

Public Policy towards Natural Disasters in India

Disconnect Between Resolutions and Reality

2005

Centre for Budget and Governance Accountability

(A Programme of NCAS)

B-64, Second Floor, Sarvodaya Enclave, New Delhi- 110 017, India

Tel: 91-11-26537603

E-mail: cbadelhi@vsnl.net

National Centre for Advocacy Studies

(<http://www.ncasindia.org>)

Serenity Complex, Ramnagar Colony, Pune- 411 021, India

Tel: 91-20-22952003 / 4 E-mail: ncas@vsnl.com

Public Policy towards Natural Disasters in India

Disconnect Between Resolutions and Reality

Prepared by
Subrat Das

Editorial Team
Praveen Jha, Amitabh Behar

Research Inputs
Anurag Srivastava

Centre for Budget and Governance Accountability
(A programme of NCAS)
B 64, Second Floor, Sarvodaya Enclave,
New Delhi – 110 017, India
Tel: 91-11-26537603
Email: cbadelhi@vsnl.net

© CBGA, 2005

The contents of this paper may be reproduced by voluntary organisations, social action groups, people's organisations, public interest professionals and citizens for non-commercial purposes with due acknowledgement of the source. Any other form of reproduction, storage in retrieval system or transmission by any means requires prior permission from CBGA.

(For private circulation only.)

Executive Summary

Natural disasters have always been there since the beginning of human civilizations, but their impact on human beings has been on the rise the world over. Natural disasters of similar nature and intensity, however, affect the developed and underdeveloped countries differently in terms of the damage of property and loss of lives caused. While the developed countries are well-equipped to cope with them through well functioning disaster mitigation, preparedness and response mechanisms; the developing countries, ill-equipped in terms of each of the above three parameters, suffer most because of natural disasters. The worst affected in such disasters, in any country, are undoubtedly the poor and the marginalised sections of the society. Not only are they most vulnerable to losses from disasters, their ability to recover from the shock brought by a disaster is also the lowest. In the aftermath of a disaster, the deprived sections of society face an immediate and acute shortage of resources and lose their access to livelihood in many cases. Also, disasters though specific to one region do not merely affect the people of that particular region. Loss of lives and damage caused to property and resources of various kinds impede the socio-economic development of an entire State/ province and, in some cases, the whole country. **The role played by the state vis-à-vis natural disasters could be divided into some categories, interlinked with each other, which are: disaster mitigation, disaster preparedness, disaster response, and rehabilitation and recovery.**

Among all the continents, Asia is considered to be most vulnerable to disasters. During 1991 to 2000, Asia accounted for as much as 83 percent of the population affected by disasters globally. India is highly prone to natural disasters, and the country has experienced very severe natural disasters at regular intervals. **Among the various types of natural disasters affecting different parts of the country, floods, cyclones, earthquakes and droughts cause maximum damage to life and property; and heat wave, cold wave, avalanches, landslides, fire, and pest attacks are also taking heavy tolls on life and property at regular intervals.** The Latur earthquake of 1993-94, the Orissa super cyclone of 1999, the Bhuj earthquake of 2001, and the Tsunami of December 2004 are some of the most severe natural disasters that have struck the country in the recent past.

In India, the basic responsibility for undertaking rescue, relief and rehabilitation measures in the event of natural disasters has been that of the State Government concerned. The role of the Central Government has only been supportive, in terms of physical and financial resources and complementary measures in sectors such as transport, warning and inter-State movement of food grains. Relief Manuals and Codes have been available for undertaking emergency operations. The subject of disaster management does not find any specific mention in any of the three lists (Union, State and Concurrent Lists) in the 7th Schedule of Indian Constitution, where subjects under the Central and State Governments as also subjects that come under both are specified. **While rescue, relief and rehabilitation in the event of a natural disaster have been considered to be the direct responsibility of the State Government concerned, the question that needs to**

be raised is- whether taking adequate measures for disaster mitigation and preparedness should also be deemed as the direct responsibility of the States? Given that the States' ability to mobilise financial resources has been much less in comparison to that of the Centre, expenditure commitments of the States have been far greater than that of the Centre, the discretion of the Centre with regard to resource mobilisation has increased in the era of economic liberalisation, and that most of the States have been facing an acute fiscal crisis since 1997-98, **it is not logical to expect the States to take the major financial burden for the crucial task of managing natural disasters.** All through the post-Independence period, States have been held primarily responsible for relief and rehabilitation activities following natural disasters. However, the responsibility for setting up appropriate disaster management mechanisms in the country should lie primarily with the Central Government.

The national level disaster management plans/ policies formulated by the numerous expert committees do not seem to have translated to better management of natural disasters in practice. **The approach to disaster management has so far been reactive-responding to disasters after they occur. Not much attention has been paid to mitigation.** Also, it seems that the important lessons that should have been learnt by the Government apparatus from the severe natural disasters in the past have been ignored, and some of the important realities in the Indian case have not got adequate emphasis from the policy makers.

The entire process of disaster management can be thought of as comprising two distinct phases, viz. Pre-disaster Phase, and Post-disaster Phase. The Pre-disaster Phase consists of measures relating to disaster preparedness, prevention and mitigation, while the Post-disaster Phase involves response, rehabilitation and recovery. Many of the developed countries are able to reduce losses from disasters because they are implementing the first phase of the process quite well. Even some of the developing countries have adopted this strategy and registered substantial decline in the losses caused by disasters. **In India also, the disaster management apparatus needs to implement the Pre-disaster Phase measures very well.** This does not mean any neglect of the need for relief operations, rather it reflects the understanding that proper disaster mitigation and preparedness efforts can not only reduce the requirement for relief and rehabilitation but also improve the rescue and relief activities significantly.

As part of disaster mitigation process, **six critical factors namely, event prediction, dissemination of warning, risk avoidance action, necessary hardware, emergency response plan and prompt activation of the emergency response plan,** should be planned and implemented in the disaster-prone regions of the country. Out of these six factors, at least two, viz. **dissemination of warning and risk avoidance action, depend crucially on the inhabitants or people in the disaster-prone areas.** Hence, **with respect to these two steps at least (in the whole chain of actions in disaster management) the Government apparatus needs to ensure that both planning as well as implementation are people-centric.**

When we look at the relevant policy documents in India, it emerges clearly that the financing of post-disaster relief and rehabilitation expenditures has had the major chunk

in the resources allocated by the Government for management of natural disasters over the years. **The mitigation and preparedness measures, which have been financed by the Government, are limited mainly to prevention of droughts and floods only. On the other hand, there has been explicit and very significant dependence by the States on financial resources from multilateral development agencies for mitigation and preparedness measures with regard to all kinds of natural disasters.** We find that the allocation of financial resources by the Government (especially the Central Government) for long-term measures for mitigation and preparedness has been very little, even during the last decade in which India supposedly has changed its approach towards disaster management; and it reflects a very low priority given by the policy makers in the country to long-term measures in the pre-disaster phase.

While the entire focus of the Government apparatus in our country (vis-à-vis coping with natural disasters) has been on post-disaster relief operations, we find serious lacunae within that sphere of activity as well. There are serious drawbacks in both planning of the relief operations as well as implementation of the same in the wake of natural disasters. Even in case of a severe disaster like **the tsunami of December 2004**, which attracted substantial amounts of funds for relief operations from state and non-state actors, **the relief measures, in the affected areas of Tamil Nadu State (in India), seem to have been supply-driven rather than being driven by the demands/ needs of the victims.** In the Andaman & Nicobar Islands, the government apparatus seems to have **ignored completely the differential needs of disabled people** in the wake of the tsunami. Similarly, it was found in many of the affected areas in Tamil Nadu that the government apparatus providing relief had **not taken into account the differential needs of women.** The intervention of the civil society also was found wanting for several reasons. Thus, there is an urgent need for focusing the relief efforts on most vulnerable sections among the affected population. Lack of accountability of those implementing the relief measures on the ground is one of the major reasons for the limited effectiveness of relief operations in the country. All those taking part in relief operations should be accountable to the disaster-affected people, who should be involved in the decisions that affect them. People in a particular area, affected by a particular disaster, have their own way of coping with that, so it's essential to include them in planning the relief operations, and ignoring their needs and suggestions can constrain the effectiveness of the rescue and relief efforts significantly. The state and non-state actors involved in relief activities must inform affected people about all aspects of relief operations and about their rights – through public meetings, mass media or information centres. They must know the views of affected people about their felt needs and priorities for improving relief provision.

The present Central Government of India introduced a draft **Disaster Management Bill** in the Parliament this year. The proposed legislation is riddled with many more complications than would appear at the first sight. Nevertheless, legislative backing for disaster management, at the national level, is a commendable step. But we must not forget that **the actual commitment of the present Government to setting up a comprehensive and effective disaster management apparatus in the country would reflect from – its willingness to channelise substantial financial resources for this purpose and its ability to learn from the experiences of the past disasters.**

Contents

		Page No.
	Executive Summary	
	Introduction	01
1.	India's Vulnerability to Natural Disasters	03
2.	Disaster Management Apparatus and Policies in India	08
3.	(Mis)management of Natural Disasters in Practice	20
4.	Government Financing of Disaster Management	23
5.	Legislation: Can It Be a Panacea?	33
6.	The Tsunami Experience: Lest We Forget the Lessons!	39
	Concluding Remarks	42
	End Notes	43
	Glossary	

Public Policy towards Natural Disasters in India

Disconnect Between Resolutions and Reality

Introduction

“The future blue-print for disaster management in India rests on the premise that in today’s society while hazards, both natural or otherwise, are inevitable, the disasters that follow need not be so and the society can be prepared to cope with them effectively whenever they occur” says the Tenth Five Year Plan of India¹. While the vision reflected in the above statement is worth commending, the reality in case of India defies such optimism. Natural disasters have always been there since the beginning of human civilizations, but their impact on human beings has been on the rise the world over. Enormous expansion of population, industrialisation and urbanisation across the globe has, on the one hand, forced people towards habitats that are hazardous and vulnerable to natural disasters, and on the other, they have led to unsustainable pressures on resources causing the erosion of natural ecological balance, both of which have intensified the frequency of occurrence as well as damage caused by natural disasters. In fact, **the costs associated with natural disasters across different countries had gone up 14 fold since the 1950s² till the end of the twentieth century**. A disaster, natural or man-made, can be defined as “any occurrence that causes damage, economic destruction, loss of human life, deterioration in human life, and deterioration in health and health services on a scale sufficient to warrant an extraordinary response from outside the affected community or area”³. Hence, in the context of natural disasters, there is a pressing need to situate public policy towards threats of such magnitude.

Natural disasters of similar nature and intensity, however, affect the developed and underdeveloped/developing countries differently in terms of the damage of property and loss of lives caused. While the developed countries are well-equipped to cope with natural disasters through well functioning disaster mitigation, preparedness and response mechanisms; the developing countries, ill-equipped in terms of each of the above three parameters, suffer most because of natural disasters. For instance, **during the decade of the 1990s, while two-thirds of the victims of natural disasters came from developing countries, just two per cent were from highly developed nations⁴**. According to the World Disasters Report, 2002, “from 1992 to 2001, countries of low human development (LHD) have accounted for just one-fifth of the total number of disasters, but over half of all disaster fatalities. **On an average 13 times more people die per reported disaster in low human development (LHD) countries than in countries of high human development (HHD)**.” While the developing countries receive greater setbacks from natural disasters, their resilience to cope with them is also less.

The worst affected in natural disasters, in any country, are undoubtedly the poor and the marginalised sections of the society. Not only are they most vulnerable to losses from natural disasters, their ability to recover from the shock brought by a disaster is also the lowest. In the aftermath of a disaster, the deprived sections of society face an immediate and acute shortage of resources and lose their access to livelihood in many cases. In a situation where acute levels of socio-economic deprivations still exist in many countries (including India), disasters not only make lives vulnerable, they also exacerbate existing vulnerability. This is apt, perhaps even for

developed nations as evidenced by the experience of recent hurricane *Katrina* in the Southern States of the U.S.A. While officially denounced, a great number of people believe that rescue and ‘curative’ action was delayed and non-committal because of larger concentration of people of colour in the affected areas (these States are also the poorest in the country). While the most affluent nation in the world has, by and large, its principal problem related to race, India’s levels of problems are compounded by simultaneous challenges of caste, class, rural-urban divide, gender and discriminations against minority groups. Thus, **in a country like India, public policy towards natural disasters becomes one of the crucial determinants of the welfare capacity of the state.**

Also, disasters, natural or man-made, though specific to one region do not merely affect the people of that particular region. Loss of lives and damage caused to property and resources of various kinds impede the socio-economic development of an entire State and, in some cases, the whole country. In fact, according to the current Defence Minister of the country, Shri Pranab Mukherjee, **the country is losing around 2 % of its GDP every year due to the costs associated with relief and rehabilitation packages necessitated by disasters**⁵. Therefore, the occurrence of a disaster in any part of the country necessitates state intervention. The role played by the state vis-à-vis natural disasters could be divided into some categories, interlinked with each other, which are: Disaster Mitigation⁶, Disaster Preparedness⁷, Disaster Response⁸, and Rehabilitation and Recovery.

India is highly prone to natural disasters, and the country has experienced very severe natural disasters at regular intervals. The devastation caused by the Latur earthquake of 1993-94, the Orissa super cyclone of 1999, the Bhuj earthquake of 2001, and the widespread drought of 2002-03 are still etched in public memory. More recently, while the Tsunami of December 2004 shocked the nation with its massive destruction and added to the list of serious natural hazards faced by the country, the financial capital of the country, Mumbai, became a mute spectator to unprecedented misery of its people for days together in the floods of July 2005 which also exposed the acute vulnerability of the big Indian cities to the wrath of nature.

With this backdrop, the present paper makes **an attempt to gauge the public policy towards natural disasters in India as has been evidenced over the last decade.** In the first section, it presents a brief account of the country’s vulnerability⁹ to natural disasters. The second section discusses the extant administrative apparatus and government policies for managing natural disasters. The third section briefly highlights the serious lacunae in both pre-disaster as well as post-disaster state intervention in case of four major natural disasters witnessed in the recent past. The fourth section of the paper traces the low priority given to disaster mitigation and preparedness measures in terms of resource allocation by the governments in the past. This section also highlights the unjust and unrealistic policies adopted by the Central Government with regard to financing of relief expenditure by States. Fifth section of the paper makes an appraisal of the legislation for disaster management proposed by the Central Government, which is the latest development within the sphere of public policy towards natural disasters in the country. While the complete lack of forethought and preparedness of the country for a disaster like Tsunami has been fully exposed, there are important lessons to be learnt from the post-Tsunami response of the government machinery and civil society groups to the disaster which has not been as commendable as it was initially portrayed to be. The sixth section of the paper presents a brief account of such lessons.

1. India's Vulnerability to Natural Disasters

Among all the continents, Asia is considered to be most vulnerable to disasters. During 1991 to 2000, Asia accounted for as much as 83 percent of the population affected by disasters globally¹⁰. And, within Asia, 24 percent of deaths due to disasters occur in India, on account of its size, population and vulnerability.

India's Key Vulnerabilities

- Coastal States, particularly in the East Coast and Gujarat, are vulnerable to cyclones.
- 4 crore hectare land mass is vulnerable to floods.
- 68 per cent of net sown area is vulnerable to drought.
- 55 per cent of total area is in Seismic Zones III-V, and vulnerable to earthquakes.
- Sub-Himalayan/ Western Ghat is vulnerable to landslides.

Source: Planning Commission of India, Tenth Five Year Plan document.

As far as disaster mitigation and preparedness is concerned, almost all committees, policy-making groups and experts discuss disasters as including both natural and man-made disasters. However, in this paper, our focus will be solely on natural disasters. **Natural disasters**, which can be differentiated from man-made disasters, **are those disasters whose direct and principal causes are forces of nature**. (Man-made disasters, on the other hand, are such disasters whose direct and principal causes are identifiable human actions, deliberate or otherwise.)

