

OED Précis



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Bank Lending for Reconstruction: the Mexico City Earthquake

Worldwide, disaster losses amount to billions of dollars annually. Developing countries suffer most in terms of lives lost, human resources diminished, and physical losses as a share of their GNP. Earthquakes, floods, hurricanes, and droughts become disasters when they outstrip a vulnerable community's ability to cope.

*The Bank assists with disaster recovery within a development framework. Experience has shown that reconstruction by itself is not enough: measures must be taken to reduce the risk of future disasters and to safeguard people vulnerable to them. The Mexico City earthquake reconstruction project was a success in a sector—housing construction—and context—emergency—where the Bank has had few successes. A recent audit by OED analyzes the reasons why the project succeeded and the implications for future reconstruction projects.**

Disaster and response

The earthquake of September 19 and 21, 1985 in Mexico City left some 250,000 people homeless and 900,000 with damaged homes. Nearly 1,700 schools were damaged and 30 percent of the city's hospital capacity was destroyed.

Despite a history of earthquakes and updated building codes, the city

was ill prepared for the tremors. Its vulnerability stemmed from its geomorphic conditions but also from its deteriorated housing stock. Most of the homes wrecked by the earthquake were typical of the "vecindades" which housed Mexico City's poorest families—inner city tenements where 20 years of rent control had left housing overcrowded and in ill repair.

The Mexican government had already made a commitment to improve low-income housing. Two national agencies, FONHAPO and FOVI, were emerging with workable programs and the Bank had come to FONHAPO's aid with a loan for \$150 million in 1985.

Very soon after the quake (October 7), the Cabinet approved a program to rebuild housing for the victims on the sites of the ruined tenements. The announcement underlined the President's involvement in the reconstruction as a problem of national importance.

This decision differed radically from those of Mexico's neighbors, Guatemala, and Nicaragua, which when faced with similar emergencies continued their regular urban development plans. The Mexican earthquake victims had made their presence felt and their plight visible. A week after the quake, a march of 3,000 strong began the first of a series of protests by those left homeless. With the aid of

public and private agencies the victims moved into camps around the damaged tenements. In contrast, the victims of the Central American earthquakes were largely hidden from view: those left homeless in Nicaragua fled to other cities and to the homes of friends and family; the Guatemalans set about rebuilding their homes in the countryside; El Salvadorans continued to live in the ruins behind the facades of the tenements or in gullies near the river.

The Cabinet announcement was followed by a decree expropriating some 5,500 rental properties damaged in the earthquake, as well as those considered to have dangerously deteriorated and those lacking individual services. The decree protected the earthquake victims from eviction. Landlords offered little resistance since most of the properties had long since ceased to yield much income.

Institutional arrangements

The massive reconstruction effort set straightforward goals in housing,

"Performance Audit Report, Mexico: Earthquake Rehabilitation and Reconstruction Project", Report No. 12149, June 1993. OED reports are available to Bank Executive Directors and staff from the Internal Documents Unit and from Regional Information Services Centers.

Bank Assistance for Emergency Recovery

The Bank has assisted with more than 130 crises following natural and man-made disasters, and since 1985 has devoted 3—5 percent of its portfolio each year to emergency recovery operations

One of the Bank's most important tasks is to help countries reduce their vulnerability. Vulnerability stems from a number of factors, key among which is poverty, which can make safety less attainable and recovery more difficult. Environmental degradation and mismanagement intensifies the disastrous effect of natural events—as when deforestation results in the silting of rivers and downstream flooding. Decisions made in the course of development can increase or decrease vulnerability. As cities grow along coasts, flood plains, and fault lines, more people and investments are placed at risk to natural hazards. But often a tendency toward vulnerability is reversible, and becomes less menacing when it is understood.

The Bank has learned that the best projects for emergency response are flexible and pay special attention to reducing future risks:

- Managers in affected countries often lack practical knowledge of crisis management.
- Institutional weaknesses are compounded by the multisectional nature of the disruption, by breakdowns in the country's lifelines—basic communication channels and infrastructure—and often by a limited ability to ensure that funds for reconstruction are productively used.

- Shortages of skilled manpower and construction materials often delay recovery.

- Prevention mechanisms need to be built into the reconstruction process. Bank staff, used to “normal” projects, sometimes assume that emergency recovery involves adjusting normal procedures, estimating losses, and a one-to-one replacement of needed buildings and supplies, but this approach may in fact increase vulnerability.

In the mid 1980s, the Bank became aware of the need to focus its disaster assistance on recovery issues and to help rehabilitate sectors that could attract further investment. One offspring of this concern has been the design of flexible “time-slice” operations to finance recovery within an overall scheme closely linked to development objectives.

