

GDLN Seminar on Strengthening Disaster Risk Management in East Asia and the Pacific – Summary of April 28, 2009 Video Conference
Housing and Community Reconstruction after Natural Disasters

Speakers:

- **Mr. George Soraya** (*Lead Urban Specialist, World Bank, Jakarta*),
Gsoraya@worldbank.org
- **Mr Praveen Pardeshi** (*IAS Municipal Commissioner, Pune Municipal Corporation, India*)
praveen.pardeshi@punecorporation.org
- **Mr. Abhas K. Jha** (*Regional Disaster Risk Management Coordinator, East Asia and the Pacific, World Bank Office, Washington, D.C.*).
ajha@worldbank.org

Main moderator:

- **Mr. Abhas K. Jha** (*Regional Disaster Risk Management Coordinator, East Asia and the Pacific, World Bank Office, Washington, D.C.*)

Key topics discussed:

1. What is the right approach for post-disaster housing reconstruction - an owner-driven, community-driven, or contractor-driven reconstruction in situ approach?
2. How are aspects such as the quality of construction and the implementation of building codes addressed by national and local governments and communities?
3. Costs of reconstruction: who takes on or shares the burden of costs?
4. How is political pressure for quick reconstruction and other challenges dealt with?

Executive Summary

This seminar on strengthening Disaster Risk Management in East Asia and the Pacific focused on post-disaster housing and community reconstruction. Various examples and experiences from post-disaster reconstruction efforts were presented and discussed. A draft [handbook](#) on post-disaster reconstruction, currently under review by global expert teams, partners and clients, served as a key document throughout the seminar and was used to explain how to manage the reconstruction of housing and communities after a natural disaster.

- This summary note highlights the key issues/points discussed at this GDLN seminar, focusing on **involving the people and communities** directly affected by disasters in the reconstruction process. Owner-Driven Reconstruction and Community-Driven Reconstruction were noted as the preferred reconstruction approaches, since Contractor-Driven Reconstruction may result in negative outcomes and beneficiaries' dissatisfaction with the lack of consultation and input into the recovery process.
- After a disaster, **building codes** need to be checked and perhaps updated, and most importantly, every new house must meet the current design standards (e.g. have a certificate), and should be audited regularly throughout the reconstruction process. Local authorities are responsible for ensuring quality control and need to provide enough trained manpower (e.g. facilitators) to oversee this process.
- In addition to the quality issue, all **expenses or costs incurred through the program should to be accountable and transparent**, especially because housing reconstruction is often the most expensive part of overall reconstruction costs. Tools to facilitate transparency include the use of the Internet for tracking expenditures, or by having selected committees such as an anti-corruption unit. Finally, political and other pressures to move quickly on reconstruction may

delay or result in poor quality housing. A stable source of funding should also be in place to ensure a smooth housing reconstruction process.

Summary

1. What is the Right Approach for Post-Disaster Housing Reconstruction?

After a disaster hits a particular area or community, the first step is to assess the total damage caused and the effect it has had on the community, the economy and physical infrastructure of the area. Housing reconstruction is more than just the physical rebuilding of housing units; it also involves the consideration of the needs of affected communities (livelihoods, environment, social fabric, institutions, and community capacity). Furthermore, an assessment defining the local capacity of the affected communities should set out how to coordinate the reconstruction process most efficiently, and should be undertaken soon after the disaster.

This should then be followed by a sound, transparent damage assessment. There are many questions which have to be sorted out, for instance, who is entitled for compensation and how much financial support should be given? Another issue is how to deal with communities who should be resettled, since this is recommended to be avoided whenever possible. All of these decisions should be made at a very early stage and set out in a strategy, because it will influence whether or not the recovery process will be successful. Detailed information on this process is provided in the online housing [handbook](#) toolkit.

Following the development of a recovery strategy, the government and affected communities must determine the best way to coordinate and manage the actual reconstruction of housing and communities. Seminar participants discussed which approach was advisable to adopt according to different contexts: (a) Owner-Driven Reconstruction (ODR), (b) Community-Driven Reconstruction Approach (CDR), or (c) Contractor-Driven Reconstruction In Situ (CRIS).

After the earthquake in Yogyakarta, Indonesia (2006), a CDR was adopted for all housing reconstruction and rehabilitation efforts. Since the local governments were generally intact after the disaster and a community driven development programme already existed and had established processes, financial arrangements, and networks of facilitators in place, the implementation of a large-scale community-based housing reconstruction was favored. The goal of the program was to rebuild more than 270,000 destroyed houses as soon as possible. This CDR involved more than 20,000 facilitators to coordinate and monitor the reconstruction of houses in all affected areas. The first step was to identify (within the first few weeks after the disaster), together with the communities, in a self-survey assessment, which households were entitled for support. This would provide inputs in order to develop a quick spatial outline plan defining temporary shelter and emergency infrastructure for the short-term and a community settlement plan for large-scale housing reconstruction for the long-term.

