COMPARATIVE STUDY ON RECOVERY & RECONSTRUCTION

A Case for an International Platform

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1. Preamble

Recovery and reconstruction are a complex process and are largely determined by the post disaster situations and the social forces existing in the region before and after the disaster. They cannot be examined in isolation from the other phases of disaster management. At the macro level, the recovery and reconstruction efforts are likely to be affected by previous preparations for, and the immediate response to, the disaster. The different phases of emergency management, including “Prevention/Mitigation,” “Preparedness,” “Response” and ”Rehabilitation/Reconstruction,” are interrelated.

In recent years there has been a shift from conceptualising disaster recovery from a linear, static phenomenon with specific set stages to an understanding of recovery as a dynamic, interactive, and decision-making process (Mileti, 1999). During the reconstruction period, "the central issues and decisions are value choices that give varying emphasis to the early return to normalcy, the reduction of future vulnerability, or to opportunities for improved efficiency, equity and amenity" (Haas et al., 1977).

It is often difficult to generalize disasters because both the affected communities and the events themselves are distinctive. Cities and towns are of varying sizes, in different regions, with different economic bases and cultural values. The communities are affected by different types of natural hazards, experience different types and extents of losses, and have recovery periods unique in nature and timing.

Nevertheless, there are a number of similar trends and recovery lessons that can be learned from the experiences of these regions. Common themes and issues can be identified and adopted. The seven case studies under review are each unique and yet there is a thread of similarity to be found in each of them.

Natural disasters and their impacts make the task of the achievement of the Millennium Development Goals (MDG) very difficult. Disaster losses can often exacerbate other crises such as a political and social conflict, disease and environmental degradation. Disasters put development gains at risk and therefore it is imperative to integrate disaster risk management within development planning in order to meet the MDGs.

However, despite its adverse impacts, a disaster also offers an opportunity to formulate dynamic policies relating to social development, economic growth, environmental quality and other essential principles contributing to sustainability. The post disaster reconstruction period provides the ideal occasion to introduce disaster reduction into sustainable development planning.

2. Background

1) Pinatubo Volcanic Eruption

The Pinatubo Volcanic Eruption occurred in June 1991 in the island of Luzon in Philippines. Mount Pinatubo's eruption was considered the largest volcanic eruption of the century to affect a densely populated area. The eruptions precipitated huge fast-flowing mudflows or lahars, posing a more serious and lingering threat to life, property and environment.

The destruction, coupled with the continuing threat of lahars and ash fall, disrupted the otherwise flourishing economy of Central Luzon, slowing the region's growth momentum and altering key development activities and priorities. The regional office of the Department of Social Welfare and Development (DSWD) reported a total of 657 persons dead, 184 injured and 23 missing as of 29 September 1991. Damage to crops, infrastructure, and personal property totalled at least P10.1 billion (US$374 million) in 1991, and an additional P1.9 billion (US$69 million) in 1992.

The report states that the government of Philippines was able to pursue its recovery and rehabilitation plan more efficiently and effectively with the support and assistance of other governments and international funding institutions. Most of the foreign assistance for rehabilitation and reconstruction came in the form of grants, loans, and technical assistance packages. Among the countries that extended assistance included Australia, Canada, France, Germany, Israel, Japan, Netherlands, United Kingdom and U.S.A. World Bank and Asian Development Bank (ADB) also provided support and loan facilities.

2) Hurricane Mitch

The Hurricane Mitch, which occurred in October 1998, was the largest natural disaster in history of Central America. It left over 10,000 persons dead, 1.5 million displaced, and affected one out of every five inhabitants in Honduras, Nicaragua, Guatemala, and El Salvador. Agricultural production suffered heavy losses; vital economic and social infrastructure was destroyed. Estimated overall economic losses amounted to over US$4 billion, slowing the expected annual growth rate for 1999 from 5.3 to 2.9 percent.

The response of the international agencies was encouraging. An Inter-agency meeting (Food and Agriculture Organization (FAO), International Fund For Agricultural Development (IFAD), International Labour Organization (ILO), United Nations Conference on Trade and Development (UNCTAD), United Nations Environment Programme (UNEP), United Nations Educational, Scientific and Cultural Organization (UNESCO), United Nations Population Fund (UNFPA), United Nations Human Rights Commission (UNHRC), United Nations Children's Fund (UNICEF), United Nations Industrial Development Organization (UNIDO), World Food Programme (WFP), World Health Organization (WHO), Inter-American Development Bank (IDB), International Monetary Fund (IMF), World Bank, International Organization for Migration

(IOM), International Federation of Red Cross and Red Crescent Societies (IFRC), InterAction) co-chaired by United Nations Development Programme (UNDP) and Office for the Coordination of Humanitarian Affairs (OCHA) underlined the need for a Transitional Appeal in order to raise adequate support for continuing relief needs as well as to forge links with longer-term rehabilitation. The sectors covered by the appeal were health, water and sanitation, shelter, food security, agriculture, education, coordination, and management.

