suitable policy and creating an effective administrative apparatus for carrying out the disaster management activities but also to ensure accountability for proper management of disasters. It was in this context that the colonial practice of vesting the responsibility for management of disasters in the states has begun to be questioned. Evidently, much of the typical kinds of disasters, both natural as well as manmade, owe their genesis in the systems and processes that are constitutionally the subject areas over which states have been accorded the legislative competence to enact laws and initiate administrative measures to mitigate adverse impacts on the life and livelihoods of the people. On account of these natural predispositions and their functional dynamics, conventionally management of disasters has been considered to be primary domain of the states on which the central government has minimum or no role to play. However, such circumstantial and conventional responsibility of the states for disaster management gradually became a kind of unbearable burden on them given the growing propensity and frequency of disasters with exceptional severity. Hence, it began to be argued that the states neither have financial resources nor are technically competent to manage disasters of a reasonably large magnitude. Rather, it would be simply farcical to charge the states with the responsibility of managing disasters without active and substantive support and assistance from the central government. Interestingly, disaster management has been one of those subjects over which the established jurisdiction of the states have been willingly allowed to be eroded to create a legitimate space for the Central Government to play an active role in it. Ironically, in the post-constitutional history of the working of Indian federalism, there has been the ominous trend of disquieting increase in the legislative competence of the Central Government vis-à-vis states through the transfer of certain subjects from the state list to the concurrent list of seventh schedule of the Constitution.

While states have generally been opposed to such moves on the part of the Central Government to disturb the original intent and scheme of the Constitution, their protest has sometimes reached unrelenting proportions on certain issues such as resource sharing, and constitution and deployment of central paramilitary forces in the states, especially in the name of counter-terror

operations. But as far as the subject of disaster management is concerned, gradual encroachment by the Central Government in this conventional domain of the states has not even taken note of by the states. On the contrary, states have been quite receptive of the central endeavours in the domain of disaster management as such efforts on the part of the central government would not only obviate their onerous responsibility in this thankless area of activity but also would engage the centre by way of financial, technical and logistical support. Thus, the subject of disaster management has conveniently been allowed to become a sort of concurrent subject over which not only the states but the central government could also enact laws, initiate administrative measures and provide financial assistance to states irrespective of the fact that the subject has traditionally been the core competence of the states.

Notwithstanding the relative silence of the Constitution, certain pointers towards understanding the mind of the constitution makers on the legislative locale of disaster management may be gathered by looking at the placement of the core subjects to which the majority, if not all, of the natural as well as manmade disasters relate. For instance, two major natural disasters in India, flood and drought, relate primarily to the excess and deficiency of water in rivers as well as other sources of water respectively in a particular region. By implication, therefore, it would be natural for that level of government in the federal system of the country to manage the issues related to the excess of water, i. e., flood, as well as deficiency of water, i.e., drought to which the subjects of water and rivers have been allocated in the scheme of division of legislative subjects through the three lists in the seventh schedule of the Constitution. Another criterion to decipher the appropriate legislative locale of the disaster management is through the application of the doctrine of residuary powers to the Indian constitution. By application of this doctrine, it can be discerned that whichever subjects of legislative competence have not been allocated to any levels of government through the constitutional scheme of the divisions of powers, such subjects would automatically fall in the domain of the Central Government which has been made the repository of residuary powers in the Constitution of India. That way, since disaster management does not figure in the scheme of enumerated subjects in any of the three lists of the seventh schedule of the Constitution, the Central Government is the rightful holder of legislative competence to make laws on the subject. As a subject of legislative competence, disaster management may, thus, impliedly be taken to be part of the provisions of article 248 dealing with residuary power of legislation. By providing that parliament has exclusive power to make any law with respect to any matter not enumerated in the concurrent list or state list, article 248 extends its jurisdiction to the subject of disaster management in view of the fact that that subject does not find mention in any of the list given in the seventh schedule of the Constitution.

As far as constitutional provisions are concerned, entry 56 of list I (Union List) envisages legislative power of the Central Government over ‘regulation and development of inter-state rivers and river valleys to the extent to which such regulation and development under the control of the union is declared by Parliament by law to be expedient in the public interest.’ As regards the competence of state governments, entry 17 of list II (state list) provides that states can legislate on the subjects of ‘water, that is to say, water supplies, irrigation and canals, drainage and embankments, water storage and water power subject to the provisions of entry 56 of List I.’ On the conjoined reading of these provisions, two broad conclusions may be drawn regarding

their implications for disaster management. One, these constitutional provisions pertain exclusively to water that arguably may have impact on only certain specific natural disasters such as flood and drought. Insofar as other manmade disasters like industrial accidents, and natural disasters like earthquake, cyclones, landslides, avalanches etcetera are concerned, these provisions are silent and therefore irrelevant for them. Two, even with respect to the waterrelated natural disasters, the constitutional scheme of things are decisively weighed in favour of the central government as the provisions of entry 17 of list II are made subject to the overriding provisions of entry 56 of list I. In other words, the states competence to make laws on water and related issues is confined only to their territorial jurisdiction beyond which it is the other state or the Central Government that can make laws. Interestingly, while enacting the Disaster Management Act, 2005, the Central government invoked the provisions under entry 23, namely 'Social Security and Social Insurance; Employment and Unemployment' in the concurrent list to draw constitutional competence to pass the legislation.

