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# Disaster Risk Management and Vulnerability Reduction:

## Protecting the Poor

SUVIT YODMANI

Suvit Yodmani is the Executive Director of the Asian Disaster Preparedness Center, Bangkok, Thailand. The paper is to be delivered at the “**Social Protection Workshop 6: Protecting Communities—Social Funds and Disaster Management**” under the *Asia and Pacific Forum on Poverty: Reforming Policies and Institutions for Poverty Reduction* to be held at the Asian Development Bank, Manila, 5-9 February 2001.

## I. Introduction

At a time when disasters take an increasing toll of human lives and material assets, both globally and in the Asian region, it is timely and relevant that this Asia and Pacific Forum on Poverty recognizes the link that disaster management has to its central theme of poverty reduction. In my paper I will highlight that proactive disaster management, focusing on reduction of disaster risks, can have a significant contribution to the goals of protecting vulnerable communities, their lives, assets and livelihoods.

## II. Paradigm Shifts—From Relief and Response to Disaster Risk Management

In this context it is appropriate to briefly trace the paradigm shift that has occurred in disaster management theory and practice over the last several decades, globally and in the Asian context.

Till a few decades ago, disasters were viewed as one-off events and responded to by governments and relief agencies without taking into account the social and economic implications and causes of these events. With significant advancement in our understanding of the natural processes that underlie the hazardous events, a more technocratic paradigm came into existence that believed that the “only way to deal with disasters was by public policy application of geophysical and engineering knowledge”. These approaches looked at disasters as exceptional events, not related to the ongoing social and developmental processes. Gradually this attitude changed to an emphasis on preparedness measures, such as stockpiling of relief goods, preparedness plans, and a growing role for relief agencies such as the Red Cross. This “contingency planning” approach certainly improved the efficiency of relief agencies but left a lot to be desired in terms of appropriateness and effectiveness of relief.

Over the four decades from the 1960s to the 1990s, there was an exponential increase in human and material losses from disaster events, though there was no clear evidence that the frequency of extreme hazard events had increased. This indicated that the rise in disasters and their consequences was related to the rise in the vulnerability of people all over the world that was induced by the human determined path of development. Noteworthy also was the recognition that this increase in vulnerability was not uniform. There were large variations across regions, nations, provinces, cities, communities, socioeconomic classes, castes, and even genders. Fredrick Cuny (1983, 14) in his much acclaimed book *Disasters and Development* cites a classic example. An

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earthquake of magnitude 6.4 occurred in San Fernando, California in 1971. In a city of over seven million people, only 58 deaths were reported. Two years later, a similar earthquake, registering a magnitude of 6.2 on the Richter scale, in Managua, Nicaragua reduced the center of the city to rubble and killed over 6,000 people. Similar patterns can be seen in other recent disasters. From this realization that people's vulnerability is a key factor determining the impact of disasters on them, emphasis shifted to using "vulnerability analysis" as a tool in disaster management. In recent years, a more comprehensive approach, that of disaster risk management, has emerged. This approach has three distinct but interrelated components: hazard assessment, vulnerability analysis, and enhancement of management capacity, and is more closely integrated with the ongoing development processes. Disasters are no longer viewed as extreme events created entirely by natural forces but as unresolved problems of development. It is now recognized that risks (physical, social, and economic) unmanaged (or mismanaged) for a long time lead to occurrence of disasters.

This evolution of approaches from relief and response to risk management has begun to influence the way disaster management programs are now being planned and financed. There are initiatives aimed at reducing social and economic vulnerability and investing in long-term mitigation activities. Unfortunately such initiatives aimed at prevention and mitigation are few, poorly funded, and insignificant in comparison with money spent by donors and development banks on humanitarian assistance and relief, as well as on postdisaster reconstruction.

Another weakness of such initiatives that they are often taken up in the formal sector of the economy, and bypass the poor and the most vulnerable sections of society. As Maskrey (1999, 86) points out, "in the year or so between the occurrence of a disaster and approved national reconstruction plans, many vulnerable communities revert to coping with risk, often in the same or worse conditions than before the disaster actually struck." Therefore, in the current paradigm of risk management approaches, there is more room than ever before for addressing the issues of risk reduction for the poor. This is also in consonance with the paradigm shift in the mainstream development practice that is now characterized by emphasis on good governance, accountability, and greater focus on bottom-up approaches.

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### III. Community-based Approaches to Disaster Management

A major cause for this paradigm shift is the experience of disaster management, particularly in Asia, related to severity of its disaster risk. Almost half of the disasters in the world occur in Asia, making this region the world's most disaster-prone area. In the last two years alone, we have experienced devastating earthquakes in Indonesia; Taipei, China; and Turkey; major floods in Bangladesh, Cambodia, People's Republic of China, India, Thailand, and Viet Nam; and numerous cyclones, including the super-cyclone that devastated the Indian state of Orissa in October 1999. Droughts too affected India, North Korea, and Pakistan, while snowstorms affected Mongolia.