Among the various types of natural disasters affecting different parts of the country, floods, cyclones, earthquakes and droughts cause maximum damage to life and property; and heat wave, cold wave, avalanches, landslides, fire, and pest attacks are also taking heavy tolls on life and property at regular intervals. However, a note on each of the first four seems worthwhile here.

1.1 Floods

- Over 40 million hectare of landmass in India is prone to floods.
- Nearly 75% of the total annual rainfall is concentrated over a short monsoon season of three to four months from June to September. As a result there is a very heavy discharge from the rivers during this period causing widespread floods.
- On an average, as much as 6.7 million hectares of land is flooded annually.
- The average annual total damage (because of floods) to crop, houses and public utilities during the period 1953-95 was about Rs.972.00 Crore.
- Flood problem has become chronic in at least 10 States.

1.2 Cyclones

- India has a very long coastline of 5700 Km., which is exposed to tropical cyclones arising in the Bay of Bengal and Arabian Sea.
- The Indian Ocean is one of the six major cyclone-prone regions in the world.
- In India cyclones occur usually between April and May, and also between October and December.
- The Eastern coastline is more prone to cyclones as about 80 percent of total cyclones generated in the region hit there.
- In the recent past the Andhra Pradesh cyclone of November 1977 and the super cyclone of Orissa in the year 1999 are considered among the worst, in which at least 10,000 people lost their lives in both the cases.
- The impact of the cyclones is mainly confined to the coastal districts, the maximum destruction being within 100 Km. from the centre of the cyclones and on either side of the storm track.
- The principal dangers from a cyclone are: (i) gales and strong winds, (ii) torrential rain, and (iii) high tidal waves (also known as 'storm surges').
- Most casualties are caused by coastal inundation by tidal waves and storm surges. The worst devastation takes place when and where the peak surge occurs at the time of the high tide.

1.3 Earthquakes

Earthquake is considered to be one of the most dangerous and destructive natural disasters. The impact of this phenomenon is sudden with little or no warning, making it just impossible to predict it or make arrangements and preparations against damages and collapses of buildings and other man-made structures (in the immediate time period before an earthquake).

- About 50-60 percent of total area of the country is vulnerable to seismic activity of varying intensities.
- Most of the vulnerable regions are generally located in Himalayan and sub-Himalayan belt, and in Andaman and Nicobar Islands.
- The Himalayan mountain ranges are considered to be the world's youngest fold mountain ranges. The subterranean Himalayas are, therefore, geologically very active. The Himalayan frontal arc, flanked by the Arakan Yoma fold belt in the east and the Chaman fault in the west constitutes one of the most seismically active regions in the world.
- Four earthquakes exceeding magnitude 8 (on the Richter scale) have occurred in the span of the last 53 years.
- After the Earthquake in Latur in Maharashtra in 1993, which was considered to be least prone to earthquake, no area is considered safe from this disaster.

1.4 Droughts

- Drought is a situation of less moisture in the soil (which makes the land unproductive) and scarcity of water for drinking, irrigation, industrial uses and other purposes, usually caused by deficient/less than average rainfall over a long period of time.
- It is one of the perennial features in some States of India, such as Rajasthan, Orissa, Madhya Pradesh, and Gujarat etc.
- Sixteen percent of the country's total area is drought-prone and approximately 50 million people are affected annually by droughts.
- In India about 68 percent of net sown area in the country is drought-prone.
- Most of the drought-prone areas identified by the Government of India lie in arid, semi-arid and sub-humid areas of the country. The rainfall behaviour in the past 100 years reveals that the frequency of below-normal rainfall in arid, semi-arid, and sub-humid areas is 54 to 57 %.
- In the arid and semi-arid zones, very severe droughts occur once in every eight to nine years.

India has experienced very severe natural disasters at almost regular intervals in the past. The Latur earthquake of 1993-94, the Orissa super cyclone of 1999, the Bhuj earthquake of 2001, and the Tsunami of December 2004 are some of the most severe natural disasters that have struck the country in the recent past.

Table 1.1: Frequency of Disasters in India			
Types of Disaster	No. of Occurrences		
	1970-79	1980-89	1990-98
Floods	40	50	58
Earthquakes	04	11	03
Cyclones	19	21	17
High Winds	09	19	09
Epidemics	06	19	08
Human-made	12	107	198
All Other	12	23	12

Source: Parasuraman, S. and P.V. Unnikrishnan (ed.) (2000), *India Disasters Report: Towards a Policy Initiative*, OUP.

Table 1.1 gives us an idea about the frequency of disasters (both natural and man-made) in the country. Even though it excludes droughts, one of the most frequent and widespread natural disasters affecting the country, it clearly indicates that **the frequency, with which natural disasters have been affecting India**, at least since the 1970s, **is quite high**. Also, it has been argued that **the changing topography due to environmental degradation has increased the vulnerability of the country to natural disasters**. For example, in 1988, only 11.2 % of the total land area of the country was flood prone, however, in 1998 floods inundated 37 % of the geographical area of the country¹¹.

The impact of these disasters has been devastating. **Between 1988 and 1997, disasters killed on an average 5,116 people and affected 24.79 million people in the country every year¹².** The death toll due to natural disasters has been going up, with **about 10,000 people killed in the super cyclone of 1999, about 20,000 killed in the earthquake of 2001, and more than 11,000 in the Tsunami of 2004.** We get a picture of the number of people affected and damage of property by natural disasters in the country during 1985 to 2001, from the following table.

Year	People Affected (in Million)	Houses & Buildings, Partially/Totally, Damaged (in Lakh)
1985	59.56	24.50
1986	55.00	20.50
1987	48.34	29.19
1988	10.15	2.42
1989	3.00	7.82
1990	3.17	10.19
1991	34.27	11.90
1992	19.09	5.70
1993	26.24	15.29
1994	23.53	10.51
1995	54.35	20.88
1996	54.99	23.76
1997	44.38	11.03
1998	52.17	15.63
1999	50.17	31.04
2000	59.43	27.36
2001	78.81	8.46

Source: Planning Commission of India, Tenth Five Year Plan document (2002)

Apart from drought, flood, cyclone and earthquake; other natural disasters like, **heat wave, cold wave, avalanches, landslides, fire, and pest attacks are also taking heavy tolls on life and property at regular intervals.** Based on the Vulnerability Atlas (for the country) prepared by the Building Materials Promotion and Technology Council (BMPTC) of the Government of India, the United Nations Development Programme (UNDP) and the Ministry of Home Affairs (of the Central Government) had identified 199 multi-hazard prone districts in the country (i.e., **at least 199 districts in India are vulnerable to multiple natural hazards**). Out of these 199 districts, 125 districts (across 12 States), believed to be most vulnerable to multiple natural hazards, were selected by the UNDP and Ministry of Home Affairs for implementing the Disaster Risk Management Programme (2002-07). Table 1.3, given below, presents a list of these 125 most multi-hazard prone districts in the country¹³. Besides the 12 States mentioned in Table 1.3, Andhra Pradesh is another State that is vulnerable to multiple natural disasters.

Table 1.3 Most Multi-Hazard Prone Districts in 12 States of the Country		
State	No. of Districts identified as multi-hazard prone	List of the most multi-hazard prone districts
Assam	13	Barpeta, Cachar, Dhemaji, Dhubri, Goalpara, Hailakandi, Kamrup, Karimganj, Lakhimpur, Marigaon, Nagaon, Nalbari
Bihar	14	Araria, Begusarai, Darbhanga, Khagaria, Kishanganj, Madhepura, Madhubani, Minger, Muzaffarpur, Patna, Saharsa, Samastipur, Sitamarhi, Supaul
Delhi	8	East Delhi, New Delhi, North Delhi, North East Delhi, North West Delhi, South Delhi, South West Delhi, West Delhi
Gujarat	14	Amreli, Banas Kantha, Bharuch, Bhavnagar, Jamnagar, Junagarh, Kachchh, Surat, Sabar Kantha, Surendranagar, Patan, Porbandar, Rajkot, Vadodara
Maharashtra	14	Kolhapur, Latur, Mumbai, Mumbai (Suburban), Nasik, Osmanabad, Pune, Raigarh, Ratnagiri, Satara, Sindhudurg, Thane, Ahmednagar, Dhule
Meghalaya	7	East Garo Hills, East Khasi Hills, Jaintia Hills, Ri Bhoi, South Garo Hills, West Garo Hills, West Khasi Hills
Orissa	14	Balasore, Bhadrak, Cuttack, Ganjam, Jagatsinghapur, Jajpur, Kendrapara, Khurda, Koraput, Nayagarh, Nuapada, Puri, Sambalpur, Rayagada
Sikkim	4	East, North, South, West
Tamil Nadu	6	Chennai, Cuddalore, Kancheepuram, Kanyakumari, The Nilgiri, Thiruvallur
Uttar Pradesh	13	Bahraich, Balrampur, Bijnor, Budaun, Deoria, Ghazipur, Gonda, Gorakhpur, Rampur, Saharanpur, Sant Kabir Nagar, Siddharthnagar, Sitapur
Uttaranchal	8	Chamoli, Dehradun, Nainital, Pithoragarh, Rudraprayag, Tehri Garhwal, Udham Singh Nagar, Uttarkashi
West Bengal	10	Bardhaman, Jalpaiguri, Kooch Bihar, Murshidabad, Nadia, North 24 Parganas, Purulia, South 24 Parganas, Uttar Dinajpur, Maldah

Note: Subsequently, the Disaster Risk Management Programme has been extended to cover 169 multi-hazard prone districts in 17 States of the country.

2. Disaster Management Apparatus and Policies in India

It is noteworthy that **the United Nations' declaration of 1990-2000 as the International Decade for Natural Disaster Reduction (IDNDR)** was not only instrumental in bringing into sharp focus the devastations caused by natural disasters, but it also introduced a paradigm shift from focussing on post-disaster relief and reconstruction to adopting a pre-disaster pro-active approach. In May 1994, a mid-term review of the UN declaration held at Yokohama, which was attended by Governments, NGOs, scientists and representatives of business, trade and industry, concluded that:

- Disasters always affected most the poor and the socially disadvantaged people in the developing countries, owing to their higher degree of vulnerability to such situations,
- Prevention and mitigation of disasters is better than disaster response which is often executed at a very high cost and yields only some temporary relief, and that
- Prevention contributes to lasting improvements in safety.

In fact, the general understanding was that while substantial progress has been made in other sectors of human development, much remains to be done towards mitigating the effect of disasters.

The subject of disaster management does not find any specific mention in any of the three lists (Union, State and Concurrent Lists) in the 7th Schedule of Indian Constitution, where subjects under the Central and State Governments as also subjects that come under both are specified. However, the Ministry of Home Affairs of the Central Government, which is the nodal Ministry for disaster management, seems to endorse the opinion that “disaster management is deemed to be a State subject”¹⁴. While rescue, relief and rehabilitation in the event of a natural disaster have been considered to be the direct responsibility of the State Government concerned, the question that needs to be raised is- whether taking adequate measures for disaster mitigation and preparedness should also be deemed as the direct responsibility of the States?

Given that the States' ability to mobilise financial resources has been much less in comparison to that of the Centre, expenditure commitments of the States have been far greater than that of the Centre, the discretion of the Centre with regard to resource mobilisation has increased in the era of economic liberalisation, and that most of the States have been facing an acute fiscal crisis since 1997-98, it is not logical to expect the States to take the major financial burden for the crucial task of managing natural disasters. All through the post-Independence period, States have been held primarily responsible for relief and rehabilitation activities following natural disasters. The setting up of the Calamity Relief Fund (discussed in detail in Section 4 of this paper) in 1990-91 was in fact the recognition of the inability of the States to bear the burden of relief expenditures also. Hence, **the responsibility for setting up appropriate disaster management mechanisms in the country has to lie primarily with the Central Government.** The issue of allocation of financial resources for disaster management will be taken up in Section 4, where we discuss Government financing of disaster management in India. **In the present section, we shall briefly look at the apparatus for disaster management that already exists in our country and some of the major policies towards mitigating the adverse impact of natural disasters adopted over the last few decades.**

The country has had an integrated administrative machinery for management of disasters at the national, State, district and sub- district levels. The basic responsibility for undertaking rescue, relief and rehabilitation measures in the event of natural disasters has been that of the State Government concerned. The role of the Central Government has only been supportive, in terms of physical and financial resources and complementary measures in sectors such as transport, warning and inter-State movement of food grains. Relief Manuals and Codes have been available for undertaking emergency operations.

An overview of the administrative structure for disaster management at national, State and district levels, as has existed until now, is presented below.

2.1 National Level Organisation

As has already been stated, ‘disaster management’ (which has meant activities largely related to post-disaster relief and rehabilitation rather than pre-disaster mitigation and preparedness) has been seen as the direct responsibility of State Governments. However, the following decision-making and standing bodies have been responsible for disaster management at the Central level:

- Cabinet, headed by the Prime Minister.
- Empowered Group of Ministers
- There has been a National Crisis Management Committee headed by the Cabinet Secretary.
- Crisis Management Group under the chairmanship of the Central Relief Commissioner comprising senior officers from various Ministries and concerned Departments, which has been responsible for reviewing contingency plans and measures required for dealing with a natural disaster, and coordinates the activities of the Central Ministries and the State Governments in relation to disaster preparedness and relief.
- For all natural disasters except droughts, the Ministry of Home Affairs is the nodal Ministry and the other Ministries play a supportive role. For droughts the nodal ministry is the Ministry of Agriculture, wherein the responsibility lies with its Department of Agriculture and Cooperation.
- Technical Organisations, such as, the Indian Meteorological Department (Cyclone / Earthquake), Central Water Commission (Floods), Building and Material Promotion Council (Construction Laws), Bureau of Indian Standards (Norms), Defence Research & Development Organisation (Nuclear/ Biological Disasters), and Directorate General Civil Defence provide specific technical support to coordination of disaster response activities.
- The Ministry of Home Affairs has set up National Disaster Management Division (NDMD) as the apex body within the Government for this purpose.

Among other organizational initiatives, in the past, it had been proposed to:

- Establish a specialised response team for dealing with nuclear/ biological/ chemical disasters,
- Establish search and rescue teams in each State, and
- Strengthen communication systems in the North Eastern Region.

The dimensions of the response to natural disasters at the Central level have been determined (since 1990-91) in accordance with the existing policy of financing relief expenditure of States through a Centrally Sponsored Scheme, the Calamity Relief Fund [CRF] scheme (which operates in combination with the National Calamity Contingency Fund [NCCF] scheme), and keeping in view the factors like:

- Gravity of a natural disaster;
- Scale of the relief operation necessary; and
- Requirements of Central assistance for augmenting financial resources and logistic support at the disposal of the State Government.

The country has had a Contingency Action Plan, which identifies initiatives that should be taken by various Central Ministries and Public Departments in the wake of disasters. It sets out the procedures and determines the focal points in the administrative machinery to facilitate launching of rescue and relief operations in response to a disaster. Various Ministries are assigned the responsibility of providing emergency support in case of disasters that fall in their purview as indicated in the table below:

Table 2.1: Ministries Responsible for Various Categories of Disasters	
Disasters	Nodal Ministry
Natural Disasters (other than Drought)	Ministry of Home Affairs
Drought Relief	Ministry of Agriculture
Air Accidents	Ministry of Civil Aviation
Railway Accidents	Ministry of Railways
Chemical Disasters	Ministry of Environment & Forests
Biological Disasters	Ministry of Health
Nuclear Disasters	Department of Atomic Energy

Source: Planning Commission of India, Tenth Five Year Plan document, 2002

2.2 State Level Organisation

- In a State, disaster response has usually been the responsibility of the Relief and Rehabilitation Department or the Department of Revenue (of the State Government).
- The Chief Secretary of the State heads the State level committee related to disaster management.
- This committee is in overall charge of the relief operations in the State and the Relief Commissioners who are in charge of the relief and rehabilitation measures function under the overall direction and control of the State level committee.
- In many States, the Secretary, Department of Revenue, is also in-charge of relief operations. State Governments usually have relief manuals and the districts have their contingency plans, which are supposed to be updated from time to time.

