DIASTER RESPONSE IN INDIA: WITH SPECIAL REFERENCE TO TSUNAMI DISASTER

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India is one of the world's major theaters of disasters both natural and human made. Floods, droughts cyclones, and earthquakes pound it end to end every year. Communal riots, conflicts, fires, epidemics, and other disasters compound the country's chronic troubles. The social and economic progress achieved over decades by the people, and advances in physical development, can be significantly devastated and degraded by disasters. Urbanization, industrialization, globalization and liberalization of economy all have influenced human life. People are tend to live in disaster prone areas due to severe stress on land, high prices of land, and construction of buildings, poverty, migration and non-regulation of urban housing construction. Even, the natural protection measures are neglected to pave the way for economic development. The government of India through its National Crisis Management Committee has been making efforts to meet the exigencies as arisen by natural disasters. It is, however, experienced that all these efforts and contingency plans concentrate on the post disaster situation. A half backed approach is adopted for preventing the occurrence of disasters. There is need for fundamental change in national disaster policy itself. The community has to be associated at all levels of planning and implementation of the disaster management programme.

Introduction

The Indian subcontinent is vulnerable to droughts, floods, cyclones and earthquakes. Land slides, avalanche and forest fires also occur frequently. Among the 32 states and Union Territories in the country, 22 are multi-disaster prone. About 40 million hectares of land in the country has been identified as flood prone and on an average 18.6 million hectare of land is flooded annually.   About 57 per cent of area of the country is vulnerable to seismic activity. About 18 per cent of country's total area is drought prone, approximately 50 million people are annually affected by droughts and about 68 per cent of total sown area of the country is

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drought prone. India has a long coastline of 8040 km. which is exposed to tropical cyclones arising in the Bay of Bengal, the Arabian Sea, and Indian Sea. The Indian Ocean is one of the six major cyclonic prone regions of the globe (Jain, 2004:61).   The coromandal coastline is more cyclones prone, with 80 per cent of the total cyclones generated in this region. Risk to the existing housing stock in various states and union-territories had been estimated by Expert Group set up by the Ministry of Urban Affairs and Employment, Government of India. About 3.9 million houses are susceptible to earthquakes of very high intensity, about 20 million houses are susceptible to damage due to winds and about 9.3 million houses are susceptible to damage due to floods. Besides the risk of earth quakes, cyclones and floods, the kutcha houses built from clay, mud, unburnt bricks, and blocks and random stone in mud, mortar and burnt bricks built in mud mortar are liable to very high damage and destruction under heavy rains. (Jain, 2004:61). Some 49 per cent of the total housing stock is liable to very high damage from natural hazards, while about 1 per cent of the total housing stock gets destroyed every year. It is to be noted that in earth quake, 80 per cent of the casualties are due to collapsing buildings. Brick and stone buildings without proper support are liable to collapse. Non-engineered buildings continue to be built in the areas prone to natural disasters. Unemployment, poverty backwardness, migration from rural areas and increasing price of land and construction, million of people are occupying disaster prone areas. Thus about 6 per cent increase in disaster affected population has been reported.

According to the World Bank assessment, the natural disasters have alone costed India whopping amount of $13 million during 1986-2001, depleting 2 per cent of the GDP and 12 per cent of national revenue. Compared to the loss of $13.4 billion during 1981-95 and $2.9 million during 1965-80, the present swelling in the volume of losses is certainly frightening and demands urgent attention of development planners (Kishore K. Singh, 2004:349). In India, out of 32 states, 22 states are regarded as being particularly disaster prone. Even the urban population faces risks of floods (Bombay flood, 2005), fire, earthquakes, cyclones, etc. In urban areas, increasing pollution has caused rapid growth in Asthama cases, water borne diseases and occupational hazards. The dilapidated and poorly built houses in urban areas increase the risks of disasters. Lack of tenurial rights over the urban space and shortage of housing facilities for all have forced to urban poor to live in the most unsafe environment with the expanding number of urban centres and the concomitant shortage of urban land, it is imperative that India works out guidelines, which can enable the urban planners to manage and regulate urban land space. India needs urban land use policy with adequate arrangements for urban land development, land use planning, and houses for poor.