- **Meaning and Origin**

The term 'Disaster' has its genesis in the Greek word "*Astron*" means 'bad star'. The word's root denotes that when the stars are in a bad position, a disaster is about to happen. Thus astrologically it was believed that great misfortune were caused by an unfavourable position of the planets. The word descended to English language in the 16th century through French word 'desastre' and Italian word 'disastro' from Latin 'dis astrum' where 'dis' denotes 'against' and 'astrum' denotes 'star' which together also means the same thing, "stars against". Later As per Oxford Concise Dictionary disaster means "*a sudden or great misfortune*". However various thinkers have explained this term on their own way, no doubt each of them has a distinct perspectives and significance of its own. In this short span it is not possible to mention those but obviously among them Smith tried to touch the major aspects of the term Disaster Management. Smith K. in his book "*Environmental Hazards: Assessing Risk and Reducing Disaster*" defines 'Disaster' as "*a disaster generally results from the interaction, in time and space, between the physical exposure to a hazardous process and a vulnerable human population.*"

Section 2(d) of the Disaster Management Act, 2005 defines Disaster as, "*a catastrophe, mishap, calamity or grave occurrence affecting any area, arising from natural or man-made causes, or by accident or negligence which results in substantial loss of life or human suffering or damage to, and destruction of property or damage to or degradation of, environment and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area*"

Thus, a disaster is an abrupt and devastating event that seriously disrupts the functioning of a society and causes human, material, economic or environmental loss that exceeds the society's capacity to cope up with using its own resources. To qualify as a disaster, the event must occur in a habituated area. Hence the common aspect, "*Disasters occur when hazards meet vulnerability*". Vulnerability to the natural phenomenon must be present for an event to constitute a disaster.

Further, personal sufferings or small range afflictions are seldom treated as disasters. For example hunger is an increasing global incident, which is being addressed with different approaches in different parts of the world. But the situation qualifies as a disaster only when it

becomes wide spread and acute, for example a famine. It is often experienced that the reasons for natural disasters could also be traced to the man's indiscriminate criminal tampering with the environment. Man's unfriendly behavior with nature often results in disastrous events. As a result a unique type of continuing natural disaster called "Environmental Degradation" has begun to crop up. It happens from poor farming, grazing, improper use or maintenance of lands, deforestation, desertification, erosion and augmented demands for fuel, wood begetting other disasters such as increased flood and famine. These types of disasters are glowing concern because of environmental impact and the large number of people being displaced. The term 'Disaster', now a days is used very widely to cover arious calamities as well, such as space, ecological, nuclear and chemical disaster, public relation crisis, solar flare emissions, impact event, telecommunication outage, global warming, over population, terrorism, economic crisis etc.

A nation's disaster management system encompasses a wide range of functions, depending on the level of significance assigned to a particular crisis. In the past, these functions mainly included the management of natural disasters like floods and typhoons; however, since the early 1990s, man-made disasters such as building collapses, gas leaks, and ship sinking accidents have also come under the auspices of disaster management. Therefore, man-made disaster management systems have also received attention in this new phase. Today, new types of disaster, entirely di\_erent from conventional disasters, are threatening our society: information and communication disruptions, paralysis of transportation and transportation systems, terrorism, and epidemics. In particular, as global health disasters such as COVID-19 has threaten the international community, the necessity to establish a disaster management system from a national perspective has become paramount.

The Disaster Management Act provides the administrative framework to take measures to deal with such incidents and allows the Government to access funds set up for this purpose.

The Centre has invoked the Disaster Management Act, 2005 to direct states to enforce a lockdown and restrict public movement. Section 10 (2)(i) of the Act allows the National Executive Committee to give directions to governments regarding measures to be taken by them. The COVID-19 pandemic triggered debates about disease surveillance and disaster preparedness in public health discourse. The government either embarked on Indian Penal Code (IPC), 1860 and Epidemic Diseases Act (EDA), 1897 or at best resorted to DMA, 2005. Of late, it resorted to the Rajasthan Epidemic Diseases Act, 2020, by stringent command and control régime. The public health strategies reveal the shuttling of the government measures from epidemic to the pandemic and in reality, from pandemic to disaster. The government has stalled the overdue legal reform and took refuge in the DMA, 2005. The webinar aims at examining the promises and pitfalls legal innovation and application of DMA, 2005 in combating COVID-19 pandemic in India.

- **Types of Disasters**

Disasters generally are of two kinds 1) Natural Disaster and 2) Manmade Disaster. A natural disaster is a natural event with catastrophic consequences for living things in the vicinity. It is defined as a violent, sudden and destructive change in the environment not caused by human

activities, but due to natural phenomena such as floods, earthquakes, fire, hurricane etc. Natural Disasters can be divided into three specific groups:- *a) Hydro-meteorological disasters, b) Geophysical disasters c) Biological disasters.*

On the other hand Man-made disasters refer to all disasters resulting from man-made hazards. It is also defined as actions committed by a government against its own people; actions committed by an outside force for civil unrest or terrorism. Nuclear or radiological accidents, building fires, hazardous materials accidents, terrorism, riots, bridge collapses etc. are the instances of man-made disasters.. Man-made disasters can be also divided into three categories *a) armed conflict b) technological disasters c) Disasters that are not caused by hazards but occur in human settlements.*

Unlike natural disasters, preventive and regulatory measures assume greater importance in the case of man-made disasters. Of course, rescue and relief measures are common to both natural and man-made disasters. On account of the human element involved in triggering the man-made disasters, the victims can have recourse to civil and public law remedies and those responsible for culpable negligence may also be liable for criminal action under the provisions of Indian Penal Code or various special laws to which reference is made hereinafter. Specific remedies for claiming relief or compensation is available in certain statutes. Further, under the law of torts, compensation can be claimed in a Civil Court for the damage/injury caused on account of tortuous acts of negligence. Relief can also be sought against the public authorities by taking resort to Constitutional remedies under Article 32 and 226 of the Constitution.

Beside these disasters may also be classified on the basis of its occurrence and duration, i.e. how rapidly they begin and how long they last. In this classification disasters can be classified into two: 1) **Rapid onset or Cataclysmic disasters** and 2) **Slow onset or Long term or continuing disasters**. Rapid onset or Cataclysmic disasters include earthquake, cyclones, floods and tsunamis. Slow onset, long term or continuing disasters include civil wars or armed conflict, droughts and famine and epidemics. In Rapid onset or Cataclysmic disasters the damaged area is relatively small, while the area affected in continuing disasters is large. In a long term disaster the situation remains constant or may even deteriorate as time passes.

- **Legislative Framework: The Disaster Management Act, 2005**

The DM Act was enacted after the 2004 tsunami disaster hit the southern coasts of India killing over 10,000 people and causing massive devastation. It was the initial step towards installing an elaborate legal and policy framework to deal with a wide variety of disasters, both in terms of immediate response and long-term preparedness. The Act itself does not specifically mention examples of disasters.

