

Disaster Management in India : Paradigm Shift in Public Policy

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Abstract

India is one of the most sensitive disaster prime countries of the world, which is exposed to recurring devastations due to cyclones, floods, earthquakes, landslides for centuries. It is estimated that over 80% of the country's geographical area is under the risk of natural disaster. Further 59% of the land mass is prone to earthquakes of various intensities; over 40 million hectares is prime to floods; about 8% of the tidal area is prone to cyclones and 69% of other area prone to drought. According to a study conducted by UNICEF, every year 65 million people an average in India is affected by natural disaster. Keeping this in background an attempt has been made here to examine four major aspects connected with the subject viz., the evolutionary process of disaster management in India, an overview of the major disasters in the country, significance of the Disaster Management Act 2005 and the key elements of disaster management plan, 2016.

Although the NDMP has been designed as a dynamic document which needs periodic improvement in tune with the emerging global best practices in disaster management. It requires certain modifications. Firstly it has not laid down a clear and practical roadmap. The identification of activities for disaster management and disaster risk mitigation are too generic. Secondly, the plan has not given a clear time frame for carrying out the activities given in the plan design. Instead it has prescribed that the activities must be carried out in short, medium, mid-and long term basis. Thirdly, NDMP has neither projected the requirements of funds nor provides how the funds shall be mobilized for carrying out the activities mentioned in the plan. Fourthly, it is silent about monitoring and evaluation of the plan. Fifthly, the activities mentioned in the NDMP are not new and they have already been mentioned in the Act and guidelines issued by the Natural Disaster Management Authority (NDMA) since 2007. Lastly, unlike Sendai Framework, the NDMP does not set any goals or targets nor it has explicitly provided how the Sendai goals shall be achieved. Thus we can conclude that NDMP needs to be supplemented with clear goals, targets and time frames in order to achieve the vision of disaster resilience. Natural disasters are the result of climatic imbalance and it cannot be prevented fully but we can develop effective working system and minimize its loss by reducing vulnerability and increasing capacity. Vulnerability is more in India because of population growth, poverty, rapid urbanization environmental degradation and lack of information about disaster. Certainly we cannot prevent disasters but its vulnerability can be reduced to a large extent by taking adequate and timely pre-contrary means.

Keywords: Disaster; Management; Cyclone; Land Slide.

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Introduction

India is one of the most sensitive disaster prime countries of the world, which is exposed to recurring devastations due to cyclones, floods, earthquakes, landslides for centuries. It is estimated that over 80% of the country's geographical area is under the risk of natural disaster. Further 59% of the land mass is prone to earthquakes of various intensities; over 40 million hectares is prime to floods; about 8% of the tidal area is prone to cyclones and 69% of

other area prone to drought. According to a study conducted by UNICEF, every year 65 million people an average in India is affected by natural disaster. Keeping this in background an attempt has been made here to examine four major aspects connected with the subject viz., the evolutionary process of disaster management in India, an overview of the major disasters in the country, significance of the Disaster Management Act 2005 and the key elements of disaster management plan, 2016.

Part-I

Major Disasters in India: An Overview

Draught Related Issues

Drought is a perennial feature in some states of India. Sixteen percent of the country's total area is drought prone and approximately 50 million people are annually affected by droughts. In fact, drought is a significant environmental problem too. It is caused by low rainfall over a long period of time. In India, about 68% of the total sown area of the country is drought prone.

Most of the drought prone areas which are identified by the Government of India lie in the arid, semiarid and sub-humid areas of the country.

Table 1: Losses due to Drought -1999-2001

Sl. No	Year	Districts affected	Villages affected (No)	Population affected (Lakh)	Damage to crops area (Lakh Ha)	Estimated value of damaged crops (Rs crore)	Cattle population affected (in lakh)
1	1999	125	-	369.88	134.22	6.44	345.60
2	2000	110	54,883	378.14	367.00	371.87	541.67
3	2001	103	22,255	88.19	67.44	NA	34.28
	TOTAL	338	77,138	836.21	563.66	378.31	921.55

Source: Govt.of India, Ministry of Agriculture, Annual Reports. Natural Disaster Management Division.

