

DISASTER RECONSTRUCTION AND RISK MANAGEMENT FOR POVERTY REDUCTION

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After Hurricane Katrina struck the Gulf Coast of the United States in late August 2005, and the world was shocked by the images of the thousands of victims stranded in the Superdome of New Orleans, many people asked, "How could this happen in the United States?" The images broadcast from New Orleans and other affected areas resembled too closely what we typically see in developing countries. Yet while the parallels are many, the most striking one is the impact of natural disasters on the poor. While those with the means to heed the evacuation order fled the area, those left behind were the most vulnerable: the sickest, the oldest, the youngest and the poorest. Katrina provided a grim reminder that any city can be caught unprepared for disaster, while also reminding us of the level of poverty that exists in parts of one of the world's wealthiest nations.

The tragedies that Katrina wrought upon the United States are much more common in developing countries, particularly among the poorer segments of the population. It is this undeniable link between poverty and the impacts of disasters that makes disaster risk management an integral part of the World Bank's mission to fight poverty. Natural disasters are a major source of risk for poor people. However, this vulnerability also happens to be one of the most overlooked dimensions of poverty. One possible reason is that disasters have traditionally been considered a humanitarian assistance issue rather than one of development. Relief and development were viewed as two different "industries" with very separate mandates, actors and sources of funds.

This approach is being reconsidered by members of the international community, and particularly by its largest reconstruction and development investor, the World Bank. If the Millennium Development Goals are to be achieved, then the reduction of disaster risk must be addressed in an aggressive manner. This article reviews various experiences in disaster risk management, particularly those of the World Bank, explores the inadequacies of the traditional approach that has focused on reaction and recovery and looks at efforts to change the policy frameworks that attend this field.

THE WORLD BANK'S DISASTER PROJECT PORTFOLIO

The World Bank has a long tradition of supporting the disaster management efforts of its client countries, particularly in post-disaster reconstruction. In fact, “reconstruction” is literally its middle name—the International Bank for Reconstruction and Development. Beginning with the European reconstruction efforts after the Second World War, the World Bank has always played a major role in post-disaster reconstruction and recovery. Since 1980, the World Bank has approved more than \$14 billion to support over 160 emergency reconstruction projects. However, this underestimates the amount the World Bank has provided in post-disaster reconstruction support, as these figures do not include amounts reallocated from ongoing development projects in the immediate wake of disasters. In these scenarios, the World Bank typically reviews the ongoing country project portfolio to see what funding can be released for emergency relief. These amounts remain under the original loan or credit agreements, and often go unnoticed in disaster lending figures. The amount of reallocated funding probably adds another 30 percent to overall reconstruction figures.

Through its development projects, the World Bank has also provided support for *ex ante* risk reduction investments. Nearly 390 additional projects approved since 1980 have components dedicated to mitigating the impacts of disasters. The total lending amounts of these initiatives near \$27 billion. However, this figure overestimates the amount invested in pre-disaster risk reduction, as it includes the entire loan amount of projects that may include risk reduction components. For instance, a forestry project may incorporate funding to train firefighters, promote fire prevention in communities, build firebreaks, etc.

To the extent that development investments help reduce poverty and its attendant vulnerabilities, World Bank portfolios in their entirety can be considered investments in disaster risk reduction. However, as discussed in the lessons below, this will not be the case until development models actively integrate disaster risk management.

LESSONS FROM EXPERIENCE IN DISASTER RECOVERY

The organization of the World Bank's operations into distinct lending sectors has contributed to an ad hoc approach to disaster risk management for decades. Other “hard” sectors of World Bank lending, such as water, transport, agriculture, health and education, have been managed more strategically, often with sector analysis and strategies that guide project design. Other multidisciplinary topics that had also been neglected for many years, such as environment and gender, were eventually recognized as priority areas. Operations then benefited from a more strategic approach to these areas, and the development of safeguards, requiring each project design to address how these issues were handled. However, disaster risk management, while constituting a substantial portion of World Bank lending, has remained

until recently an “orphan sector” that lacked strategic planning.