3) Flash floods and landslides in Venezuela

Ten days of torrential rains in the Vargas state of Venezuela in December 1999 led to flash floods and massive mudslides that affected nine northern states where 75 percent of the country's population live, sweeping away thousands of homes. In total, an estimated 15,000 to 20,000 people died, more than 8,000 homes were affected, and about 500,000 survivors had to be evacuated from the region. According to the United Nations Economic Commission for Latin America and the Caribbean (UN/ECLAC) the losses amounted to 3.3 % of Venezuela's GNP.

The response of the international community to the emergency was immediate and generous through international organizations, bilateral governmental agreements, and the civil society. Five days after the disaster, the total international financial assistance amounted to more than US$ 8 million coming from more than 20 countries, international agencies and non-governmental organizations. Several member countries of the European Union (EU), offered concessional loans to Venezuela of over US $ 100 million. Multilateral organizations provided an estimated total of US $ 1,250 million (IDB: US $ 337 million; World Bank: US $ 588 million; Corporación Andina de Fomento: US $ 325 million) intended primarily for the water sector, communications and housing sectors.

4) El Salvador Earthquakes

On 13 January, 2001, an earthquake measuring 7.6 on the Richter scale with an epicentre just off the coast of El Salvador devastated the country. Exactly a month later, on 13 February, a second earthquake measuring 6.6 struck the nation. More than 3,000 aftershocks took place during this time and afterwards including earthquakes on 17 February and 28 February that registered 5.1 and 5.6 on the Richter scale.

The damage caused to this country with just over 6 million inhabitants was enormous. The final toll amounted to 1,259 people killed, 8,964 injured, 149,563 houses destroyed, 185,398 houses damaged, 2,647 public schools, 24 hospitals, 28 health clinics, 2,300 kilometres of roads, and 75% of potable water systems damaged or destroyed. Overall, 1.5 million people, 25% of the population of El Salvador, suffered grave losses from the earthquakes. Damaged infrastructure left unusable by the earthquakes included 40% of hospital capacity and 30% of the nation's schools. Total economic loss was

estimated at US$1.255 billion, equivalent to one-half of the annual national government budget.

By mid-2001, the reconstruction process had started although with mixed results. United States Agency for International Development (USAID)/El Salvador reconstruction assistance focused on the revitalization of social infrastructure for the rural poor, including: housing, schools, childcare centres, public health infrastructure, and potable water and sanitation systems. The Government of Canada provided US$805,000 to Pan American Health Organization (PAHO)/WHO, IFRC, and NGOs for emergency assistance and approximately US$2.7 million in relief and reconstruction assistance to the Government of El Salvador. Approximately US$645,000 of the funding was to be used to support rehabilitation efforts such as the reconstruction of houses, repairs to schools and potable water systems, and healthcare services in the earthquake-affected areas.

5) Orissa Super Cyclone

The cyclone of rare catastrophic intensity struck the eastern state of Orissa on 29-30 October 1999. It swept the entire Orissa coast, affecting 12 districts and parts of neighbouring West Bengal, devastating a 250 km stretch of eastern Orissa's coast. About 10,000 people were reported killed and many thousands more devastated. The violent cyclone swept the state with sustained winds of 160 mph. It was the worst cyclone in meteorological history, with one of the highest wind speeds ever recorded--223 mph.

The cyclone also destroyed the livelihood of the coastal state's farming community--it saturated more than 1 million hectares of cropland under salty water and killed some 406,000 livestock. About 11 million people, nearly a third of the state's population of 35 million, were estimated by the UN agencies to be directly affected, having lost their shelter, crops, cattle and livelihoods. Another 7 million people were partly affected due to the large-scale collapse of infrastructure, including communications and surface transport.

In November and December 1999, several UN missions -- ILO, WHO, UNESCO and FAO -- visited Orissa to assess the impact of the cyclone and the long-term rehabilitation needs in agriculture, livelihood, health and education. Thematic workshops aimed at addressing emerging issues at the relief, rehabilitation and reconstruction phases were organised. The UN agencies worked out a preliminary budget of US$50 million to be spent in the 15 years following the disaster. The report gives a good description of the various rehabilitation and reconstruction works undertaken by the various UN agencies and by other organizations like Cooperative for American Relief Everywhere (CARE), Department for International Development (DFID), ActionAid, IFRC, and World Bank.

6) Gujarat Earthquake

The earthquake which occurred in Gujarat, western India in January 2001 caused massive loss of life and injury. It left nearly 1 million families homeless, and destroyed much of the area's social infrastructure: from schools and village health clinics, to water supply systems, communications and power. One month after the earthquake official Government of India figures placed the death toll at 19,727 and the number of injured at 166,000. The World Bank and the Asian Development Bank estimated that reconstruction would cost about Rs 10,600 crore (US$2.3 billion). In their joint Gujarat Earthquake Recovery Program Assessment Report presented to the government of Gujarat, the two multilateral banks had put the total loss of assets, including private assets, at Rs 9,900 crore (US$2.1 billion). The bulk of these losses were in the housing sector (Rs 5,200 crore /US$1.1 billion). Among the other severely affected sectors were education, health, rural water supply, irrigation, transport, and public buildings and monuments. The World Bank and the Asian Development Bank announced loans worth US$300 million and US$500 million respectively. Other agencies like the DFID, USAID, Canadian International Development Agency (CIDA) and EU too provided financial assistance for the rehabilitation projects.