Table 2: Regional Distribution of Drought years in India

Region	1951-60	1961-70	1971-80	1981-90	TOTAL
Bihar Plateau	0	1	1	5	7
Bihar Plains	2	1	1	4	8
Western Rajasthan	1	3	3	7	14
Gujarat Region	3	1	2	5	11
Saurashtra & Kutch	1	2	2	5	10
Marathwada	0	0	2	3	5
Orissa	2	2	5	6	15
Total	9	10	16	35	70

Source: Govt.of India, Ministry of Agriculture, Annual Reports

Cyclone Related Issues

India has a very long coastline of 5700 km., which is exposed to tropical cyclones originating in the Bay of Bengal and Arabian Sea. The Indian Ocean is one of the six major cyclone-prone regions of the world. In India cyclones occur usually between April and May and between October and December. The eastern coastline is more prone to cyclones. About 80% of total cyclones generated in the region originate there.

Major cyclones in India

- 1737 October 7 in the Bay of Bengal: A cyclone destroyed 20,000 ships in the densely populated area with a huge amount of shipping and trade. It was estimated that more than 300,000 people died in that cyclone.
- 1789 December at City of Coringa: Three tidal waves caused by a cyclone destroyed the harbour city at the mouth of the Ganges river. Most ships were sunk and an estimated 20,000 people drowned.
- 1839 November at City of Coringa: A gigantic 40-foot tidal wave caused by an enormous cyclone wiped out the harbour city that was never entirely rebuilt. Twenty Thousand vessels in the bay were destroyed and 3,00,000 people died.
- 1864 October 5: Most of Calcutta denuded by cyclone and 70,000 people killed.

- 1876 October 31 in the Meghna River Delta near City of Backergunge: A tidal wave caused by a cyclone flooded the river delta; some areas were submerged under 40 feet of water; 1,00,000 people were drowned and another 1,00,000 are reported to have perished from subsequent diseases caused by the polluted water.
- 1942 October 16: A cyclone devastated Bengal and about 40,000 lives were lost.
- 1967 October 12 in Orissa: A massive cyclone struck the rural state consisting of small villages. All lives (human and animal) and structures were wiped out. The precise number of fatalities and destruction is unknown.
- 1971 September 29 in Orissa: Cyclone and tidal wave in the Bay of Bengal killed as many as 10,000 people.
- 1977 November 19 in Andhra Pradesh: Cyclone and tidal wave claimed approximately 20000 lives.
- 1996 November 6 in Andhra Pradesh: A cyclone that was headed to the neighbouring Krishna district took an unexpected turn toward the Godavari river delta with winds of up to 100 mph (miles per hour). About 1,600 people died and tens of thousands were rendered homeless.
- 1999 October 29 in the eastern Orissa: A super cyclone with wind gusts up to 190mph and waves of up to 15 feet in height crashed into 85 miles of the coastal stretch and caused devastation in the districts of Kendrapara, Jagatsinghpur, Puri, Cuttack, and Jaipur. Transportation routes, infrastructure, public buildings including schools and hospitals, communication lines, utilities, and thousands of acres of farmland were destroyed. More than 9,500 people died and 2.5 million became homeless. Four hundred thousand heads of livestock were drowned and damage estimation reached 3.5 US \$ billion (cyclone).

Flood related disasters

Flood disasters affect the largest number of people globally, accounting for 63% of the total number affected by disasters from 1992-2001. In the decade from 1992-2001, hydrometeorological disasters accounted for 64% of the decade's estimated damage from reported disasters (IFRC 2002). In

India, between 1996-2001, floods accounted for 38.7% of all disaster events and 53.4% of the people were affected by floods.

The Indian weather is greatly influenced by the monsoon system. The country receives three quarters of its annual precipitation during the summer monsoon months between June to September. In terms of spatial variations, the areas carrying heavy riverine discharge are those that receive heavy precipitation during monsoons, thereby compounding the problem. The entire Indo-Gangetic plain and the northeastern states receive an annual precipitation of over 1,000 mm; in the lower Gangetic Plains, it is between 1,500-2,500 mm, while in upper Assam the annual average precipitation is over 2,500 mm. The Lower Gangetic Plain and Assam Valley are therefore heavy rainfall areas and most flood-prone.

The southwest monsoon during the months from June to October brings the maximum rainfall. Consequently the rivers are in spate and carry heavy discharge during this period, often resulting in floods, especially in the lower reaches. Flooding is aggravated by sediment deposition in the river channels, drainage congestion, and synchronization of river floods with ocean tides along the coastal plains. On average, the nation loses about Rs 100 million due to floods annually: the amount spent on relief and reconstruction results in a phenomenal loss of resources every year.