Some successful projects:

- *Nepal Earthquake Reconstruction Project*: emphasized disaster-resistant reconstruction of housing and schools, adoption of improved building codes and techniques, and intense community participation.
- *Rio Flood Reconstruction Project in Brazil*: emphasized reduction of disaster vulnerability and creation of a “prevention culture”.
- *Income Generating Project for Refugee Areas in Pakistan*: involved the refugee community in alleviating the damage of natural resources such as fuelwood, pasture land, and water.
- *Sudan Emergency Flood Reconstruction Program*: smooth international coordination.

health, and education. The education and health components of the reconstruction were managed successfully by the standard agencies in charge of school and hospital construction.

For housing, the project relied on several existing agencies but the bulk of the work, including demolition, clearance, management of temporary housing, and new home construction

was left to a newly created agency, RHP, which was given a two-year life span. Commercial banks were used initially to handle savings accounts to finance temporary assistance to the homeless, but the task proved too complicated for them. The project was completely managed by government agencies, although some NGOs participated in financing or building about 3 percent of the homes.

The Bank's role

The Bank offered immediate assistance for reconstruction by rechanneling \$81 million from another, stalled, urban project, and approved a new loan of \$400 million for the reconstruction effort by March 1986. The Bank's financial support was key, but so was the wisdom to understand and back a good program, fully “owned” and managed by the Mexican authorities.

Housing reconstruction

RHP

The agency created for housing reconstruction, *Renovación Habitacional Popular (RHP)*, managed the demolition, clearance, reconstruction, and repair of more than 42,000 apartments while supervising the temporary shelter and predicament of some 85,000 families.

Created by Presidential decree three weeks after the earthquake, RHP started out with staff borrowed from sectoral ministries, and without previous planning or experience in emergency situations. This factor explains its first weeks of apparent inaction while it developed an effective organization. It soon regrouped into a much tighter structure based on a direct link between the Director General and 13 modules which became the key of the reconstruction effort. (See Box.)

By December 1985, after it had surveyed the damaged buildings and families left homeless and introduced a new building code, RHP decided to:

- Demolish buildings in danger of immediate collapse.
- Rebuild all tenements in danger of collapse or unfit to live in, even when the problems stemmed from general deterioration and lack of maintenance, not just from earthquake damage. In practice, most of this housing was rebuilt entirely; RHP found that repairs and retrofitting often would cost more than new construction, particularly given the

overall decision to rebuild with private bathrooms and kitchens.

RHP's objectives thus evolved: first from rebuilding what had been damaged in the earthquake to rebuilding what could be damaged in a future earthquake, and then to replacing the city's deficient tenements with independent and occupant-owned apartments built according to an earthquake-resistant building code.

Construction, repairs, and rehabilitation were linked with occupants' purchase of housing units and geared to their income levels.

RHP performed extremely well, calling into question the view that no new agency should be created to deal with disasters. It was disbanded after its two-year mandate was completed, leaving its portfolio to FONHAPO which continued to build housing for the remaining families.

Choice of housing type

RHP discarded its initial proposal to finance self-help and progressive development units which would have varied according to buyers' income levels. Since most of the victims had similar economic and family situations, it chose a standard design formula at a standard price. The apartments varied somewhat from site to site, but were all the same size, arranged in groupings of fewer than 20. The designs respected the life style of the beneficiaries, maintaining the common areas and patios, and low density, while respecting the needs of each family for space and privacy. The financing plan and price were designed to be affordable to families who earned from one to 2.5 times the minimum wage (40 percent of victims were in this group). Families who could afford larger units were offered recently built apartments on the outskirts of Mexico City.

The project thus looked very different from the Bank's traditional housing and disaster reconstruction projects of the 1970s, which had emphasized progressive housing and serviced lots. In accepting the Mexican

How Did They Do It? Effective Participation

RHP was charged with registering, housing, and consoling the earthquake victims while negotiating new solutions with them. It had to deal first with homeless families living in the street and with widespread distrust of its intentions. RHP went from dealing with to collaborating with the insurgent neighborhood reconstruction committees, with opposition parties, and NGOs.

RHP's 13 modules were reception centers to attend to the earthquake victims. Each module formed a renovation council, made up of victims, that helped count the people displaced and verified the identity of those who claimed certificates of right to a replacement dwelling. Representatives of the different agencies offering housing and the various NGOs met with victims at the modules and worked out which solution would be best for each family.

Since the basic commitment was to rehouse families on the sites where they had lived before the quake, the modules sorted out the groupings of people to be housed in each new apartment building, and worked with them during the design phase. Families joined together in determining the materials for common areas, pavings, planters, location of water tanks and shrines, and so on. Every apartment plan

had to be signed by the owners before construction could begin.

About half the families continued to live in temporary shelters in the streets, with RHP supplying water, sanitation, and cooking implements. Another half took advantage of RHP's rental aid program. Families who moved out of the shelters to live with family or friends or in vacant apartments were given a monthly subsidy (whose cost per family was considerably less than that of the temporary shelters). Meanwhile, the modules became important for maintaining contact with families who had dispersed.