The dynamics and machinery of urban development are complex. Therefore, careful attention is needed to find the best opportunities and effective routes to introduce safety measures. Many authorities fail to recognize the rich range of measures that need to be adopted and integrated into a viable and affordable programme. The expanding scale of urban pressures, problems, and risks in India is a daunting challenge. However, India has certain assets that many countries envy when it comes to reducing urban risks. There is strong and increasing government commitment to disaster protection, a vibrant civil societies network which provides base of community participation, and high share of private sector in humanitarian aid to disaster's victims and reconstructions of disaster affected areas. However, there is lack of coordination and integrated approach for disaster response.
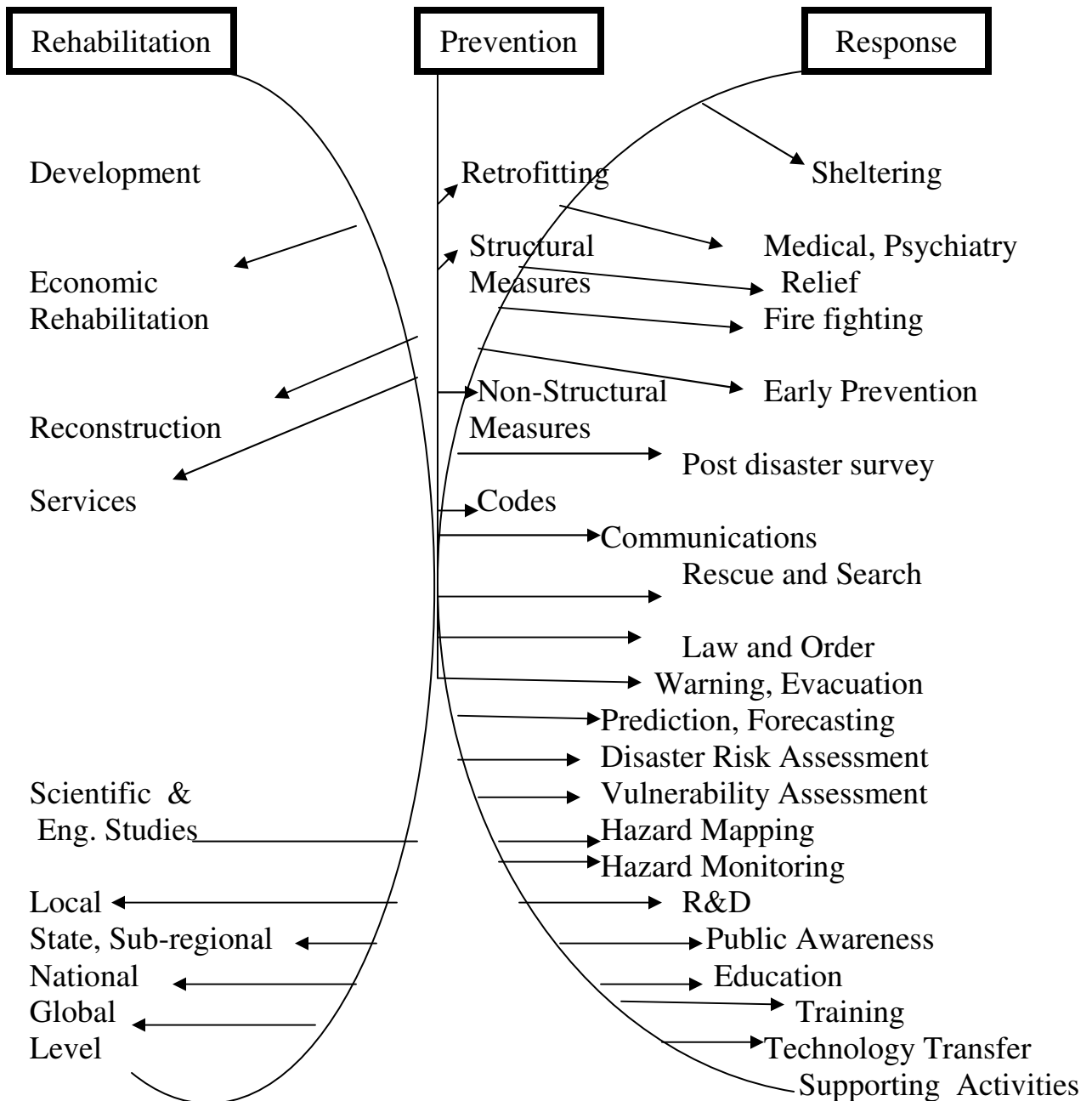
Chart - I