This began to change in 1998, when the World Bank established a central unit to focus on disaster risk management. The Hazard Risk Management team (formerly called the Disaster Management Facility) dedicated itself to monitoring the World Bank’s disaster-related interventions as a sec-

tor of investment, with the aim of extracting lessons to inform future World Bank engagement in the area. The unit’s objectives are to facilitate a more strategic response to disaster emergencies and to enhance the World Bank’s poverty alleviation efforts by integrating effective disaster risk reduction into development activities.

Disaster-risk management has remained an “orphan sector” until recently.

The first objective in improving the World Bank’s disaster emergency response focused on efforts to extract lessons from the World Bank’s many reconstruction projects, and the experience of other partners. Indeed, working with external partners has been critical to tapping into the wide array of disaster risk management expertise around the globe. In 2000, the World Bank launched the ProVention Consortium, a global coalition of governments, international organizations, academic institutions, the private sector and civil society organizations dedicated to increasing the safety of vulnerable communities and to reducing the impact of disasters in developing countries. The ProVention network includes organizations involved in all phases of disaster risk management—from risk analysis to emergency relief to post-disaster recovery. Forging links and closer interaction with these agencies has promoted new thinking in the field, and has ushered in the development of innovative tools for managing risk.

With the ProVention Consortium, the World Bank led an inter-agency review of lessons from recovery efforts following five major disasters: the Bangladesh floods of 1998, Honduras after Hurricane Mitch in 1998, the 2001 earthquake in Gujarat, India, the 2000 and 2001 floods in Mozambique, and the 1999 Marmara earthquake in Turkey. Based on these five cases, as well as reviews from completed World Bank reconstruction operations, a number of lessons have emerged that relate to timing and sequencing and the overall focus of disaster recovery interventions.

TIMING AND SEQUENCING OF ACTIVITIES

Agencies involved in disaster response and recovery tend to plan around distinct phases of “relief,” “recovery” and “development.” Current World Bank policy is very clear that it is not a relief organization, but rather supports the restoration of “assets and production levels in the disrupted economy.”¹ UN agencies have more recently begun to promote the concept of “transition recovery,” or the period during which relief activities have drawn to a close, but recovery is yet to begin.² One example is in Aceh where, one year after the Indian Ocean tsunami of 2004, large-scale housing

reconstruction has yet to begin, and 67,000 people remain in temporary barracks or rotting tents. While people wait for permanent housing, a program instituted in the first months of 2006 focused on ensuring that all internally displaced people (IDP) have suitable transitional housing.³ Although the concept of transition recovery is useful for agency planning purposes, the design of new phases reflects the failure of aid agencies to provide adequate support to disaster recovery—just as the very need for disaster reconstruction assistance reflects the failures of development.

In fact, all of these phases are artificial terms. The ProVention case studies concluded that recovery operations converge with the development process, and that

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many communities live in a permanent state of recovery, because “temporary relief” has become a permanent coping strategy.⁴ In many countries, we see that “temporary housing” often becomes permanent housing for the poor, and, due to improper construction standards, the cycle of vulnerability

continues. The staff of agencies engaged in post-disaster relief or recovery activities should be trained to work flexibly throughout these varying contexts.

Recovery projects themselves are often too short to address the projected length of recovery. Real-time recovery from a significant disaster can take five years or more. However, donors often have their own timetable, which commonly ranges from one to three years. For example, U.S. relief for Honduras following Hurricane Mitch towards the end of 1998 had to be spent by December 2001. Six years later, field assessments revealed that hundreds of people remained in temporary shelters.⁵ World Bank policy dictates that emergency recovery projects last up to three years, although they are extended in many cases, reflecting the longer timeframe of recovery. The pressure to disburse funds can result in hurried design and implementation that renders some projects inappropriate.

In this regard, governments and donors need to be realistic about what can be achieved in the short and longer terms. There is certainly a tendency to take advantage of the brief window of opportunity that these situations provide to incorporate numerous disaster prevention components into emergency operations. An ideal and comprehensive reconstruction strategy should merge with development planning and address the long-term issues related to disaster reduction. However, emergency recovery projects need to take into account the weakened administrative capacity that disasters bring, while exploiting the opportunity to strengthen risk management capacity. Emergency operations should focus on urgent reconstruction priorities. And certainly any reconstruction of housing, public buildings and infrastructure should include disaster-resistant technologies and safe siting. However, strengthening institutions and capacity for effective disaster prevention is a longer-term investment that requires careful design and an extended implementation schedule. The

World Bank has taken an increasingly phased approach in providing disaster recovery assistance, including studies on emergency operations to identify long-term risk reduction needs, and then designing activities for a follow-on investment.