Poverty levels are rising in Asia. In every disaster it is communities that are on the receiving end, and those who suffer most and are the first casualties are the poor. One contributing factor is that more and more people occupy marginal and exposed land. The poverty that drives people to live in precarious locations and adopt unsustainable means of survival, aggravates what may have otherwise remained minor emergencies. An obvious example of this is settlement and farming on riverbanks prone to flooding or urban squatters living on hazardous landslide-prone slopes. Thus it is the poor within communities who are the most vulnerable to disaster risk and must be the focus of disaster risk reduction efforts.

In addition to this focus on risk management, there is another growing trend taking place in Asia: the shift from a top-down to a bottom-up approach. This is due to, on one hand, communities taking a much stronger role in disaster management to reduce risk. On the other hand, the aid and development agencies are finding new approaches to disaster management that attempt to merge the disaster reduction strategies defined by policymakers with the needs and resources of the local community, where eventually the success and failure of disaster management activities will be tested.

Before we go further, we need to make clear what we mean by disaster management and community-based disaster management and why it is necessary.

When we ask ourselves "What is a disaster?" We tend to think of flood, earthquake, and cyclones, and the associated effects, loss, and damage. When we ask ourselves "Who works in disasters?" we tend to think of the fire brigade, ambulance, rescue workers, and so on. We tend to associate disasters with emergencies and disaster management with emergency response.

But what happens if we ask ourselves about all the different factors and processes that create the risk of disaster? In one way or another in any community risks are always present. The possibility that a disaster might or might not occur will depend on whether those risks are adequately managed or not. Looking at disaster from this perspective the management of the emergency itself ceases to be a priority. The priority becomes the management of those risks, because if they are managed ineffectively, it can lead to disaster.

When we ask ourselves which organizations should be involved in these actions, we see that other kinds of organizations become involved, not just emergency response organizations, but also local governments, planning departments, and developmental nongovernment organizations (NGOs). Importantly, we realize at the same time that it is something communities themselves are involved in.

Community-based disaster management can be seen as risk reduction programs designed primarily by and for the people in certain disaster-prone areas. Disaster mitigation using government and institutional interventions alone is insufficient because they pay little attention to addressing the community dynamics, perceptions, or priorities. At the same time, local communities are often either unaware of these formal disaster management interventions or they find the interventions inappropriate due to the lack of recognition of community's vulnerabilities and capacities, or they lack the external resources or technical support to supplement their own initiatives and capacity.

Just as every individual, family, organization, business, and public service within a community will be affected by a disaster; each has a role to play in managing disaster. Looking at it practically, the multitude of actions that must be taken to implement an effective disaster management program requires the participation of the entire community.

Another reason for implementing community-based approaches is that communities are knowledgeable about the disasters happening in their environment and are able to anticipate them in some cases. They may not be scientific but the richness of experience and indigenous knowledge is a resource to be recognized.

These resources need to be tapped and developed. In many cases, we learn that with proper training and information the communities are able to safeguard and minimize the disaster risks. It is

essential that local capacities be strengthened to assess risks and develop mitigation strategies that are based on the communities' human, financial, information and material resources.

Over the last two decades there has been a growing realization that disaster management is most effective at the community level where specific local needs, resources, and capacities are met. It is at the local level that the physical, economic, and social risks faced by the poor can be adequately assessed and managed. Some initiatives in this direction have come up in recent years. For the last four years, the Asian Disaster Preparedness Center (ADPC) has been holding regional and national training program on "community-based approaches to disaster management". In the coming years this training activity will be transferred to national, provincial, and local levels in partnership with national and local organization. A number of regional disaster research networks such as La Red in Latin America, Duryog Nivaran in South Asia, and Peri Peri in southern Africa are also working on local level vulnerability issues.

