



Learning from the Pakistan Experience of post-2005 Earthquake Rural Housing Reconstruction

The Pakistan Earthquake of 2005

The earthquake that struck northern parts of Pakistan on the morning of October 8, 2005 left widespread destruction in its wake. It killed over 73,000 people and left more than 2.8 million in need of shelter at the onset of a harsh Himalayan winter, in a predominantly inhospitable rural terrain that was difficult to access. The earthquake affected nine districts in Khyber Pakhtunkhwa (KP) province and Azad Jammu & Kashmir (AJK) state, covering an area of approximately 30,000 square kilometers.

Economic assets and infrastructure suffered extensive damage, with social service delivery, commerce, and communications either debilitated or completely destroyed. Vulnerable groups, mainly women and children living in inaccessible mountain areas with low levels of income and service provision, bore the brunt of the earthquake's impact. Almost 600,000 houses were either completely destroyed or partially damaged. Virtually none of the housing in affected areas featured seismic considerations in

their design. Compounding this was the generally poor quality of construction and maintenance.

The Response: Pakistan's Rural Housing Reconstruction Program

Rural housing took the brunt of damage requiring over US\$1.5 billion for reconstruction and repair. In response, the Government of Pakistan, in collaboration with the World Bank, launched the Rural Housing Reconstruction Program (RHRP).

RHRP relied on an owner-driven mechanism providing multi-tranche financial support to affected households based on assistance, inspection, and certification at various stages of construction to ensure compliance with seismic-resistant standards. The housing grants financed replacement of completely destroyed houses with new seismic-resistant core units, and repair of damaged houses to seismically acceptable standards. A detailed Damage Assessment and Eligibility Verification Survey was conducted across the affected area to develop verified lists of

Photo above: Existing construction techniques made seismic-resistant through introduction of requisite structural elements.

Nature of Tranche	Amount of tranche (PKR)	Total disbursed (PKR billion)	# of beneficiaries	% of eligible beneficiaries covered
First Tranche: Temporary Shelter Support	25,000	14	550,000	n/a
Second Tranche: Mobilization	75,000	40	567,000	101%
Third Tranche: Completion up to Plinth level	25,000	11	438,000	95%
Fourth Tranche: Completion up to Lintel level	50,000	21	420,000	91%
Total	175,000	86		

Note: First tranche of PKR 25,000 for Temporary Shelter Support was provided to 550,000 beneficiary households before the official launch of the Rural Housing Reconstruction Program and the Damage Assessment and Beneficiary Eligibility Verification Survey. Thus, the number of beneficiaries for this grant was not equal to that of the remaining grants, which were officially part of the Program. Source: ERRA M&E Annual Report 2010-11

potential beneficiaries. Grant disbursements were channeled through commercial banks directly into beneficiary bank accounts. Partner organizations provided technical assistance for reconstruction and rehabilitation.

In total PKR 86 billion were disbursed through the RHRP. By end-2008, 94 percent of reconstructed houses (430,000 houses) were compliant to seismic-resistant standards up to lintel level.

Lessons Learned from Rural Housing Reconstruction Program Components

1. Guiding Principles and Strategy

The Guiding Principles and accompanying strategies underpinning the RHRP were based on international experience, as well as the specific context of the Pakistan earthquake, and included:

i) owner-driven housing reconstruction; ii) assisted and Inspected reconstruction and restoration regime; iii) seismic safety; iv) uniform principles and assistance packages across all funding sources maximizing outreach; and v) judicious use of grants; reducing and managing conflicts and grievances; avoiding socioeconomic distortions, inequities and disparities.

2. Institutional Arrangements for Rural Housing Reconstruction

Within a month of the disaster, the Pakistan government set up the Earthquake Reconstruction and Rehabilitation Agency (ERRA) with a clear mandate to manage post-disaster recovery and reconstruction across all affected sectors. The agency coordinated all assistance through a 'one-window' mechanism, and all stakeholders were obliged to work through it. ERRA also created strong linkages with existing national-level institutions to assist in the implementation of various elements of the reconstruction program.

Lesson Learned: Political support is crucial, but drops over time. The absence of government leadership is one of the greatest risks in responses, at times more problematic than resource deficiencies.

3. Detailed Damage Assessment and Beneficiary Eligibility Verification Survey

A preliminary damage assessment by local authorities was followed by a comprehensive door-to-door assessment

covering the entire affected area. This was done by the Pakistan military due to lack of capacity of other possible partner organizations for a task of such scale. A large number of field teams were mobilized, each comprising a military engineer, a representative of the local community, and a government functionary such as a revenue official or a teacher. The results were compiled to create a central database of beneficiaries, which was linked to the existing national identity database. Besides conducting the survey, the field teams signed Memoranda of Understanding (MoUs) with verified beneficiaries, specifying the purpose of the grant and mutual responsibilities.