Main Elements of Disaster Management
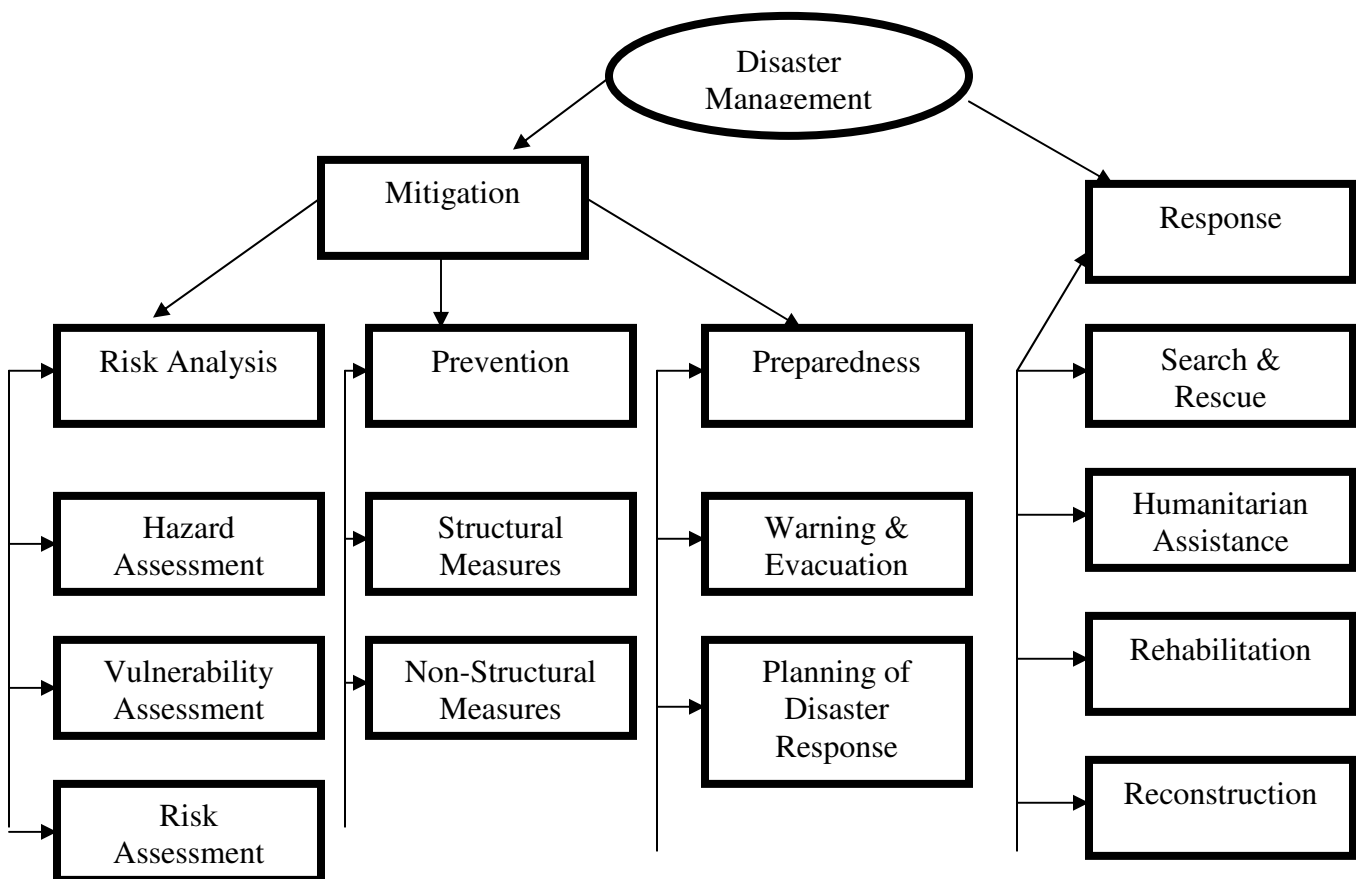
Source: Arya, A.S. (2004)

Chart - 1 denotes elements of disaster management. There are mainly three elements of disaster mitigation viz. risk management, prevention and preparedness. Chart - 2 shows functional structure of natural disaster mitigation. The main three elements are rehabilitation, prevention and response. In responsive measures, relief, medical aid, shelter, food rescue, warning, evacuation, assessment of vulnerability and risks, public awareness, capacity building for livelihoods restoration etc. are included.

Chart - 2: Functional Structure of Natural Disaster Mitigation

Rehabilitation	Prevention	Response

Development

Economic
Rehabilitation

Reconstruction

Services

Retrofitting

Structural
Measures

Non-Structural
Measures

Codes

Sheltering

Medical, Psychiatry
Relief
Fire fighting

Early Prevention

Post disaster survey

Communications
Rescue and Search

Law and Order
Warning, Evacuation
Prediction, Forecasting
Disaster Risk Assessment
Vulnerability Assessment
Hazard Mapping
Hazard Monitoring

Scientific &
 Eng. Studies

Local
State, Sub-regional
National
Global
Level

R&D
Public Awareness
Education
Training
Technology Transfer
Supporting Activities