#### **IV. Institutional Arrangements for Disaster Management**

Community-based disaster management requires an enabling and supportive institutional framework. In the last two decades, particularly during the 1990s, which was observed as the International Decade for Natural Disaster Reduction, several countries in the Asian region undertook the establishment of new or revamped institutional arrangements for disaster management. Recognizing the cross-sectoral nature of action required both in preparedness planning and response, and even more so in mitigation, these took the form of interministerial national councils or coordinating boards. Such multidepartmental bodies were also set up at the state/province, district, city, and village levels. For example, the Philippines and Indonesia established the National Disaster Coordinating Council and the National Coordinating Board for Disaster Management (BAKORNAS). This is supported by a network of regional, provincial, city, and *barangay* (village) Disaster Coordination Councils. Coordination with NGOs and United Nations agencies as well as initial efforts to involve the private sector were another theme. However, being new initiatives often led by ministries or departments responsible for relief distribution or civil defense, they found it challenging to provide leadership to the work of a wide range of ministries. So too the development of national, provincial, and district-level disaster management and mitigation plans has been a new effort during the decade. For example, such plans were developed in Cambodia and Sri Lanka through a

consensus building consultative process. The consolidation of this framework and the disaster management planning efforts for community based work focused on vulnerability reduction remains a forthcoming thrust. Having been closely involved with these efforts, ADPC will continue to work closely with the governments and other stakeholders in the ongoing development of these arrangements.

#### **V. Experience in Selected Countries in Asia**

Let us take two examples of community-based disaster management from Bangladesh and Nepal, which have been at the forefront in developing community-based disaster initiatives in disaster management.

For example, the Bangladesh Red Crescent Society has a Community Based Disaster Preparedness Program in Cox Bazar. The coastal areas and off-shore islands of this district are regularly frequented by cyclone and tidal bore. The objective of the Program is to enable the community to deal with the impact of cyclone-related disaster using participatory methods aimed at strengthening the self-help capacities of the people. Examples of some community-based initiatives include: the formation of Village Disaster Preparedness Committees; development of an extensive awareness raising campaign; training of the community in disaster preparedness, community first aid, and cyclone warning signals; shelter maintenance; and implementation of disaster preparedness measures such as installation of drinking water and food storage facilities and construction of raised poultry sheds.

There is also the well-known Cyclone Preparedness Program (CPP) of the Bangladesh Red Crescent Society. CPP demonstrates the importance of usable and understandable information and a good network to disseminate this information. The Bangladesh Red Crescent Society has developed a comprehensive system of passing on special weather bulletins containing cyclone warning signals from the Bangladesh Meteorological Department to households. Other CPP activities include training of volunteers, public awareness campaigns, and cyclone drills and demonstrations.

CARE Bangladesh also implements a number of community-based initiatives. CARE Bangladesh used food-for-work to help communities with community “flood-proofing” after the 1998 floods. This includes raising of house plinth to a 5-year flood level, schools and community centers to

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a 20-year flood level, raising hand pumps and building foot paths, as well as village-level saving schemes that are used as a safety net in a disaster to meet immediate relief needs.

Under the Asian Urban Disaster Mitigation Program of ADPC, CARE Bangladesh is implementing the Bangladesh Urban Disaster Mitigation Project. The project will begin with the establishment of community-based flood mitigation and disaster preparedness system in the two demonstration project sites, the municipalities of Gaibandha and Tongi. Through this process, the project aims to improve the capacity and skills of the communities to manage risk and apply mitigation skills in the urban areas. It is expected that the best practices and lessons learned from the two demonstration project sites will be replicated to other municipal areas of Bangladesh.

The Kathmandu Valley Risk Mitigation Program, being implemented as a part of ADPC's Asian Urban Disaster Mitigation Program by Nepal Society for Earthquake Technology (NSET) and Geo Hazards International (GHI) has also focused on enhancing the safety of rural and urban communities by retrofitting and reconstructing vulnerable school buildings. The program involves the active participation of community leaders in the vulnerability assessment process and of local masons, traders, and development committees in construction. Involvement in this program promotes the message of the need for seismic strengthening of all vulnerable buildings and develops the skills of masons and technical personal in building safer buildings. A unique feature of the program is the partnership between the high quality of technical input produced by NSET and the community participation and contributions mobilized through the School Management Committees.

## **VI. Focus on Vulnerability Reduction**

Let us return to a key issue in vulnerability reduction. While it is clear that the poor are often the most affected in a disaster, it is perhaps too simplistic to assume that there is a direct and absolute correlation between vulnerability and poverty. Poverty, as an indicator of lack of access to resources and income opportunities, is one of the several dimensions of vulnerability. In addition to the economic dimension, there are also other aspects of social positioning such as geographical location, age, gender, class, ethnicity, community structure, community decision making processes, and political issues that determine poor people's vulnerability. Secondly though poor communities are economically vulnerable, they very often have social, cultural, and political capacities to cope with disasters, which are the greatest assets in disaster management.

Risk reduction strategies for the poor should work toward reducing economic vulnerability and at the same time capitalize on (and perhaps nurture) the inherent social and cultural capacities of the poor communities. The existing local level mechanisms for managing risk should be identified and strengthened. For example, local level access to credit for risk reduction activities (such as retrofitting of schools) could be channeled through pre-existing village councils.