The legislation which is of utmost relevance to the subject in question is The Disaster Management Act, 2005. The Act is aimed at prevention and mitigation of effects of disasters and for undertaking a holistic, coordinated and prompt response to any disaster situation. It is meant to provide for requisite institutional mechanisms for drawing up and monitoring the implementation of the disaster management plans and ensuring measures by various wings of government (vide Statement of Objects and Reasons). It provides for setting up of a National Disaster Management Authority under the Chairmanship of the Prime Minister, State Disaster

Management Authorities headed by the Chief Ministers and District Disaster Management Authorities headed by District Magistrates. It also provides for constitution of a National Disaster Response Force and setting up of National Institute of Disaster Management. The Act also provides for the constitution of Disaster Response Mitigation Funds at the National, State and District levels. The Act also provides for specific role for local bodies in disaster management. The Act requires the establishment of National Institute of Disaster Management, the functions of which include preparation of training modules for human resources development and promotion of awareness among stakeholders. The National Disaster Management Authority and the State level and District level authorities have been put in place pursuant to the said Act. Further, in many States, Disaster Relief Funds have been created and the Central Government makes substantial contribution thereto. Even earlier to this legislation, some States have enacted the State Disaster Management Acts. Though the Act is primarily designed to take care of the disasters caused by natural calamities on a large scale, the expression ‘disaster’ in the Act has a very wide connotation including within its fold man-made disasters.

The Act contemplates drawing up of a plan for disaster management at National, State and District level. Responsibilities have been cast on the Ministries and Departments of Government of India and the States to take measures necessary for prevention or mitigation of disasters in accordance with the guidelines laid down by the National Authority and the State Authorities as the case may be. Making provision for funds in the annual budget for the purpose of carrying out the activities and programmes set out in disaster management plans is contemplated by the Act. Offences and penalties are dealt with in Chapter X of the said Act. Section 56 contains an important provision that “any officer on whom any duty has been imposed by or under this Act and who ceases or refuses to perform or withdraws himself from the duties of his office shall, unless he has obtained the express written permission of his official superior or has other lawful excuse for so doing, be punishable with imprisonment for a term which may extend to one year or with fine or both. The prosecution under this Section can be launched only with the previous sanction of the Central Government or the State Government as the case may be. Punishment for obstruction by any officer or employee of the Central Government or the State Government or a person authorized by the National, State or District Authority in the discharge of his functions and refusal to comply with any direction given by or on behalf of the Government or the Authority is prescribed by section 51.

The functions of the State Executive Committee (SEC) of which the Chief Secretary is the Chairperson, are set out in Section 22. Sub-section(1) says that SEC shall have the responsibility for implementing the National Plan and State Plan and act as the coordinating and monitoring body for management of disasters in the State. Sub-section (2) enumerates various specific functions of SEC, without prejudice to the generality of the provision in of Subsection(1). Section 64 of the D.M. Act confers power on the National and State Executive Committees, State Executive Committee or the District Authority, as the case may be, to initiate action for making or amending the rules, regulations, bye-laws etc., if the same is required for the purposes of prevention of disasters or the mitigation thereof. The appropriate department or authority is required to take necessary action thereon.

In the aftermath of Bhopal gas tragedy, the Parliament enacted the **Environment (Protection) Act, 1986** to ensure that the developmental and industrial activities do not damage the environment or cause pollution. In 1991, the **Public Liability Insurance Act 1991** was enacted which imposed obligation on the owners of industries handling hazardous substances to take mandatory insurance to provide compensation to victims of industrial disasters. As far as the industrial workers are concerned, the Employees' State Insurance Act 1948 provides for compulsory State Insurance for stipulating certain benefits in the event of sickness and employment injury to workmen employed in factories.

The other relevant Central legislations are : The Cinematograph Act, 1952; the Factories Act, 1948; the Electricity Act, 2003 and Indian Electricity Rules, 1956; the Fatal Accidents Act, 1855; the National Green Tribunal Act, 2010; the Workmen's Compensation Act, 1923; The Explosive Substances Act, 1908, the Inflammable Substances Act, 1952, The Indian Boilers Act, 1923, The Mines Safety Act 1952 and Mines Rules, The Insecticides Act, 1968, The Civil Liability for Nuclear Damages Act, 2010; provisions of Indian Penal Code viz. Section 304-A (causing death by rash or negligent act), Section 304 (culpable homicide not amounting to murder), the offences under Chapter-XIV concerning negligent conduct with respect to poisonous and explosive substances, fire or combustible material.

Thus, there is a plethora of laws in our country aimed at building safety, industrial safety, fire prevention and control and safety of electrical installations. Disaster prevention, mitigation and management at the National and State levels has been given a statutory basis. Alas, many regulatory provisions in the State and Central Laws cry for effective implementation. The crux of the problem lies in enforcement of laws. It is common experience that many provisions are observed more in their breach. In the aftermath of a grave mishap, there will be knee-jerk reaction, there will be talk of improving the systems and there will be checks and raids. One is left to wonder whether the authorities concerned have suddenly become conscious of their duties and obligations under the laws of the land. As observed by the Supreme Court in **Municipal Corporation of Delhi Vs. Association of Victims of Uphaar Tragedy**<sup>1</sup> *"As the days pass, slowly the disaster management equipment and personnel are allowed to slip away from their readiness. Only when the next disaster takes place, there is sudden awakening"*. The Supreme Court further observed: *"In regard to the preparedness to meet disaster, there could be no let up in the vigil. The expenditure required for maintaining a high state of alert and readiness to meet disaster may appear to be high and wasteful regarding 'non-disaster periods' but the expenditure and readiness is absolutely must"*. The officials at the field level or in the lower rung of the hierarchy are mostly blamed, little realizing that the existing staff is far from sufficient, the equipment provided to them is far from satisfactory and the repeated requests made to improving the infrastructure and quality of equipment as well as to fill up vacancies are not given due attention at the higher levels. In Uphaar tragedy case the Delhi High Court also noted that several requests by the Fire Department for upgradation of the fire combating equipments were caught up in bureaucratic red tape. The Court observed: *"When lives of citizens are involved, the requirement of those dealing in public safety should be urgently processed and*