Source: Arya, A.S. (2004)

Disaster Response

Disasters are the ultimate test of emergency response capability. The ability to effectively deal with disasters is becoming relevant because of the increasing risk factors. Increase in population density (Quarantell, 1981), population shifts and increasing technology are some of the important factors for increasing risks, leading to disasters. As areas become more densely populated, there are more potential victims when a disaster strikes. National disasters such as earthquakes, hurricanes, cyclones, Tsunami, and floods tend to result in greater losses due to densely populated areas in India. Another reason for increasing disaster losses are that population density in disaster prone areas is increasing. The increasing settlements development in high risk areas is the cause of concern. The pattern of settlement in high risk areas is reflected in the increasing mortality ratio in India. In the process of setting high risk areas, natural protection against environmental threats is removed. In India, the vegetative coverage and forests were destroyed in coastal areas for promoting shrimp farming, business tourism and housing colonies. This lead to damage of natural protection against hurricanes, and Tsunami and ultimately Tsunami affected to the large population in coastal areas in southern states recently. The vulnerability of people living in high risk areas is increasing because the habitations are often unaware of potential risks and how to deal with them. Even, the prices of land for house construction in high risk areas are lower which attract people for housing construction, even without proper approval of housing structures. People are living in structures that are not designed to resist the forces of local hazards. In India, earthquakes have affected severely due to lack of good design technology and inadequate earthquake resistance housing and building structures. The new technology is also adding to the list of disaster agents at an ever increasing rate. A large quantity of hazardous chemicals, wastes, bio-medical wastes, and dumping adds proliferation of high risk office buildings and hotels that subject their inhabitants to fire threats not experienced before. The society is also becoming more dependent on technology and specialization, making more vulnerable to disaster (Quarantell, 1985). Our dependence on computers is introducing a new form of disaster vulnerability (Drabek 1986: 375).

In the context of ever increasing risks of disaster losses, it is imperative to deal with these catastrophes with full preparedness and planning. In disasters there are often conditions that may make the

traditional division of labour and resources, characteristics of routine emergency management, unsuitable for disaster response (Heide, E.A.)

1. Disaster may put demands on organizations, requiring them to make internal changes in structure and delegation of responsibilities;
2. Disasters may create demands that exceed the capacities of single organizations, requiring them to share tasks and resources with other organizations that use unfamiliar procedures;
3. Disaster may attract the participation of organization and individual volunteers who usually do not respond to emergencies;
4. Disasters may cross jurisdictional boundaries, resulting in multiple organizations being faced with overlapping responsibilities;
5. Disasters may create new tasks for which no organization has traditional responsibility;
6. Disasters may render unusable the normal tools and facilities used in emergency response;
7. Disasters may result in the spontaneous formation of new organizations that did not exist before.

The typical response to a disaster includes multiple independent organizations from the private sector as well as from agencies of city, country, state, region and district governments. Disasters do not need to cover large geographical areas in order to cross multiple levels of government responsibility. However, disaster management is the only responsibility of government. Community based organizations and NGOs have to play a critical role in disaster management. Disasters are characterized by great uncertainty. Often the character and extent of damage and the secondary threats are not immediately apparent and therefore the necessary counter measures not undertaken. Disasters often create the need for different organizations to share resources. Therefore, coordination of multi organizational task accomplishment is required. The needs such as fuel and maintenance for vehicles, sanitary facilities, food, shelter and rest facilities, relief and replacement, personnel and emergency message, contact arrangement also are to be included in the logistic support of an organization responding to a disaster (Kallsan 1983:28). In contrast to daily emergencies, disasters often call for large scale search and rescue operations. An important security task in disasters is keeping unauthorized persons out of the disaster area in order to prevent looting and decrease congestion hampering rescue efforts, and to prevent persons from being injured in the wreckage. Moreover, mass handling of the dead creates problems that may

not have been faced in routine emergencies. Handling the dead poses different problems in disasters. The other tasks that are important in disaster response are:

1. Warning and communicating with the public
2. Shelter and feeding of displaced persons
3. Evacuating neighbourhoods
4. Evacuating hospitals, prisons, nursing homes and psychiatric facilities
5. Coordinating volunteers
6. Acquiring and allocating unusual resources
7. Dealing with mass arrival carcasses
8. Dealing with livestock or family pets that had to be left behind or sheltered (Drabek, 1986:116)
9. Procedures for condemning damaged buildings
10. Disposing of unclaimed valuable and merchandise found in the rubble at the scene (Moore, 1958:85)
11. Control of air traffic (Drabek, 1981: 179)
12. Disposing of large amounts of donations
13. Controlling emergency vehicle traffic in order to avoid blockage of routes by emergency vehicles
14. Checking the hospitals, nursing homes and day care centres that may need assistance
15. Prioritizing of utility sources delivery