Kerala Floods 2018

From 8 August 2018, severe floods affected the south Indian state of Kerala, due to unusually high rainfall during the monsoon season. It was the worst flood in Kerala in nearly a century. Over 483 people died, and 14 are missing. About a million people were evacuated, mainly from Chengannur, Pandanad, Edanad, Aranmula, Kozhencherry, Ayiroor, Ranni, Pandalam, Kuttanad, Malappuram, Aluva, Chalakudy, Thiruvalla, Eraviperoor, Vallamkulam, N. Paravur, Vypin Island and Palakkad. All 14 districts of the state were placed on red alert. According to the Kerala government, one-sixth of the total population of Kerala had been directly affected by the floods and related incidents. The Indian government had declared it a Level 3 Calamity, or "calamity of a severe nature". It is the worst flood in Kerala after the great flood of 99 that took place in 1924. Thirty-five out of the fifty-four dams within the state were opened, for the first time in history. All five overflow gates of the Idukki Dam were opened at the same time, and for the first time in 26 years 5 gates of the Malampuzha dam

of Palakkad were opened. Heavy rains in Wayanad and Idukki have caused severe landslides and have left the hilly districts isolated. The situation was regularly monitored by the National Crisis Management Committee co-ordinated the rescue and relief operations.

Regarding causes of the flood is concerned, Kerala received heavy monsoon rainfall, which was about 75% more than the usual rain fall in Kerala, on the mid-evening of August 8, resulting in dams filling to capacity; in the first 24 hours of rainfall the state received 310 mm (12 in) of rain. Almost all dams had been opened since the water level had risen close to overflow level due to heavy rainfall, flooding local low-lying areas. For the first time in the state's history, 35 of its 54 dams had been opened. The deluge has been considered an impact of the global warming.

Landslide related disasters

Landslides are a major hydro-geological hazard with regular occurrence in almost all hill regions such as the Himalayas, north-eastern hill ranges, Western Ghats, Nilgiris in the south, Eastern Ghats, and the Vindhyas in central parts. Heavy and prolonged rainfall due to tropical disturbances or convective storms is a common trigger for landslides. Little or no advance warning often hinders timely action. Table gives information about the major landslide occurrences, their locations, dates, and impacts.

Earthquake related disasters

Earthquakes strike without warning and cause widespread damage to various structures and systems. These can neither be predicted nor prevented in terms of their magnitude, place, and time of occurrence. Globally, between 1950-1999, earthquakes constituted 29% of great natural catastrophes, with 47% of the fatalities, 35% of economic losses and 18% of insured losses (Munich Re Group 2002). About 50-60% of the total area of the country is vulnerable to seismic activity of varying intensities. The Himalayas are the most active seismic zone in the Indian subcontinent and have suffered over 650 recorded earthquakes of a magnitude of 5 and above in two centuries. An area wise estimation of earthquakes according to damaging capability is given below.

- 12% land is liable to severe earthquakes (intensity MSK IX or more)-

- 18% land is liable to MSK VIII (similar to Latur/ Uttarkashi).
- 25% land is liable to MSK VII (similar to Jabalpur Earthquake).

Table 3: Major Earthquakes in India

Year	Region	Magnitude on Richter scale	Deaths
1803	Kumaon Region	7.7	NA
1819	Kuteh	8.0	NA
1869	Cachar, Assam	7.5	NA
1885	Sapoor, Jammu & Kashmir	7.0	NA
1897	Shillong, Assam	8.7	1600
1905	Kangra (Himachal Pradesh)	8.0	2000
1906	Himachal Pradesh	7.0	NA
1918	Assam	7.6	NA
1930	Dhubri, Meghalaya	7.1	N.A.
1934	North Bihar - Nepal	8.3	11000
1935	Quetta (Now in Pakistan)	7.5	25000
1941	Andaman Island	8.1	N.A.
1945	Dibrugarh, Assam	7.8	NA
1950	Assam	8.6	1500
1952	Pondgo and Tangu	7.5	N.A.
1956	Anjar, Gujarat	7.0	N.A.
1956	Bulandshahr (Uttar Pradesh)	6.7	N.A.
1958	Kapkote (Uttar Pradesh)	6.3	N.A.
1963	Badagam (Jammu and Kashmir)	5.3	N.A.
1967	Koyna (Maharashtra)	6.5	200
1986	Dharamshala (Himachal Pradesh)	5.7	N.A.
1988	Assam	7.2	N.A.
1988	North. Bihar	6.7	1300
1991	Uttarkashi (Uttar Pradesh)	6.6	768
1993	Latur, Maharastra	6.4	10000
1997	Jabalpur	6.0	37
2001	Kutch, Gujarat	6.9	13805
2005	Jammu & Kashmir	7.6	NA