7) Marmara Earthquake

An earthquake measuring 7.8 on the Richter scale struck Izmit in the Maramara region of Turkey on 17 August, 1999. It claimed over 17,000 lives and left nearly 32,000 injured. The World Bank's preliminary assessment report in September 1999, estimated economic damage due to the earthquake to be between US$3.1 and 6.5 billion. The damage to housing was estimated to be around US$1.1 and 3 billion and damage to essential services at US$500 million.

The government of Turkey collaborated with international agencies like the World Bank to draft its reconstruction programmes. A comprehensive reconstruction framework was drafted by the World Bank, UNDP, the EU and other international agencies and was funded by the European Investment Bank and the World Bank. Two World Bank projects namely the Emergency Earthquake Recovery Loan (EERL) and the Marmara Earthquake Emergency Reconstruction Project (MEER) comprised a substantial part of the reconstruction programme. The EERL was used for short-term purposes, while the MEER was used for short term and medium term projects.

Table 1: Disaster details

Sr. No	**Disaster**	**When & where**	**Death Toll** (approx)	**Total Population Affected** (approx)	**Houses Damaged** (approx)	**Infrastructure Damaged** (approx)	**Economic loss** (approx)
1.	Pinatubo Eruption	Luzon island in Philippines on 12 June 1991	657	2.1 million	81,654	P3.8 billion (Pesos)	P12.489 million
2.	El Salvador Earthquakes	Cuscatalan, San Salvador, San Vicente and Paz on January and 13 February 2001	1,259	1.5 million	334,866	-N.A-	US$1,255 billion
3.	Flash	Vargas state in	15,000-	-NA-	8,000	US$ 1,961	US$3,237

	floods and landslides	Venezuela on 15 &16 December 1999	20,000			million	million
4.	Hurricane Mitch	Honduras, Nicaragua, Guatemala and El Salvador on 26 October 1998	10,000	3.5 million	386,000	US$ 5 billion	US$ 6 billion
5.	Gujarat Earthquake	Kutch in Gujarat on 26 January, 2001	20,000	15.9 million	424,510	-NA-	US $2.1 billion
6.	Orissa Super Cyclone	12 districts of Orissa on 29 October 1999	9,893	11 million	16.49 lakhs	-N A-	-NA-
7.	Marmara Earthquake	Izmit, Turkey on 17 August 1999	17,000 (approx)		Damage to housing estimated between US$1.1 to 3 billion	US$ 500 million	US$ 3.1 to US$ 6.5 billion

3. Rehabilitation Objectives

The rehabilitation objectives in all the disasters under study were largely framed in consultation with the international aid and donor agencies. This is clearly illustrated in the report on Hurricane Mitch. There, an important step in the reconstruction and rehabilitation processes was in the Stockholm Consultative Group Meeting. On 25-28 May 1999 in Stockholm, Sweden, IDB chaired a meeting of the Consultative Group (CG) for the Reconstruction and Transformation of Central America. The conference was a forum for Central American nations to present their plans for national reconstruction and transformation, and an opportunity for donor countries to make pledges and coordinate funding priorities in response to the crisis provoked by Hurricane Mitch.

The objectives broadly were the same but varied in some specifics. The aim of the recovery and reconstruction efforts in the seven case studies focussed on the restoration of infrastructure, the building of roads, hospitals and homes, restoration of economic activity and the reduction of vulnerability by the adoption of disaster reduction measures. In the aftermath of the Pinatubo eruption, the Government of Philippines decided to adopt preparedness measures against the mudflows or lahars. It also sought to ensure the continuous flow of goods and services and to reduce the susceptibility of infrastructure in the event of areas being affected by mudflows. The government also aimed at preventing further degradation of the environment and to restore damaged ecosystems.

In the case of Hurricane Mitch likewise, the goal of the reconstruction efforts was to reduce the social and ecological vulnerability of the region. The reports on the flash floods and landslides in Venezuela and the earthquakes in El Salvador do not give any details of the objectives of the reconstruction efforts.

In the report on Hurricane Mitch, however, the objectives are clearly spelled out in the Stockholm Declaration, which laid out the following objectives to guide the reconstruction process:

- Reduce the social and ecological vulnerability of the region, as the overriding goal.

- Reconstruct and transform Central America on the basis of an integrated approach of transparency and good governance.

- Consolidate democracy and good governance, reinforcing the process of decentralization of governmental functions and powers, with the active participation of civil society.

- Promote respect for human rights as a permanent objective. The promotion of equality between women and men, the rights of children, of ethnic groups and other minorities should be given special attention.

- Coordinate donor efforts, guided by priorities set by the recipient countries. Intensify efforts to reduce the external debt burden of the countries of the region.

The reports on the Orissa Super Cyclone and the Marmara Earthquake and to a lesser extent the one on the El Salvador Earthquakes, the objectives are enumerated in terms of the sectoral interventions by the international agencies. The report on Orissa Super Cyclone lists in a table the areas of intervention by the UN agencies in the rehabilitation process.