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<sup>1</sup> (AIR 2012 SC 100);



*no such administrative process of clearance in matters of public safety should take more than 90 days*". Apathy, collusion, perfunctory inspection, lack of follow up action – all these have marred the system to check violations of law. Paradoxically, the infringement of safety laws and norms is rampant in the Government offices and buildings as no one is made accountable and the officials in charge have a feeling of impunity and immunity. There are hardly any inspections of Government buildings, especially the old and high rise. In the name of economy, sufficient manpower required is not deployed and safety norms are quite often thrown to winds. We are saying all this because the addition of laws or changes in law are by themselves no answer to tackle the problems connected with manmade disasters. The aspect of enforcement is highly important. Further, adequate legal mechanisms and funds should be made available to ensure that the victims get immediate relief without hassles. The victims and their dependents should be enabled and empowered to get the due relief in the form of compensation and other assistance at the earliest in keeping with the ideals of welfare State.

- **The Persistent "Good Faith" Clause**

The BDM guidelines also suggest the need for modifications in existing legal framework to deal with biological disasters that include giving power to central and State governments and local authorities to "act with impunity, notify the affected area, restrict movements or quarantine the affected area". These provisions had already been made under Section 73 of the DM Act, which states that no legal action can be taken against any government or authority at Central, State, District, or Local levels or any person working on their behalf for any work "done in good faith". Many States additionally invoked the Epidemic Diseases Act 1897 (EDA) to deal with the COVID-19 crisis. Enforceable by the State Government, this Act mainly prescribes temporary regulations to be observed by the public that the government deems necessary for the prevention of the outbreak or spread of an epidemic. It also provides for the power for inspection of people travelling by railway or other modes and their segregation in hospitals or temporary accommodation if suspected to be infected. The Act also empowers the Central Government to inspect people aboard or about to board ships or vessels leaving or arriving at any port and detain them if necessary. Violations under the Act are liable for action under Section 188 of IPC and any action taken in "good faith" under this Act also could not be challenged via any suit or legal proceeding.

This Act was also amended via an ordinance in April 2020. The main impetus of this amendment was to make provisions for punishment or legal action against those who committed any acts of violence against healthcare professionals who were discharging their duties in tackling the epidemic.

The clause for "good faith" has been a persistent feature in all the Acts and BDM guidelines related to disasters that has not been clearly defined and is open to vague interpretations. Similarly, the insistence on impunity for officials, especially in an epidemic situation where response includes mass surveillance and restriction of movement, is also a reason for worry for civil liberties and rights scenario. The onslaught of cases of police brutality during the COVID-19 lockdown has raised concerns regarding the tendency of "over-policing" in India and its inadequacy in general, let alone a public health crisis like the COVID-19 pandemic.

- **Efforts to Frame Laws on Disaster Management at International level**

**(i) The Geneva Mandate on Disaster Reduction**

Recognizing that the world is increasingly being threatened by large scale disasters triggered by hazards, which will have long term negative social, economic and environmental consequences on nature and hamper nation's capacity to ensure sustainable development and investment, particularly in developing countries, International Decade for natural Disaster Reduction (IDNDR) was envisaged for the year starting from 1990 towards partnerships for Disaster Reduction in the 21st century. To guarantee a safer world for future generations and to build on progress achieved during the IDNDR, in 1999 the Geneva mandate on Disaster Reduction was adopted by IDNDR International Programme Forum to implement policy measures at the international, regional, sub-regional, national and local levels aimed at reducing the vulnerability of nature to natural and technological hazards through proactive rather than reactive approaches.

**(ii) Yokohama Strategy**

In the Yokohama Strategy and Plan of Action for a Safer World, formulated in the year 1994 during the World Conference on Natural Disaster Reduction in Japan in the context of the International Decade for Natural Disasters, when member nations of the United Nations met, a certain plan of action known as the Guidelines for Natural Disaster Prevention, Preparedness, and Mitigation was drawn up for implementation by each of the nations which had participated. In the said action plan for the year 2000, each nation was required to frame national legislation on disaster management. Following the above plan of action, many nations have taken steps to pass suitable legislations with reference to the Yokohama Strategy on disaster management.

**(iii) Hyogo Framework**

The World Conference on Disaster Reduction was held from 18 to 22 January 2005 in Kobe, Hyogo, Japan, and adopted the present frame work for Action 2005-2015 : Building the Resilience of Nations and Communities to Disasters (known as the " Frame work for Action"). The Conference provided a unique opportunity to promote a strategic and systematic approach to reducing vulnerabilities and risks to hazards. It underscored the need for, and identified ways of, building the resilience of nations and communities to disasters.

- **INSTITUTIONAL FRAMEWORK**

**1. National Disaster Management Authority (NDMA)**

The NDMA, as the apex body for disaster management, is headed by the Prime Minister and has the responsibility for laying down policies, plans and guidelines for DM and coordinating their enforcement and implementation for ensuring timely and effective response to disasters. It will approve the National Disaster Management Plan and DM Plans of the Central Ministries / Departments.

**2. National Executive Committee (NEC)**

The NEC is the Executive Committee of NDMA, which assists the NDMA in the discharge of its functions and also ensures compliance of the directions issued by the Central

Government/NDMA. It is headed by the Union Home Secretary, along with Secretaries from some other ministries, and senior officers of GOI as members.

### **3. National Institute of Disaster Management (NIDM)**

Capacity building along with training, research, documentation and development of a national level information base is the main responsibility of NIDM. It organizes training of trainers, DM officials and other stakeholders.

### **4. National Disaster Response Force (NDRF)**

NDRF is constituted for the purpose of specialized response to disaster situation/disasters/emergencies, both natural and manmade, under the command and supervision of NDMA. The NDRF, presently comprising of 8 to 10 battalions, is positioned at different locations in the country. NDRF units would maintain close liaison with the designated State Governments and it would provide prompt services in handling disasters. It will also impart basic training to all the stakeholders identified by the State Governments.