One of the most basic principles of sound development management is placing local communities in the driver's seat of planning, design and implementation so that activities adequately reflect their needs and assure ownership and sustainability. This same principle applies to disaster-recovery projects, wherein community participation reaps myriad benefits that include addressing psychological trauma, capacity building, improved governance and increased social capital. However, the urgency of rapid delivery, both real and perceived, can often lead to a perception on the part of aid agencies that proper community consultation is not feasible. The ProVention case studies found a high failure rate for recovery programs that did not explicitly incorporate the concerns of affected populations.

One year after the Indian Ocean tsunami, a report on the recovery status in Aceh noted that while the event left many government units in disarray, community leaders took an active role and ensured that nearly everyone had basic shelter in the immediate aftermath, and that there were no unchecked epidemics. This level of participation is credited with convincing the government of Indonesia to make a firm commitment to using a community-driven development approach to the recovery efforts. There are certainly difficult tradeoffs involved with ensuring an adequate level of participation and promoting swift recovery. The Aceh report noted that while these tradeoffs may slow the pace of reconstruction, they hopefully enhance its sustainability. Only time will tell in this case, but there is evidence from other countries to indicate that affected communities want to participate fully in disaster response, even if it implies slower implementation.⁶

FOCUS OF RECOVERY EFFORTS

Past experience indicates that large-scale infrastructure and housing are major investments in disaster recovery, accounting for as much as 50 percent of total funding. In contrast, insufficient attention has been given to the impact of recovery interventions on people's livelihoods. While the rehabilitation of infrastructure and housing are key tools in restoring people's productive capacities, the ProVention case studies note that this connection was not always made, and they recommend further analysis on whether these measures enhance or negate livelihood strategies.⁷

Direct support for community subsistence through such mechanisms as cash payments, food or cash for work programs, have traditionally been considered an activity of relief agencies, and not a focus of the World Bank's. In fact, World Bank policy states, "The [World] Bank finances investment and productive activities, rather than relief or consumption." However, over the years, the World Bank has realized the importance of maintaining livelihoods of disaster-affected communities

in order to prevent their slipping deeper into poverty. The World Bank's policy on financing cash payments has been waived many times and recent reconstruction projects increasingly include livelihoods components. World Bank policy on emergency lending is currently under revision, and the new policy will likely incorporate this change.

Housing reconstruction is often a major feature of the World Bank's relief programs. As a top priority for disaster-affected communities, this is sometimes the most political issue in a recovery program, and one of the most desirable for donors to support in terms of visibility. However, the complexities entailed in this realm of disaster recovery go beyond politics. One disaster review goes so far as to suggest that agencies question whether they have the mandate and capacity to engage in housing reconstruction.⁸ In Honduras after Hurricane Mitch, for example, many NGOs got involved in housing reconstruction for the first time, which led to many incidents of incomplete or sub-standard housing projects. In Tegucigalpa, some housing resettlement projects remained largely uninhabited and un-serviced four years after the event. In some cases, the time limit of external funding was blamed for hurried and incomplete projects.

The World Bank, however, has extensive experience in reconstructing housing after disasters. Some lessons specific to housing reconstruction include the following:

- ♦ Proper sequencing of housing reconstruction—land assembly, distribution of materials and construction of infrastructure networks and so on—is important.
- ♦ Land acquisition should be one of the first steps to take, and take quickly, after a natural disaster.
- ♦ Relocation is a major issue. Decisions to relocate affected populations should be contingent upon: (i) consent of the target population; (ii) legal tenure of new sites and responsible agency's control over them; (iii) accessibility of new sites for intended population. There is a need to assess whether the reasons for relocation are technically correct before planning to relocate people or entire villages. The tendency to return an evacuated population is almost irresistible in the case of coastal communities, for instance. Moreover, when relocating people away from one risk, it is important to keep exposure to new risks in mind. While it may be important to settle people away from flood-prone areas, in situ reconstruction should be promoted after earthquakes to take advantage of existing infrastructure and community facilities, while minimizing resettlement and its attendant social dislocation. In situ reconstruction has stimulated considerable self-help efforts in low-cost reconstruction. It also provides a good opportunity to build on the knowledge growing out of the experiences of other developing countries as they face similar emergencies.