Table 2 : UN Sectoral Intervention in Orissa

UN agency	**Sectors of Intervention**
UNDMT (United Nations Disaster Management Team)	Disaster Preparedness, MIS support, UN House operation, Advocacy and communication and Intersectoral coordination
UNICEF	Health, Education, Child development and nutrition, Child protection and Child Rights.
UNESCO	Textbooks
WHO	Health
FAO/UNDP	Agriculture/Allied sectors
ILO/UNDP	Livelihood support for artisans
UNDP	Shelter Development and slum improvement
WFP	Nutrition/ Food for work
UNCHS (United Nations Centre for Human Settlement) UNFEM (United Nations Development Fund for Women) UNHCR (The Office of the United Nations High Commissioner for Refugees) UNFPA	Technical Know-how/Expertise

The report on the Marmara Earthquake gives a breakdown of the MEER project undertaken by the World Bank, mentions the various projects for which the World Bank allocated funds. These include Disaster Response System and Risk Reduction Strategy, which covered areas like Emergency Management System, Disaster Insurance Scheme and Land Use Planning and Enforcement of Construction Codes. The other areas of intervention were a trauma programme for adults, construction of permanent housing, business rehabilitation and rebuilding and repair of roads, water supply systems, wastewater systems, power distribution networks.

In the El Salvador Earthquakes the report mentions that the USAID/El Salvador reconstruction assistance focused on the revitalization of social infrastructure for the rural poor, including: housing, schools, child care centres, public health infrastructure, and potable water and sanitation systems.

The report on the Gujarat Earthquake lists out some of the objectives and also how many of them were achieved. The Government of Gujarat, with the support of World Bank and ADB, initiated Gujarat Emergency Earthquake Reconstruction Project (GEERP). The rehabilitation and reconstruction effort was the biggest–ever housing program undertaken in the entire world in terms of numbers and geographic area. One of its objectives in the housing sector was the owner-driven housing construction facilitated by financial, material and technical assistance by the government.

4. Analysis

There are no universally accepted methods to gauge the progress in the risk reduction process or the impact of international cooperation. The international assistance is largely tabulated in terms of the total financial contributions. It is imperative to have standards based on comprehensive evaluations of the current situation and then develop tools and mechanisms to periodically monitor progress and evaluate impact.

In the light of the criteria that were laid down for the assessment of rehabilitation and reconstruction works in these disasters very few of the disasters under study are able to pass muster. These criteria as spelt out in the outline to this report are:

- Appropriate institutional and operational frameworks to facilitate immediate recovery as well as long-term sustainable development

- Assessment of the existing protocols and mechanisms for cooperation and coordination among the international agencies and the affected country

- The presence or otherwise of systems to assist swift and efficient recovery of the affected populace

- Legal, institutional and financial mechanisms/ structures to facilitate recovery and reconstruction

- The presence or otherwise of an advisory group to assist in the development of a recovery plan

- Training of personnel in charge of recovery on a regular basis

Additionally other criteria to be taken into consideration are:

- Whether the reconstruction works incorporated risk reduction concerns and practices and were able to reduce overall vulnerability of the affected communities over a period of time.

- Whether the reconstruction projects were able to provide an impetus to socio-economic recovery and plan for strategic investments in order to facilitate resumption of the productive processes.

- Whether the recovery efforts were able to initiate structural reform in the socio-political and economic environment of the country leading to long-term development.

In terms of the first criteria of institutional and operational frameworks in almost all the disasters under study, some operational structures were set up

in the immediate aftermath of disasters. In the Philippines, the *Presidential Task Force on the Rehabilitation of Areas Affected by the Eruption of Mount Pinatubo* or Task Force Mt. Pinatubo was established. It was mandated to guide and coordinate all rehabilitation efforts of the government, including those participated in by the private sector and the international community. After a year, the *Mount Pinatubo Assistance, Resettlement and Development Commission* succeeded the Task Force by virtue of a law, Republic Act 7637, passed by the Philippine Congress and signed by the President Fidel V. Ramos on 24 September 1992. With a term of six years, the Commission was mandated, among others, to formulate policies and plans, to coordinate the implementation of programs and projects, and to administer the initial 10-billion peso fund appropriated for the "aid, relief, resettlement, rehabilitation and livelihood services as well as infrastructure support for the victims."

In the regions affected by Hurricane Mitch, an Ad-hoc Emergency Management Committee (CONE) at the national level was created to function as an information centre, headed by a Minister of State. The permanent Committee for Contingencies (COPECO) was the coordinating body for all the Regional Disaster Committees (CODERs) and Municipal Disaster Committees (CODEMs). Information was fed from the CODEMs through CODERs to COPECO and CONE. The UNDP in Nicaragua helped in designing a new disaster management strategy. Early in 2000, the Nicaraguan National Assembly passed a new law creating the National System for Disaster Prevention, Mitigation and Attention and officially established the National Risk Reduction Plan as a primary operational instrument.
In Venezuela, UNDP performed a comprehensive and multidisciplinary damage evaluation that was provided to the Venezuelan Government and coordinated the activities of the multiple actors, both national and international, that participated in the emergency response.