### **5. State Disaster Management Authority (SDMA)**

At the State level, the SDMA, headed by the Chief Minister, has the responsibility for laying down policies and plans for DM in the State. It would approve the State Plan in accordance with the guidelines laid down by NDMA, coordinate the implementation of the State Plan, recommend provision of funds for mitigation and preparedness measures and review the departmental plans of the different departments of the State, to ensure the integration of prevention, preparedness and mitigation measures.

### **6. State Executive Committee (SEC)**

The SEC, headed by the Chief Secretary of the State Government, has the responsibility to assist the SDMA in the performance of its functions. It has the responsibility to coordinate and monitor the implementation of the National Policy, National Plan and the State Plan.

*The primary responsibility for disaster management rests with the State. The institutional mechanism put in place at the Centre, State and District levels would help the State manage disasters in an effective manner.*

### **7. State Disaster Response Force (SDRF)**

SDRF has been constituted in the State, with the assistance of Rajasthan Armed Constabulary (RAC). Initially, it is comprised of 150 trained and experienced personnel of RAC and they are stationed at Kota, Jodhpur and Jaipur with effective strength of 50 each. The force has been provided with expertise training and equipment to serve as state's response team during disasters.

### **8. Centre for Disaster Management**

A Centre for Disaster Management, located in the State Administrative Training Institute (ATI), Jaipur, has been given the responsibility of capacity building in the State. It organises Trainings of Trainers (Tot) and other stakeholders and also serves as a centre of knowledge and documentation for DM in the State.

### **9. District Disaster Management Authority (DDMA)**

The DDMA is headed by the District Collector to act as the planning, coordinating and implementing body for DM at the district level and take all necessary measures for the purposes of DM in accordance with the guidelines laid down by NDMA and SDMA. It has the responsibility to prepare the District DM Plan for the district.

## 10. Local Authorities

Local authorities, consisting of Panchayati Raj Institutions (PRIs), Municipalities, District and Cantonment Boards and Town Planning Authorities, which control and manage civic services, have the responsibility to ensure capacity building of their officers and employees for managing disasters, carrying out relief, rehabilitation and reconstruction activities in the affected areas. They have their own DM Plans as per the guidelines of NDMA, SDMA and DDMA.

*At the district level, DDMA would act as the district planning, coordinating and implementing body for disaster management and would take all measures for the purposes of disaster management in the District in accordance with the guidelines laid down by NDMA and SDMA.*

## 11. Nodal Departments

The State Government has designated disaster specific Nodal Departments for efficient management of disasters.

- **DISASTER MANAGEMENT DURING PANDEMIC**
- **Covid-19**

The COVID-19 epidemic or pandemic is an ongoing spread of coronavirus disease identified in 2019 (COVID-19). The outbreak was first reported in Wuhan (China) at the end of December 2019, but the source was still unclear. Hong Kong (China) reported the first confirmed COVID-19 patient on 22 January 2020, and then gradually the number of confirmed cases increased. The World Health Organization (WHO) declared the outbreak to be a Public Health Emergency of International Concern (PHEIC) on 30 January 2020. During the early stage of the COVID-19 outbreak, the number of infected cases continued to grow. Some problems emerged including the absence of a public health emergency response system for making contingency plan and for coordinating the anti-epidemic response action; and lack of adequate manpower (such as nurses and doctors with critical care experiences) & resources (such as masks, personal protective equipment, & ventilators). The situation continued to get worse, COVID-19 continued to spread from continent to continent, and finally WHO officially declared the COVID-19 outbreak as a pandemic on 11 March 2020.

- **Management tactics to be adopted**

Many people have just known that epidemic is a local outbreak of an infectious disease, but most of them actually do not aware that an epidemic is being classified as one kind of biological disaster. Disaster is defined as a serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources. Also, such event overwhelms local medical capacity and requires a request to the national or international level for external assistance.

The usual natural disaster such as earthquake results in a large number of trauma patients which require trauma management including airway management, breathing support, circulatory intervention and wound care; whereas epidemic results in a large number of infected patients, which require infection control measures and medical treatment including the use of anti-

microbial drugs and vaccines. Although the nature of the disaster and the format of management differ, however, the concept and approach of management are similar. According to WHO, the disaster management cycle has four components, which include mitigation (reducing risk); preparedness (providing training and drills); response (carrying out medical rescue), and recovery (restoring and reconstructing physical, psychological, and social health).

To manage a biological disaster or epidemic more properly and effectively, the healthcare system should reduce the disaster risk before it happens (mitigation); equip the healthcare team and public adequately before the epidemic outbreak occurs (preparedness); dispatch a public health emergency response team to control and treat the infection (response); and facilitate those infected patients and infected healthcare workers (HCWs) to recover physically, psychologically and socially.

- **Government role in Managing Pandemic**

On March 24, 2020 Ministry of Home affairs declared “The COVID-19 epidemic” in India which has affected many countries and the World Health Organization has declared it ‘Pandemic’. Government of India (GOI) has been taking several proactive preventive and mitigating measures starting with progressive tightening of international travel, issue of advisories for the members of the public, setting up quarantine facilities, contact tracing of persons infected by the virus and various social distancing measures.

Several advisories have been issued to States and Union Territories (UTs) for taking necessary measures to contain the spread of this virus. Government have temporarily suspended metro and rail services as well as domestic air traffic. The situation has been continuously reviewed at the level of the Prime Minister of India.

The PM has addressed the Nation on the need for preventive measures and has also held meeting with all the Chief Ministers through video conference. While steps taken by State/UT Governments are in the right direction, lack of uniformity in the measures adopted as well as in their implementation, may not serve the objective of containing the spread of the virus. Considering the situation. The National Disaster Management Authority (NDMA), chaired by Hon’ble Prime Minister Shri Narendra Modi, in exercise of the powers under section 6(2) (i) of the Disaster Management Act, 2005, has issued an Order dated 24.03.2020, directing the Ministries/ Departments of Government of India, and the State/Union Territory Governments and State/ Union Territory Authorities to take effective measures to prevent the spread of COVID-19 in the country.

In compliance of the said Order of NDMA, Ministry of Home Affairs (MHA) has issued an Order dated 24.03.2020 under Section 10(2)(l) of the Disaster Management Act, directing the Ministries/ Departments of Government of India, State/Union Territory Governments and State/ Union Territory Authorities to take effective measures for ensuring social distancing so as to prevent the spread of COVID-19 in the country.