Lessons learned: Carrying out damage assessment and eligibility verification as a single exercise accelerates the process, mitigates the risk of error, and ensures transparency and equitability.

4. Transparent Mechanism for Grant Payments to Beneficiary

A multi-tranche grant payment mechanism was developed that was closely tied to beneficiary eligibility, and the inspection and certification regime. Beneficiary households received financial assistance in tranches; the first tranche was released upon beneficiary verification, while subsequent releases were dependent upon them meeting criteria for seismic resistant reconstruction agreed to in the initial MoU.

Lessons Learned: Many beneficiaries did not have bank accounts and lived in remote areas. A strong effort was needed to mobilize commercial banks and other financial entities to facilitate expedited opening of bank accounts.

5. Development of Seismic-Resistant Structural Designs

The large scale devastation caused by the 2005 earthquake provided a window of opportunity to improve the prevalent methods and quality of construction. The guiding principle of the reconstruction effort was 'building back better'. A menu of seismic-resistant structural designs was developed, based on familiar materials already prevalent in the region.

Lessons Learned: People build early; policies and strategies are always catching up with them. Housing reconstruction starts earlier than other sectors. It is important that policies, standards, and support systems are devised and in place in time to ensure that people are aware of the terms and conditions of financial support, and can access technical advice in time to use it.

6. Training and Capacity Building in Disaster-Resistant Construction

Training materials and curricula on seismic-resistant construction were developed for various target groups such as architects, masons, and community members. A ‘cascaded training’ approach was used to train a critical mass of artisans and craftsmen in the affected area in seismic-resistant construction techniques. Model houses and demonstration structural details were also set up at field level.

Lessons Learned: International experience in training on seismic-resistant construction techniques, provided by a team of experts from Nepal, proved invaluable in developing training curricula. The building boom in the disaster-affected areas attracted unskilled individuals to join the construction sector, exacerbating the need for training.

7. Assistance, Inspection and Certification of Disaster-Resistant Construction

Since the release of housing grant tranches was conditional on adherence to seismic-resistant construction standards, a regime of assistance, inspection, and certification was set up. Hundreds of specialized teams were mobilized for the entire duration of the Program. These teams were also provided training to carry out their roles. Inputs from these teams were then linked with the beneficiary database to release grant tranches electronically.

Lessons Learned: Dealing with non-compliance is essential in achieving Program objectives. The field inspection teams advised beneficiaries on necessary improvements to achieve compliance and arranged for technical assistance to be provided by partner organizations.

8. Effective Public Information Campaigns

Information material developed for the Program included: (a) general material for mass media (radio, TV, print) to deliver key messages to beneficiaries and stakeholders; and (b) technical information materials (e.g. training materials, drawings, posters) for various target groups outlining technical standards on seismic-resistant construction. All information release was controlled by ERRA, thereby ensuring consistency.

Lessons Learned: Retrieving messages already disseminated is very difficult. While strong measures for consistency were set in place, some unauthorized guidelines on construction standards did get introduced, resulting in some initial reconstruction activity not following approved standards. Another important lesson was that among visual tools, all groups expressed preference for photographs.

9. Creating a Building Materials Supply Chain

To counter potential shortages in availability of building materials, price increases, and difficulties in accessing materials in remote areas (leading to high transportation costs), the Program helped set up a building materials supply chain and materials hubs with the collaboration of the private sector. These were designed to ensure consistent and fair-priced supply of required materials across the affected area. The hubs represented an expansion rather than replacement of the private sector, and hence did not distort markets.

Lessons Learned: Private sector-led materials hubs tend to be located near existing markets. The initiative helped partly resolve the problem of limited supply in secondary centres and remote areas.

10. Community Mobilization

ERRA tasked partner organizations (which were also responsible for capacity building of construction masons at field level) with social mobilization activities in affected villages. The Program strategy provided consistent messages and outlined common outputs for social mobilization, but left Partner Organizations to achieve them using their own best practices and approaches. Village Reconstruction Committees (VRCs) were formed to support this effort.

Lessons Learned: The Partner Organizations, mainly local NGOs, often had prior experience with this nature of work and thus provided valuable expertise in community mobilization. Village Reconstruction Committees played a facilitation role but lacked authority over households, at times undermining their effectiveness.

