Financing Disaster Reconstruction: The Popayan Earthquake

The Bank assists with disaster recovery within a development framework, supporting measures to reduce the risk of future disasters and safeguard people most vulnerable to them. The highly successful Popayan Reconstruction Project in Colombia set the standard for subsequent efforts to reduce the impact of disasters. A decade later, an OED audit analyzes the effects of the project and the implications for future reconstruction projects.

Popayan, in western Colombia, has suffered major earthquakes almost every 80 years. On March 31, 1983, during Holy Week celebrations, an earthquake measuring 5.4 on the Richter scale hit Popayan and 11 other municipalities in the surrounding Department of Cauca. About 250 people were killed and 1,500 injured.

Effects of the quake

About 2,400 homes were completely destroyed in Popayan, and another 6,900 suffered major structural damage. Also damaged were streets, rural roads, schools, health facilities, shops, commercial and office buildings, rural infrastructure, and bridges.

At first the damage made it difficult for the government to function. Public utilities needed major repairs, and the loss of electric power greatly complicated actions aimed at disaster relief. Massive operations were needed to provide emergency shelter and to build replacement housing.

Project goals

The Bank loan ($40 million, approved February 1984, closed December 1988) supported the first three years of a 15-year disaster-recovery program. The project was designed to help:

- Restore essential facilities and services and re-establish basic economic activity, so as to minimize economic and social disruption over the long term.
- Build streamlined arrangements for efficient coordination of the reconstruction program, while strengthening the institutions involved.
- Develop a framework for dealing with natural disasters in the Popayan region and in other geologically unstable areas of Colombia.

The project financed the rebuilding of the historic city center and created new neighborhoods for low-income families made homeless. It supported improvements in design and the creation of an improved building code, under which buildings would be upgraded to seismic-resistant standards. It set aside broader social issues which could be better pursued later.

A carefully crafted reconstruction strategy slowly evolved. Donor agencies coordinated their assistance within the comprehensive plan which the Bank helped the government to put together.

Results

The project was successfully implemented, though 18 months later than expected. Difficulties included a nine-month delay before the newly-created implementing agency, the Corporation for the Reconstruction of Cauca (CRC), was assigned personnel; the appointment of four different mayors and four different governors during project implementation; and the difficulty of raising counterpart funds, given that the city's annual budget had been prepared two years earlier without provision for emergencies.

Low-income housing

The project's infrastructure components, which carefully targeted poor households, had a lasting positive impact on urban development.

The social situation after the earthquake was explosive: landlords could not repair low-income apartments cheaply enough to charge rents that the poor could afford. Popayan experienced land invasions from 24,000 newly homeless people.

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"Performance Audit Report, Colombia, Popayan Region Earthquake Reconstruction Project", Report No 13203, July, 1994. OED reports are available from Bank Executive Directors and staff from the Internal Documents Unit and from Regional Information Services Centers.
The project helped to defuse the situation by providing funding for the acquisition of land and a strong sites and services component. Seventeen new neighborhoods were created, in which marginalized people received legal title to plots of land. Among the more far-sighted policies supported was the integration of the new settlements into the city; broad avenues connect them to the center, while the individual lots are large enough for the settlements not to become slums. Nearly a decade later, results are excellent. The housing is quite attractive and built to earthquake-resistant standards. Families have invested in street-side beautification, especially where streets have been paved. A sewerage system and treatment facilities have halted the pollution of two rivers which flow through town.

Better disaster-resistance

By ensuring that all newly constructed and repaired buildings followed earthquake-resistant design criteria, the project significantly reduced the likely damage from future quakes.

Institutional development

CRC became a strong unit with effective leadership. Since the project, it has developed into a specialized regional reconstruction authority. Its new mandate is one of environmental protection and promoting the sustainable use of natural resources.

CRC’s successful coordination of the reconstruction of Popayan moved the Colombian government to create a National Disaster Response and Prevention System, supported by adequate financial planning, both to facilitate emergency recovery and to invest in disaster prevention measures nationwide.

Factors in successful implementation

The Bank provided critically important technical help. Other factors were: sound design; creation of a strong implementation unit, CRC; effective local leadership; and the connections of CRC directors to the highest decision-making levels (this removed bottlenecks and speeded decision making).

Issues, lessons

Time-slice approach

This was the first project in which the Bank financed a time-slice of a disaster recovery program. The time-slice approach gives useful flexibility. In Popayan, the Bank’s identification mission helped to elaborate an overall reconstruction strategy, rather than identifying precise project components. CRC was able to refine its activities as better information became available. Largely as a result of this flexibility, the reconstruction effort experienced few major problems during implementation.

Note, however, that a disaster response that unfolds as slowly as that in Popayan can have significant costs: simple problems become more complex and costly to resolve (as when land invasions become semi-permanent), not to mention the health and environmental implications of allowing tent camps to linger in parks and vacant lots.

Developing public understanding

The importance of funding and organizing public education about disaster mitigation at the earliest possible date cannot be overemphasized. Within 60 days of the Popayan earthquake, a new building code had been imposed and a public education program had begun. The building code has been enforceable because it is widely understood. Publications and courses were developed, aimed at constituencies ranging from the man-in-the-street to the masons and engineers.

Bank staffing, mission timing

Identification missions following crises require experienced staff. In Popayan, experienced Bank staff convinced the government not to “piggyback” broader social and organizational goals on to the recovery program, which can delay the recovery effort.

Mission timing in this project seems to have been critical: the first Bank mission arrived in time to provide valuable training and guidance to the government; the second arrived in time to help shape a comprehensive program.

Housing the poor

The best approach to the problems of the urban poor, not only in a post-disaster setting, may be to concentrate on what worked in this project:

- Ensure optimal urban planning.
- Finance the delivery of electric power, water, and sewerage.
- If necessary, provide land with legalized title for housing at the outset.
- Let families rebuild housing according to their tastes and incomes, while providing guidance in disaster-resistant building techniques.

Cost recovery

This project raises the important issue of whether post-disaster subsidies are unavoidable. Though emergency loans tend to be extremely successful in terms of institutional development and the construction of physical works, costs are difficult to recover from beneficiaries. Strict enforcement is not an option—no government can risk worsening the situation of disaster victims.

Subsidies to disaster victims may be justified by the externalities associated with the timely, effective restoration of normal economic and social conditions. The Bank generally discourages subsidies, but to the extent that its disaster-recovery projects are targeted to the poor, it should be more realistic during the design phase about the difficulty of recovering costs.