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Lessons from Natural Disasters and Emergency Reconstruction

The Operations Evaluation Department (OED) is an independent unit within the World Bank. This note was prepared following the earthquake and tsunami disaster of December 26, 2004, to gather together salient findings and lessons from project evaluations OED has conducted over the past decade. Natural disasters are also the subject of an ongoing thematic evaluation that will be published in 2006.

The Major Issues

The World Bank is rarely called upon to respond to tsunamis, and it has only done so a handful of times. The most common natural disasters, on the other hand, are recurrent rather than single events: they strike the same nations repeatedly. When the devastation caused by storms, floods, earthquakes and other natural disasters in industrial and developing countries is compared, the injury and death rates can be up to 100 times higher in the poorer developing countries. Disaster prevention measures in industrial countries reduce the risk of disaster damage, making insurance rates affordable. Conversely, in highly vulnerable areas of the developing world the certainty of disaster precludes the laying-off of financial risk outside the vulnerable area.

Both the typically recurrent nature of disaster and the availability of technological, social, and organizational remedies make disaster response an area where mitigation – policies and actions that are intended to reduce the impact of the next disaster – must be an integral part of a strategy of both recuperation and pre-disaster planning. Of course, the longer the return period, the more difficult it often is for governments to justify the needed mitigation investments. Lack of mitigation is itself an indicator of underdevelopment, one that the World Bank can help overcome. While the consequences of disasters are not entirely preventable it is often technically possible to mitigate them so that fewer lives and less of the constructed environment are lost. Systems of prediction and risk analysis and mapping for many types of natural disaster are well developed, and with suitable institutions and adequate resources catastrophe is avoidable. The problem in developing countries often comes down to making difficult development choices from among the many competing demands. Disaster mitigation, because it is a periodic need rather than a constant one, tends to lose out to other priorities – especially once the disaster has fallen out of the international media and the immediate relief needs have been met.

Major Findings From Past Disasters

The World Bank should be involved in natural disaster response from the outset. The use of consultative groups has been particularly effective in mobilizing aid resources and facilitating coordination in post-conflict situations. Consultative groups could also be used for natural disaster operations. Front-end preparation, including joint damage and needs assessments preparatory to consultative group meetings and robust institutional arrangements, should be undertaken before specific operations are put in place. Identifying strong local leadership and project management offices is particularly important. When disaster assessments are credible, and they include an assessment of the economic and social impact of the event as well as a physical needs assessment, countries ultimately mobilize more assistance than would be the case with clearly exaggerated claims.

Ways must be found for other multilaterals to work together or in parallel – in the short term – on a clearly defined set of activities with the same eligibility requirements and benefits. Other potential collaborators include those bilaterals that are accustomed to post-disaster work.

Country directors should have sufficient authority to make programming and implementation decisions in the field, and experienced staff should be assigned to emergency operations. While experienced staff commonly come forward to assist in such operations, there is no clear procedure for ensuring that the right staff are assigned. Over the longer term, the Bank needs to ensure that it continues to develop a cadre of experienced disaster professionals, and give them assignments that allow for their rapid deployment. The development of written guidelines for task managers confronting natural disasters should also be a priority.

Reallocating resources from existing projects, the traditional Bank approach to emergencies, affects the ability to attain long-term development goals and is less effective than specific reconstruction lending. While shifting resources from existing programs to rehabilitation and reconstruction efforts with very high rates of return can be justified, experience has shown that new financing well designed and managed by special disaster units that are authorized to respond quickly tends to be used more effectively. Restructuring old projects is often politically easier than new lending and allows the Bank to support government entities that are already accustomed to working with the Bank – but delivery by staff committed to the goals just abandoned is often not effective and eventually proves to be not very good for the programs the money has been pulled out of.

Project design should be simple, based on extensive participation by the local communities and beneficiaries, and take into account local implementation capacity. More specifically, it should limit the number of implementing agencies and the number of sectors involved, and reduce the conditions placed on the lending. Implementation should be flexible to ensure responsiveness to community needs and rapidly changing conditions on the ground.

At the outset providing survivors with income earning opportunities tied to physical work often seems to help as much as grief counseling. In disasters that cause significant damage to housing, taking the time to ensure that all usable building materials are recovered and recycled is one way to ensure that the poor will be able to afford to rebuild. Once work opportunities associated with rubble clearance and materials recycling diminish, cash assistance targeted to affected families (especially) as they wait for more permanent shelter is very important – more important than providing food, blankets and clothing. Indeed in most disasters sending in canned food and used clothing from overseas is enormously counterproductive.