Adequate communication is a recurring challenge in disaster response. The importance of communication is its ability to get people to work together on a common task or toward a common goal to coordinate. It is the process by which each person understands that how his individual efforts intermesh with those of others. The information is required for need assessment and rescue operations. The most crucial types of information that need to be shared are related to (Brunacini, 1985:54):

a) An ongoing assessment of what the disaster situation is and what disaster counter measures need to be undertaken;
b) An ongoing determination of what resources are needed to undertake the counters measure. What resources are presently available and how they can be obtained;
c) A determination of the priority of needed disaster counter measures;

d) A determination of what persons and organizations will be responsible for the various tasks necessary to accomplish the counter measures (Sorensen, 1985:32)

Computers are not only useful for sharing and analyzing disaster information, but also for sharing it. The internet facility may provide strong base for efficient communications in the following measures (Wohlworth, 1987; Carroll 1983; Carroll, 1985, Wallace 1985).

1. Sharing and collecting information about what agencies have responded and what resources they have dispatched.
2. Locating and specifying procedures for obtaining special disaster resources;
3. Sharing information about the location, scope, and character of the disaster and damage that has resulted;
4. Sharing information about the status of transportation routes facilities, docking and landing sites;
5. Generating and sharing predictions about weather and other expected conditions;
6. Obtaining information on how to deal with a specific hazardous chemical;
7. General electronic mail.

Thus, it is clear that the communication and equipments and procedures used by most emergency agencies are established primarily to deal with information flow within the organization. Disasters care for inter agency communication also. To some extent, it can be facilitated by the availability of inter-agency radio networks. However, the critical information requirements of the various organizations involved in disaster response need to be mutually understood and the responsibility for gathering and disseminating it needs to be made clear.

Significantly, disasters pose problems for resource management. A prerequisite to effective and efficient resource management is an accurate system for overall analysis of the disaster situation and the available resources (Dynes 1974; 77; Quarantelli, 1983:68). Overall, need, assessment, involves two major processes: (1) situation analysis; and (2) resource analysis. Situation analysis is the collection of information about the extent and character of the disaster itself and problems that have to be tackled. While resource analysis involves the collection of information

about the resources needed to be handled. The source allocation of disaster resources depends on the task priorities already decided for the response of disaster.

In contrast to most routine emergencies, efficient response in disaster requires procedures for triage and casualty distribution. Triage has been called the key stone to mass casuality management (Bowers, 1960:59). The technique for assigning priorities for treatment of the injured when resources are limited is called triage. Generally, attention is given first to those with the most urgent conditions and to those who are the most salvageable (Silverstein, 1984:8). The triage is beneficial in disaster response due to the facts: (i) triage separates out those who need rapid medical care to some life or lives, (ii) by separating out the minor injuries; triage reduces the urgent burden on medical facilities and organizations, (iii) by providing for the equitable and rationale distribution of causalities among the available hospitals. Triage reduces the burden on each to a manageable level, often even to non-disaster level. In order to distribute casualties rationally among the hospitals, capacity assessment of the existing hospitals, dispensaries and clinics need to be examined.

It is to be noted that convincing the public to evacuate areas threatened by impending disaster is often challenging one (Mcluckie, 1970:2). In disasters, communication with the public assumes new dimensions not present in routine emergencies. Warning can be one of the most important types of disaster communication allowing the recipients to avoid the threat altogether or to significantly lesson its effects. However, people are often reluctant to evacuate the premises stricken by disaster (Quarantell, 1972:67). There are a number of reasons why persons hesitate to evacuate in the face of threatening disaster. They may not be convinced that they are actually at risk, they may wish to stay and protect their property, or they may want to assure the safety of other family members and property before leaving (Perry 1985; 60; Drabek, 1986:84). Those living in disaster threatened areas are more likely to evacuate if they are encouraged by invitations from relatives and friends outside.

In the impact area people prefer to seek shelter with friends or relatives rather than at public shelters. Importantly, the process of warning is complicated since it requires the accomplishment of a number of tasks. Jammed telephone lines and circuits as well as traffic congestion, make the process more difficult.

Tsunami Disaster in India: Tsunami disaster in Asia and Africa affected millions of people and devastated huge amount of property, physical resources and livelihoods. Even, the disaster washed away millions of housing units and people become homeless. The incidence of natural disaster caused panic to national and state governments. Tsunami or giant wave affected not only the Arch area but also some coastal areas in Malaysia, Myanmar, Thailand, Bangladesh, India, Sri Lanka, Maldives etc. As on 25 March, 2005, Time Bureau reported the deaths of 174662 and 107721 missing persons (Table - 1).