2.3 District Level Organisation

- There has been District Level Coordination and Review Committee headed by the Collector as Chairman, with participation of all other related agencies and departments.
- The district administration is the focal point of all Governmental plans and activities. The actual day-to-day function of administering relief has been the responsibility of the Collector/District Magistrate/Deputy Commissioner who exercises coordinating and supervising powers over all departments at the district level.

Thus, India has had a contingency action plan for natural disasters at the national level. Disaster relief manuals and disaster plans have been available at the State level and also at the district level, but these plans are not always updated and they have mainly focused on relief.

2.4 Mitigation and Preparedness Measures¹⁵

- The **India Meteorological Department** (IMD) is responsible for cyclone tracking and warning to the concerned user agencies. There is a special **Disaster Warning System** (DWS) for the dissemination of cyclone warning in local languages through INSAT to designated addresses in isolated places in coastal areas. A comparison of the death tolls caused by the Andhra Pradesh cyclones of 1977 and 1990 illustrates the life-saving potential of timely warning and evacuation. The number of deaths in 1977 cyclone was over 10,000, whereas the loss of human lives in the cyclone of 1990 was less than 1,000 even though the intensity of the latter was not less. Timely warnings issued by the IMD enabled the district administration in the coastal areas of Andhra Pradesh to evacuate over half a million people to safer places, in the cyclone of 1990. However, such levels of disaster preparedness, which have been witnessed in Andhra Pradesh with regard to cyclones, have not been found in other States, most notably Orissa.
- To monitor the possibility of floods, the **Central Water Commission** (CWC) has a flood forecasting system covering 62 major rivers in 13 States.
- Based on inputs from the IMD and CWC on the rainfall behaviour and water levels in the reservoirs and the crop situation, the **National Crop Weather Watch Group** monitors drought conditions. Remote sensing techniques are also used to monitor drought conditions based on vegetative and moisture index status.
- In the event of severe drought, State Governments are expected to introduce appropriate policy packages to support vulnerable populations through **food for work programmes** and other **employment-generation and income-generation activities**. Most of the food for work programmes are supposed to be undertaken to desilt the existing water tanks, deepen the tanks, and carry out the construction of water harvesting structures. Sometimes, the State Governments may also include the restoration of public utilities and creation of social infrastructure in such food for work programmes in drought-affected districts. [However, it may be worthwhile to note here that the **creation of social infrastructure, restoration of public assets or construction of durable water harvesting structures through drought relief works depends to a large extent on the scope for incurring capital expenditure¹⁶ in the relief works, which is usually very less**. This is because expenditure incurred by the

States on 'relief on account of natural calamities' has always been treated as *revenue expenditure*¹⁷ and the financial assistance provided by the Central Government to States for 'relief on account of natural calamities' are also expected to be spent as *revenue expenditure*. Thus, **for incurring any significant capital expenditure within their relief works the States have been asked to depend on their Plan funds or their own Budgets**. This restriction on the nature of expenditure that can be incurred by States with the money received specifically for calamity relief has actually constrained the ability of the States to create durable social infrastructure through the relief works.^{18]}

- The **Drought Prone Areas Programme (DPAP)** has been implemented since 1973 in 149 districts in 14 States, and the **Desert Development Programme (DDP)** has been implemented in 36 districts across 7 States.
- A programme titled **National Watershed Development Project for Rainfed Areas (NWDPA)** has been under implementation in drought-prone areas. The objectives of this programme are to achieve conservation of rainwater, control of soil erosion, regeneration of green cover and promotion of dry land farming systems including horticulture, agro-forestry, pasture development and livestock management etc.
- There are large areas of degraded land of over 100 million hectares in the country which could be reclaimed. Most of the land needs only basic water and soil conservation measures and some amount of plantation and protection work. By protecting, regenerating and restoring the degraded land, the pressure on remaining land, forests and pastures can be reduced. A **National Wasteland Development Board** has been constituted to promote integrated wasteland development.
- Natural disasters, in particular droughts, result in huge unemployment problems in the rural areas. In view of the problem of unemployment in the drought-prone areas, rural development efforts have been envisaged for the purpose of providing wage employment to the rural poor. The **Jawahar Rozgar Yojana (JRY)** has been the largest such programme in the country. **Employment Assurance Schemes (EAS)** have also been pursued to provide employment opportunities mostly in drought-prone areas.
- As regards cyclones, the mitigation and preparedness measures envisaged by some of the States also include **construction of cyclone shelters and afforestation in coastal areas**. Post-disaster reconstruction projects, taken up in areas affected by major calamities, have tried to incorporate structural mitigation measures. Such reconstruction activities have consisted of construction of housing and public infrastructure, drainage and rural water supply, expansion of road and communication networks, and shelterbelt plantations, etc.
- Reconstruction of buildings and houses in the earthquake-hit areas has tried to incorporate quake-resistant measures and the relevant technical specifications.

Over the last decade, from 1990 to 2000, which was observed as the International Decade for Natural Disaster Reduction (IDNDR), several activities were initiated in the country, which focused on awareness generation and information dissemination as regards disaster management. A **High Powered Committee (HPC)** on Disaster Management, under the chairmanship of Mr. J.

C. Pant was constituted in August 1999 which submitted its report in 2001. The **HPC's mandate was to prepare Disaster Management Plans at national, State and district levels and suggest measures for strengthening of existing arrangements.** It took an overview of all recent disasters in the country and identified common preparedness and response mechanisms on the basis of a series of consultations with a number of Government, non-government, national and international agencies and media organisations. One of the most important recommendations of the HPC was that at least 10 percent of Plan funds at the national, State and district levels be earmarked and allocated for schemes which specifically address areas such as disaster mitigation and preparedness.

Disaster Risk Management Programme [2002-07]

The United Nations Development Programme (UNDP) and the Ministry of Home Affairs (of the Central Government) had identified 199 multi-hazard prone districts in the country, based on the Vulnerability Atlas (for the country) prepared by the Building Materials Promotion and Technology Council (BMPTC). UNDP and Ministry of Home Affairs selected 125 of the 199 districts (across 12 States), believed to be most vulnerable to multiple natural hazards, for implementing the Disaster Risk Management Programme (2002-07) [Please refer to Table 1.3 for a list of these 125 districts]. At the national level this Programme is meant to provide support to the Ministry of Home Affairs to set up institutional framework for disaster preparedness, prevention and mitigation. It is also expected to help boost local capacities to address disasters through an integrated approach for reducing socio-economic and environmental (including natural hazards) vulnerabilities.

Source: UNDP and National Disaster Management Division, Min. of Home Affairs, Govt. of India (2002), Disaster Risk Management Programme [2002-07], Series 2.0

The **Ministry of Home Affairs** in the Central Government was made **the new nodal ministry for disaster management**, replacing the Ministry of Agriculture (while droughts still remained under the purview of Ministry of Agriculture). Also, following the devastating experience of Orissa in the super cyclone of 1999 and Gujarat in the earthquake of 2001, **Orissa State Disaster Management Authority (OSDMA)** and **Gujarat State Disaster Management Authority (GSDMA)** were constituted as autonomous agencies for setting up appropriate disaster management mechanisms in the respective States.

Thus, there can be no doubt about the fact that activities related to disaster management at the planning/ policy-making level, in the country, have expanded significantly over the last decade. However, **very few would argue that the vulnerability of the country (or most of its regions) to losses from natural disasters have reduced over this period of time.** The national level disaster management plans/ policies formulated (or recommended) by the numerous expert committees do not seem to have translated to better management of natural disasters in practice. While the question of priorities for disaster management, as reflected in the resource allocations by the Government, is dealt with in Section 4 of this paper, in the following sub-section we discuss a few of the pertinent issues related to management of natural disasters which seem to have been ignored in the disaster management apparatus and policies in the country at the national level.

2.5 Appraisal of the Present System

The intention of the Central Government as regards measures for disaster mitigation in the country, witnessed in the recent years, is a welcome change. The interest and action shown by the government authorities at the policy-making level is praiseworthy. The measures envisaged by the various expert committees do represent a paradigm shift in the approach of the Government towards dealing with disasters. However, numerous problems crop up when we come to the ground realities in the country. Till now, **in terms of the infrastructure and awareness for disaster mitigation and preparedness, there is a huge gap between what the HPC and other such bodies have been suggesting and what exists in reality.** Had there been synergy, we would not have had such major losses of lives and property in the disasters that have struck different regions of the country in the last few years.

Home Minister's Statement in Parliament on March 10, 2005

“...The approach to disaster management has so far been reactive- responding to disasters after they occur. Not much attention has been paid to mitigation. It is possible to ensure this, provided appropriate mitigation measures are taken so that the next calamity does not result in the loss of property and lives as hitherto fore. It will be the endeavour of the Government to ensure that over a period of time this objective is achieved.”

- Taken from the Statement in Parliament (on March 10, 2005) given by the present Home Minister at the Centre, Shri Shivraj Patil, regarding the constitution of the National Disaster Management Authority [headed by the Prime Minister].

Source: Press Information Bureau, Govt. of India (www.pib.nic.in)

The statement by the present Home Minister in the Parliament on March 10, 2005 (please see the Box above) aptly summarises what has been happening in the country as regards managing natural disasters. However, such statements alone will not help in improving the ground realities with respect to coping with natural disasters. **Such rhetoric about the necessity of changing the approach towards disaster management (in India) can perhaps be found in almost every document/ policy paper/ plan prepared by any agency of the Government. However, the practice in the last few years has hardly shown any significant change in the approach of the Government machinery towards disasters.**

Also, it seems that **the important lessons** that should have been learnt by the Government apparatus **from the severe natural disasters in the past have been ignored**, and some of the **important realities in the Indian case have not got adequate emphasis** from the policy makers. In the following, we present a brief account of some of the specific issues and, important lessons, which need to be addressed pertinently in the disaster management policy in India.

The entire process of disaster management can be thought of as comprising two distinct phases, viz. 1. Pre-disaster Phase, and 2. Post-disaster Phase. The Pre-disaster Phase consists of measures relating to disaster preparedness, prevention and mitigation, while the Post-disaster Phase involves response, rehabilitation and recovery. Many of the developed countries are able to mitigate losses from disasters because they are implementing the first phase of the process quite well. Even some of the developing countries have adopted this strategy and registered substantial decline in the losses caused by disasters.

Pre-disaster Phase Measures: Contrasting Bangladesh and India

Bangladesh had suffered a major cyclone in Cox's Bazaar in 1970, which had left approximately 5 lakh people dead. But, in early 1990s, when a cyclone of similar intensity hit the country, although the population density of Bangladesh had almost doubled (in comparison to 1970), only 128 people died*. This could be possible because of proper implementation of the Pre-disaster Phase measures in the country.

However, in India, the Pre-disaster Phase measures have been found completely missing in many cases. For instance, as had been reported in the media, in the first week after the Gujarat earthquake (in 2001) there were significantly high number of surgeons in the quake-hit region, but they could not conduct surgery because of lack of equipments and electricity. Telecom lines were all defunct, so difficulty rose in transmission of much needed information about the need, type and location of relief work. Even though Kachhh (the worst hit district in that earthquake) belongs to one of those seismic zones in India which have the highest risk of an earthquake, the Government apparatus was caught completely unprepared for the disaster.

(*Vinod Menon, in course of his deliberations at the *Consultation on Draft Report on the Functioning of Calamity Relief Fund*, organised by Centre for Budget and Governance Accountability, in New Delhi on September 27, 2004.)

Thus, in India also, the disaster management apparatus needs to implement the Pre-disaster Phase measures very well. This does not mean any neglect of the need for relief operations, rather it reflects the understanding that **proper disaster mitigation and preparedness efforts can not only reduce the requirement for relief and rehabilitation but also improve the rescue and relief activities significantly**. This is because; **prevailing levels of disaster preparedness and mitigation measures determine the extent of damage as well as the effectiveness of rescue and relief operations**. Also, it is obvious that even relief measures of a limited scale will be more effective when the scale of damage caused by a disaster is low.

[It may be worthwhile to note here that while our focus here is on disaster mitigation and preparedness, we must not forget the fact that **even the post-disaster relief and rehabilitation efforts in our country, as have been witnessed in some of the major disasters in the past, are far from satisfactory**. There are **numerous serious lacunae both at the level of policies towards relief and rehabilitation as well as in practice on the ground**. In Section 4 of this paper, we shall briefly discuss the major lacunae in the policy of financing relief expenditure of States, and in Section 6, we shall take a brief look at the loopholes in practice with respect to relief and rehabilitation following the Tsunami of December 2004.]

The preparedness and mitigation measures with respect to the various natural disasters involve several activities, many of which have been ignored in our country. One such activity is **catching early warnings from the disaster-prone areas**, which the disaster management apparatus has not paid enough attention to. This can be done easily in case of droughts. For instance, low rainfalls, distress sale of fodder, cattle and assets by the farming community can provide early signals of an impending drought. Similarly, foodgrain prices can also serve as a proxy indicator of a drought in the near future¹⁹.

Table 2.2: Critical Factors in the Disaster Mitigation Process

Comparison of Outcomes of Three Events			
Event	Machilipatnam (Andhra Pradesh) Cyclone, 1990	Ersama (Orissa) Cyclone, 1999	Bhuj (Gujarat) Earthquake, 2001
Magnitude	Major	Major	Major
<u>Loss mitigating factors</u>			
1. Event Prediction	Predicted in time	Predicted in time	Not possible
2. Warning	Given in time	Given in time, but, ambiguous	Not possible
3. Risk avoidance action	Cyclone shelters were available, evacuation effected	No shelters, no evacuation	No quake-resistant buildings, rescue effort tardy
4. Hardware	High wind-proof radio masts, etc., in place	Not much hardware in place	No equipment to detect buried people, earth moving equipments mobilised slowly
5. Emergency response plan	Fair	Poor	Poor
6. Activating emergency response plan	Prompt	Poor	Poor
No. of People Dead	Less than 1,000	50,000**	50,000-1,00,000**
Source: Sagar Dhara (2001), "The Bhuj Quake: Lessons of Previous Disasters not Learnt", The Hindu Survey of Environment			
** The official death figures were approximately 10,000 for Orissa cyclone and approximately 16,000 for Gujarat earthquake.			

The comparison of the outcomes of three events, in Table 2.2 above, clearly indicates that with better measures for mitigation and preparedness in the disaster-prone areas, the death toll and the extent of damage caused by a natural disaster can be checked significantly. As part of disaster mitigation process, all of the **six critical factors**²⁰ namely, **event prediction, dissemination of warning, risk avoidance action, necessary hardware, emergency response plan and prompt activation of the emergency response plan**, or at least as many of them as are feasible in case of a particular type of disaster, should be planned and implemented in the disaster-prone regions of the country.

Out of the six critical factors mentioned above, at least two, viz. **dissemination of warning and risk avoidance action, depend crucially on the inhabitants or people in the disaster-prone areas**. Hence, **with respect to these two steps at least** (in the whole chain of actions in disaster management) **the Government apparatus needs to ensure that both planning as well as implementation are people-centric**. It was reported in the media²¹ recently that in the World Conference on Disaster Reduction, held in Kobe, Japan, in the month of January this year, hazard specialists and grassroots groups urged the architects of future early-warning systems to learn from local people around the world ‘who are up to their elbows in risk reduction’. They stressed that, **since it is the local people who directly bear the brunt of a disaster, the early warning systems need to be tailored for local use and they need to be generated on site**. It was understood that **many of the developing countries cannot afford the expensive technology for disaster reduction that are in use in the developed nations like, Japan or the U.S., and hence, in such countries the ‘bottom up’ approach to risk reduction involving local communities could be quite useful**.

People-centred Approach to Disaster Risk Reduction: A few examples

- In Bangladesh, local communities in the disaster-prone areas have come up with ways to protect the vulnerable people from floods and cyclones. Villagers use colour-coded flags for evacuation: yellow means ‘get ready’ and red means ‘leave your houses now’. Instructions are broadcast over loudspeakers mounted on mosques for prayers, and in temples, bells are rung in special ways to indicate danger.
- A user friendly, computer-aided rating system to warn people of fire dangers has been quite successful in Namibia. Based on a simple analysis of rainfall levels, the system warns the local communities about impending wildfire hazards, which does not require especially fancy technology or expensive telecommunications.
- In Bihar, India, there have been instances of villagers dividing themselves into teams to tackle floods. One group of villagers monitors water levels, another flags vulnerable peoples’ homes, while a third team carries the injured to higher ground. A fourth team clears the village of snakes and dirty water when it’s time for people to return to their houses.