However, these bodies were largely short-lived and limited to short-term goals. The exceptions were the Orissa State Disaster Management Authority (OSDMA) and the Gujarat State Disaster Management Authority (GSDMA) set up in the aftermath of the Orissa super cyclone and the Gujarat Earthquake respectively. GSDMA was the highest body created at the State Government level to tackle disasters effectively and efficiently. It is a mix of senior politicians as well as senior bureaucrats. Among the functions of GSDMA as laid out in its charter are:

- To undertake social and economical activities for rehabilitation and resettlement of the affected people that would include new housing, infrastructure, economic rehabilitation, social rehabilitation and other related programmes,

- To prepare programmes and plans to mitigate losses on account of disasters as a strategy for long- term disaster preparedness,

- To undertake research and study regarding causes for losses on account of natural disasters and to suggest remedial measures for minimizing the same,

- To obtain funds for rehabilitation and resettlement, and to ensure optimum utilization of these funds obtained in the form of the Government of India, World Bank and ADB, USAID, DFID, IFRC, Donors, NGOs and from financial institutions, public and private trusts or any other organisations,

- To manage the Gujarat Earthquake Rehabilitation and Reconstruction Fund,

- To act as nodal agency and co-ordinate various issues relating to the deserving victims, out of the funds, either directly or through a common fund.

In Gujarat, for the successful implementation of its housing reconstruction programme, GSDMA was awarded the UN Sasakawa Award. The citation of the award says “the Sasakawa Jury wishes to recognize the inclusive and innovative approach adopted by GSDMA in disaster situations, in which many partners and their stakeholders, both inside and outside India, provided knowledge and resources to formulate effective policies and legislation and prepare disaster management plans.”

In Orissa, a notable success of the international rehabilitation efforts was the creation of the programme on Community-Based Disaster Management (CBDM), supported by UNDP and DFID of the Government of U.K. One of the highlights of the programme was the preparation of Community Contingency Plans. The project implemented over a period of 19 months in 10 blocks in the state strengthened the capacity of the government functionaries as well as communities to cope with natural hazards more effectively. These initiatives helped the state government to develop a state disaster management plan and policy. The UN agencies identified their strengths in the entire rehabilitation and reconstruction efforts as:

- Policy changes made in the Orissa state agriculture with focus on early warning system

- Community-based Development Plan of Orissa placed as a model for other states

- Creation of positive environment for attracting funds which resulted in the UN system contributions of US$30million in response to Orissa Super Cyclone 1999 and over US$ 23million in response to Gujarat Earthquake 2001

- Partnership with the Secretary to government of India for reconstruction management

- Strategic support provided for setting up of State Disaster Mitigation Authority in Orissa

- Strategy of the ongoing programmes of the UN family to channelize individual resources through the network of NGO partners with strong field presence, trust and credibility among the local communities in the affected areas, in addition to their co-operation.

As for laws governing reconstruction and rehabilitation the report on the Pinatubo eruption mentions that the Philippine Congress and the Office of the President promulgated a series of laws and regulations that governed the country's reconstruction and rehabilitation.
The financial assistance for reconstruction and rehabilitation was largely adequate in almost all the regions although its utilization was not efficient. The report on El Salvador points out that despite the generous assistance from the international community, the reconstruction and rehabilitation process has not been as effective as it would have been desired. In the areas affected by Hurricane Mitch, the report points out that the window of opportunity provided in the aftermath of the disaster to initiate systemic change was lost. The regional socio-economic structures remain the same. The endemic poverty of the region, which increased its vulnerability, was also not tackled. In Venezuela, a large proportion of the generous financial assistance was made available as well through the reallocation of loans granted but not disbursed. The actual disbursement of these funds was considerably delayed because it depended on the presentation of detailed programs for their use. The unstable political and administrative situation of the country acted as a hindrance to the effective operation of the international rehabilitation efforts.

In all the case studies, few years after the disaster, progress was made in the restoration of infrastructure, however there was very little progress in the process of ushering in long-term changes. The report on Hurricane Mitch states that, five years later, much of the damaged infrastructure of Central America has been restored. Groundwork was laid for the development of early warning systems and also for the relocation of habitation from vulnerable areas.

The report on the El Salvador Earthquakes informs that although over 200,000 temporary shelters were erected shortly after the earthquakes, the construction of more permanent housing was not taken up in earnest. By early 2002, there had been little reconstruction in the health sector, and 7 most damaged hospitals were described by health officials as still in "a critical state, and work on rebuilding smaller healthcare facilities had only begun." Most major highways had been repaired but local roads still needed work as of September 2001. The economic situation greatly deteriorated in El Salvador. Almost 51 percent of the population now lives below the poverty line, proportion nearly 4 percent higher than in 1999 and considered to be due to the quakes. In 2002, more than 200 Salvadorans were reported to be emigrating every day due to poverty.

Six months after the flash floods and landslides in Venezuela the social and economic situation in the country according to the study was still very precarious. There was, no long-term reconstruction program and for the

international agencies it presented a complex situation leading to duplication of efforts. The report goes on to state that the widely held perception within the country was that the international assistance did make an impact during the emergency response period. However, its efforts in the rehabilitation and reconstruction process proved to be ineffective. The implementation of several externally funded reconstruction projects brought some new techniques and methodologies to Venezuela although there has been no evaluation of the significance of the technology transfer.

In the Orissa super cyclone, government as well as media reports show that the rehabilitation efforts in Orissa have not met with the anticipated level of success. This can be judged from this report in the 'Times of India' three years after the cyclone.