Table - 1 Number of Dead and Missing

Country	Dead	Missing
Indonesia	126771	93482
Sri Lanka	31225	5644
India	10749	5640
Maldives	82	26
Malaysia	68	0
Burma	61	0
Bangladesh	2	0
Somalia	298	0
Tanzania	10	0
Kenya	1	0
Total	174662	107721

Source: Time, April 4, 2005

Houses, boats, ports, hotels, clinics, roads, and railways, small fishing boats, shops, vehicles, small family business, and hundreds of thousands of jobs were lost. The human loss was the theatre tragedy of this disaster. It was the small local communities that were bodily affected and which most need quick assistance. The affected states in India were Andhra Pradesh, Kerala, Pondicherry, Tamil Nadu, parts of Andaman and Nicobar. Initial estimate indicated that the number of the poor people in India could increase by 6, 45,000. The Damage and Need Assessment Report prepared jointly by the World Bank and United Nations put overall rehabilitation and reconstruction needs in four mainlands Tsunami affected states and territories of India to the tune of $1.2 billion. Overall damages to assets were estimated at about

$575 million and productivity losses about $450 million. Reconstruction needs for housing were estimated at $490 million and fisheries at $285 million. It was estimated that the livelihoods of about 6,45,000 families were directly and indirectly affected in Tamil Nadu, Kerala, Andhra Pradesh and Pondicherry of them about one third were directly linked to the fisheries sector, about one fourth to micro-enterprises while remaining were engaged in agriculture livestock, and seasonal employment. The disaster hit the livelihoods of those that were already poor with the hardest hit including women, scheduled castes and tribes. World Bank made available $ 553 million assistance for the reconstruction and rehabilitation of Tsunami affected areas in India (World Bank, March 2005). The key difference from the past natural disasters is that this time the single largest shares of the money about a quarter came from private donors. In the initial 90 days, $977 million were demanded by Tsunami affected countries, while $873 million were pledged and $753 million were promised to pay. U.N. alone promised to $6.4 billion to Tsunami affected nations. During first 90 days, 22.7 per cent funds were spent on shelter and food items, 29.9 per cent on food items, 20.6 per cent on education, and safety, 14.6 per cent on coordination and support services, 12.5 per cent on health, and 6.2 per cent on water and sanitation (Time, 4, 2005). The World Bank followed the 3 major principles for recovery of Tsunami disasters viz. (a) the governments of the affected countries must have the central role and ownership of the recovery efforts, (b) communities should be involved in assessing their needs and designing recovery programmes, linked to long term strategies for growth and poverty reduction; (c) the international community must act in coordination to ensure efficient use, donor resources, and work with the governments of affected countries to set clear goals and monitor and evaluate progress.

Due to size of the country, the overall impact of on economy of India's was minimal. The state's GDP are unaffected because economic activities along the coastal areas have very less share in state's income. A marginal impact in the short run on the Balance of Payments was expected to the extent that exports of shrimp adversely affected along-with coastal tourism.

Table - 2

Damage and Loss in India Due to Tsunami Disaster

Particular/States	Damage and Loss			Effect on Livelihoods
	Damage	Loss	Total	
Andhra Pradesh	31.8	16.7	48.5	35.6
Kerala	68.2	57.6	125.8	82.6
Tamil Nadu	509.8	327.5	837.3	332.8
Pondicherry	48.2	82	56.4	30.4
Total by Sectors	658.0	410.0	1068.0	481.4
Fisheries	320.1	304.5	624.6	383.2
Agriculture and Livestock	15.1	22.0	37.1	42.0
Micro enterprises and other	19.7	36.5	56.2	56.2
Housing	193.50	35.2	228.7	-
Health and Education	13.70	9.9	23.6	-
Rural and Municipal Infrastructure	27.9	1.6	29.5	-
Transportation	35.2	0.3	35.5	-
Coastal protection	33.6	0.00	33.6	-
Relief	-	200.7	200.7	-

Source: U.N. March, 2005

The overall objective of the recovery framework of the U.N. System in support of government of India for a post Tsunami Rehabilitation and Reconstruction Programme was to define the approach of the United Nations in facilitating the rapid recovery of the affected population. The approach was designed to lead to both recovery and the expansion of opportunities for sustainable development and the reduction of true disaster risks. According to government reports, 10749 people in India lost their lives and 6913 were injured. It was reported that 5640 are missing. The highest human losses were reported in Andaman and Nicobar Islands and the state of Tamil Nadu. Overall damages were estimated at approximately $660 million and losses in the tune of $410 million (Table 2). The United Nations approach moved beyond identification of requirements of financial support for physical assets

and infrastructure and related technical studies that were addressed through financing by Government of India with support from the World Bank and Asian Development Bank to (United Nations, 2005):