The Order shall remain in force, in all parts of the country, for a period of 21 days with effect from 25.03.2020. The Ministries/ Departments of Government of India and State Governments/Union Territory Administrations, have been directed to ensure strict implementation of these Orders. The implementation of these measures will be monitored by MHA.

As per WHO recommendation, “Social Distancing” is key for controlling COVID19. Achieving Social distance for a country with population of 1.3 billion can only be possible with complete lockdown which is not an easy task to enforce on public without proper experimentation and communication. Hence call for “Janata Curfew” by PM Modi, requesting entire country to voluntarily stay at home for 12 hours helped not just in understanding pain points prior to 21daylockdown but also gave an experience for public to make prior preparation which also caused very less disruption due to weekend.

India is one of the first country for imposing international travel ban, screening of 1.5Million International passengers on arrivals and quarantine those with symptoms followed by 21DayLockDown. While initially it was criticized by experts due to economic repercussions, it got an acceptance globally and rest of the countries started following the same. This is applauded by experts from WHO and UN as proactive approach. holistic approach followed by government including Direct Benefit Transfer, support for immigrant labors, work from home opportunities and huge base of volunteers. As per the “statistical rate of growth-based analysis” by health ministry, cases could be projected to spiral to 8.2 lak by April 15th registering a 41% cumulative growth rate.

COVID impact is not limited to physical health of People but it is causing huge stress among people due to which there are some cases of even prominent people committing suicide or died of heart attack. PM Modi announced 9PMfor9Minutes Challenge on April 5th to turn off lights and lit lamps for 9 minute at 9pm as a mark of unity. As per Ministry of Power, they expected reduction of demand in power by 12GW but after this event they realized that demand reduced by 32GW, which proves overwhelming response by public for this challenge. As per the medical experts, lighting of lamp and standing for cause will help in destressing. Hence is another exercise by government which is executed at free of cost but gave best results.

Regular interactions with all stakeholders, taking state government admins into confidence, discussions with peers like SAARC Countries, G20 groups helping for sharing knowledge, medical equipment’s empowering state governments etc., ensured that India is either self sufficient or exchange resources with peer countries. Proactive approach of India not just helped country in containing cases but also helping other countries by supplying one of the essential medicine HCE and PPE Kits. With Railways, Army, Ministry of Women Welfare also taking part in the mission of upgrading medical facilities, India might soon will be in a position to help other countries with medical services too.

As there is no clear evidence if Lockdown and social distancing can help in containing COVID, proactive announcement of 21DayLockdown has clearly helped government for spikes in cases. During this lockdown period government worked on setting up COVID specialty hospitals, Isolation wards, procuring ventilators and PPE kits etc., India is well ahead of the curve in terms of preparation. For a country as large as India, the number one priority for the government continues to be a containment strategy – the lockdown, sealing off the red zones are some of the measures to stop the spread of the virus. To help in this, the Government of India also launched mobile app – ‘AarogyaSetu’, that is aimed at curbing the spread by effective tracking and monitoring of COVID-19 infected patients, regular updates, notifications and alerts from ‘Mygov.in’. ArogyaSetu app is appreciated as one of the innovative solution by WHO.

- **ROLE OF JUDICIARY DURING PANDEMIC**
- **Judicial Preparedness during Pandemic**

The COVID-19 pandemic has created considerable challenges for the functioning of courts during states of emergency, curfews and lockdowns. Pandemic which caught hold of the whole world, no doubt, shocked the litigants, lawyers, judges and the administrators of justice. The Supreme Court of India and High Courts have adopted measures to reduce the physical presence of lawyers, litigants, court staff, para legal personnel and representatives of the electronic and print media in courts across the country and to ensure the continued dispensation of justice. Members of the judiciary rendered effective cooperation in the implementation of measures designed to reduce the transmission of the virus. The scaling down of conventional operations within the precincts of courts is a measure in that direction. Access to justice is fundamental to preserve the rule of law in the democracy envisaged by the Constitution of India. The challenges occasioned by the outbreak of COVID-19 were addressed while preserving the constitutional commitment to ensuring the delivery of and access to justice to those who seek it. It was necessary to ensure compliance with social distancing guidelines issued from time to time by various health authorities, Government of India and States. Court hearings in congregation ought to become an exception during that period. Courts at all levels responded to the call of social distancing and ensured that court premises do not contribute to the spread of virus. This can only be achieved with the collective efforts of Apex Court and High Courts. In **Suo Moto Writ (Civil) No.5/2020 In re: Guidelines for court functioning through video conferencing during Covid-19 Pandemic** Apex Court exercised power under Article 142 of the Constitution of India and issued following guidelines.

- i. All measures that have been and shall be taken by this Court and by the High Courts, to reduce the need for the physical presence of all stakeholders within court premises and to secure the functioning of courts in consonance with social distancing guidelines and best public health practices shall be deemed to be lawful.
- ii. The Supreme Court of India and all High Courts are authorized to adopt measures required to ensure the robust functioning of the judicial system through the use of video conferencing technologies; and
- iii. Consistent with the peculiarities of the judicial system in every state and the dynamically developing public health situation, every High Court is authorised to determine the modalities which are suitable to the temporary transition to the use of video conferencing technologies;
- iv. The concerned courts shall maintain a helpline to ensure that any complaint in regard to the quality or audibility of feed shall be communicated during the proceeding or immediately after its conclusion failing which no grievance in regard to it shall be entertained thereafter.
- v. The District Courts in each State shall adopt the mode of Video Conferencing prescribed by the concerned High Court.

- vi. The Court shall duly notify and make available the facilities for video conferencing for such litigants who do not have the means or access to video conferencing facilities. If necessary, in appropriate cases courts may appoint an amicus-curiae and make video conferencing facilities available to such an advocate.
- vii. Until appropriate rules are framed by the High Courts, video conferencing shall be mainly employed for hearing arguments whether at the trial stage or at the appellate stage. In no case shall evidence be recorded without the mutual consent of both the parties by video conferencing. If it is necessary to record evidence in a Court room the presiding officer shall ensure that appropriate distance is maintained between any two individuals in the Court.
- viii. The presiding officer shall have the power to restrict entry of persons into the court room or the points from which the arguments are addressed by the advocates. No presiding officer shall prevent the entry of a party to the case unless such party is suffering from any infectious illness. However, where the number of litigants are many the presiding officer shall have the power to restrict the numbers. The presiding officer shall in his discretion adjourn the proceedings where it is not possible to restrict the number.