For owner-occupied apartments which needed repairs and rehabilitation, RHP established ten depots in key locations throughout the city where families could go to pick up construction materials and to get technical advice. The depots were later transferred to FONHAPO.

To minimize disruption of normal activities, RHP carried on most of its activities at night. Meetings with beneficiaries and counseling went on from evening on. The task of trucking some 2,500 tons of rubble out of the city, and bringing in an equivalent load in new building materials was carried out from midnight to five a.m. The Bank's supervision missions adjusted their hours to meet with RHP's nocturnal shifts.

plan for financing finished apartments and purchasing used housing, in addition to the expropriation policy, the Bank recognized that disaster reconstruction could differ from standard housing reconstruction projects, and that it was more important to support the borrower's plan than to foist its own solutions on to clients.

Achievements

As a result of the project the victims of the earthquake were able to resume, or improve on, their lives as

they had been before the disaster. The project took important steps in prevention and mitigation, rehabilitating and replacing dilapidated buildings. The project had a substantial effect on Mexico's disaster awareness (see Box), and the city, particularly its poorest residents, will not be as vulnerable to the next natural disaster.

The *housing component* is most impressive. Some 78,000 families were rehoused. The number of units completed exceeds the number anticipated at appraisal by about 12 percent. The reconstructed housing is

Reducing Urban and Natural Risks

by Manuel Aguilera Gomez

Dr. Aguilera, now President of the Steering Committee of the PRI of Mexico City, was Director General of the Popular Housing Reconstruction Unit.

When urbanization pushes beyond a certain point, risk and vulnerability become constant factors that must be considered in the design and implementation of urban development policies. Not until the 1985 earthquake did we become fully aware of our profound vulnerability as an urban community. The first step in reducing the vulnerability of the Federal District has been the redesign and implementation of an integrated civil protection system. The second is a reorientation of the urbanization process and the city's development model.

Modernizing the civil protection system

The basic purpose of this system is to guarantee an organized, speedy, and efficient government and community response to any emergency and to coordinate joint efforts to restore normalcy in services and the rhythm of daily life. The project to modernize civil protection has five elements.

- Fostering solidarity.
- Local decentralized responses to emergencies.
- Training for each population group by zone and type of activity;

of a quality rarely found in public sector housing, or private housing for low-income families, anywhere, and at reasonable cost.

The *schools component* cost some 20 percent more than its appraised costs but appears to have widely surpassed its goals (by 179 percent). The city government retrofitted some 3,000

- Coordination of public agencies and the community to give the rescue effort unity and balance;
- International exchange of experiences to introduce Mexico City to advanced technologies for preventing and responding to disasters.

Reorienting urban development

For many years, urban growth meant that most investments went to expand major infrastructure—water supply, storm drainage, the subway—largely in the modern parts of the city. Many of the major infrastructure systems must continue to provide a centralized service for the urban whole. But most government action—whether to reduce pollution, improve the urban space, or diminish foreseeable risks—should be a local, decentralized, response to the priority demands of specific, localized, social entities.

In the future, most investments in Mexico City must be made in mixed urban habitats. To integrate them fairly will require a stress on community development rather than the continuing growth of vast metropolitan programs. Aggregate demand must yield to priority demand—which should be met mainly from local resources. Through group representation, communities must participate directly in managing everything that bears on their daily lives.

undamaged schools to bring them up to standards set by new construction codes. This was the first Bank-supported reconstruction project to support such preventive measures.

Project costs were about 9 percent more than programmed. Unit costs were actually reduced during the reconstruction process, but more

damaged and vulnerable buildings came to light than had been originally counted.

Lessons

- *Disaster recovery and the Bank:* The success of the Mexico reconstruction project, and the importance of the Bank's role in it, should dispel doubts about the Bank's capacity to undertake emergency projects. But the experience underlines the fact (also mentioned in OED audits of the Guatemalan and Nicaraguan earthquake reconstruction projects), that Bank assistance will only be effective if government is sincerely committed to reconstruction.
- *Disaster reconstruction projects:* The experience emphasizes the importance of quick response and flexibility in getting a project underway.
- *Urban projects:* Traditional low-cost housing models may not be the right response to disasters. The decision to rebuild for the earthquake victims on the sites of their former housing was key. It respected community and neighborhood relationships, as well as location with relation to employment, as few housing projects manage to do.
- *Institutions and project management:* RHP, which drew many of its professional staff from FONHAPO and other parts of the housing sector, seems to have gained strength and dynamism from the fact that it was a new body with a clear mission and a short life span, tailored to the task. A danger in setting up new institutions in emergencies is that they may live on after the emergency is over.
- *Supervision:* The project was actually underway during its presumed appraisal, but was backed with substantial supervision. Its history is one of continual adjustments to speed up administrative processes and to avoid stagnation for lack of money or materials.

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