Risk reduction is not a stand-alone sectoral theme but needs to be consciously integrated into our planning and implementation of development. It is both tragic and futile to see the benefit of years or decades of development investment washed away in a typhoon or flood, when marginal additional investment in incorporating hazard resistance could have protected these assets. Recognition of the proneness to natural hazards of each geographical location and the use of available hazard maps to assess risks needs to become an integral part of each project appraisal by development agencies. Thus disaster risk assessment should be part of the project appraisal process just as environmental impact assessment is; and construction adhering to higher hazard resistance standards becomes mandatory for hazard-prone locations.

It is becoming clear that the nature of the vulnerability of the poor is complex and varied. Hence there are no straightforward solutions for risk reduction for the poor. It will require multi-dimensional approaches and innovative institutional arrangements to achieve the goal of risk reduction for the poor. Nonetheless, the overall objective of risk reduction for the poor should be to make development sustainable for them.

I would like to emphasize that communities alone cannot implement community-based disaster management. It will take concerted efforts at different levels and across different sectors to improve our understanding of the linkages between poverty and vulnerability and to devise effective mechanisms for risk reduction for the poor.

#### **VII. ADB's Role in Disaster Management and Mitigation**

The Asian Development Bank (ADB) has been in the forefront in recognizing the adverse impact of disasters on development and it has played a pioneering role in promoting the incorporation of disaster reduction in development planning. Loans extended by the Bank in the area of disaster mitigation and postdisaster rehabilitation was over US\$2B (at real 1997 prices) during the 10-year period of 1988-1998. Additionally, the Bank has made more than 30 disaster-related technical

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assistance (TA) loans/grants. ADPC has been proud to be associated with two regional technical assistance projects (RETAs) and one national grant. One RETA studied disaster management practices in selected developing member countries (DMCs), organized a seminar and published two highly acclaimed handbooks, *Disaster Mitigation in Asia and the Pacific* (ADB 1991) and *Disaster Management: A Disaster Manager's Handbook* (ADB 1991), and *Disaster Mitigation: The Role of the Asian Development Bank* (ADB 1991). A second RETA supported the institutional strengthening of ADPC.

Seminal ADB papers on its role in disaster mitigation and its experience of postdisaster rehabilitation have focused on important future directions for the Bank in the field of disaster management:

- (i) Being a major source of postdisaster rehabilitation funding, there is a clear need for the Bank's continued involvement in this field and for improvement of loan performance for this purpose.
- (ii) Longer-term postdisaster reconstruction programs should go beyond the status quo ante and be aimed at vulnerability reduction. Such programs should have broad sectoral/structural objectives and be well integrated into the long-term development programs of DMCs, thus benefiting from detailed planning studies and effective institutional support.
- (iii) In all operations funded by it the Bank should set an example by incorporating disaster risk assessment as an integral part of the approval process and adopting appropriate mitigation measures in project implementation.

The third technical assistance supported by ADB and is being currently implemented by ADPC is to assess and strengthen disaster management and mitigation in two of the largest Indian states of Uttar Pradesh and Uttaranchal. This ADB project, initiated under a postdisaster assistance following the Chamoli earthquake in 1999, is focused on advising the two state governments in developing new institutional arrangements and developing state and district level disaster management and mitigation plans and statewide disaster Management Information Systems. The project is a pioneering new initiative by the ADB in proactively promoting disaster reduction measures in anticipation of future disasters and represents an innovative and exemplary new direction in

development assistance funding. This thrust should be further continued in funding of innovative projects of this kind in other countries, provinces and more importantly at the community level. This will enable the Bank to effectively implement its poverty reduction agenda and continue its leadership role in disaster reduction activities.

### **VIII. Conclusion**

I would like to end by emphasizing that disaster risk reduction is a proactive approach that needs to be integrated in regular development planning and poverty reduction program at all levels. Policymakers in the development and poverty reduction sector need to recognize that disasters are not just “setbacks” or “roadblocks” to development, but result from the paths that development is pursuing. Thus by changing our planning processes, and incorporating disaster risk assessment in the planning of all new development projects, we can make sure that the future natural hazards will encounter resilient communities that are capable of withstanding their impact and therefore remain mere emergencies rather than disasters. We need to recognize that we can mitigate the impact of disaster and make mitigation the cornerstone of our disaster management interventions. We must shift the focus to the most poor and vulnerable sections of our society, and ensure that our interventions are community-based and driven. With its pioneering and leading role in development in the region, and its emphasis on poverty reduction, I would urge ADB to continue to provide leadership to various key stakeholders in the complex process of integrating community-based disaster risk and vulnerability reduction in the development agenda.