- ♦ Housing technology should be simple and culturally appropriate.
- ♦ Local construction materials should be used to deal with building bottle-necks.
- ♦ Cost recovery procedures vary in form, advantages and disadvantages.
- ♦ Some operations indicated that tight quality audit arrangements with independent teams are essential for large-scale emergency reconstruction of private dwellings by owners and for the reconstruction of public infrastructure.

IMPACTS

Major disasters have sometimes been cited as catalysts to enact social change on issues that would not advance in “normal” times. A shining example from recent experience is the peace accord signed in August 2005 between the Free Aceh Movement (GAM) and the government of Indonesia, bringing to an end a nearly 30-year conflict in the region. Progress on the peace agreement is credited in part to the impact of the tsunami, and with the significant resources flowing into the region now, there is an unprecedented opportunity for lasting peace and recovery.⁹ In order to nurture this fragile accord, it will be critical to link the tsunami recovery programs with ongoing conflict resolution efforts and to ensure that recovery from both disasters is carried out in an equitable and transparent manner.

The promotion of gender equality is another important area that can often be addressed easily and speedily in the recovery process. For example, deeding newly constructed houses in both family names, including women in housing design and construction, promoting land rights for women, building non-traditional skills through income-generation projects, distributing relief through women, and funding women’s groups to monitor disaster recovery projects are practical steps that can be taken to empower women, and, at the very least, to avoid the reinforcement of any existing gender inequities. In the five ProVention case studies, attention to the promotion of gender equity was fairly limited, although some good practices were identified. In Honduras, for example, increased female representation in community organizations helped empower women in other areas of life, according to those involved. In Mozambique, women who were interviewed in Chokwe province claimed that gender relations had changed as a result of the flooding. This was due to aid agencies insisting on gender equity in the form of participation in housing committees that supervised construction, as well as their inclusion in training courses for craftspeople, which led to the formation of a women’s carpenter association.¹⁰

Given that natural disasters have wide-reaching impacts, recovery programs need to be actively pro-poor, and can provide an effective vehicle for poverty reduction. Many project documents note that the poor are hardest hit by disaster, and

Recovery programs can easily promote gender equality.

therefore seem to assume the connection to recovery programming helping the poor. Perhaps this is a safe assumption in some cases, for example, Mozambique, where nearly 70 percent of the population live below the poverty line. In this case, the community survey found that following the 2000 floods, agriculturally-based rural communities with low levels of capital investment or agronomical inputs were generally

Recovery programs need to be actively pro-poor.

well served by the World Bank's livelihood strategies which were restored shortly after the floods. However, the Mozambique government and agencies generally avoided the issue of large asset depletion like that of cattle and fisheries equipment, which has resulted in some rural communities being significantly more vulnerable than they were before the floods. It is encouraging that newer disaster recovery projects prepared by the World Bank have an increasing focus on supporting the livelihoods of the poor through cash grant schemes, microfinance programs and recovery of small and medium enterprises. Unfortunately, the impact of recovery programs on the poor has not been systematically tracked and needs more quantitative analysis.

The lessons described above, among others, are critical to improving the post-disaster recovery support the World Bank provides to its borrowers. Perhaps a more important realization permeating the World Bank and other members of the international community over recent years is that of the need to treat disasters as part of development rather than as disruptions to it.

Helping to put disaster risk reduction on the World Bank's agenda as a priority were the early efforts of the Hazard Risk Management team with several partners to document the economic and longer-term developmental impacts of disasters. Prior to this, there was a relatively small body of development literature that focused on this subject, which relegated disasters to the sole mandate of humanitarian assistance organizations. When poverty reduction is measured in terms of GDP growth, it is necessary to show how it is impacted in order to make disasters a priority for development.¹¹

Some economists argue that disasters can have a positive impact on emerging economies due to the post-disaster construction boom and the introduction of new and improved technologies.¹² This would not be the case for hazards such as droughts, which cause little physical damage but severe direct and indirect damages to household economies. These economists' views also do not account for the unequal distributional impacts of disasters, nor their social and human consequences.