In line of these directions various guidelines were issued by the High Courts all over the country for containment of transmission of virus and also to ensure access of justice to all.

- **Judicial pronouncements**

- i. **Gaurav Kumar Bansal and Ors. vs. Union of India (UOI) and Ors. (08.05.2017 - SC) : 2017(6)SCC 730**

In this the Apex Court reviewed the steps taken by the NDMA and opined that there has been sufficient compliance with the provisions of the Act and it is not necessary for us to issue any particular directions. All we need to say is that it is absolutely necessary for the NDMA constituted at the national level and the State Disaster Management Authority at the State level to be ever vigilant and ensure that if any unfortunate disaster strikes there should be total preparedness and that minimum standards of relief are provided to all concerned.

- ii. **Gurusimran Singh Narula vs. Union of India (UOI) and Ors. (05.11.2020 - SC) : 2020(6)ALT170**

While dealing with the Public Interest Litigation filed to seek direction to forthwith ban on spraying of all kinds of disinfectants on human beings which is being done supposedly for protecting the human beings from the Novel Coronavirus disease 2019. The Apex Court observed as under:

“When Respondent No. 1 has issued advisory that use of disinfectant on human body is not recommended and it has been brought into its notice that despite the said advisory, large number of organizations, public authorities are using disinfectants on human body, it was necessary for the Respondent No. 1 to issue necessary directions either to prevent such use or regulate such use as per requirement to protect the health of the people. The provisions of Disaster Management



Act, Section 10, 36 and other provisions are not only provisions of empowerment but also cast a duty on different authorities to act in the best interest of the people to sub-serve the objects of the Act.”

**iii. Kush Kalra V. Union Of India, 2020 SCC Online SC1017**

The direction in this case came after a PIL was filed before the Court seeking an end to the practice of authorities affixing posters outside residences of Covid-19 positive persons who are under home isolation. The Petition prayed that directions be issued to stop publishing the names of COVID-19 positive persons by the official of the Health Department in the States and Union Territories and also to stop freely circulating their names in welfare associations of colony and apartment complex which are serious violation of fundamental rights, right to privacy and right to live with dignity. The 3-judge bench of Ashok Bhushan, R. Subhash Reddy and MR Shah, JJ has directed that no State or Union Territory is required to paste posters outside the residence of COVID-19 positive persons, as of now. The State Governments and Union Territories can do so only when any direction is issued by the competent authority under the Disaster Management Act, 2005

**iv. In Re: Problems and Miseries of Migrant Labourers (09.06.2020 - SC) : 2020(7)SCC 181**

The National Disaster Management Authority in exercise of power under Section 6(2)(i) decided to direct the Ministries/Departments of Government of India, State Governments and State Authorities to take measures for ensuring Social Distancing so as to prevent the spread of Covid-19 in the country w.e.f. 25.03.2020 for twenty-one days. Necessary guidelines were also issued on 24.03.2020 by the Government of India, Ministry of Home Affairs. The migrant labourers on account of Lockdown measures enforced w.e.f. 25.03.2020, and due to closure of their place of work/source of employment started moving in several parts of the Country to reach their hometown. The Government of India, Ministry of Home Affairs noticed this fact on 29.03.2020 in following words:

Whereas, movement of large number of migrants have taken place in some parts of the country so as to reach their hometown, this is the violation of Lockdown measures of maintaining Social Distance.

To this the Apex Court observed that under the guidelines, movement by migrants also constituted an offence Under Section 51 of Disaster Management Act, 2005. Police Authorities started stopping such movements and also registered certain First Information Reports against the migrant labourers. The movement of migrant labourers, tourists and students was permitted by the Government only w.e.f. 29.04.2020. There may be First Information Reports or complaints against migrant labourers alleging violation of Lockdown measures in moving on roads. The migrant labourers who were earning their bread by working in different establishments due to cessation of work were forced to move to their hometown. The action of movement of these migrant labourers after enforcement of the Lockdown measures was by force of circumstances. The Court was of the view that the State may consider withdrawing Prosecution/Complaints lodged against such migrant labourers for the offences as referred to in

Section 51 of the Disaster Management Act, 2005 and other related offences lodged against the migrant labourers during the period of Lockdown under Disaster Management Act, 2005.

**v. In Re: The Proper Treatment of Covid 19 Patients and Dignified Handling of Dead Bodies in the Hospitals and Ors. (19.06.2020 - SC) : 2020(7)SCC 145**

The Apex Court issued notice in this Suo Motu writ petition with object to notice deficiencies, shortcomings and lapses in patient care of Covid-19 in different hospitals in National Capital Territory of Delhi and other States. The object was to take remedial action by all concerned to redeem the plight of patients and other persons who needs medical care

The Apex Court observed that the Union of India, Ministry of Home Affairs may issue appropriate directions in exercise of power under Disaster Management Act, 2005 to all States/Union Territories to uniformly follow the revised discharge policy dated 08.05.2020 with regard to discharge of different categories of patients as categorised in the revised discharge policy.

**vi. Gajendra Sharma V. Union Of India, 2020 SCC Online SC 963 –**

It is a case relating to customers requesting to waive off interest on loan during the moratorium period, the 3-judge bench of Ashok Bhushan, R. Subhash Reddy and MR Shah, JJ has directed that all steps to implement the decision dated 23.10.2020 of the Government of India, Ministry of Finance be taken so that the benefit to the eight categories contemplated in the affidavit can be extended.