Source: www.infochangeindia.org (“Promote people-centred early warning systems, say experts”, citing www.alertnet.org, January 21, 2005).

Thus, in the disaster management system in India, all of the critical factors that can mitigate losses from natural disasters need to be implemented well, with **particular emphasis on the Pre-disaster Phase measures**. The disaster management **authorities need to ensure that early warning systems (to be used in disaster prone areas), dissemination of warning and plans for risk avoidance action are people-centred, i.e., they are tailored for local use and they incorporate the traditional knowledge of the local communities with regard to coping with natural disasters**. The disaster management apparatus needs to catch early warnings from the disaster-prone areas and take prompt action subsequently. Besides these, **there are several other crucial factors**, which need to be taken care of well in the country. We briefly mention some of these in the following.

- It is **necessary to incorporate the essential disaster mitigation elements into the development plans pursued at the national, State, district and local levels**. While numerous committees/ expert bodies have reiterated this suggestion/ recommendation in the past, not much seems to have changed in practice. Many disasters in the recent past, for instance, the earthquake in Gujarat (2001), or the flood in Mumbai (July 2005), have shown that we have been pursuing unhindered urbanisation in different parts of the country and that we have to pay huge costs for such unsustainable development plans at almost regular intervals. Hence, the rhetoric for sustainable development must translate into reality.
- The important recommendations by various committees/ agencies/ expert bodies with regard to- development of effective communication systems in the country, public awareness and education on disaster management, application of latest technology for disaster preparedness (like, Geographic Information System, Remote Sensing, Communication Satellites, etc.), promotion of risk transfer options like insurance, etc. need to be implemented across the country.
- The entire process of disaster mitigation, preparedness, and response must involve common citizens to whatever extent possible. In order to involve the masses in these processes **it is important not only to make them aware of the risks and feasible solutions relating to disasters but also to give them incentives for participating in such activities**. The Government of course has been trying to spread awareness about community-based preparedness, etc, through different channels. However, **there has been no attempt from the Government, at any level, to give incentives to people towards participating in such activities**. To begin with, the Government can provide monetary help to people below poverty line, for paying the premium, towards insuring their lives and property against losses caused by disasters, while making it contingent upon their participation in disaster preparedness activities.
- Another loophole in the disaster mitigation plans has been the ignorance of the important role that **healthcare institutions** are required to play in the wake of a disaster. It is needless to mention that **the public healthcare system in India is grossly inadequate in many parts of the country even during normal times**. In the aftermath of a disaster, the reach and effectiveness of the extant public healthcare system would be far below the required levels. The private healthcare facilities are of course there, but they are based mostly in the urban areas and charge substantial amount of money for their services. In

these circumstances, if the marginalised and vulnerable sections of our society are to be provided effective relief, **the Government must take strong initiatives for expanding the network of public healthcare institutions, especially in the rural areas, improving their manpower and infrastructure and for giving proper guidelines regarding their role in the wake of a disaster.** It is very important to strengthen the primary healthcare institutions, which must be accessible to a widely divergent population. Healthcare institutions at different levels- primary, secondary, and tertiary, should be given well-defined and mutually supportive roles vis-à-vis disaster management. **At the village level, emergency healthcare providers, with proper training in life-saving skills, need to be deployed** so that they can provide the essential service to local communities during disasters.

- There should be decentralization of disaster management efforts- in terms of **involving the village Panchayats and other local bodies in both planning and implementation of disaster preparedness measures specific to their areas.** As we have already noted, the processes of dissemination of warning and risk avoidance action necessarily depend on the active participation of local people in a disaster-prone area, hence, the *Panchayats* and other local bodies should have substantial roles to play in these activities. In fact, **the planning towards management of natural disasters has to combine both the ‘top down’ approach and the ‘bottom up’ approach.** Among the various measures for disaster mitigation mentioned above- ensuring that development plans incorporate disaster mitigation norms, catching early warnings, prediction of natural disasters in time, issue of warnings from the disaster management authorities, availability of necessary hardware (such as, search and rescue equipments, high wind-proof radio masts, emergency communication infrastructure, etc.), having an emergency response plan, activating the emergency response plan promptly during a disaster, and providing comprehensive as well as effective relief and rehabilitation to the people affected- could be undertaken with a top down planning approach. However, several important activities, such as, **creating awareness among people, promotion of disaster mitigation and preparedness measures among the local communities, dissemination of warning among people in the affected areas, evacuation of people to safer places in the event of a disaster, and taking precautionary measures in the post-disaster situation (such as against epidemics), etc. need to be undertaken with a bottom up planning approach.** The local self-government bodies must have a major say in the latter.
- A major factor that has obstructed proper management of natural disasters in India in the past is that the **Government authorities have been treating disaster management only as an emergency responsibility.** This attitude needs to be changed and **the authorities must learn to tackle natural disasters as a regular phenomenon.** A sizable chunk of the officials, drawn from all the relevant branches of the Government, and serving at different tiers of Government, need to be given adequate training as well as regular practice in handling natural disasters.

3. (Mis)management of Natural Disasters in Practice

In this section, we shall briefly look at our experiences of disaster management in practice in case of four major natural disasters in the recent past. The discussions relating to Orissa super cyclone (1999), Gujarat earthquake (2001) and Mumbai flood (July, 2005) focus on the causes for the massive destruction in each of these cases, and thus reveal that actual practice of disaster management in the country has had a very poor track record. The major factors responsible for the disaster in each of these three cases were different, and they throw light on different weaknesses of the disaster management system that has existed in India. On the other hand, the discussion on Rajasthan drought (2002-03) focuses on the major lacunae in the relief and rehabilitation activities that were undertaken by the State Administration following the severe drought. The experience of relief and rehabilitation following the Tsunami disaster of December 2004, especially in Tamil Nadu and Andaman & Nicobar Islands, throws up several important lessons. But given the added relevance of these issues at present, we discuss these lessons separately in Section 6 of the paper.

3.1 Orissa: Super Cyclone, 1999 ²²

The Orissa super cyclone had hit Jagatsinghpur district (in the State) on 29th and 30th of October 1999; and the cyclonic storm with heavy rain had continued for over 36 hours. Maximum damage in this district was caused in Ersama block of Kujang tehsil. This block lying near the coastline was ravaged, during the super cyclone, by three 10-metre-high tidal waves.

Experts have maintained an opinion that almost ninety per cent of the people who died in Ersama block during 29-30 October, 1999 could have been saved, if they had been evacuated inland beyond the reach of the tidal waves in time, and that there was sufficient time with the State administration for evacuation.

The infrastructure facilities available in Orissa, during and immediately after the super cyclone, were grossly inadequate. **In 1999, the whole district of Jagatsinghpur had only 3 cyclone shelters (during our visit to Jagatsinghpur district in June 2003, we had gathered from the people of the coastal villages of the district that those 3 cyclone shelters had, in fact, saved many lives during the super cyclone).** The police wireless system in the region failed for there were no radio masts, which could withstand wind blowing at the speed of 260 to 300 km per hour. Also, Orissa had no network of ham radio sets at that time. **These handicaps in terms of the infrastructure, added with the lack of awareness on the part of the local population in the affected districts, proved too costly, as about 10,000 lives were lost.**

The immediate response of the Orissa Government to the super cyclone, in terms of rescue measures, provision of relief and prevention of epidemics in the affected regions, was dismal. The relief activities, which followed, have not been up to the satisfaction of all the victims even though the State received substantial assistance from humanitarian agencies, other State Governments and individual donors. The most victimized, among the people seeking relief assistance, have been the legal heirs of those people who received injuries during the cyclone and died because of such injuries later. Some such deaths have been compensated through ex-gratia assistance, but many cases were still pending (as in June 2003) and were being scrutinized by a

District Level Committee. Also, no compensation was given to people for the loss of livestock in the super cyclone, though it has been estimated that the total number of livestock that perished in the super cyclone was about 4,40,000²³. The main reason cited was that official records of the livestock population were not there, and hence it was impossible to verify the validity of any claim for such compensation.

3.2 Gujarat: Earthquake, 2001 ²⁴

On 26 January 2001, a devastating earthquake measuring 6.9 on the Richter scale shook the entire state of Gujarat causing death and destruction in many parts of the State. The epicentre of this strong earthquake being located 20 km. to the north of Bhuj, the damage caused in the district of Kachchh was most severe. Although thousands of persons died immediately in the earthquake, thousands others were trapped alive in the rubble. **The failure of the State administration to start the rescue operations quickly and the lack of equipments for rescue operations dealt a severe blow to the efforts of saving those who were buried alive in the rubble.** Instruments to detect persons buried alive were highly inadequate and were available only with the foreign rescue teams. It took long enough to mobilize earth-moving equipments to remove the rubbles in the quake-hit areas.

Reportedly, it took the State administration more than 36 hours to mobilize jeeps, ambulances, water tankers, cranes, gensets, earth movers and gas cutters; and more than 3 days to reach the worst affected cities of Bhuj and Anjar. In sharp contrast to the lack of preparedness of the State administration, the foreign rescue teams which were rushed to the quake-hit areas immediately after the quake were well equipped to quickly detect trapped persons with sonars (which detect vibrations), devices to detect heart beats, miniature cameras and specially trained dogs, and special drills and slings to remove the rubble.

The most determining factor behind the huge loss of lives and property in the Bhuj quake was the fact that buildings in Kachchh were not constructed incorporating quake-resistant elements into them. Even though Kachchh belongs to that seismic zone of India which has one of the highest risks of a strong earthquake, the construction of quake-resistant buildings was not done because both the Government and the public perceived the risk of an earthquake as low.

3.3 Rajasthan: Drought, 2002-03 ²⁵

The drought of 2002-03 was one of the worst in the history of Rajasthan. The damage caused by this drought was aggravated, as it was the fourth successive drought year in the State. As many as 47 cases of unnatural deaths in Kishanganj and Shahabad tehsils of Baran district in Southeast Rajasthan were reported by the media and civil society organisations in the months of September and October, 2002. Though the Government of Rajasthan maintained that these deaths were not related to hunger but to illness, civil society organisations strongly contended that **these deaths were due to illness caused by consumption of poisonous food under conditions of starvation.**

During our visit to this region in April 2003, we had covered two hamlets of Sahariyas (a tribal community in Rajasthan), namely, *Premnagar colony* in Bhanwargarh village (under Bhanwargarh Gram Panchayat) and *Chenpura-Sunda* (under Khandela Gram Panchayat) in Baran district of Rajasthan. In both these places, the plight of the Sahariyas was visible. Most of the non-Sahariya beneficiaries of drought relief works and political representatives as also the Government officials blamed the alcohol addiction of the Sahariyas (males) for their miserable conditions. The picture portrayed was that the Sahariyas themselves were responsible for starving without food. However, the reality was different. Most of the Sahariyas, whom we talked to, were willing to work in the relief works under progress in their areas. **Earlier, most of the Sahariya men earned their livelihood by working as Haali (almost a bonded labour) for the rich farmers of their villages as well as neighbouring villages. Once the farmers got trapped in the severe drought, the Sahariyas lost their sole access to livelihood.** This triggered the consumption of poisonous food in the community, which also led to deaths of more than forty people within a short span of time in 2002.

Despite the district administration (of Baran, Rajasthan) and tehsil office (in Kishanganj, Baran district in Rajasthan) making tall claims regarding the drought-relief works under progress in the region, we were disappointed with the implementation at the ground level. Most striking observations relating to the drought relief measures were: **grossly inadequate scale of relief works, punishment being given to the underfed workers for not completing works in time, ineffective Fodder Depots, failure of Pashu Shibirs (Animal Camps), construction of temporary assets only (like earthen roads and wells which would not last beyond one season), and the ignorance of important needs of villagers by officials dealing with relief works.**

3.4 Mumbai: Flood, July 2005

Starting from 27 July 2005, Mumbai, along with some other parts of Maharashtra, witnessed unprecedented torrential rains for several days. The floods that followed killed more than 400 people in the city of Mumbai, hundreds more were injured. Following the heavy rains, a large part of Mumbai was inundated and there was scarce relief for thousands of people stranded on roads, railway platforms, offices, schools and colleges etc. The major roads in the city were blocked and even the trains ran at irregular intervals. There was no electricity or functioning telephone line in the suburbs for weeks. The problems in the city were compounded by the epidemics that followed. According to many observers, this disaster has exposed the acute vulnerability of the city (famous as the financial capital of the country) to natural disasters and revealed the major loopholes in the development plans adopted in the city.

It was observed that had the Government of Maharashtra implemented its own guidelines on disaster management plan for Mumbai (incidentally the only city in the country which has such a plan) much of the losses caused by the floods could probably have been avoided²⁶. It has also been observed that **the unprecedented flooding of much of north Mumbai and the submergence of the land around the Bandra-Kurla complex (in the city) had all been predicted by environmentalists, and it is the Government's greed that is to be blamed for the disaster.**²⁷ Noted environmentalist, Mr. Bittu Sahgal, had in the past strongly opposed to the Government's plans for diverting the *Mithi* river to construct the Bandra-Kurla complex since

there was no provision for adequate drainage. According to Mr. Sahgal, the area where the *Mithi* river exits now is about one-third of its original size, as land was reclaimed for construction of the said complex, and hence it was inevitable that the river would flood its banks during heavy rainfall. Also, Mr. Sahgal notes that, a large mangrove patch between the river and the Bandra-Kurla complex, which provided a natural barrier against flooding, had been illegally reclaimed. Thus, it is argued that none of the consequences of the heavy rainfall in the city should come as a surprise to the Government.²⁸

4. Government Financing of Disaster Management

In this section we shall discuss the priorities given to disaster management in India, as reflected from the financial allocations made by the Government (especially, the Central Government) for measures related to disaster mitigation and preparedness as well as those related to relief in the post-disaster situations. When we look at the relevant policy documents, it emerges clearly that the financing of post-disaster relief and rehabilitation expenditures has had the major chunk in the resources allocated by the Government for management of natural disasters over the years. The mitigation and preparedness measures which have been financed by the Government are limited mainly to prevention of droughts and floods only. On the other hand, there has been explicit and very significant dependence by the States on financial resources from multilateral development agencies for mitigation and preparedness measures with regard to all kinds of natural disasters.

4.1 Financial Resources for Natural Disaster Mitigation and Preparedness

Within the federal fiscal structure that has evolved in India since independence, the Planning Commission oversees the *Plan expenditure*²⁹ by the Centre and States and hence the transfer of Plan funds from Centre to States. On the other hand, the Finance Commission oversees the transfer of Non-plan funds from Centre to States and Non-plan expenditure of the States. Expenditure on relief in the event of a natural disaster has always been treated as Non-plan expenditure, and hence it has always remained within the purview of Finance Commissions. At the same time, expenditures on long-term disaster mitigation and preparedness (in the pre-disaster phase) have always been treated as Plan expenditure and hence it has fallen under the supervision of the Planning Commission.

Therefore, our assessment of the allocation of financial resources for natural disaster mitigation and preparedness measures is based mainly on the perusal of Five Year Plan documents.

- The subject of **disaster management was addressed specifically for the first time in the Tenth Five Year Plan (2002-07) document**. The need for giving specific attention to disaster management was overlooked in all previous Five Year Plans.
- Whatever **long-term measures for mitigation of disasters** have been **incorporated in the Five Year Plans, relate to droughts and floods only**. These measures fell largely under the Plan schemes for provision of drinking water in the drought-prone areas, generation of employment in the drought-prone areas, providing inputs to agriculture and flood control measures.