Over-reliance on international assistance for post-disaster relief and recovery has major limitations. Multilateral assistance can take a long time to disburse. As a result, the human impact and level of economic disruption are exacerbated by delayed responses. There are also limitations to consider regarding the effectiveness of relief and reconstruction aid. While resource allocation requires careful targeting to reach those most affected, the urgency of the situation and the pressure (both on

donors and recipient governments) to disburse funding detracts from the planning process. Resources may be targeted based on bureaucratic or political considerations, rather than directed to those expenditures and investments most likely to restore economic activity quickly. In many cases, there is a great deal of leakage of funds earmarked for response and recovery, and the aid does not reach the poor.

And while a construction boom may provide some short-term benefits, researchers such as Charlotte Benson and Edward J. Clay have done much to document the longer-term adverse impacts of disasters on developing economies.¹³ The quantity of funds available for relief and reconstruction may not be sufficient, even with additional borrowing and grants from the donor community, leaving a substantial resource gap. Moreover, the diversion of limited fiscal resources away from other key development projects can have longer term adverse economic effects. Overseas Development Institute notes that disasters have little impact on overall aid flows, and that donors respond to disasters by reallocating money rather than providing fresh funds.¹⁴

FROM RECOVERY TO RISK REDUCTION

Mainstreaming disaster risk management into development requires the incorporation of hazard risks into policy frameworks, and allocating the necessary resources to manage those risks. It also requires an understanding of the relationship between poverty and disasters, and how they reinforce each other. The German aid agency (*Deutsche Gesellschaft für Technische Zusammenarbeit*, or GTZ) calls poverty and disasters the “co-dependent pair” and notes that economic development can in some cases increase disaster vulnerability.¹⁵ Indeed, Keith Smith calls for a balanced view of disasters, integrating the behavioral model that focuses on the geophysical extreme as the cause of the disaster, and the structural model, which emphasizes the role of institutional factors and global forces in increasing the marginalization of the poor, and hence, hazard vulnerability.¹⁶ Where the behavioral model relies on technical fixes to reduce disaster impacts, the structural school promotes the use of local knowledge and community-based initiatives for managing risks. From a practical point of view, there is clearly a need for both top-down and bottom-up approaches in reducing disaster impacts in developing countries.

For its part, the World Bank is increasing efforts on a number of fronts to manage disaster risk in a more proactive way. It is working with several partners, including Columbia University’s Earth Institute, to identify global disaster risk “hotspots” in order to inform the development planning efforts of aid agencies and governments.¹⁷ Within the World Bank, for example, this analysis is used to target the Country Assistance Strategies of disaster-prone countries to integrate risk reduction as a development priority.

At the project level, the World Bank is working with partners to develop tools

and training for mainstreaming disaster risk into the design and implementation of investments. These include methodologies to better analyze the costs and benefits of mitigation investments, and construction guidelines for disaster resistant hospitals and health centers. The benefits at this level are obvious: in Grenada, the World Bank funded retrofitted emergency shelters and an education development project that included the retrofitting of schools. After Hurricane Ivan hit the island in September 2004, the damage assessment mission found that the retrofitted shelters operated effectively, and the two schools under the World Bank's education program not only survived without significant damage, but were also used as shelters. The World Bank is also exploring more efficient and effective mechanisms for financing disaster risk. For example, the Marmara Earthquake Emergency Reconstruction Project has implemented the Turkish Catastrophe Insurance Pool (TCIP). The introduction of liability and compulsory property insurance shifts the financial burden of natural disasters to the TCIP, which in turn arranges for risk transfer to global reinsurance and capital markets and builds up national earthquake reserves. In Colombia, the ongoing Disaster Vulnerability Reduction Project will support investment in local risk reduction measures and include a fast disbursing component that will be activated in the event of a disaster emergency.