11. Social Aspects

The Program ensured that women-headed and orphan households also received financial assistance. Under the Landless Program, financial assistance was provided to households without land or who had lost / had rendered hazardous their land due to the earthquake. Reconstruction grants were provided on the basis of houses and not households; in cases where more than one family lived under one roof, the grant was provided to the owner subject to agreement by other family members.

Lessons Learned: It is critical to understand the social dynamics in post-disaster settings and account for these, so as to ensure that reconstruction programs do not exacerbate existing social inequities. Ideally a program should be empowering in nature, but at the very least it should ensure that it is not leaving vulnerable groups even more disadvantaged.

12. Grievance Redress Mechanisms

In order to ensure equity, a formal mechanism was developed that streamlined the handling and resolution of complaints and grievances faced by beneficiaries. It was a simple, low-cost, and automated system and was based on four tiers: community/village, sub-district, and district (where appeals could be made), and ERRA, which centrally tracked data on complaints redress to determine trends and problems. A number of district-level Data Resource Centres (DRCs) were also established in the affected areas to deal with certain kinds of complaints and grievances related to personal and financial data.

Lessons Learned: The grievance redress mechanism also ensured quality control and a built-in monitoring and evaluation function for the Program.

13. Reporting, Monitoring and Evaluation

The Program developed a comprehensive Reporting, Monitoring, and Evaluation (RME) system to function in a coordinated manner to standardize and compile all data streams related to reconstruction data, seismic compliance,



Remote communities had to summon all possible means to transport construction materials to building sites.

and technical support activities. This provided reporting on a disaggregated level on key program outcomes, and was used to make information available to a range of stakeholders for Program analysis, planning, and course corrections.

Lesson Learned: All forms and methodologies were standardized, making processing and compilation easier. ERRA retained centralised control providing accountability and reducing confusion or parallel systems. Indicators determined monitoring priorities. The Program measured rates of compliant completion of houses, and financial disbursement – its formal indicators. Several other aspects of reconstruction (e.g. cost of reconstruction) were formally tracked only retroactively to inform policy development.

Program Impacts

The ambitious scale and scope of the Program meant that some of its interventions and approaches outlasted the Program itself, and became mainstreamed:

1. An Emerging Culture of Disaster Risk Reduction

At the time of the earthquake, virtually none of the housing in the affected area had seismic considerations in design, in spite of being in a high seismic-risk area. Compounding this was the generally poor quality of construction. Thus the philosophy of ‘Build Back Better’ underpinned the RHRP design, which helped generate a culture of safety and resilience. Thus, what began as an immense disaster was turned into an opportunity and a prospect to enhancing the lives of the affected people through reconstruction.

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2. Creation of Institutions for Disaster Management

A key aspect of disaster response is availability of requisite institutional capacity, which was essentially absent at the time of the earthquake. The post-earthquake reconstruction experience led the Government of Pakistan to establish the National Disaster Management Authority (NDMA), and its subsidiary entities at the provincial level. NDMA has since emerged as the key coordinator in post-disaster situations, in the immediate relief and recovery phases, as well as championing the disaster risk reduction agenda.

3. Transparent Grant Payment Mechanism

In the years since the earthquake, the post-disaster grant payment mechanism developed under the Rural Housing Reconstruction Program has set a precedent in Pakistan. It has been further developed and used post the historic 2010 and 2011 floods. Beneficiaries received compensation grants through a centralized system of debit/ATM cards, linked with the national-level citizen identification database.

Documenting RHRP Success for Replication

In light of the phenomenal success of the RHRP, GFDRR has funded its documentation through the development of a Manual for Post-Disaster Housing Program Managers. It’s objective is to assist project managers and policy makers engaged in large-scale post-disaster housing reconstruction programs make decisions on how to reconstruct housing and communities after major natural disasters. It provides a comprehensive guide to the tasks and processes required for development and management of such programs, using key lessons and learning from the RHRP.

The Manual uses Pakistan’s post-earthquake Rural Housing Reconstruction Program (RHRP) as a case study, and draws on the experience and lessons from it to derive recommendations for future post-disaster housing reconstruction programs. The Manual also provides a strong results-based outlook through a results framework that links desired impacts, program level and intermediate outcomes, and outputs into a coherent whole. It also provides information on the options that were considered in various aspects of reconstruction, and insights into what worked and what did not. It aims to guide policymakers in designing and implementing such a program with a focus on achieving results. It thus tries to make a unique contribution by bringing in a results lens to conventional post-disaster reconstruction efforts.