(Source : NCDM 2001, Singh et al. 2000)

Part-II

Disaster Management in India

The earliest initiatives in developing an institutional mechanism for disaster management began in 1883 in India, with the First Famine Code formulated by a Famine Commission. After 1947 (independence from British Raj), the initial focus was on food scarcity and famine so a Scarcity Relief

Division within the Ministry of Agriculture was put in charge of drought and scarcity management and gradually given the responsibility for managing all natural disasters when it was upgraded to a Natural Disaster Management Division (NDMD) within the Ministry of Agriculture. But India began a process of rapid industrialization without understanding and appropriate policy framework related hazards and associated risks. Implementation of safety procedures, including regulatory approaches, soon followed and institutions such as the National Safety Council (NSCI) were created. The Bhopal disaster (1984) did much to focus more attention on the need for a holistic approach to technology disaster management, and the role of ordinary people in emergencies. The government took several important measures, with major legislative changes and stronger institutional mechanisms. It set up Crisis Groups at central, state, district and local levels.

One of the earliest institutional initiatives in terms of a changing approach was the Central Sector Scheme on Disaster Management, implemented from 1993-94, and focused on disaster preparedness with an emphasis on mitigation and preparedness measures and improving the national capacity to reduce the adverse impacts of natural disasters. The principal activities undertaken involved hazard mapping and vulnerability assessment (e.g., preparation of the Vulnerability Atlas of India); human resource development (establishment of a National Centre for Disaster Management (NCDM) in New Delhi and disaster management cells with dedicated faculties in all the administrative training institutes in the states); upgrading the early warning system and strengthening the seismological instrumentation network; awareness generation; and other related activities.

Bhopal disaster (1984), Orissa super-cyclone (1999) and the Bhuj earthquake (2001) gave some of the unforgettable lessons not only to community in the affected areas but also to the Governments, both at the national as well as the state level, on the urgent need for developing a comprehensive approach to mitigation and prevention, for natural and manmade disasters. A High Powered Committee (HPC) on disaster management was established in August 1999 to recommend an institutional system for managing disasters. The committee studied the disaster management system globally and had a series of consultations with all stakeholders. Recommendations were made in Oct 2001 which focused on the need for a holistic effort considering all disasters within a coordinated

system of governance. It is this recommendation from the HPC that possibly provided the impetus for the Act of 2005 and gradual establishment of national-level authorities and committees. HPC also provided a model district plan. The HPC also focused on instilling a culture of prevention into the national psyche.

The Planning Commission of India incorporated a separate chapter on 'Disaster Management - The Development Perspective' in the 10th Five Year Plan (2002-2007), with the objective of informing, guiding, and providing specific strategies for all state governments on disaster management. The Tenth Five Year Plan emphasized that development cannot be sustainable without mitigation being built into the development process. It provided for preparation of a plan for disaster mitigation for all states and mandated that each development initiative in a hazard-prone area should have disaster prevention or mitigation as a term of reference. This helped bring about a shift in approach from national development to 'safe national development' and laid down broad parameters and strategies for information dissemination and research initiatives, capacity building, training and education, community-level initiatives, and institutional arrangements. The Eleventh Five Year Plan reiterated the aim of safe development with integration of mitigation measures into development initiatives.

The cultural ethos of the most vulnerable people, facing frequent disasters with little resilience and a poor quality of life, was one of fatalism and acceptance of loss as the wrath of nature (act of God!). A similar attitude prevailed within the administrative machinery too, with a focus only on post-disaster relief and rehabilitation (re-active attitude). The prevalent nomenclature of the nodal officials and departments dealing with disaster management; viz., relief commissioners and departments of relief, indicate the significance of relief in the administrative system. Ironically, Even now, the fund earmarked for disaster management is called the Calamity Relief Fund (CRF). Majority of state Governments still follows the ancient "Relief codes", a byproduct of famous "Famine code (1883)". Very recently, Government of India has advised the State Governments to convert their "Relief Codes" into "Disaster Management Codes" by building into it the process necessary for drawing up disaster management and mitigation plans as well as elements of preparedness apart from response and relief.