- Only 11 out of 100 proposed cyclone shelters had been built
- A mere 392 out of 3,779 schools had been rebuilt
- Government departments had not spent funds allocated to them for relief and rehabilitation.

The Times of India again in a report dated 9 April 2002 cited the state's revenue minister that major departments like water resources, rural development, and housing had not been able to utilize fully the funds allocated to them for rehabilitation works. Works which are worth only US$ 9.55 million of the US$ 51 million sanctioned by the World Bank had been used by March 2002. Another report in the India Today of 27 May 2002 also gives examples of the poor state of the rehabilitation efforts. Two years after the calamity, the state government had only been able to undertake reconstruction projects worth Rs 600 million under World Bank assistance. The Bank had agreed to provide an assistance of Rs 23.5 billion in the first phase.

The report on the Marmara Earthquake mentions that among the various reconstruction projects undertaken, the building of roads and the restoration of infrastructure have been largely successful. However, in the field of urban regeneration a lot remains to be achieved as yet. Some bottlenecks that still remain are:

- The practice of constructing gecekondus, i.e. poorly constructed ill planned housing, is widespread in Turkish society. It is often difficult to convince householders to replace their homes with earthquake resistant structures.
- Various schemes linked to earthquake reconstruction such as the system for state compensation for damaged buildings under the Disaster Law, and the scheme for partial ownership of real-estate, which give owners very powerful right proved difficult to implement.

Similarly the report on the Pinatubo eruption says that the application and use of good practices and experiences made available through technical assistance extended by other governments and international organizations, facilitating the development and implementation of critical development

programs and projects and the early recovery and rehabilitation of the affected areas. In terms of the above criteria, it seems apparent that only one of the above criteria, namely, that of legal system to assist recovery, was present.

The rehabilitation in Gujarat with the assistance of agencies like the World Bank, ADB and UNDP especially in the construction sector was largely successful. The ISDR report 'Living with Risk' says the reconstruction process in Gujarat did not conform to previous or traditional approaches for organising large-scale public works. There was collaboration between national and international interests as well as a conscious effort to ensure that local communities would be involved in the process and that their needs would be represented at every stage in the rehabilitation process. The document further states that "the fact that all plans for housing and community facilities were designed to meet construction standards for both earthquake and cyclone resistance, and that they were approved by both the communities and the appropriate government technical departments, illustrates practical measures that contribute to the future reduction of risks".

The Government of Gujarat reconstructed and repaired affected houses in record time of 2 years. Among the many innovative methods adopted in the housing reconstruction efforts were:

- Housing assistance packages announced in a record time with a choice of relocation or in-situ reconstruction to be taken by the village community.

- Owner driven housing construction was facilitated by financial, material and technical assistance by government

- Multi-hazard resistant reconstruction was made mandatory to resist cyclones, earthquake and other natural disasters

- Engineers were appointed in villages to supervise housing construction and provide technical guidance

- Payments were made in three instalments for new construction to ensure multi-hazard resistant construction. The second and third instalments were given only after verification and certification by engineers

- An important move was to exempt the excise duty for building materials produced in Kutch

- Nirdeshika (guidelines) I and II were prepared to guide people for construction and repair

- Four shaking table demonstrations were conducted for awareness generation and confidence building

- Technical cassettes on construction and retrofitting houses were shown in 2,500 villages

- A cassette on safe construction using the medium of folk art Bhavai was prepared and screened in 2,500 villages

- Audiocassette in the form of folk songs giving messages on multi-hazard resistant construction was played in community gatherings and meetings.

- The need for safe housing construction and retrofitting was taken up as an agenda in the gram sabha in all the 18,000 villages of Gujarat.

In terms of information sharing, there seems to have been some apparatus in place in almost all countries under study. For example, the report on Hurricane Mitch states that the office of the UN Resident Coordinator facilitated the information outflow, enhancing a coordinated response between the UN System, the Government, and the international donor community. A special “Mitch” website was established to keep the international community regularly updated. In addition, a United Nations Disaster Assessment and Coordination team (UNDAC) was mobilized to assist the overall situation and needs assessment and in the coordination of the international assistance, and a senior emergency adviser was recruited to facilitate the coordination between all the main actors. In Venezuela, the UNDP established the Cooperation Management System (SIGCO) that served as an information and coordination centre for the international emergency assistance. Thus, there was a system to assist coordination and information sharing among the international agencies.

However, there remained some lacunae in the coordination because the report on Hurricane Mitch subsequently states, “millions of dollars have been given in foreign assistance mainly to implement mostly technical and, in many cases, repetitive and uncoordinated projects. The result of foreign assistance for disaster reduction has been many reports, maps, and publications that are not being utilized and whose existence is, in many instances, completely ignored.”

Thus, it seems evident that despite the adequate financial backing and the good intentions, the international rehabilitation efforts did not prove to be an unqualified success. There were undoubtedly some successes and good practices that with some improvisations could also be replicated elsewhere.