- The **major ongoing schemes that have the potential for disaster mitigation** include Integrated Wasteland Development Programme (IWDP), Drought Prone Area Programme (DPAP), Desert Development Programme (DDP), Flood Control Programmes, National Afforestation and Eco-development Programme (NA&ED), Accelerated Rural Water Supply Programme (ARWSP), and Crop Insurance Scheme. Clearly, **all these schemes concern the vulnerability to droughts and floods only.**
- The State Governments have always been asked to use their Plan funds or their own budgetary resources for undertaking repair/ reconstruction of capital assets damaged in natural disasters. Hence, **the emphasis in the policy documents** (e.g. in the Finance Commission Reports that have overseen relief expenditure incurred by States) **has mostly been on availability of financial resources for repair or reconstruction of public assets.** Even the Tenth Five Year Plan document, in the context of its role in funding all kinds of activities in disaster management other than post-disaster relief expenditure, states that for repair/ reconstruction of public assets (damaged in natural disasters) funds would be made available to the affected States on a priority basis. However, it does not make any significant commitment with respect to long-term measures for mitigation and preparedness. Thus, **the need for allocating financial resources for specific preventive measures relating to natural disasters other than drought and flood has not been addressed in the policy documents.**
- Also, the expenditure incurred by the States on ‘relief on account of natural calamities’ has always been treated as *revenue expenditure*. The financial assistance provided by the Central Government to States for ‘relief on account of natural calamities’ are also expected to be spent as *revenue expenditure*, and, for incurring any significant *capital expenditure* within their relief works the States have been asked to depend on their Plan funds or their own Budgets. This **restriction on the kind of expenditure that can be incurred by States with the money received specifically for calamity relief has significantly constrained the ability of the States to undertake any long-term measure for mitigation in the disaster affected areas through the relief works.**
- The **Natural Disaster Management Programme**, a Central sector scheme implemented **since 1993-94** by the Department of Agriculture and Cooperation, is probably the only Plan scheme that specifically addresses the need for long-term (disaster) preparedness measures in the country. The **total allocation for this programme in the Eighth Five Year Plan (1992-97) was a meagre Rs. 6.3 crore, which rose to Rs. 16.32 crore during the Ninth Five Year Plan (1997-2002).** The major activities undertaken in this programme include the establishment of the National Centre for Disaster Management (NCDM) at the Indian Institute of Public Administration, New Delhi in 1995 (the NCDM was replaced by National Institute of Disaster Management in 2003), creation of 24 disaster management faculties in 23 States, research and consultancy services and documentation of major disasters. While, the activities undertaken in the National Disaster Management Programme are very welcome, clearly **the magnitude of the problem in our country demands disaster preparedness measures at a far greater scale, for which substantial financial resources are also required.**

- Another noteworthy feature has been **the excessive dependence of the Government on financial support from multilateral donor agencies for undertaking long-term mitigation and preparedness measures in the disaster-prone areas**. According to the Tenth Five Year Plan document, the Government, as a policy, does not make any request or appeal to the international community in the event of a disaster; however, assistance offered suo moto is accepted. The Tenth Plan document also states that funds for long-term preparedness/preventive measures are available from multilateral funding agencies such as the World Bank, and these have formed part of the State Plan expenditures. In this context, it may be worthwhile to note that **the UNDP and Ministry of Home Affairs had jointly started the Disaster Risk Management Programme (2002-07)**, in 125 most multi-hazard prone districts across 12 States in the country. This programme is perhaps the one and only national level initiative that addresses the acute need for taking long-term measures in the disaster-prone areas and building capacities of the local communities. This programme, which has later on been extended to 17 States, **was started with financial support solely from the UNDP**. The resources required for the programme were estimated to be US \$ 27 million approximately, over a period of six years. **It was initiated with US \$ 2 million for Phase-I and US \$ 5 million for Phase-II donated by UNDP and subsequently the Government has taken assistance from USAID and European Union for this project.**
- Since 1990-91, we have had a Calamity Relief Fund (CRF), a centrally sponsored scheme, for financing immediate relief expenditure of States in the wake of a few selected natural disasters. Also, we have had the National Fund for Calamity Relief (NFCR) from 1995 to 2000 and then the National Calamity Contingency Fund (NCCF) from 2000-01 onwards, in combination with the CRF, for financing immediate relief expenditure of States in the wake of ‘severe’ natural disasters. However, **we have never had any ‘disaster mitigation fund’**. As we shall see in the discussion in Section 4.2 below, **the States have been constrained- on the one hand by the norms and guidelines for expenditure under CRF and NCCF schemes which rule out any long-term capital expenditure, and on the other by their own fiscal crisis- in spending money on disaster mitigation and preparedness measures**. Hence, the demand for setting up a ‘disaster mitigation fund’ has been there since quite some time. There has been no visible attempt by the Central Government along this line as yet. The Disaster Management Bill of 2005 (discussed in detail in Section 5), however, envisages a National Disaster Mitigation Fund.

The High Powered Committee (HPC) on disaster management, which submitted its report in 2001, was perhaps the first policy-making body in the country that recognised the acute need for allocation of substantial financial resources for disaster mitigation. As we have already noted, one of its recommendations was that at least 10 percent of Plan funds at the national, State and district levels be earmarked and allocated for schemes which specifically address areas such as disaster mitigation and preparedness. The Tenth Five Year Plan document did acknowledge this recommendation of the HPC, but it did not mark out any magnitude for the Plan funds that would be channelised for disaster mitigation measures during 2002 to 2007 under the different Ministries/ Departments.

We get further evidence on **the disconnect between the ends visualised and the means provided by the Government, vis-à-vis disaster mitigation**, from a recent Status Report of the National Disaster Management Division (of Ministry of Home Affairs).³⁰ According to this Status Report, the Government of India have issued guidelines that where there is a shelf of projects, projects addressing mitigation will be given a priority, and it has also been mandated that each project in a hazard prone area will have disaster prevention/ mitigation as a term of reference and the project document has to reflect as to how the project addresses that term of reference. This is indeed **a welcome step, but grossly inadequate in comparison to the gravity of the problems**. For, **there is no clear indication of the Central Government making available any additional funds to the States for undertaking projects specifically meant for disaster mitigation and preparedness**. The Guidelines issued by the Central Government to States mention that **“Funds available under the ongoing schemes may be used for mitigation/ preparedness**. For example funds under the rural development scheme can be used for construction of cyclone shelters in areas prone to cyclones. Similarly, sites and designs of primary school buildings in flood prone areas may be so selected that they can serve as shelters in times of floods. The design requirements for primary school buildings and hospitals and other important public buildings in seismic zones IV and V would need to be in accordance with BIS norms for construction in these zones.”³¹ Thus, what we find in these guidelines is a mandate for giving higher priority to those ongoing Government-funded projects which have a potential for disaster risk reduction, and inclusion of disaster mitigation elements into the ongoing projects where it is feasible to do so, however, there is no provision for channelising additional Government funds into projects meant for disaster mitigation.

Thus, we find that the allocation of financial resources by the Government (especially the Central Government) for long-term measures for mitigation and preparedness has been very little, even during the last decade in which India supposedly has changed its approach towards disaster management; and it reflects a very low priority given by the policy makers in the country to long-term measures in the pre-disaster phase.

While we make a case for greater allocation of funds by the government for disaster mitigation and preparedness measures, we have to acknowledge the **financial constraints of the government** too. There can be no doubt over the desirability of greater expenditure on such pre-disaster phase measures, as very high returns on such investments can be expected in terms of significant reductions in losses to the socio-economic infrastructure caused by disasters as well as reductions in the requirement of funds for expenditures on relief and rehabilitation of the victims of natural disasters. **However, the government needs to augment its own revenue in order to be able to channelise substantial financial resources for comprehensive mitigation and preparedness measures**. There exists a strong case for collecting these financial resources from the private corporate sector in the country, for instance, through a surcharge for building up a fund for disaster mitigation.

We already hear a lot about ‘corporate social responsibility’ not only in the traditional social sectors but of late in the sphere of disaster management as well.³² However, **there are a number of problems with a mechanism under which the private corporate sector voluntarily contributes resources for disaster management activities**. First of all, the magnitude of such voluntary contributions can hardly be expected to reflect the true costs of the role of the corporate sector in amplifying the vulnerabilities of a community or an entire region to a disaster.

As we had noted at the outset, the impact of natural disasters has been on the rise the world over primarily because **industrialisation and urbanisation across the globe have led to unsustainable pressures on resources causing the erosion of natural ecological balance**, which has intensified the frequency of occurrence as well as damage caused by natural disasters. Hence, the private corporate sector owes a part of its profits to the cause of channelising resources for disaster management. Secondly, it is well known that the geographical spread of industrial development in India has been extremely uneven, a trend which has got further amplified in the era of economic liberalization in the country. In such a scenario, **it is very likely that voluntary measures by the private corporate sector will tend to be clustered in a few regions**, which are having their own industrial units or inhabited by their clientele. Hence, the government should levy a surcharge on the private corporate sector for mobilising financial resources and then use those funds for undertaking the disaster mitigation activities in vulnerable regions across the country.

However, **the Central Government in India, as of now, seems to have visualized a role for the corporate sector in which its financial contribution would be much smaller**. Apart from sensitisation and training of the corporate entities to integrate disaster mitigation elements into their own infrastructure and operations, the government expects them to help mostly in awareness creation for disaster management. Clearly, a move towards mobilising financial resources for disaster management from the corporate sector is a difficult task, which requires very strong political will and commitment for the process of disaster mitigation and prevention.

4.2 Financial Resources for Relief Expenditure by States³³

Under the federal structure of governance in India, provision of immediate relief to the victims of natural disasters has been the primary responsibility of the States. However, often the scale of a natural disaster combined with the economic and infrastructural abilities of the State Government create such a situation where assistance from the Central Government towards meeting the relief expenditure becomes necessary. Before the setting up of the Calamity Relief Fund (CRF) scheme (in 1990), during the occurrences of natural disasters, the State Governments used to approach the Centre with a claim for immediate financial assistance for meeting the expenditure on relief. The amount of assistance released from the Centre, however, was based on an assessment of the damage caused by the disaster (and extent of help required) by a Central Team which visited the disaster affected area for this purpose. As this whole process was cumbersome and time-consuming, the State Governments faced many hurdles in providing immediate relief to the victims. Also, under the *Margin Money Scheme* (meant for helping the States in meeting relief expenditure necessitated by natural disasters) that was in operation all through the recommendation periods of II to VIII Finance Commissions (i.e., from 1957 to 1990), the amount of assistance given from the Centre was far short of what the State Governments actually needed.

All these problems led the **Ninth Finance Commission to recommend for setting up of the Calamity Relief Fund scheme for financing relief expenditure of States in the wake of natural disasters**³⁴. The main objectives of this scheme were to:

- Enable the States to incur requisite levels of expenditure on relief in the wake of natural disasters
- Avoid delays in State Governments' response to a natural disaster
- Provide greater autonomy as well as responsibility to the States in the relief operations, and
- Discourage the States against inflating their demands for funds or wasteful expenditure.

There is requirement for every State to have a separate CRF, with Finance Commission recommendations deciding the annual allocations under this scheme. Every year, the Centre provides 75 per cent of the funds to the CRF of each State (as a non-plan grant) while the rest 25 per cent comes from State Government itself. Expenditure under CRF is required to be incurred following the guidelines for the same. The Tenth Finance Commission had recommended for setting up a **National Fund for Calamity Relief (NFCR)**, situated with the Central Government as a contingency fund, for providing assistance to States in the wake of natural disasters of 'rare severity'. Accordingly the NFCR was set up and it functioned over the period 1995-2000. However, with the suggestions of the Ministry of Agriculture (of the Central Government) and the Eleventh Finance Commission, this NFCR was replaced by the **National Calamity Contingency Fund (NCCF)**, which is in operation at present. The NCCF, like its predecessor, is meant for providing assistance to States (in excess of their CRF money) on a case-by-case basis for natural disasters of 'rare severity'. It has a corpus of Rs. 500 crore, which once exhausted is recouped by the Centre by the levy of a surcharge.

4.2.1 Salient Features of the CRF Scheme (from 1990-91 to 2004-05)

- Size of the CRF for each State (during the recommendation periods of the Ninth, Tenth and Eleventh Finance Commissions) has depended mainly on the magnitude of relief expenditure incurred by the individual States in the past. Hence, **the States that incurred higher expenditure on relief during 1990s got higher allocations for their CRFs during 2000-2005.**
- Centre and each State contribute to this Fund in a ratio of 75:25. This requirement of making 25 % contribution to the respective CRF has been uniform across all States.
- CRF money **can be used only for immediate relief expenditure of a short-term nature.**
- Money could be used only in case of the natural disasters of **Drought, Cyclone, Earthquake, Flood, Fire and Hailstorm.**
- Money from CRF **cannot be used for restoration of capital assets damaged in a disaster;** such expenditures by the States are required to be adjusted against their Plan funds.
- CRF scheme has been accompanied by the National Fund for Calamity Relief (NFCR) during 1995-2000 and then by the National Calamity Contingency Fund (NCCF), from 2000-01 onwards, for disasters of 'rare severity'. That is, NCCF has funded relief expenditure of States necessitated by 'severe' natural disasters on a case-by-case basis.

Table 4.1: Average Annual Allocations to CRFs of different States for each year during 2000-01 to 2004-05			
(As per the recommendations of the Eleventh Finance Commission)			
(in Rs. Crore)			
S. No.	State	Average Annual Allocation to CRF during 2001-02 to 2004-05	Annual Average Contribution of the Central Government to CRF
1	Andhra Pradesh	218.88	164.16
2	Arunachal Pradesh	13.28	9.96
3	Assam	112.16	84.12
4	Bihar*	136.65	102.49
5	Goa	1.37	1.02
6	Gujarat	178.36	133.77
7	Haryana	89.85	67.38
8	Himachal Pradesh	48.05	36.04
9	Jammu & Kashmir	38.57	28.93
10	Karnataka	82.41	61.81
11	Kerala	74.31	55.73
12	Madhya Pradesh*	99.57	74.68
13	Maharashtra	173.73	130.29
14	Manipur	3.17	2.38
15	Meghalaya	4.35	3.26
16	Mizoram	3.28	2.46
17	Nagaland	2.16	1.62
18	Orissa	120.97	90.73
19	Punjab	135.62	101.71
20	Rajasthan	228.76	171.57
21	Sikkim	7.63	5.72
22	Tamil Nadu	113.42	85.07
23	Tripura	5.74	4.31
24	Uttar Pradesh*	197.42	148.06
25	West Bengal	111.73	83.80
Total		2201.52	1651.14
*: Prior to the re-organisation of these states			
Source: Compiled from Report of the Eleventh Finance Commission			

4.2.2 Has CRF Been Effective Until Now?

In the event of any severe natural disaster, we hear a lot about the Prime Minister's National Relief Fund, the Chief Minister's Relief Fund, and aid/ donations by foreign countries, humanitarian agencies and international organisations, and much less about the Calamity Relief Fund (CRF). However, **the CRF (in combination with the NCCF) is the only source of funding available for all the States in our country on a regular and assured basis for natural disasters of any magnitude, including both the smaller disasters (which do not attract national or international attention) as well as the severe disasters.** Also, the CRF has proved to be better than the Margin Money scheme (which existed earlier) in financing relief expenditure of States. **However, there are numerous peculiarities in the design of the scheme and loopholes in its implementation by the States, which have significantly constrained the effectiveness of this scheme.**

Flaws in the Design/Framework of the Scheme:

- The determination of the size/ quantum of CRFs for different States has been heavily loaded against the poorer States. Economically better off States, which could incur higher amounts of relief expenditure in the past, have been given higher allocations to their CRFs. The poorer States, like Bihar, Orissa, Uttar Pradesh, Assam, etc., despite their high vulnerability to natural disasters and significant losses suffered by disasters, have not been able to get higher allocations than some of the less disaster-prone and economically better off States.
- Allocations to CRF have been grossly inadequate; almost every major disaster in the last 10 years has forced the Government to depend on NCFR (during 1995 to 2000) or NCCF (2000-01 onwards). Release of funds from the NCCF has been an arduous process, which involves a time lag in transfer of funds to the concerned State.
- Only six natural disasters have been eligible for expenditure under the scheme, which is quite unrealistic and rigid. Landslides, avalanches, pest attacks, heat wave, cold wave, etc. have all been kept outside CRF scheme during the period from 1990-91 to 2004-05. The Tsunami, for instance, was not under the CRF scheme as none of the Government bodies had any idea about such a hazard. But in the Tsunami of December 2004, the Tamil Nadu State administration was compelled to use CRF money for immediate relief expenditure, to which the Centre did not make any objection either.³⁵
- A uniform list of items and norms of expenditure (under CRF) for all the States is a major drawback, as the wide diversity in geographical, social and economic factors across different regions in the country requires a flexible approach to relief and rehabilitation. Also, some of the norms of relief, as under the CRF and NCCF schemes, have been found to be quite unrealistic.