**vii. In Re: Contagion Of Covid 19 Virus In Children Protection Homes, 2020 SCC OnLine SC 1026 –**

The 3-judge bench of L. Nageswara Rao, Hemant Gupta and Ajay Rastogi, JJ has issued directions to ensure education of children in Child Care Institutions which has suffered due to the COVID-19 pandemic. The Court issued the following directions

- State governments to provide the necessary infrastructure, stationary, books, printers along with the other equipment that is necessary for children to quantitatively attend online classes on the basis of the recommendation made by the District Child Protection Units, within 30 days from the date of the order.
- State Government shall also ensure that the required number of tutors are made available for teaching the children in various Child Care Institutions. Extra classes, if necessary, should also be taken for the children to help them in preparing for the final examinations to be held next year.
- District Child Protection Units shall inform the District Legal Service Authorities about the progress made in the infrastructure being provided to the Child Care Institutions and the functioning of online classes periodically i.e. once in a month.
- District Child Protection Units to make an assessment of the children who are restored to their families or guardians or foster homes during the lockdown by taking the assistance of other statutory bodies like the Child Welfare Committees and Juvenile Justice Boards.

**viii. In Re: Contagion of COVID-19 Virus in Prisons, Suo Moto Writ Petition (C) No.1/2020 (Dated 23/03/2020).**

A Bench comprising the Chief Justice SA Bobde, Justices L. Nageswara Rao and Justice Surya Kant directed that prisons must ensure maximum possible distancing among the prisoners including undertrials. The bench also took into consideration the possibility of outside transmission and directed that the physical presence of all the undertrial prisoners before the Courts must be stopped forthwith and recourse to video conferencing must be taken for all purposes. The bench also directed that the transfer of prisoners from one prison to another for routine reasons must not be resorted except for decongestion to ensure social distancing and medical assistance to an ill prisoner and there should not be any delay in shifting sick person to a Nodal Medical Institution in case of any possibility of infection is seen. The bench further directed that each State/Union Territory shall constitute a High-Powered Committee to determine which class of prisoners can be released on parole or an interim bail for such period as may be thought appropriate.

### **Rajasthan High Court**

**ix. Sunil Samdaria and Ors. vs. The State Government of Rajasthan and Ors. (18.12.2020 - RAJHC) : MANU/RH/0607/2020**

State Government of Rajasthan in the wake of COVID-19 pandemic, vide its order dated 09.04.2020, deferred the collection of school fees for 3 months by the private schools recognized by Primary and Secondary Education Departments. To this the Court observed as follows:

“It is true that in normal situation the private schools are entitled for collection of school fees as per the provisions of the act of 2016 but as discussed above provisions of the Disaster Management Act, 2005 have overriding effect on all other statutes and the impugned orders have been found to be issued under the act of 2005 for mitigating the plight of the citizens in unprecedented crises of the COVID-19 Pandemic. Therefore, the impugned orders can't be termed as invalid or inexecutable”

**x. Society of Catholic Education Institutions in Rajasthan and Ors. vs. The State Government of Rajasthan and Ors. (07.09.2020 - RAJHC) : MANU/RH/0448/2020**

While dealing with the issue of charging of school fee by the schools the court observed that a balance is required to be struck between financial difficulty of the school management relating to release of the salary of the staff and minimum upkeep of school on one side and the financial pressure, which has come on the parents due to the pandemic and lock-down .

The Court was also of the view that under the Act of 2005, the authorities would have jurisdiction to lay down policy, guideline and direction, which may be found to be suitable for the purpose of providing the relief to the persons affected by the disaster as mentioned in Section 22 of the Act of 2005. The guidelines can be laid down for mitigation of such loss to the citizens. The powers and functions of the State Executive Committee under Section 22(j) provide that the State Executive Committee shall ensure that non-governmental organizations carry out their activities in an equitable and non-discriminatory manner. The petitioners are all non-governmental organizations and are expected therefore to play their necessary role in mitigating the sufferance caused to the public at large, while at the same time also protect their own staff

from facing financial difficulties. In view of the above, the Court by an interim measure and till the situation gets normalized, directed the school authorities to allow the students to continue their studies online and allow them to deposit 70% of the tuition fees element from the total fees being charged for the year.

**xi. Suo Motu V. State of Rajasthan**

Challenge in brief: The suo moto PIL was registered on the basis of news reported in various news channels of Rajasthan stating that a huge number of prisoners (approx. 55), both convicts and undertrials at Jaipur district jails were detected corona positive.

Order: Taking into account the circumstances posed by the outbreak of Covid-19 pandemic, the Court directed the state government to maintain high standards of care for the jail inmates. It also issued certain directions in this regard such as incorporation of the COVID-19 SOP for jails so that the accused will be tested by local medical authorities for coronavirus and if found negative then only the accused person will be remanded to jail/custody. The jail authorities who are in direct contact with the prisoners also require special attention to ensure that such virus is not transmitted to them or to their families and authorities will ensure test of jail staff on a regular random basis. The isolation wards in the jails shall be inspected by the medical officers of each district and take steps which will be necessary for maintaining cleanliness and sanitization. The aforesaid directions were made to the State of Rajasthan in order to incorporate the same in their SOP for jails for the purpose of the present COVID-19 pandemic.

## **CONCLUSION**

Finally, every disaster has sociological, psychological, ecological, economical and political ramifications nationally and internationally. Loss, damages and unending miseries spawn by disasters make it difficult to identify and answer a series of important issues pertaining to disaster management. It is worth here to mention that Disaster Response System consists of various stages in the disaster management activities such as Preparatory stage, Warning stage, Emergency stage, Rehabilitation stage and Reconstruction stage. Still a proper understanding of the consequences of disasters and their devastating impact is necessary to *learn* from our faults, minimize our weaknesses and to build on our strengths in order to develop an effective and time-bound system for disaster management. An effective system which set out the legal, institutional and financial arrangements for disaster management, which plans and build up strategies for disaster response system to reduce loss of life, injuries, human sufferings and to alleviate the other adverse effects of future disasters.

Disaster Management is a part of the Fundamental Right of Right to Life under Article 21 of the Constitution of India. It imposes a duty on the part of the State to adopt proper disaster management policies as a part of its duty to ensure sustainable development of the nation. In the view of the frequency of disaster striking India, there is a need for continued vigilance, preparedness and conscious efforts to reduce the occurrence and for mitigation of impact of disaster.