5. Challenges and Shortcomings

As is evident from the above assessment, the international efforts at reconstruction in very few of the disasters under study, with the notable exception of the work in Gujarat, were able to achieve a great degree of success. Some of the challenges that can be identified based on the above studies, faced by international agencies working in the field of reconstruction and rehabilitation are:

- The support of the local government and a favourable political climate: This is very clearly stated in the report on Venezuela, which states that the unstable political and administrative situation in the country acted as an impediment to the international rehabilitation efforts in the country. The unfavourable political situation constituted a sizeable obstacle for the international donors. Substantial financial resources available from national and international sources for reconstruction took some time to reach their destination because of bureaucratic difficulties resulting from the political upheavals affecting the country. The UNDP report 'Reducing Disaster Risk' says that a review of livelihoods and governance conditions prior to the Orissa cyclone in 1999 pointed to corruption at all levels, unnecessary bureaucracy, political rivalry and an apathetic civil society as pressures that contributed to vulnerability. The report further points out that in the aftermath of the disaster, problems with governance mean that aid budgets can be skewed towards the recovery of one group or sector as opposed to another.

- Legal and institutional frameworks to assist recovery: Few of the regions under study created stable long-term legal and institutional structures to assist recovery. In the immediate aftermath of the disaster, the respective governments responded by setting up organisations to aid recovery but these largely proved to be short-lived and defunct. Notable exceptions, however, were GSDMA and OSDMA. Gujarat subsequently also enacted a comprehensive disaster management legislation.

  As the UNDP report 'Reducing Disaster Risk' points out that in all internationally assisted capacity building programmes for disaster risk management, a component of institutional strengthening is included. These efforts do not always lead to any perceptible effectiveness in disaster risk management. Though national organisations are set up, they are often unnecessarily centralised and at times unable to effectively coordinate across other government sectors or with civil society.

- Financial mechanisms to support the rehabilitation works: A study of the above disasters underlines the need for an integrated financial mechanism that would ensure effective allocation of funds as well as their disbursement.

- Lack of any well formulated reconstruction plan incorporating mitigation and structural changes: The international efforts in few of the disasters under study were able to bring about any substantial risk reduction in the region. The communities' socio-economic conditions remained unchanged and so did their vulnerability to future disasters. No clear reconstruction and recovery strategic programming could be organised implementation of initiatives was inadequately coordinated, patchy and often driven by the short-term imperative of quickly delivering physical products

- Involvement of the local communities: The international agencies largely remained isolated from the local communities often due to cultural barriers, however where efforts were made to involve the communities, they have met with unprecedented success. This was evident in the success of the Community-based Disaster Management (CBDM) launched by the UNDP in Orissa. Most of the international aid is often routed through the central government, which is often geographically as well as socially isolated from the affected communities. Therefore, there is the need to decentralise the international aid i.e. reroute it through the local communities.

- Lack of coordination among the international agencies: While the emergency response activities were often well coordinated, in the medium term reconstruction projects there were often international agencies working at cross-purposes. The report on Hurricane Mitch points out that the substantial foreign assistance that came in the aftermath of the disaster was used largely to implement mostly technical and, in many cases, repetitive and uncoordinated projects. The result of foreign assistance for disaster reduction has been many reports, maps, and publications that are not being utilized and whose existence is, in many instances, completely ignored.

6. Conclusion

International emergency aid has shown both a quantitative and qualitative improvement over the past few years. Reconstruction and recovery processes have also shown a corresponding upswing. One notable feature in recent years has been the larger and more effective international assistance in recovery and reconstruction compared to earlier years. Recovery and reconstruction are no longer left entirely to local governments. The recovery and reconstruction in the western Indian state of Gujarat was able to achieve a notable degree of success, its housing reconstruction programme received international acclaim. The methods employed were non-traditional and decentralised, targeting the local communities. In Orissa, the Community-based Disaster Programme launched in assistance with UNDP was very successful and replicated in other areas.

In the other case studies under review, greater progress, than in the past, was made in the restoration of infrastructure with considerable international assistance. In the aftermath of the Marmara Earthquake in Turkey, reconstruction projects assisted largely by World Bank for the repair of roads and restoration of infrastructure were successfully implemented. In the aftermath of the Hurricane Mitch, many infrastructural projects were successfully implemented. Both in Orissa and Gujarat, long term institutional mechanisms were created for disaster management.
The information sharing among the international agencies in these disasters was also a great improvement from the past. In the aftermath of the Hurricane Mitch, a special Mitch website was created by the UN agencies and in Venezuela a Cooperation Management System was devised to assist in information sharing.

However, recovery and reconstruction are also specifically the areas, which require greater attention by the international agencies. Reconstruction and recovery periods provide opportunities for understanding the root causes of disaster and reorienting development objectives towards sustainable alternatives.

Effective reconstruction should not merely involve delivery of physical products but also incorporate risk reduction concerns and promote sustainable development. The recovery process can be an opportunity for incorporating disaster risk reduction mechanisms into post-disaster development planning. Disturbances caused by disasters often provide political space for alternative and more democratic forms of social organisation. It is in incorporating and universalising these practises that an international recovery platform can play a vital role.

To organise and manage recovery efforts in an alien environment is a daunting task. It requires a good understanding of the local socio-economic and political structure of the affected country. The rehabilitation efforts have to be undertaken in close cooperation with the local government and community. Their support will go a long way in ensuring the success of the rehabilitation

efforts. Rehabilitation projects have to be conceptualised keeping in mind the needs of the community and should be administered and executed diligently in order to minimise cost over-runs and adhere to the time schedule. It is imperative that apart from the physical reconstruction visualised there is also a need for socio-economic reconstruction.