A chain of disasters brought a shift from a relief-

based to a proactive preparedness and mitigation-based approach. It was realized that the apparent loss of human life and assets masked insurmountable losses in livelihood, social capital, and economic development. It is estimated that disasters result in annual average losses amounting to about 2.25% of the GDP (WB, 2003). Disasters lead to enormous economic losses that are both immediate as well as long term in nature and demand additional revenues. Also, as an immediate fall-out, disasters reduce revenues from the affected region due to lower levels of economic activity leading to loss of direct and indirect taxes. In addition, unplanned budgetary allocation to disaster recovery can hamper development interventions and lead to unmet developmental targets. Disasters may also reduce availability of new investment, further constricting the growth of the region. Besides, additional pressures may be imposed on finances of the government through investments in relief and rehabilitation work. In the recent earthquake in Gujarat, more than 14,000 lives were lost, ten lakh houses were damaged and the asset loss has been indicated to be worth 15,000 crore (WB,2003).

The cost of rehabilitation and reconstruction of a shattered infrastructure and economy can be enormous and carry over for years. 26 January 2001 Gujarat earthquake gave a big lesson and it was perceived & realized that a holistic approach was needed for effective management of complex emergencies created by disaster situation. As a result, the responsibility for disaster management, excluding drought, was shifted to the Ministry of Home Affairs, Government of India, in June 2002. Planning Commission of India has pointed out natural disasters as a major cause of setbacks to development and it is the poorest and the weakest that are the most vulnerable to disasters. Given the high frequency with which one or the other part of the country suffers due to disasters, mitigating the impact of disasters must be an integral component of our development planning and be part of our poverty reduction strategy.

The Paradigm shift in public policy from a disaster-specific to a comprehensive and holistic approach in a multi sectoral and multidisciplinary format gained momentum. This approach proceeded from the conviction that development cannot be sustainable unless disaster mitigation is built into the development process and investments in mitigation are more cost-effective than expenditure on relief and rehabilitation. The National Disaster Management Act, 2005, which came into the statutes on 26th December, 2005, provided a legal

and institutional framework for "the effective management of disasters and for matters connected therewith or incidental thereto." The Act provided for an institutional mechanism at the national, state, and local levels for comprehensive disaster management. It also provided for establishment of the following institutions and mechanisms to deal with disaster management.

Part-III

Disaster Management Act, 2005

A formal disaster management policy, headed by a national disaster focal point body that functions in liaison with the office of the President or Prime Minister and with key government ministries, is vital to lay out plans which can be followed out during calamities, even under the pressure of adverse circumstances of disaster events. India, with bitter past experiences and amid future predictions of more severe natural and technological calamities, woke up to the need for a specific disaster management policy. Particularly, the Asian tsunami (2004) and the Bhuj earthquake (2001) exposed serious limitations in the country's preparedness system. For the first time it was acknowledged that different ministries taking turns during calamities created an administrative crisis, and ad hoc crisis management without a national policy was totally unfeasible to keep up with the demands of the situation. A national policy on disaster management for prevention, preparedness and mitigation of disasters was recognized as the most crucial need of the time. So despite increasing disaster awareness, it often takes an actual or imminent occurrence of a large-scale destructive event to stimulate novel changes.

Just like the Bhopal gas disaster (1984) opened new vistas for development, the earthquake of Bhuj and the Great Asian tsunami, as blessings in disguise, brought a major shift in the field of crisis management by way of Disaster Management Act. Thus, the Disaster Management Act, 2005, has provided with a legal vehicle to accelerate disaster prevention and mitigation efforts to build a safer and disaster free country.

Key Features of the Act

The number of disasters and their impacts have continued to grow over time from bad to worse. So

preparedness to face a disaster whether natural or man-made, needs to be increased, and vulnerability reduced and neutralized, so that the impact of the disasters is the least, and loss of life and property is minimal.