1. Highlight additional and complementary areas,
2. Focus on capacity building for processes and system and required for promoting livelihood recovery and diversification that could be appropriately addressed through technical assistance and grant funding channeled through United Nations,
3. Build on ongoing post Tsunami work and relationships already established with state officials and NGO's partners,
4. Establish systems for experience sharing and more effective implementation by the large number of partners involved in the recovery and rehabilitation phases in South India,
5. Focus on immediate and long term vulnerability reduction, both in terms of natural disaster risk and social vulnerabilities.

Tsunami affected the lives, livelihoods, and damaged physical resources as well as coastal habitations. According to reports, 10881 people in India lost their lives and 5792 persons were reported missing with another 6913 injured. Overall damage and losses in Tamil Nadu and Pondicherry alone were estimated at $1 billion. In Nagapattinam, the worst affected district on the mainland, more than 6000 people died (Some 4592 alone in a thin 10 km. long coastal stretch); close to 200,000 people were affected when 73 coastal habitations were in - undated and some 40,000 families lost their livelihoods. More than 110000 fishing craft were damaged and 5.60 lakh kg. of nets, which the fishermen value as much as the boats lost (World Bank, November 2005).

The administration in Tamil Nadu and Pondicherry launched its huge relief operation immediately despite, the fact that it was faced with its own human and infrastructure losses. In Nagapattinam, the major hospital had just one ward left functioning after the Tsunami to deal with the injured pouring in; and in Pondicherry government rescue teams out on the streets after the first wave were trapped when the second wave rushed in. World Bank task for the multi agency India Emergency Tsunami Reconstruction programme aimed at helping governments in Tamil Nadu and Pondicherry in their relief and rehabilitation efforts. The Bank is providing overall assistance to the tune of US $528.5 million including $2.5 million grant to Tsunami affected territories in mainland India. In Andhra Pradesh, the

assistance ($40million) is mainly focused on livelihood recovery and reconstruction of rural and municipal infrastructure and is being provided through ongoing credits. In Kerala ($10 million), it is for rural water supply and also is being provided through on going credit. The assistance in Tamil Nadu and Pondicherry was for housing reconstruction and infrastructure to support livelihood recovery in fisheries sector and support to agriculture, horticulture and animal husbandry sectors. Repair and retrofitting of damaged public buildings including the health centers and education institutions and public works are being provided in Tamil Nadu. $11 million worth 80 assistance is also provided for strengthening coastal roads through ongoing International Bank for Reconstruction and Development loan in Tamil Nadu. (World Bank, November 2005). Out of total assistance, $2.5 million assistance is grant for the fisheries sector in the state. The World Bank assistance programme is likely to continue up to April 2008 (Table 3).

Table - 3
World Bank Assistance in India

($ Millions)

Credit Funding	Tamil Nadu	Pondicherry	Total
Housing Reconstruction	354.2	29.6	383.8
Restoration of livelihoods	27.9	8.5	36.4
Repair, Reconstruction of Public Buildings and Public Works	19.5	-	19.5
Technical Assistance and Training	9.4	1.7	11.1
Implementation Support	12.0	2.2	14.2
Grant Funding Fisheries Sector	2.0	0.5	2.5
Loan Funding Coastal roads	11.0	-	11.0
Total	1436.0	42.5	478.5

Source: World Bank, Newsletters, Nov. 2005

More than 55000 new houses are being built and most people rendered homeless by the Tsunami are likely to move into their new homes by the middle of next year. Currently, some 27,000 families in Tamil Nadu and Pondicherry are living in temporary shelters. A range of new upgraded

infrastructure is replacing the destroyed - ports and harbours, fish landing centres and auction halls, i.e. factories and cold storages are coming up.

Rehabilitation of Cyclone Victims: Tropical cyclones are large, rotating atmospheric phenomenon extending horizontally from 150 to 1000 km. and vertically from the surface to 12-14 km. These are low pressure areas with a spiral shape. Fierce winds spiraling anticlockwise in the Northern Hemisphere blow around the cyclone centre. Cyclones generally move 300-500 km. in 24 hours over the ocean causing severe loss and distruction to property, human lives and livestock resources. Two gigantic cyclones severely hit the coast of Orissa at Gopalpur and Paradeep on 18 and 29 October 1999. Out of total 30 districts in the state 14 coastal districts were heavily affected. (Medury and Dhameja, 2005: 257). In total 18000 villages, and 12.7 million people were affected. The death toll in the area was more than 10000 people. About Rs. 2.5 crores worth of property was destroyed (Table 4).