Some lessons that can be drawn from the above case studies and lead to an improvement in the international recovery efforts are:

- It is imperative to enlist the support of the local authorities and liase with them to ensure smooth implementation of plans. This would require a good understanding of the political, socio-economic and cultural structures of the region. An international platform could facilitate this with established mechanisms for collection and assimilation of global data. It is imperative to assimilate the vast amount of data collected nationally for global comparisons to include key information needed for risk assessment (number of trained paramedics, number and capacity of active community disaster response groups) and vulnerability factors (armed conflict, governance, social capital, epidemiology). This would increase the quality of global recovery interventions. The ideal would be to create a unified global system of disaster data that connects nationally maintained country databases to a global database that is administered through such a platform.

- The international agencies need to provide an impetus to the development of legal and organisational structures to implement reconstruction. A system should be developed to assist the country in recovery. Disaster mitigation should be an integral part of public policy, urban planning and development processes. In the wake of the Hurricane Mitch, a pilot project to incorporate disaster prevention within the development agenda at the local level was initiated in Nicaragua in 2001. This UNDP project sought to include disaster management in the planning for all productive sectors, social sectors and environmental management. Following risk mapping procedures areas of high vulnerability received additional support and incentives for environmental rehabilitation, the designation of safe areas for urban expansion and demarcation of zones for protection from human intervention.

  There is a need to extend these practices to other international recovery efforts. They have, of course, to be tailored to the specific local needs. An advisory group of international experts with good knowledge of the recovery process and the regional dynamics could be constituted to provide the necessary guidance. An international platform with a body of experts easily accessible for consultation would be of great help. There is a need for an established and tested methodology for rapid assessment of needs, rapid programming of action and rapid deployment of required technical teams. The international platform could network and document skills,

knowledge and best practices of recovery and reconstruction and, draw from their experience for the benefit of affected countries. It can also provide training to personnel engaged in recovery and reconstruction.

- With a multitude of agencies, there is often a lack of coordination leading to them often working at cross-purposes. Thus, there is a need for an international platform, which would coordinate the activities of agencies engaged in the implementation and management of recovery projects. The international agency could also help in the development of international protocols, which would aid the international agencies in their overseas work.

- A financial mechanism to sustain the recovery efforts should be worked out. While the specifics would vary from one disaster to the next, a broad framework to fund the reconstruction projects should be worked out. This funding mechanism could be worked by major international agencies in unison working under a broad platform. A universally approved formula would provide uniformity and greater efficiency to the international efforts.

- A comprehensive reconstruction plan incorporating risk reduction measures and promoting sustainable development should be formulated. The plan should be conceived in consonance with the community's needs and vulnerability. It is evident from the above case studies that for international efforts to be effective, they have to move beyond physical reconstruction to a more sustainable long-term development.

- The involvement of the local communities and the incorporation of their needs would enhance the viability of the international projects. Most international aid is largely routed through the central or state governments. The governments are often not tuned to the grassroots realities and as the report on the Latin American disasters points out the outcome of the international intervention in the region was a series of reports and publications that were of no use to the local communities. There should be emphasis on capacity building of the community and increasing its economic self-sufficiency. The technologies to be used should be compatible with the communities' capacity and transfer of technology to the community should be the goal.

- The endemic poverty in most of the regions under study increased its vulnerability to disaster, thus for any disaster mitigation measures to be effective would have to address socio-economic problems. The 'window of opportunity' provided should be utilised to usher in long-term structural changes in the economy, polity and society. For the above measures to be formulated and implemented requires a level of expertise and knowledge often beyond the resources of a single organisation. An international recovery

platform with a body of experts and a comprehensive database would be of great assistance to international agencies undertaking structural recovery programmes.

- There is a need for an advisory group under the aegis of an international recovery platform to provide guidance to the international recovery efforts. This group would be comprised of a international and regional experts on the subject and representatives from international organisations and NGOs.

- There are at present no standards to evaluate the impact of the international efforts. Most contributions are generally evaluated in monetary terms with no attempt to assess the impact on risk reduction or sustainable development. It is therefore vital to have a body, which could set benchmarks based on comprehensive reviews of the work done by the international agencies.

It is evident from the above that recovery and reconstruction are complex processes requiring a level of expertise often beyond the capacity of individual nations and organisations. This has become very evident in the recent Tsunami which devastated countries across continents killing more than 300 thousand people and displacing people in regions as diverse as Indonesia, Thailand, Sri Lanka, India and even Somalia in Africa. The UN agencies have called it the biggest relief operation to be undertaken in recent times and also the costliest with many billions of dollars being spent. In such situations, the need for an international recovery platform, which will help evolve appropriate frameworks and mechanisms to coordinate international responses and efforts, becomes even more imperative.

Additionally this platform would provide training to personnel engaged in recovery and also help in the development of a database of recovery and reconstruction experiences and best practices in non-disaster situations, as well as a national socio-economic, cultural and disaster profile. This information could be readily accessible in times of disasters and go a long way in streamlining the efforts of the international recovery platform. While it is undeniable for global sustainable development, there is a need for efficient recovery and reconstruction mechanisms.