Unrealistic Compensation under the CRF scheme

“During the previous drought in Nagapattinam (in Tamil Nadu), there was great disparity in the compensation amounts for small end marginal farmers although the fact remained that both the groups had lost their entire crop. And, the compensation was very meager compared to the loss incurred.Also, in the previous drought (in Tamil Nadu) the Centre had announced a relief of Rs. 22 per coconut tree, while the farmer had to spend Rs.500 to uproot the dead tree and reclaim the land for cultivation. After much negotiation by the Tamil Nadu Government this was later raised to Rs.125 per tree.”

- Mr. Santhanam, State Commissioner for Disaster Relief, Government of Tamil Nadu, during the deliberations at *National Consultation on Disaster Management* held in *Chennai* on *April 18-19, 2005*.

- Another major flaw in the design of the scheme is that it does not make any provision for financing restoration of damaged public assets or long-term measures for disaster mitigation/preparedness in the disaster-affected areas. As has already been stated, this scheme does not allow for creation of capital assets, however necessary they may be for disaster mitigation.

Loopholes in Implementation of the Scheme:

- The Comptroller and Auditor General (C & AG) of India, in its report on the functioning of the CRF (and NFCR) scheme in 1999, had highlighted several instances of irregularities in implementation at the ground level and misappropriation of CRF funds by the States.
- State Governments, in many cases, have shown laxity in fulfilling the requirements of reporting and submission of utilization certificates, which has resulted in delays in transfer of funds to their CRFs from the Centre.
- In a few cases of disasters of rare severity, and especially in allocations of foodgrains under relief measures, there have been allegations of Centre's relief assistance to the different States being driven by political interests.
- Since the entire process of determining the items and norms of expenditure under relief measures has remained centralized, the institutions of local self-governance and hence the local communities have had no say in it. As a result, when relief operations are undertaken in the disaster-affected areas, many of the felt needs of the disaster-affected people have been ignored.
- The Government apparatus has not been able to quash discriminations against socially marginalised groups in relief operations. For example, during the first few months after the Tsunami (of December 2004), it was reported in the media that in the coastal areas of Tamil Nadu, *dalits* had to face discrimination from upper caste people in several of the relief camps. Another such instance, highlighted by several civil society groups, has been the negligence of the special needs of disabled people during the relief operations in Andaman & Nicobar Islands following the Tsunami. Also, in case of the drought relief works in Baran, Rajasthan, in 2003 (which we have discussed in Section 3.3), the differential vulnerability of the *Sahariyas* had not been addressed by the State administration within the relief operations.

4.2.3 Recommendations of the Twelfth Finance Commission (for 2005-06 to 2009-10)

The Twelfth Finance Commission (TFC) was expected to do away with many of the peculiarities/ rigidities in the design of the CRF (and NCCF) scheme and make suggestions for improving the scope and effectiveness of the same. It submitted its report in December 2004, which has been accepted completely by the Central Government.

Some of the recommendations of the TFC can be expected to improve the CRF scheme and make it more effective, which include:

- An additional provision of 25 % of the aggregate size of the CRF (i.e., the total CRF for all States) to be allocated among undivided Uttar Pradesh, Madhya Pradesh, Bihar, Orissa, West Bengal and the Special Category States.
- CRF scheme has been extended to cover landslides, avalanches, cloudburst, and pest attacks.

Also, some of the changes in the Guidelines for CRF scheme brought about by the Ministry of Home Affairs (MoHA) recently are welcome. These changes are that- States can now use 10 % of their CRF money to procure search and rescue equipments for their teams, and States can use CRF money for training specialists' teams for disaster preparedness.

However, the recommendations of the 12th Finance Commission, with regard to CRF (and NCCF), are disappointing for several reasons, which include:

- Continuing the determination of the size of CRFs for different States on the basis of relief expenditures incurred by them in the past,
- Continuing with the flat 75:25 ratio for contributions by the Centre and each of the States to their respective CRFs,
- Keeping natural disasters like, heat wave and cold wave outside the scope of CRF (despite requests to the TFC by Bihar, Haryana and Orissa to include these),
- Not raising the corpus of NCCF from the prevailing Rs. 500 crore level, despite the fact that the severe disasters over the last decade have necessitated huge expenditures on relief,
- Not making any provision for creation of durable assets/ pursuance of disaster mitigation measures through the relief works in the disasters affected regions, and
- Not envisaging any fund for disaster mitigation and preparedness measures despite being referred (in its Terms of Reference) to recommend on ‘financing disaster management’. In fact, the Ministry of Home Affairs (of the Central Government), after consultation with States, had submitted a Memorandum to the Twelfth Finance Commission proposing the creation of a disaster mitigation fund, which would assist the States in taking mitigation measures.

Thus, **while the entire focus of the Government apparatus in our country (vis-à-vis coping with natural disasters) has been on post-disaster relief operations, we find serious lacunae within that sphere of activity as well.** As we noted in the discussion above, there are serious drawbacks in both planning of the relief operations as well as implementation of the same in the wake of natural disasters. Some obvious corrections to the process of Government financing of relief expenditure must be stated here. The poorer States should be allowed to contribute a lower proportion to their CRFs rather than the flat 25 % of the fund. **All the States should be assessed on the basis of their proneness to natural disasters, losses suffered in the past, occurrence of disasters in quick succession, and population below the poverty line, so that their CRFs could be determined accordingly.** The corpus of NCCF should be raised substantially, and the Ministry of Home Affairs should ensure quick release of assistance to the affected States from NCCF. **Definition of a natural disaster, eligible for CRF/ NCCF money, should be quite flexible** making it possible for the States to intervene in case of most of the natural disasters effectively. **In case of relief and rehabilitation following natural disasters, the principle that “everybody needs to be treated at par” can become inappropriate and unjust; hence, the state mechanism must recognize differential vulnerabilities and losses within a community.** The States should be given a Non-Plan Grant for restoration of capital assets damaged in natural disasters instead of being asked to cut down the size of their Plans for this purpose, something which many States have been demanding since long. Finally, the country should have **a sizable fund devoted for Disaster Mitigation and Preparedness Measures.**

In the following section, we shall discuss the recent initiative by the Central Government for providing legislative support to disaster management in the country. The Disaster Management Bill, 2005, while addressing some of the long-standing needs relating to management of natural disasters also throws up several questions about the planning and organisation of Government intervention in natural disasters, in the coming times.

5. Legislation: Can It Be a Panacea?

The present Minister of Home Affairs (in the Central Government) introduced a draft Disaster Management Bill in the Parliament this year.³⁶ Though devastation caused by the Gujarat earthquake in 2001 forced the Government to sit up and think about the change necessary in its orientation towards disasters, before that in 1999, the High Powered Committee (HPC) had been constituted to formulate the policy framework on disaster management in India. The HPC had recommended measures for strengthening the organisational structure and for formulating a comprehensive model plan for Natural and Manmade Disaster Management at the national, State and district levels. Thereafter, following the Gujarat earthquake, an all-party National Committee on Disaster Management (NCDM) was constituted in 2001, under the Chairmanship of the then Prime Minister, to deliberate on the necessary institutional and legislative measures needed for an effective and long-term strategy to deal with natural disasters in future³⁷. On the recommendation of the NCDM, the Government of India (Allocation of Business) Rules, 1961 were amended to transfer the work relating to management of disasters, except droughts, from the Ministry of Agriculture to the Ministry of Home Affairs in June 2002.

Soon after this transfer of responsibilities, the Government had drawn up a strategic roadmap in October 2002 for reducing the country's vulnerability to disasters. The State Governments were advised to develop similar State roadmaps taking the national roadmap as broad guidelines. Accordingly, **a view was taken in the Government that instead of a Central legislation on disaster management, the States might be advised to enact their respective State legislations.** Consequently, the State of Gujarat enacted legislation on disaster management in 2003 and States of Bihar and Jharkhand are in the process of enacting similar laws.³⁸

India became a signatory to Hyogo Framework for Action 2005-15

India has become a signatory to the Hyogo Framework for Action 2005-15, which was adopted at the World Conference on Disaster Reduction at Kobe early this year. All participating members pledged to strengthen disaster preparedness systems in their countries.

However, **over time, a strong need was felt to vest the coordination mechanism at the national level with necessary legislative back up,** the devastation caused by the Tsunami in December 2004 adding further momentum to such thinking. The Government, therefore, decided to enact a law on disaster management which would “provide for requisite institutional and coordination mechanism and powers for undertaking prevention and mitigation measures as also mechanism for ensuring preparedness and capacity building to handle disasters”.

The proposed legislation is relatable to Entry 23 (Social Security and Social Insurance) in the Concurrent List of the Constitution. This will have the advantage that **it will permit the States also to have their own legislation on disaster management.** The Disaster Management Bill, 2005 was introduced in Rajya Sabha on 11 May 2005.

5.1 Salient Features of the Bill

Statement of Objects and Reasons of the Bill

“1. The Government have decided to enact a law on disaster management to provide for requisite institutional mechanisms for drawing up and monitoring the implementation of the disaster management plans, ensuring measures by various wings of Government for prevention and mitigating effects of disasters and for undertaking a holistic, coordinated and prompt response to any disaster situation.

2. The Disaster Management Bill, 2005 provides for setting up of a National Disaster Management Authority under the Chairmanship of the Prime Minister, State Disaster Management Authorities under the Chairmanship of the Chief Ministers and District Disaster Management Authorities under the Chairmanship of District Magistrates. The Bill also provides for concerned Ministries or Departments to draw up department-wise plans in accordance with the national disaster management plan. It provides for the constitution of a National Disaster Response Force and setting up the National Institute of Disaster Management. The Bill provides for the constitution of the National Fund for Disaster Response and the National Fund for Disaster Mitigation and similar Funds at the State and District levels. The Bill provides for specific role for Local Bodies in disaster management including Panchayati Raj Institutions as well as Urban Local Bodies like Municipalities.

3. The proposed enactment will facilitate effective steps for the mitigation of disasters, prepare for and coordinate effective response to disasters, as also matters connected therewith or incidental thereto.

4. The Bill seeks to achieve the above objects.”

- The Disaster Management Bill, 2005- Bill No. LV of 2005, introduced in the Rajya Sabha on 11 May 2005. (Downloaded from www.lawmin.nic.in)

The Disaster Management Bill, 2005 has the following salient features:

(i) As is evident from the name itself, **this Bill concerns both natural as well as manmade disasters occurring in the country**. This aspect of the Bill could have significant implications for the process and quantum of funding that would be made available to the Government apparatus responsible for managing natural disasters in future. As we have seen, Government funding available for management of natural disasters has been meagre in comparison to the requirement. Hence, **making adequate funds available for management of both natural and manmade disasters could prove to be a Herculean task for the Government and test its commitment to the process of disaster mitigation and prevention**. However, as of now, we can only say that the intention of the Government, as reflected from the *Statement of Objects and Reasons of the Bill* (please refer to the Box above) is welcome.

(ii) The Bill provides for setting up of Disaster Management Authority at national, State and district levels under the Chairmanship of Prime Minister, Chief Ministers and District Magistrates, respectively.

- (iii) The National Disaster Management Authority (NDMA) shall have the responsibility for laying down the policies, plans and guidelines for disaster management. It may constitute an Advisory Committee consisting of experts in the field of disaster management. The NDMA shall be assisted by a National Executive Committee of Secretaries to be constituted by the Central Government.
- (iii) The NDMA shall also lay down guidelines for the minimum standards of relief to be provided to persons affected by disasters.
- (v) The State Executive Committee shall have the responsibility for implementing the National Plan and the State Plan and act as the coordinating and monitoring body for management of disasters in the State.
- (vi) The Bill provides for constitution of a specialist response force called National Disaster Response Force (NDRF), where command and supervision shall vest in an Officer to be appointed by the Central Government as the Director-General of the National Disaster Response Force. (The Ministry of Home Affairs has already taken steps to earmark 8 battalions of Central Para Military Forces, from their existing strength, to be trained and equipped to function as specialist response teams.)
- (vii) Most importantly, the Bill provides for constitution of National Fund for Disaster Response (NFDR) and National Fund for Disaster Mitigation (NFDM), and similar Funds at State as well as District levels.

Interim Arrangement pending enactment of law

Keeping in view that the passage of the Disaster Management Bill was likely to take some time, the present Central Government had proposed for setting up a National Disaster Management Authority (NDMA), under the Chairmanship of the Prime Minister, (and its associated Committees) by executive orders in March 2005, which would be in accordance with the provisions of the said Bill. On July 15, 2005, the Prime Minister constituted a five-member NDMA comprising as its members (Retd.) Gen. N.C. Vij (as Deputy Chairman), S.P. Sukhatme (former Chairman of Atomic Energy Regulatory Board), K.M. Singh (former Director General of CISF), and M. Sridhar Reddy (former Minister in Andhra Pradesh Government).

The NDMA would provide for the requisite institutional and coordination mechanism and powers for undertaking mitigation measures as also mechanism for ensuring preparedness and capacity building to handle disasters in the interim period, pending the enactment of law on disaster management.

While legislative backing for the disaster management apparatus and policies in the country is commendable, it is pertinent to ask **whether the proposed legislation can be a panacea for the problems afflicting management of natural disasters in the country?** In the following, we present a brief appraisal of this Bill highlighting some of the more relevant aspects.

5.2 Assessment of the Disaster Management Bill, 2005

There is reason to be optimistic about the impact of such a legislation (on management of natural disasters in the country) on several grounds, which are as given below.

- Perhaps, **the most commendable feature of the Bill** is its provision for the setting up of **Disaster Mitigation Funds, at national, State as well as district levels**. With a separate Fund in place for the purpose of financing mitigation measures, we can expect timely and adequate flow of funds to finance projects/ initiatives related to disaster mitigation and preparedness.
- The provision for setting up a **National Disaster Response Force**, “for the purpose of specialist response to a threatening disaster situation or disaster”, is another positive feature of the Bill. Developing a skilled and trained force of personnel for rescue and relief operations backed up with adequate infrastructural/ hardware facilities is essential. The Eleventh Finance Commission had suggested for constituting a group of 200-300 personnel drawn from different Government departments associated with the services for rescue and relief in each State, which in turn could constitute a national force of 3000 to 4000 personnel. Such teams could be mobilised and deployed anywhere in the country in a disaster situation.
- A noticeable strength of the Bill is its **inclusion of both man-made and natural disasters within the overall purview of disaster management**. While, there exists a Centrally Sponsored Scheme for financing relief expenditure of States in the wake of natural disasters [the CRF scheme, in combination with the NCCF scheme] with whatever lacunae it has, there is apparently no such scheme/ mechanism for financing relief expenditure following man-made disasters. However, as we have already stated, making adequate funds available for management of both natural and manmade disasters could prove to be a phenomenal task for the Government and test its commitment to the process of disaster mitigation and prevention.
- The Bill provides for the formulation of **Disaster Management Plans**, not only at the **national level** but also at the **State and district levels**, along with the requirement that these plans would be reviewed and updated at the interval of every one-year. These Disaster Management Plans will lay down the roles and responsibilities of the different Ministries/ Departments at the respective levels of Government, and subsequently the Ministries/ Departments shall draw up plans for their activity in disaster management. This provision holds a lot of **potential for enabling a comprehensive and integrated engagement of the various arms of the government in disaster management** at all levels.
- The provision, in the Bill, for **preparation of Status Reports by all Ministries/ Departments** with regard to their role in disaster management (as envisaged in their respective Plans) and the strategies to be adopted for attaining the desired levels, is again a far-sighted element of the legislation.