Against this backdrop, the Government of India, through Disaster Management Act, 2005 (DMA), decided to put in place, necessary institutional mechanisms for drawing up and monitoring the implementation of disaster management plans, ensuring measures by various wings of government for preventing and mitigating the effects of disasters and for undertaking a coordinated and prompt response to any disaster situation.

The primary aim is to prevent the risk of death and injury to the population, and reduce the damage and economic losses inflicted on the community as a whole through a culture of risk and vulnerability reduction. The Act focuses upon a holistic and proactive, multi-dimensional strategy with measures like, prevention, mitigation, preparedness, capacity building and awareness, prompt and efficient response and developmental reconstruction, to build a safe and disaster resilient country. It provides for a detailed action plan right from the Central Government to the district and local levels to draw, implement and execute disaster management plans.

Under the Act, there is a National Disaster Management Authority (NDMA) which functions, as the Apex body, under the chairmanship of the Prime Minister, assisted by the National Executive Committee (NEC) consisting of secretaries of various ministries and department heads. The primary functions of the NDMA is to: lay down policies, plans and guidelines on disaster management to be followed by the State Disaster Management Authorities (SDMA), and different Ministries or Departments of the Government of India to draw up their plans, for ensuring timely and effective response to disasters; approve the National Plan prepared by the NEC and other plans prepared by the Ministries or Departments; coordinate their enforcement and implementation; take such other measures for the prevention and mitigation of disasters, or preparedness and capacity building for dealing with disaster situations; and recommended guidelines for the minimum standards of relief to be provided to persons affected by disasters. Similarly, there are State Disaster Management Authorities (SDMA) under the Chief Ministers, assisted by State Executive Committees and District Disaster Management Authorities (District Authority) under the District Magistrates/

Collectors for effective management of disasters in accordance with the national plan and policies. The local authorities are also involved in the process of disaster management, subject to the directions of the District Authority. Thus the Act provides a very detailed, four tier administrative set-up at the national, state and district level, and to an extent at the taluka level, for an optimum disaster management.

Further, the Act has set up a National Institute of Disaster Management (NIDM) which is engaged in research, training of personnel for disaster management, building awareness, and such other related functions. It has also set up a National Disaster Response Force for the purpose of 'specialist response' comprising of trained personnel from the Central Paramilitary Forces. The act has constituted a National Disaster Response Fund at the Centre and State Disaster Response Fund and District Disaster Response Fund at the State and District level respectively for meeting threatening disaster situations of disasters. Similarly it proposes to constitute Disaster Mitigation Fund at the National, State and District level for projects exclusively for mitigation purpose.

Thus, the Disaster Management Act, 2005, makes a holistic effort to ensure prompt response to disasters by promoting measures for prevention, preparedness and mitigation; establishing institutional and techno-legal frameworks; ensuring efficient relief and recovery through dedicated decision support system; and mainstreaming disaster management into developmental planning processes.

Part-IV

The National Disaster Management Plan

The National Disaster Management Plan (NDMP) provides a framework and direction to the government agencies for all phases of disaster management cycle. The NDMP is a "dynamic document" in the sense that it will be periodically improved keeping up with the global best practices and knowledge base in disaster management. It is in accordance with the provisions of the Disaster Management Act 2005, the guidance given in the National Policy on Disaster Management 2009 (NPDM), and the established national practices. Relevant agencies – central or state – will carry out disaster management activities in different phases

in the disaster-affected areas depending on the type and scale of disaster.

Within each state, the state government is primarily responsible for disaster. However, in situations where the resources of the state are inadequate to cope effectively with the situation, the State Government can seek assistance from the Central Government. In addition, there may be situations in which the Central Government will have direct responsibilities in certain aspects of disaster management. While the NDMP pertains to both these exigencies, in most cases the role of central agencies will be to support the respective state governments. Barring exceptional circumstances, the state governments will deploy the first responders and carry out other activities pertaining to disaster management.

The NDMP provides a framework covering all aspects of the disaster management cycle. It covers disaster risk reduction, mitigation, preparedness, response, recovery, and betterment reconstruction. It recognises that effective disaster management necessitates a comprehensive framework encompassing multiple hazards. The NDMP incorporates an integrated approach that ensures the involvement of government agencies, numerous other relevant organisations, private sector participants, and local communities.