Table - 4
Area Affected in Orissa

Area	Number of Affected		Total
	Super Cyclone of 29-30 October 1999	Cyclone of 17-18 October 1999	
Districts	12	2	14
Blocks	97	29	126
Village Panchayats	1846	-	-
Villages	14,000	3,407	17,407
Population (in lakh)	125.69	23.1	148.77
Agricultural land (Lakh hectare)	17.33	1.21	18.54

Source; Voluntary Sector in Relief and Rehabilitation, Orissa Disaster Mitigation Mission, Bhubaneshwar.

Natural disasters, except in the case of droughts are the responsibility of the Ministry of Home Affairs but the basic responsibility for undertaking rescue, relief and rehabilitation in the event of natural disasters is with the concerned state government. The role of the central government is supportive in terms of physical and financial resources. The Prime Minister,

Cabinet Committee and the Home Minister, provide the overall policy response. The state government meets the needs of the immediate situation from the Calamity Relief Fund. Special Relief Commissioner is responsible at the state level for all kinds of relief work. (Madury and Dhameja, 2005:262). In the aftermath of the super cyclone, help was offered by many governmental and NGO's at the national and international levels, Organizations such as ECHO, ASPRO, CASA, Luthern World Wide, Catholic Relief Services, Indo-German Social Service Society, HUDCO, AWARE, Agragami and Adhikar. These organizations geared up in no time to meet the challenges of rehabilitation. In order to chalk out a long term strategy, a Disaster Emergency Committee was constituted, comprising of NGO's like OXFAM, Help Age India, World Vision, CARE, Action Aid, Save The Children International, Federation of Red Cross, and Red Crescent Societies, Tear Fund and Concern. The immediate response of the government of Orissa and the NGO's was to set up community kitchens, provide relief material and distribute exgratia payments to compensate the victims. The UN agencies launched massive rehabilitation measures with focus on infrastructure, education, child development, health, livelihoods, and habitation and management information systems. The Livelihood and Employment Restoration Programme launched by OXFAM in collaboration with European Union in Jagatsinghpur district aimed at restarting the traditional livelihood of the affected population through the provision of food/cash for work; facilitating work for community based rehabilitation and restoration activities etc. (Madury and Dhameja, 2005: 26). The post cyclone phase initiated some economically viable schemes but the entire rehabilitation procure came to based on external agency help. The state government and central governments rehabilitation measure were overshadowed by the work done by domestic and international NGO's.

Conclusion:

Disaster response and preparedness is most effective when it is built into development programmes. In the long run, disaster mitigation could be implemented at nominal cost by incorporating them into development programmes. The expenditure on disaster mitigation would reduce the potential losses that disasters cause. Significantly, urban planning urgently begs a fundamental conceptual change, with a need for locating urban disaster management strategies in a holistic programme embracing issues like poverty, provision of institutional support for informal sectors activities, over urbanization, environmental degradation and unchecked consumerism

etc. A sound, effective and people centric urban disaster management strategy can emerge only in the context of a truly sustainable and people centric development paradigm. Disaster management and mitigation be organized around local recovery efforts. In an integrated disaster risk management approach, activities from structural interventions to community based disaster management which reduces hazard and vulnerability should be coordinated. It is imperative to orient and train development agencies to integrate disaster risk management into the national and local disaster reduction into development. Collaboration among stakeholders is a critical strategy in disaster reduction. It enhances and complements the respective capabilities of concerned sectors and organizations in the pursuit of development objectives. Moreover, there is need for robbing for larger investment in disasters reduction and development into best practice.

There is a need to have a comprehensive National Risk Policy. There is also need for a specialized facility to provide professional training, education and management skills to prepare competent synergic and dedicated team for emergency services and providing relief to victims. Rehabilitation of disaster affected population needs a revised approach with a focus on overall development of the region and providing financial support for rehabilitation. In order to ensure long term socio economic and psycho-cultural rehabilitation, political and administrative support is to be considered essential. This requires a rehabilitation plan enduring participation of local committed and trustworthy civil societies, people and community at large. Again, the rehabilitation and reconstruction should be planned in such a way that it is acceptable to society and local culture, and traditions are preserved. Moreover, restoration of educational institutions, health, socio-economic infrastructural facilities and livelihoods is must to gain confidence of the local people. Special regulatory mechanism is to be developed in order to effective distribution of relief and prioritising the development, rehabilitation and reconstruction needs of the disaster affected areas.

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