Despite its potential for having a far-reaching impact on disaster management in the country, the Disaster Management Bill 2005 suffers from **numerous serious lacunae, which need to be amended before enacting the proposed legislation**. In the following, we briefly mention some of those lacunae and also comment on the report of the Standing Committee of the Parliament on Ministry of Home Affairs, which was entrusted the task of critical appraisal of the Bill.

- It is disappointing to note the **limited role envisaged for the institutions of local self-governance and local communities in the process of disaster management** to be put in place. As per the original Bill introduced in the Parliament, the role of the local bodies would largely be consultative, in case of formulation of disaster management plans, and related mainly to the activities of imparting training and awareness on disaster management. As we have already argued in Section 2 of this paper, **many experts have highlighted the need for learning from the local communities (who usually have some traditional experience of tackling disasters, especially natural disasters, occurring in their areas), in the process of shaping up measures for disaster mitigation and preparedness, especially in the developing countries** which cannot afford to spend to the extent as the developed countries do on disaster management. It may be noted here that the Parliamentary Standing Committee has made a case for representation of local bodies as: “the Committee recommends for inclusion of a clause/ provision in the Bill for nomination of public representatives (like the Chairman of Zila Parishad and other local bodies) as co-Chairperson of the District Disaster Management Authority”³⁹.
- In fact, a serious weakness of the Bill is its **adherence to top-down approach in envisaging the planning process relating to all aspects in disaster management**. As we have already discussed, the processes of dissemination of warning and risk avoidance action depend crucially on the people in the disaster-prone areas. Hence, with respect to these two steps at least (in the whole chain of actions in disaster management) the Government apparatus needs to ensure that both planning as well as implementation are people-centric or pursued with a bottom-up approach. However, the Bill envisages an approach towards all aspects of disaster management in which the National Disaster Management Plan would be formulated at the highest level, and subsequently this National Plan would dictate the formulation of Plans at the State level, at the District level and so on.
- A serious lacuna in the Bill is that **it does not make adequate provisions for putting in place a mechanism for Public Grievance Redressal on matters relating to disaster management** that could be easily accessible to people in the disaster affected/ prone areas. The Bill restricts the jurisdiction of Courts, which would deal with any suit or proceeding against any of the authorities involved in disaster management at any level (including the District level authorities), to the Supreme Court and the High Courts only.
- The Bill provides for the setting up of a National Disaster Response Fund, State Disaster Response Funds as also District Disaster Response Funds. Also, the Bill states that the “National Disaster Response Fund shall be made available to the National Executive Committee to be applied towards meeting the expenses for emergency response and relief”⁴⁰. Therefore, these Disaster Response Funds, at the different levels, will deal with the expenditures on rescue, relief and immediate rehabilitation in the wake of disasters. Presently, we have the CRF scheme for financing expenditure of States on immediate relief in the event of natural disasters, and the NCCF scheme for the same purpose in case of natural disasters of severe intensity. **Since the domain of the Disaster Response Funds will overlap with those of CRF and NCCF schemes, it is essential that the Bill throw light on the linkages between the two**. Also, if the CRF/NCCF schemes are going to be replaced completely or modified substantially after the setting up of Disaster Response Funds, then the Disaster Management Bill 2005 should clearly state the institutional mechanism for implementing the new system of financing relief expenditures (in case of natural disasters).

- Again there is **lack of clarity in the Bill regarding the flow of funds between different arms of the Government machinery** for the purpose of measures to be taken for disaster mitigation and preparedness. While there would be Disaster Mitigation Funds at national level, State level and also district level, “for projects exclusively for the purpose of mitigation”, the Bill also requires “every Ministry or Department of the Government of India to make provisions in its annual budget, for funds for the purposes of carrying out the activities of disaster management plan”. The Bill also requires a similar mechanism at the State level. Now, the question is how would the money from the Disaster Mitigation Funds flow down for the projects on mitigation so as to enable the various Government Ministries/ Departments undertake the necessary expenditure towards carrying out their objectives in disaster management? **A lot of clarity and suitable modifications in the Government accounting framework would be needed for the sake of transparency in and accountability for expenditure on disaster management.**
- Also, many of the States have been facing major problems relating to availability of **funds for financing reconstruction of public/ capital assets damaged in disasters**. While the States have, in the submissions to the Finance Commissions, demanded for funds for this purpose to be given to them as Non-Plan Grants, the prevailing mechanism has forced them to cut down their Plan funds for this purpose. Unfortunately, the Disaster Management Bill 2005 does not address this problem.

Thus, the proposed legislation on disaster management is riddled with many more complications than would appear at the first sight. It is hoped that when the revised Disaster Management Bill (based on the recommendations of the Parliamentary Standing Committee) is brought to the Parliament again in the Winter Session of 2005⁴¹, many of the lacunae in the original Bill would have been done away with.

While legislative support for disaster management is commendable, we must not forget that **the actual commitment of the present Government to setting up a comprehensive and effective disaster management apparatus in the country would reflect from – its willingness to channelise substantial financial resources for this purpose and its ability to learn from the experiences of the past disasters.**

6. The Tsunami Experience: Lest We Forget the Lessons!

The massive earthquake in the Indian Ocean, off the coast of the Indonesian island Sumatra, on December 26, 2004 triggered a series of lethal tsunamis that hit the coastal regions of Indonesia, Thailand, Malaysia, Bangladesh, India, Sri Lanka, and Maldives in South/ South-east Asia and the coasts of Somalia, Kenya and Tanzania in eastern Africa. The combined death toll in this unprecedented disaster was above 2,30,000 even by conservative estimates, and over 10 lakh people in these countries were left homeless. In India, the tsunami caused devastation in the coastal areas of three southern States, Andhra Pradesh, Tamil Nadu and Kerala, and in the Union territories of Andaman & Nicobar Islands and Pondicherry.

Since the Government apparatus in India had never recognised the threat of a tsunami of such a huge magnitude, pre-disaster mitigation and preparedness measures for this disaster were almost entirely non-existent. Consequently, the devastation caused by the tsunami in the affected areas in India, especially in Andaman & Nicobar Islands, Pondicherry and the coastal districts of Tamil Nadu was enormous. In Tamil Nadu, the areas of Nagapattinam, Cuddalore, Kanyakumari, Chennai, Villupuram, Tuticorin and Tirunelveli were the worst hit. **Across the country, reportedly, more than 11,942 people were killed in this disaster.**⁴² The combined response from the Central and State Governments, civil society organisations from across the country, humanitarian agencies, private corporate sector as well as common citizens in terms of the financial and manpower support offered in relief operations in the post-disaster phase has been widely seen as unprecedented.

However, over the period of last eight months (i.e., since the time the tsunami had struck), **several important issues have emerged within the sphere of relief and rehabilitation efforts in the tsunami-hit regions.** Since the rehabilitation efforts are still on, these issues hold specific relevance at present. Moreover, as we have discussed in the previous sections of this paper, in India the major emphasis of state intervention with regard to natural disasters has been on post-disaster relief and rehabilitation works. Accordingly, at the current juncture, the emphasis of the experts (on disaster management) as well as policy makers is clearly on pre-disaster measures, and much less attention is being given to the post-disaster interventions by the state/ non-state actors. Hence the lacunae in the post-disaster interventions by the state and non-state actors, in the tsunami-hit regions, need to be highlighted and lessons learnt for the future.

- Recently, it was reported that **even eight months after the disaster, survivors in the Andaman Islands still suffered from apathy of the Government apparatus.** A report by the Human Rights Law Network (HRLN) gives evidences of the survivors in the islands living with much difficulty in temporary tin-shed houses, the children there not getting textbooks or notebooks for studying, and people getting drinking water which is contaminated.⁴³ The report by HRLN has strongly criticised the fact that **the Government apparatus grossly neglected traditional housing needs of the tsunami victims and inappropriate housing options were forced on them.** While it was observed that not a single traditional wooden house (on the Island) had collapsed in the tsunami, the tribal community leaders have been forced to accept

RCC structures in the reconstruction efforts carried out by the Government. Also, it has been highlighted that many victims were still stranded in their villages without electricity, fuel and transport facilities.⁴⁴ While the indifference of the Government officials to the felt needs of the victims is highly undesirable, the flawed reconstruction efforts could make the inhabitants of the Island more vulnerable to natural disasters in future.

- Earlier, in the months of January- February this year, it was reported in the media ⁴⁵ that the **disabled people were the worst affected by the tsunami, especially in the Andaman& Nicobar Islands**. A report by the National Centre for Promotion of Employment for Disabled People (NCPEDP) revealed that not much was done to address the needs of persons with disabilities who were caught up in the devastating tsunami, especially in the Andaman & Nicobar Islands, and no rehabilitation services were made available to disabled victims in the entire region affected by the tsunami.
- As has been observed by some of the civil society activists, in the context of relief operations in the tsunami-hit regions of Tamil Nadu, **certain pre-conceived notions of relief were forced upon the victims**. For instance, relief efforts in Tamil Nadu witnessed ‘endless’ provision of *Sambar* and *Rasam Rice*, while people in the affected communities hardly wanted such food⁴⁶. This resulted from two factors. First of all, **many of the actors engaged in relief works were ill informed about the most affected people, the fishing community, and its socio-cultural traditions**.⁴⁷ Secondly, some of the relief efforts were not based on the felt needs of the victims rather they were supply-driven.
- While some of the prompt actions taken by Tamil Nadu State administration has been commended, the coordination between the Government apparatus and the Non-Governmental Organisations in the relief operations (in Tamil Nadu) has also been hailed by many as exemplary. However, it was also observed that some of the Non-Governmental Organisations had ‘kept out’ of coordination with others. While their reluctance to share information with others was a major factor, these organisations showed their doubts over other organisations’ motivations as the reason for keeping out of coordination.⁴⁸ Undoubtedly, the victims of tsunami would have been most affected by such **rivalry between the Non-Governmental Organisations**.
- More news of lacunae in the tsunami-relief efforts of the Government as well as Non-Governmental Organisations have come into light recently. ⁴⁹ It has been found that **several of the Non-Governmental Organisations involved in tsunami relief operations did not have much consultation with the leaders of the local communities**. As a result, these organisations remained unaware of the historical, social and economic conditions that had prevailed in the tsunami-affected coastal regions (such as, the culture of sharing everything equally within a community, role of traditional–fishing Panchayats, etc). **Consequently, the relief provided among such communities are leading to social conflict, and the affected communities could now be worse off with relief than before**.

- Similarly, it has been highlighted that **many of the Non-Governmental Organisations have, as part of their relief efforts, adopted smaller villages with less population** and some of the larger villages have been left out. As relief has poured into these smaller villages, the **distribution of relief has been unequal** leading to discord between villages.⁵⁰
- Another major drawback in the relief efforts by the state and non-state agencies has been the **gross negligence of the plight of the farmers who live further inland in Tamil Nadu and have been affected by the tsunami**. In the tsunami, “sea water carried by the massive waves seeped into farm lands, destroyed standing crops, left behind a lot of silt and turned the soil into a saline waste”.⁵¹ According to many farmers in the Nagapattinam district in Tamil Nadu, it could take up to five years or more to desalinate their lands. However, their problems have been almost completely ignored by the relief providing agencies in the State.

While there are numerous important lessons to be learnt from the way relief and rehabilitation efforts have been undertaken in the tsunami-affected regions, there are also **a few pertinent lessons to be learnt regarding long-term measures for disaster mitigation and preparedness** from this disaster.

- Following the tsunami disaster, the present Central Government reportedly has approved a Rs. 125 crore- project for setting up a tsunami-warning system in the Indian Ocean region, which will use the Deep Ocean Assessment and Reporting Technology (DOART).⁵² This early warning system for tsunamis and storm surges in the Indian Ocean is expected to be operational by September 2007. **While advanced technology can certainly prove useful in catching early-warning signals, the greatest hurdle would be faced in communicating such warning to the remote coastal areas which are most vulnerable to disasters**. This is because the coastal areas, especially the remote villages there, scarcely have televisions or telephones. Hence, **the Government, besides setting up state-of-the-art warning technology must ensure that the villages in the coastal areas have adequate communication facilities**.
- Another important lesson that has emerged from the tsunami experience concerns **the role that Panchayats can play in disaster mitigation and preparedness**. According to one account, a Panchayat in Cuddalore region of Tamil Nadu, which has a well-trained disaster mitigation team, saved all but 8 persons in the tsunami.⁵³ Thus, building the capacity of the local bodies in disaster management must be given high priority by our policy makers.

Thus, we find that even in case of a severe disaster like the tsunami of 2004, which attracted substantial amounts of funds for relief operations from state and non-state actors, the **relief measures, in the affected areas of Tamil Nadu, seem to have been supply-driven rather than being driven by the demands/ needs of the victims**. In the Andaman & Nicobar Islands, the government apparatus seems to have **ignored completely the differential needs of disabled people** in the wake of the tsunami. Similarly, it was found in many of the affected areas in Tamil Nadu that the **government apparatus providing relief had not taken into account the differential needs of women**. The intervention of the civil society also was found wanting for

several reasons. Hence, there is an urgent need for focusing the relief efforts on most vulnerable sections among the affected population. Lack of accountability of those implementing the relief measures on the ground is one of the major reasons for the limited effectiveness of relief operations. All those taking part in relief operations should be accountable to the disaster-affected people, who should be involved in the decisions that affect them. People in a particular area, affected by a particular disaster, have their own way of coping with that, so it's essential to include them in planning the relief operations, and ignoring their needs and suggestions can constrain the effectiveness of the rescue and relief efforts significantly. The state and non-state actors involved in relief activities must inform affected people about all aspects of relief operations and about their rights – through public meetings, mass media or information centres. They must know the views of the affected people about their felt needs and priorities for effective relief and rehabilitation.

Concluding Remarks

Thus, as regards management of natural disasters, at most levels, focus of the Government machinery in India has been on rescue and relief operations only. The Government machinery lacks proper training in disaster management and it is ill equipped to tackle natural disasters through effective mitigation and preparedness measures. While the crucial aspects of coping with natural disasters, like, disaster mitigation and preparedness, have always been ignored, even the post-disaster response of the state through rescue, relief and rehabilitation measures have been found inadequate most of the time.

Over the last decade, activities related to disaster management at the planning/ policy-making level in the country have expanded significantly. However, very few would argue that the vulnerability of the country (or most of its regions) to losses from natural disasters have reduced over this period of time. The national level disaster management plans/ policies formulated by the numerous expert committees do not seem to have translated to better management of natural disasters in practice. In terms of priorities for disaster management, we find that the allocation of financial resources by the Government (especially the Central Government) for long-term measures for mitigation and preparedness has been very little, even during the last decade in which India supposedly has changed its approach towards disaster management; and it reflects a very low priority for long-term measures in the pre-disaster phase. In the recent guidelines of the Central Government to the States, we find a mandate for giving higher priority to those ongoing Government-funded projects which have a potential for disaster risk reduction, and inclusion of disaster mitigation elements into the ongoing projects where it is feasible to do so, however, there is no provision for channelising additional Government funds into projects meant for disaster mitigation. Also, there exists a strong case for mobilising financial resources for disaster management from the corporate sector, however, it requires a strong political will and commitment on the part of the government for prevention of and mitigating losses from natural disasters.

Finally, while the initiative for legislative backing is commendable, the actual commitment of the present Government to setting up a comprehensive and effective disaster management apparatus in the country would reflect from – its willingness to channelise substantial financial resources for this purpose and its ability to learn from the experiences of the past disasters.

End Notes

¹ Page 199 of Chapter 7: Disaster Management: The Development Perspective, Tenth Five Year Plan, accessed from www.planningcommission.nic.in (Website of the Planning Commission of India).

² World Disasters Report, 2001 (citing data by the reinsurance company *Munich Re*)

³ Definition of disaster by the World Health Organisation, quoted in Parasuraman, S. and P.V. Unnikrishnan (ed.) (2000), *India Disasters Report: Towards a Policy Initiative*, OUP.