The NDMP recognizes the need to minimize, if not eliminate, any ambiguity in the responsibility framework. It, therefore, specifies who is responsible for what at different stages of managing disasters. The NDMP is envisaged as ready for activation at all times in response to an emergency in any part of the country. It is designed in such a way that it can be implemented as needed on a flexible and scalable manner in all phases of disaster management:

a) mitigation (prevention and risk reduction),
b) preparedness, c) response and d) recovery (immediate restoration to long-term betterment reconstruction).

The NDMP provides a framework with role clarity for rapid mobilization of resources and effective disaster management by the Central and State Governments in India. While it focuses primarily on the needs of the government agencies, it envisages all those involved in disaster management including communities and non-government agencies as potential users. The NDMP provides a well-defined framework for disaster management covering scope of work and roles of relevant agencies along with their responsibilities and accountability necessary to ensure effective

mitigation, develop preparedness, and mobilize adequate response.

Vision of the NDMP

Make India disaster resilient, achieve substantial disaster risk reduction, and significantly decrease the losses of life, livelihoods, and assets – economic, physical, social, cultural, and environmental – by maximizing the ability to cope with disasters at all levels of administration as well as among communities.

Legal Mandate of the Legislation

Section 11 of the DM Act 2005 mandates that there shall be a National Disaster Management Plan (NDMP) for the whole of India. The proposed NDMP complies with the National Policy on Disaster Management (NPDMD) of 2009 and conforms to the provisions of the DM Act making it mandatory for the Government of India and various central ministries to have adequate DM plans. While the national plan will pertain to the disaster management for the whole of the country, the hazard specific nodal ministries and departments notified by the Government of India will prepare detailed DM plans specific to the disaster assigned. As per Section 37 of the DM Act, every ministry and department of the Government of India, including the hazard-specific nodal ministries, shall prepare comprehensive DM plans detailing how each of them will contribute to the national efforts in the domains of disaster prevention, preparedness, response, and recovery.

Scope the the NDMP

As per the DM Act 2005, the National Plan shall include:

- a. Measures to be taken for prevention of disasters or the mitigation of their effects
- b. Measures to be taken for the integration of mitigation measures in the development plans
- c. Measures to be taken for preparedness and capacity building to effectively respond to any threatening disaster situations or disaster
- d. Roles and responsibilities of different Ministries or Departments of the Government of India in respect of measures of the three aspects mentioned above.

The NDMP provides an over-arching planning framework for DM for the whole country, which

must be reviewed and updated annually. Central Government shall make appropriate provisions for financing the Plan. Disaster management, covering prevention, preparedness, response, and recovery, necessarily involves multiple agencies and it is even more so in a large country like India. Hence, the inter-agency coordination and collaboration among stakeholders are of utmost importance for the successful implementation of the NDMP and in ensuring effective risk reduction, response and recovery.

The NDMP is highly ambitious requiring a very long period spanning as much as 15 years for the complete implementation of some of the larger targets such as rolling out all the measures for DRR in all parts of the country. Depending on the nature of the suggested measure, they will be implemented within a span of five, ten, or fifteen years from the start of implementation, as short, medium, and long-term measures.

The NDMP provides the framework for mobilization and coordination of the central ministries, departments and other agencies among themselves and the devolution of responsibilities between central and state government in all spheres of disaster prevention, preparedness, response and recovery within India. The deployment of armed forces and central agencies during disaster within India will be subject to norms adopted by the Central government and the relevant protocols agreed upon between Central and State Governments. Any State may seek the assistance and support of the Centre and other States at any time during a disaster. Responding to incident specific emergencies is the responsibility of designated agencies.

The plan is based on detailed hazard-specific guidelines (Annexure-I) prepared by the NDMA. The Government of India has notified certain central ministries and departments for hazard-specific nodal responsibilities for overall coordination of disaster management for the particular hazard. In addition, GoI has notified certain ministries disaster-wise for coordinating immediate post-disaster response. These notified ministries/departments have to prepare detailed DM plans to carry out the roles assigned to them. At the same time, each central ministry, department, state, and district has to formulate respective DM plans specifying how each entity can contribute to effectively manage disasters.