It is necessary to assess whether the reasons for relocation are technically correct before planning to relocate people or entire villages. Particularly when moving people away from coastal zones, the tendency to return is almost irresistible. 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.

Reconstruction of damaged infrastructure is imperative, but insufficient by itself. It is equally important to identify local vulnerabilities and determine how to reduce them in ways that lead to durable solutions. The sustainability of infrastructure reconstructed after disaster is always in doubt when long-term measures to address disaster mitigation are absent. Reaching agreement on the mitigation measures with the government within the first three months is very important because it gets much harder to get politicians to focus on disaster once the memory of the emergency recedes. Once these agreements are reached they need to get locked into some form of public commitment - so that people can be reminded of it, and outcomes are usually better if some financing mechanism for the mitigation measures is discussed and locked in. Options to be considered (within the context of what is affordable) include financial incentives, land use and management practices, a review of land tenure patterns, upgraded building codes, training for construction craftsmen, and other nonstructural measures to lessen vulnerability.

Lessons for the Future

- ***Post-disaster operations need to deal early and forcefully with land ownership issues.*** Where possible land titles should be regularized or a functional proxy for land titles should be provided. Where such measures are not possible, alternative means need to be found to ensure that land is not seized outright or that fraudulent claims are honored. The local government must help control profiteering on land that is urgently needed for the reconstruction process.
- ***To avoid reconstruction delays, streamlined decision-making and procedures for contracting civil works should be put in place early.*** Depending on the country and its specific circumstances, this can be achieved either through a high-powered unit developed for the purpose or through existing institutions that can provide continuity in planning, coordination, and monitoring. In countries with a decentralized implementation structure in place, such as Bolivia, Argentina, and Pakistan among others, demand-driven projects implemented by multiple agencies seemed to work.
- ***Seed money should be made available to finance extremely small-scale – but nevertheless critically important – post-disaster actions.*** Activities such as constructing model infrastructure or demonstrating mitigation techniques need to begin before windows of opportunity close and costs skyrocket. Too often, critically important agreements with government agencies, other donors, and NGOs unravel because it takes too long for Bank support to come on line.
- ***Supervision needs to be relatively intensive.*** Emergency loans are put together in a great hurry, so many of the details are left to be defined during project implementation, and flexibility is required to accommodate rapidly changing post-disaster conditions, therefore requiring more supervision effort. Emergency projects require special attention to the design and implementation of disbursement arrangements: bottlenecks to cash flow should be minimized before project approval through provision of guidelines, sample bidding documents, technical

assistance to first-time borrowers, training in procurement procedures, and simple local disbursement procedures.

■ **Emergency assistance should promote equitable development.** For example, a policy to deal with renters in the post-disaster context is required. The use of public money to provide multiple housing replacements for the wealthy, while doing nothing for the renter, is inequitable. The lack of cash support in the immediate post-disaster period often results in waterfront land being transferred from the poor to the better-off.

■ **Project design should take into account that the Borrower, on all levels – local and national government, as well as communities – will have a diminished capacity to function following a disaster.** This realization should be coupled with a clear analysis of the Borrower's institutional capabilities on all levels involved. Such an analysis should take place during project design. In addition, it is important for governments to maintain a core capacity for prevention, disaster response, and mitigation. Where local administrative institutions have been severely degraded immediate needs may need to be provided for through alternative networks such as nongovernmental organizations and UN agencies, but should be coupled with a clear plan to rebuild government administrative capacity.

■ **In countries prone to natural disasters, appraisal of emergency credits should seek to mainstream disaster mitigation and recovery into longer-term country institutional development activities.** Appropriate design standards are critical; they should be prepared before project approval so that costs can be better estimated; and infrastructure designs should be prepared with recurrent disasters in mind. Institutions that address the full range of hazards tend to be more sustainable than those that address a more limited agenda.

■ **Infrastructure maintenance is one of the most important features to mitigate against future disasters.** Before planning to construct new infrastructure, their future maintenance should be considered and training and technical assistance for maintenance should be included in project design.

■ **If certain technical studies are considered crucial to provide updated plans and infrastructure designs, special contracts in the credit/loan documents should be included to stipulate a timetable for the preparation of terms of reference, recruitment of consultants, commissioning and completion of the studies, and submission of draft reports.** In the case of tsunamis and tropical storm related flooding, attention to getting the warning out should be prioritized. Countries that are tied to technological warning systems have, in the past, received advance notice of a coming event, yet still been unable to communicate news of the coming threat (and the actions to take) to the inhabitants in the greatest danger.

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