⁴ Tenth Five Year Plan, accessed from www.planningcommission.nic.in (Website of the Planning Commission of India).

⁵ The Economic Times, “Disaster Mgmt policy by end of ’05, says Pranab”, 15 September 2005

⁶ **Disaster mitigation** includes policies and actions undertaken at a time distant from (i.e., much before the occurrence of) an actual disaster situation, in order to prevent or reduce the impact of the disaster.

⁷ **Disaster preparedness** includes the steps and measures that should be undertaken in the immediate time period before the occurrence of a disaster in a particular locality, i.e., when the probability of a disaster in the locality in the immediate future is very high. Examples of disaster preparedness measures would be the issuance of warnings, evacuation of people to safer areas, etc.

⁸ **Disaster response** can broadly refer to the rescue and relief measures undertaken in the affected area after a disaster has struck. Such measures are intended to cope with the consequences of a disaster by organizing timely and effective rescue operations, provision of relief and appropriate post-disaster assistance to the affected people.

⁹ **Vulnerability**, with respect to disasters, refers to the extent to which an individual, or a community or some structures in a particular area are likely to be adversely affected by a particular natural or man-made disaster.

¹⁰ World Disasters Report, IFRC, 2001.

¹¹ UNDP and National Disaster Management Division, Min. of Home Affairs, Govt. of India (2002), *Disaster Risk Management Programme [2002-07]*, Series 2.0 (accessed from Research Reference CD of the Institute for Studies in Industrial Development, New Delhi).

¹² Ibid.

¹³ Ibid.

¹⁴ Ibid.

¹⁵ This sub-section draws substantially from the discussion presented in **Menon, Vinod and Shirish Kavadi**, **Background Paper on Disaster Management**, www.infochangeindia.org (downloaded in March 2005).

¹⁶ Any kind of **Capital Expenditure** incurred by the Government leads to an increase in the Government’s assets (physical or financial) or a reduction in its liabilities. Examples are public investment in a factory, repayment of a loan, etc.

¹⁷ **Revenue expenditure** refers to that kind of Government expenditure, which does not have any effect on the asset-liability position of the Government. Examples are salaries, wages, interest payments, etc.

¹⁸ For a detailed discussion of this problem, refer to Das, Subrat and Nandan Jha (2004), *Natural Disasters and Relief Provisions in India: Commitments and Ground Realities*, Centre for Budget and Governance Accountability, New Delhi

¹⁹ Vinod Menon, in course of his deliberations at the *Consultation on Draft Report on the Functioning of Calamity Relief Fund*, organised by Centre for Budget and Governance Accountability, in New Delhi on September 27, 2004.

²⁰ Dhara, Sagar (2001), “The Bhuj Quake: Lessons of Previous Disasters not Learnt”, *The Hindu Survey of Environment*, July

²¹ www.infochangeindia.org (“Promote people-centred early warning systems, say experts”, citing www.alertnet.org, January 21, 2005).

²² This sub-section has been drawn mainly from **Das, Subrat and Nandan Jha (2004)**, *Natural Disasters and Relief Provisions in India: Commitments and Ground Realities*, Centre for Budget and Governance Accountability, New Delhi, and **Dhara, Sagar (2000)**, ‘Wishes Can Be Horses: Good risk management can reduce high excess mortality in India’, *Down to Earth*, April 30.

²³ Behera, Aurobindo (2002), “Government – NGO Collaboration for Disaster Reduction and Response: The India (Orissa) Experience”, Paper presented in the *Regional Workshop on Networking and Collaboration among NGOs of Asian Countries in Disaster Reduction and Response*, 20-22 February 2002, Orissa State Disaster Management Authority.

²⁴ This sub-section has been drawn from **Dhara, Sagar (2001)**, “The Bhuj Quake: Lessons of Previous Disasters not Learnt”, *The Hindu Survey of Environment*, (July 2001), and **Das, Subrat and Nandan Jha (2004)**, *Natural*

Disasters and Relief Provisions in India: Commitments and Ground Realities, Centre for Budget and Governance Accountability, New Delhi.

²⁵ This sub-section has been drawn from **Das, Subrat and Nandan Jha (2004)**, *Natural Disasters and Relief Provisions in India: Commitments and Ground Realities*, Centre for Budget and Governance Accountability, New Delhi

²⁶ <http://www1.mid-day.com/> (Mid Day July 29, 2005).

²⁷ Vir Sanghvi, "Flooding Caused by Government's greed, not God", *The Hindustan Times*, July 31, 2005, Mumbai

²⁸ Ibid.

²⁹ **Plan expenditure** usually refers to that Government expenditure which is incurred in pursuance of programmes/ schemes/ projects mentioned in the Five Year Plan documents. It is distinguished from Non-plan Expenditure.

³⁰ National Disaster Management Division (2004), *Disaster Management in India: A Status Report*, Ministry of Home Affairs, Government of India, August 2004 (Downloaded from www.ndmindia.nic.in)

³¹ **Annexure III: Guidelines to State Governments** in National Disaster Management Division (2004), *Disaster Management in India: A Status Report*, Ministry of Home Affairs, Government of India, August 2004 (Downloaded from www.ndmindia.nic.in)

³² Confederation of Indian Industry (CII) and National Disaster Management Division (Government of India) [2003], "Disaster Risk Management and the Role of Corporate Sector- The Indian Perspective", Downloaded from the website of UNDP, India <www.undp.org.in> in September 2005.

³³ This sub-section has been drawn from **Das, Subrat and Nandan Jha (2004)**, *Natural Disasters and Relief Provisions in India: Commitments and Ground Realities*, Centre for Budget and Governance Accountability, New Delhi

³⁴ The reports of the Finance Commissions as well as the notifications issued by the Central Government in this context use the term **Calamity** instead of **Disaster**. However, for the sake of consistency in this paper, we shall use the term disaster instead of calamity.

³⁵ Based on communication with the State Commissioner for Disaster Relief, Tamil Nadu, on April 18, 2005.

³⁶ The Disaster Management Bill, 2005- Bill No. LV of 2005, introduced in the Rajya Sabha on 11 May 2005. (Downloaded from www.lawmin.nic.in)

³⁷ Report of the Department-Related Parliamentary Standing Committee on Home Affairs: One Hundred and Fifteenth Report on The Disaster Management Bill, 2005

³⁸ Ibid.

³⁹ Report of the Department-Related Parliamentary Standing Committee on Home Affairs: One Hundred and Fifteenth Report on the Disaster Management Bill, 2005

⁴⁰ Clause 46 (2) of CHAPTER IX in the Disaster Management Bill, 2005 (Bill No. LV of 2005), introduced in the Rajya Sabha on 11 May 2005

⁴¹ *The Hindu*, "Disaster management policy likely by year-end", 15 August 2005

⁴² Report of the *National Consultation on Disaster Management* (organized by Rejuvenate India Movement, CYSD and EXNORA International) held in *Chennai* on *April 18-19, 2005*.

⁴³ *The Hindu*, "Rehabilitation still a dream for tsunami victims in Andaman Islands", August 23, 2005

⁴⁴ Ibid.

⁴⁵ www.infochangeindia.org, "Report alleges neglect of the disabled in tsunami aftermath", February 2005

⁴⁶ Raju Rajagopal in his presentation (GO-NGO Collaboration in Disaster Management: The Tamil Nadu Post-Tsunami Experience) at the *National Consultation on Disaster Management* (organized by Rejuvenate India Movement, CYSD and EXNORA International) held in *Chennai* on *April 18-19, 2005*.

⁴⁷ Ibid.

⁴⁸ Ibid.

⁴⁹ Santosh Srinivasan, "Tsunami relief with understanding", *The Hindu*, July 14, 2005

⁵⁰ Ibid.

⁵¹ Ibid.

⁵² *The Asian Age*, March 21, 2005

⁵³ Dr. T. Karunakaran, "Hazard Free Habitat and Gram Swaraj", *National Consultation on Disaster Management* (organized by Rejuvenate India Movement, CYSD and EXNORA International) held in *Chennai* on *April 18-19, 2005*.

GLOSSARY

Though some of the terms, which have a specific meaning in the Indian case, have been explained in the endnotes, a detailed glossary is worthwhile. The purpose of presenting this glossary is to give the readers some idea about what we mean, in the Indian context, by certain terms that have been used frequently.

Serial No.	Terms	Definition
1.	Disaster	Any occurrence of an extraordinary event of limited duration that causes damage, economic destruction, loss of human life, and deterioration in health and health services on a scale sufficient to warrant an extraordinary response from outside the affected community or area.
2.	Hazard	It usually refers to the danger or risk associated with the occurrence of an extraordinary event of limited duration. It can be understood as any rare natural or man-made phenomenon which can inflict damage to life and property by causing a disaster. Thus, hazard is a threat, while disaster is an event.
3.	Vulnerability	It refers to the extent to which an individual, or a group of people or some structures in a particular area are likely to be adversely affected by a particular natural or man-made disaster.
4.	Natural Disasters	Natural disasters/calamities can be contrasted with man-made disasters. Man-made disasters are such disasters whose direct and principal causes are identifiable human actions, deliberate or otherwise. On the other hand, the direct and principal causes for natural disasters are the forces of nature.
5.	Disaster Mitigation	It includes policies and actions undertaken at a time distant from (i.e., much before the occurrence of) an actual disaster situation, in order to prevent or reduce the impact of the disaster.
5.1.	Structural Measures	Examples of such measures are the construction of cyclone shelters and food shelters for evacuation of people during cyclones and floods, construction of coastal embankments to protect coastal land from inundation by tidal waves and storm-surges, construction of drainage channels, construction of water harvesting structures, etc.
5.2.	Non-structural Measures	Examples of such measures are putting in place a mechanism for proper coordination between all the agencies involved (e.g., the State Administration, various Government Organisations, Non-Governmental Organisations, Community groups at the local level, etc.) during all phases of the

- management of a disaster; steps for training and public awareness; formation of local contingency action plans; relevant legislation and policy-making; etc.
6. **Disaster Preparedness** It includes the steps and measures that should be undertaken in the immediate time period before the occurrence of a disaster in a particular locality, i.e., when the probability of a disaster in the locality in the immediate future is very high. Examples of disaster preparedness measures would be the issuance of warnings, evacuation of people to safer areas, etc.
 7. **Disaster Response** It can broadly refer to the rescue and relief measures undertaken in the affected area after a disaster has struck. Such measures are intended to cope with the consequences of a disaster by organizing timely and effective rescue operations, provision of relief and appropriate post-disaster assistance to the affected people.
 8. **Disaster Management** It comprises all aspects of pre-disaster and post-disaster activities. Thus, it covers the policy-making/planning process relating to disasters, actions which are required to be taken in the immediate time period before a disaster strikes, as also the response of the state and the affected community to the occurrence and consequences of a disaster.
 9. **Drought** Drought, in India, is generally considered to be occurring when the principal monsoon, i.e. South-West Monsoon for those parts which are dependent on South-West Monsoon and North-East Monsoon for areas dependent on North-East Monsoon, fail or are deficient or scanty. Monsoon failure results in crop failure, shortage of drinking water as well as undue hardship to the rural and urban community. There is no provision for declaration of drought by Government of India. Drought is declared for each State or part of the State by the State Governments under the Relief Manuals or similar documents of the State Governments.
 10. **Flood** Flood is the temporary overflow of water from a water body to the floodplain not normally covered by water. According to water bodies, the floods are classified as river floods, lake floods, reservoir floods, on seacoast floods, floods in mines, etc. Floods cause large-scale loss of property, lives, crops, and disrupt land-to-land communication.
 11. **Earthquake** Shaking and vibration at the surface of the earth resulting from underground movement along a fault plane or from volcanic activity. Earthquakes are considered to be one of the worst natural hazards which often turn into disaster causing widespread destruction and loss to human lives.
 12. **Cyclone** A cyclone is an area of low pressure around which the winds flow counterclockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere. The cyclone is

- accompanied by powerful thunderstorms. Most damage from cyclones is caused by the strong winds, torrential rain and high storm tides. Floods generated by cyclonic rainfall are more destructive than the winds.
13. **Hailstorm** A violent weather condition with high-speed winds accompanied by precipitation and thunder and lightening.
 14. **Heat Wave** A period of exceptionally hot weather, often with high humidity, during the summer is called a heat wave.
 15. **Cold Wave** It is characterized by a persistent and widespread condition of unusually cold weather.
 16. **Landslide** A landslide is the rapid sliding of large masses of bedrocks. Whenever mountain slopes are steep there is a possibility of large disastrous landslide. Earthquakes or sudden rock failures trigger landslides.
 17. **Tsunami** One or a series of huge sea waves produced by a sub-marine earthquake, landslide, or volcanic eruption. These waves may reach enormous dimensions and have sufficient energy to travel across entire oceans. Tsunamis should not be confused with tidal waves, as they have nothing to do with tides. The word tsunami is of Japanese origin, meaning 'harbor wave'.
 18. **Finance Commission** Finance Commission, in India, is constituted to define financial relations between the Centre and the States. Under the provision of Article 280 of the Indian Constitution, the President appoints a Finance Commission for making recommendations (to the President) in respect of: 1). The distribution of net proceeds of taxes to be shared between the Union and the States and the allocation of share of such proceeds among the States. 2). The principles which should govern the payment of grants-in-aid by the Centre to the States. 3). Any other matter concerning financial relations between the Centre and the States.
 19. **Planning Commission** There is no account of Planning Commission in the Indian Constitution. It was set up as an advisory and specialized institution by a Resolution of the Government of India in March 1950. Planning Commission is charged with the responsibility of making assessment of all resources of the country, augmenting deficient resources, formulating Plans for the most effective and balanced utilization of resources and determining priorities. This institution prepares the Five Year Plans in India. Currently, the Tenth Five Year Plan (2002-07) is in operation.
 20. **Plan Expenditure** A significant part of the expenditure of the Centre and States in India, every year, is regarded as Plan expenditure. Plan expenditure usually refers to that Government expenditure which is incurred in pursuance of programmes/ schemes/ projects mentioned in the Plan documents.

21. **Capital Expenditure** Any kind of Capital Expenditure incurred by the Government leads to an increase in the Government's assets (physical or financial) or a reduction in its liabilities. Examples are public investment in a factory, repayment of a loan, etc.
22. **Revenue Expenditure** Revenue expenditure refers to that kind of Government expenditure, which does not have any effect on the asset-liability position of the Government. Examples are salaries, wages, interest payments, etc. However, currently, a debate is going on in the country over the desirability of classifying the expenditure on important social services, such as, education, health, etc. (a very small proportion of which has been on creation of assets) as Revenue expenditure.
23. **Margin Money Scheme** The Second Finance Commission (SFC), while estimating the States' committed expenditure (for the five years of its recommendation period of 1955-56 to 1959-60), included in their annual revenue a margin for enabling the States to set apart sizeable sums of money for accumulation in a fund for meeting expenditure necessitated by natural calamities. The annual amount as recommended by the SFC, based roughly on the average expenditure over the previous decade, was Rs. 6.15 crore for all the 14 States at that time. This scheme was later called as the 'Margin Money Scheme'. State Governments had to set up separate funds and transfer the amounts calculated for each of them to such funds annually.
24. **Calamity Relief Fund (CRF) Scheme** CRF is a Centrally Sponsored Scheme for financing of immediate relief expenditure incurred by the States in the wake of a natural calamity. A CRF is constituted for each State, and receives contributions from the Centre and the respective State Government in the ratio of 75:25. States' relief expenditure in case of only ten specified natural calamities, viz. drought, flood, cyclone, earthquake, fire, hailstorm, landslides, avalanches, cloudburst, and pest attacks are eligible for getting financed by this scheme.
25. **NCCF Scheme** National Calamity Contingency Fund (NCCF) is interlinked with CRF. Union Government set up NCCF on recommendations of the Eleventh Finance Commission in the year 2000. The NCCF is a Central Government fund maintained for providing additional financial assistance to any State Government for incurring expenditure on relief, in excess of the Centre's contribution to the CRF of that State. Such assistance is considered by the Central Government only when the natural calamity is of rare severity.