The measures included in the NDMP, which is a dynamic document, are indicative and not exhaustive. Based on global practices and national experiences, the plan will incorporate changes

during the periodic reviews and updates. The suggested measures are short (within 5 years), medium (within 10 years), and long-term (within 15 years) in terms of complete implementation. While some of the suggested measures in all categories—short, medium, and long-term – are already under implementation or in need of upgrading, many need to be initiated. Since there is considerable variation in the current status of the proposed measures across ministries, departments, states, and UTs, in this document the measures have not been arranged into short, medium and long-term categories. Each central Ministry, Department, and the State Government will categorize the items in their DM Plans into these three time frames for implementation while preparing their plan or at the time of revising existing plans. The proposed responsibilities of the State agencies are indicative. The States may assign responsibilities to appropriate agencies.

In the case of recovery, there are three recovery periods after a disaster: a) Early – three to eighteen months, b) Medium – within five years and c) Long-term – within five to ten years. These depend on the specific disaster and are relevant only with reference to particular recovery programmes. Hence, the NDMP discusses them only in general terms.

Key Objectives

Along with the mandate given in the DM Act 2005 and the NPDM 2009, the national plan has incorporated the national commitment towards the Sendai Framework. Accordingly, the broad objectives of the NDMP are:

1. Improve the understanding of disaster risk, hazards, and vulnerabilities
2. Strengthen disaster risk governance at all levels from local to centre
3. Invest in disaster risk reduction for resilience through structural, non-structural and financial measures, as well as comprehensive capacity development
4. Enhance disaster preparedness for effective response
5. Promote “Build Back Better” in recovery, rehabilitation and reconstruction
6. Prevent disasters and achieve substantial reduction of disaster risk and losses in lives, livelihoods, health, and assets (economic, physical, social, cultural and environmental)

7. Increase resilience and prevent the emergence of new disaster risks and reduce the existing risks
8. Promote the implementation of integrated and inclusive economic, structural, legal, social, health, cultural, educational, environmental, technological, political and institutional measures to prevent and reduce hazard exposure and vulnerabilities to disaster
9. Empower both local authorities and communities as partners to reduce and manage disaster risks
10. Strengthen scientific and technical capabilities in all aspects of disaster management
11. Capacity development at all levels to effectively respond to multiple hazards and for community-based disaster management
12. Provide clarity on roles and responsibilities of various Ministries and Departments involved in different aspects of disaster management
13. Promote the culture of disaster risk prevention and mitigation at all levels
14. Facilitate the mainstreaming of disaster management concerns into the developmental planning and processes

Conclusion

Although the NDMP has been designed as a dynamic document which needs periodic improvement in tune with the emerging global best practices in disaster management. It requires certain modifications. Firstly it has not laid down a clear and practical roadmap. The identification of activities for disaster management and disaster risk mitigation are too generic. Secondly, the plan has not given a clear time frame for carrying out the activities given in the plan design. Instead it has prescribed that the activities must be carried out in short, medium, mid-and long term basis. Thirdly, NDMP has neither projected the requirements of funds nor provides how the funds shall be mobilized for carrying out the activities mentioned in the plan. Fourthly, it is silent about monitoring and evaluation of the plan. Fifthly, the activities mentioned in the NDMP are not new and they have already been mentioned in the Act and guidelines issued by the Natural Disaster Management Authority (NDMA) since 2007. Lastly, unlike Sendai Framework, the NDMP does not set any

goals or targets nor it has explicitly provided how the Sendai goals shall be achieved. Thus we can conclude that NDMP needs to be supplemented with clear goals, targets and time frames in order to achieve the vision of disaster resilience.

Natural disasters are the result of climatic imbalance and it cannot be prevented fully but we can develop effective working system and minimize its loss by reducing vulnerability and increasing capacity. Vulnerability is more in India because of population growth, poverty, rapid urbanization environmental degradation and lack of information about disaster. Certainly we cannot prevent disasters but its vulnerability can be reduced to a large extent by taking adequate and timely pre-contrary means. Notable among them are

- a. *Scientific Warning System*: Availability and assembly of scientific information is as important as forecasting which is unfortunately lagging behind in several areas of the country.
- b. *Application of Satellite Phones/HAM Radios*: In major disasters like earthquake, communication network gets affected first. Here alternate mode have to be prevented.
- c. *Community Awareness and Training*: Country is the major stakeholder in DM. It plays key role at every stage of DM execution. By enhancing awareness among this country and by providing proper training to the people to overcome fresh hurdles the extent of vulnerability can be reduced to a large extent.
- d. *Proper co-ordination between various departments and stakeholders*: A healthy linkage between the implementation them by DM with the people will help to attain positive results.

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