Other projects provide support at the community level for a bottom-up approach in risk reduction. For instance, in Nicaragua, communities are implementing flood monitoring and early warning systems. In Ecuador and Peru, one initiative is exploring how indigenous knowledge and scientific technologies can be combined to better manage the impacts of El Niño events. A guidebook for microfinance institutions was also developed so that they can both protect themselves as institutions during disasters, and better support the recovery of the communities they serve.

CONCLUSION

As the largest provider of reconstruction and development assistance, the World Bank bears a responsibility to promote a more developmental approach to reducing disaster risk. Efforts are building momentum, and exciting progress has been made in a number of countries to foster a more proactive approach to managing disaster risk. But much more remains to be done, and each actor has a critical role to play. A number of bilateral and multilateral aid agencies, including the United Kingdom's Department for International Development, the Inter-American Development Bank and others are revising their policies and approach to disaster risk management. More donors, civil society actors and governments need to shift from a reactive to a preventative approach in order to protect lives and avoid losses. The technologies for risk reduction are well-known and must be applied. We also need to better acknowledge the global economic forces that contribute to the vulnerability of the poor, and strengthen local capacity for managing risk.

Education and awareness at all levels is key to changing how we think and act towards natural risks. Local communities need to be educated and empowered both to live with the risks of their environment and to demand better services from their local and national officials. At the national and international levels, we need to find the right incentives and rewards for effective risk management, as there is still too much to gain politically, both for donors and governments, from making disaster response an apparent aspect of the development agenda. Until this happens, the cycle will continue, and disasters will continue to widen the gap between rich and poor—seemingly, but erroneously, with no one but nature to blame. ♣

NOTES

¹ World Bank, “Emergency Recovery Assistance”, (Operational Policy 8.50, World Bank, Washington, DC: August 1995). This policy is currently undergoing revision to reflect the lessons from Bank and international experience.

² UNDP, “From Relief to Recovery: The Gujarat Experience” (report, October 2001).

³ Badan Rehabilitasi dan Rekonstruksi NAD-Nias (BRR), “Aceh and Nias One Year After the Tsunami: The Recovery Effort and Way Forward,” (December 2005).

⁴ Tony Beck et al., “Fighting Poverty While Supporting Recovery from Natural Disasters” (Synthesis Report,” World Bank, Washington, DC: forthcoming).

⁵ John Telford et al., “Learning Lessons from Disaster Recovery: The Case of Honduras” (report no. 8, World Bank, Washington, DC: June 2004).

⁶ ProVention Consortium and ALNAP, “South Asia Earthquake 2005: Learning from Previous Earthquake Relief Operations.”

⁷ Beck *ibid*.

⁸ ProVention Consortium and ALNAP, *Ibid*.

⁹ BRR *Ibid*, 115.

¹⁰ Peter Wiles, Kerry Selvester and Lourdes Fidalgo, “Learning Lessons from Disaster Recovery: The Case of Mozambique” (report, World Bank, Washington, DC: April 2005), 54, www.sarpn.org.za/documents/d0001856/8-Mozambique_WB_Apr2005_Full.pdf.

¹¹ All World Bank publications related to disaster risk management are accessible on the web at www.worldbank.org/hazards.

¹² Overseas Development Institute (ODI), “Aftershocks: Natural Disaster Risk and Economic Development Policy,” (briefing paper, ODI, London: November 2005).

¹³ See for example, “Understanding the Economic and Financial Impacts of Natural Disasters” (report, World Bank, Washington, DC: February 2004); “Bangladesh: Disasters and Public Finance” (report, World Bank, Washington, DC: November 2002); “Dominica: Natural Disasters and Economic Development in a Small Island State” (report, World Bank, Washington, DC: October 2001).

¹⁴ ODI *Ibid*.

¹⁵ Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), *Linking Poverty Reduction and Disaster Risk Management*, (Eschborn, Germany: GTZ, 2005).

¹⁶ Keith Smith, *Environmental Hazards*, (London: Routledge, 1996).

¹⁷ Maxx Dilley, et al., “Natural Disaster Risk Hotspots: A Global Risk Analysis,” (report, World Bank, Washington, DC: 2005).

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