The advantage of this approach was that communities were involved in the reconstruction process; for instance, they could choose for themselves from different designs of houses and materials; additionally, they were encouraged to use their capacity (e.g. manpower and knowledge) to rebuild themselves the new houses together with the technical support from the facilitators. The result was a high level of satisfaction within the communities (around 90 percent), and almost all units (270,000) were occupied after the reconstruction process was completed, which took only 2 years.

After the earthquake in Gujarat, India (2001), the approach taken was mainly ODR, which again resulted in high satisfaction rates, since the owners were able to decide for themselves which materials, designs, etc. they wanted. Similarly, after the earthquake in Latur (1993) ODR resulted in high satisfaction rates (80 percent) compared to 60 percent dissatisfaction of housing quality for contractor-driven reconstruction projects.

The discussions at the seminar made it clear that ODR and CDR were the favored solutions for housing reconstruction. This is because CRIS does not include enough the views and perceptions of the community, and tends to result in poor quality housing (mass-production); furthermore, it does not make use of local materials and knowledge resulting in higher costs (as seen in the case of Latur).

2. Building Quality and Implementation of Building Codes

Since ODR and CDR are the preferred approaches in the reconstruction of houses, the aspect of quality control is crucial, as it involves large numbers of technical experts who often need advanced training. Not only are the personnel required, the appropriate building codes also need to be put in place and regularly reviewed and updated. Moreover, a seminar participant raised the issue of good governance, crucial in implementing building codes in relation to the large number of collapsed schools in Sichuan as a result of the Wenchuan Earthquake.

In the case of the earthquake in Kobe (1995), adequate building codes, which met seismic requirements, had been in place at the time of the disaster. But, nearly all of the collapsed houses had been built prior to its implementation and had not been in line with the 'new' standards.

The implementation and control of new construction of housing is crucial, especially when multi-hazard resisting structures are needed in disaster-prone areas. For example, in the case of Yogyakarta, each house received a certificate to provide proof of its seismic stability. Quality control of housing stock in Yogyakarta was reviewed about three times and by different auditors, including third parties, since the next tranche of money could only be transferred if the buildings met expected quality standards.

3. Costs of Reconstruction: Who Takes on the Burden of Costs? How are Costs Shared Among Stakeholders?

It was highlighted that reconstruction of housing typically amounts to more than 30 percent of the total costs of redevelopment. For example, after the 2004 Asian tsunami in Aceh, Indonesia, the housing reconstruction costs totalled around 57 percent, and similarly in Yogyakarta, housing comprised over 50 percent of the total budget. Therefore, it is important not only to consider the housing reconstruction process as a whole, but also to think about how the money is generated, and which beneficiaries receive benefits (in the form of cash transfers, building materials, training, or a combination of support).

In the case of Yogyakarta, housing reconstruction financing was supplied mainly from the government's budget totalling Rp 15.3 trillion → US\$1.6 billion. From these funds, the government was able to offer each homeowner a payment of \$1,600 (about half of the total costs) to develop the housing structure.

Another important measure in the financing of reconstruction is the control over the prices of core building materials such as steel, cement, or bricks. In the case of Gujarat, local authorities used their political leverage to regulate the price of bricks to make them more affordable for the local people.

Yet, most funding for housing reconstruction derives from government sources (as in the cases of Yogyakarta and Kobe) or from donors (Aceh), because there is often an insignificant number of houses which are covered by insurance -- as was the situation following the earthquake in Yogyakarta -- thus demonstrating the burden on government, donors, or the affected communities themselves to finance reconstruction. As a result, large shares of money are transferred either to communities, contractors, or directly to homeowners, which requires a transparent accountability system.

In Yogyakarta, the government developed a platform in the form of a [website](#) (in Bahasa Indonesia) where all transactions, complaints, and the reconstruction process as a whole was monitored. The website is available to the public for transparency purposes.

In the case of Gujarat, all financial assistance paid to homeowners was channelled through bank accounts in order to track the flow of funds and guarantee that requirements for transparency and accountability were met. Furthermore, in Aceh, there was an [anti-corruption unit](#) in charge of overseeing the flow of funds and monitoring expenditures.

In conclusion, it is particularly important to supervise and track the flow of funds for housing reconstruction, since this sector often generates the highest costs of the total reconstruction process.

4. Political Pressure for Quick Reconstruction and Other Challenges

Immediate disaster response is crucial, particularly when it comes to housing reconstruction. However, pressures to speed up the reconstruction process may result in poor quality housing and mismanagement, as was the case in some areas of Aceh, where the government put pressure on communities to rebuild quickly. The poor quality of construction was also due to the lack of adequate funding, since the transfers to recipients had not been fast enough. This resulted in upset communities and, due to the slower pace of reconstruction, disappointed government agencies.

In Yogyakarta, political pressure was absent because the flow of money to the communities had been ensured throughout the reconstruction process. Almost all of the reconstructed houses (270,000) were built within 18 months after the disaster, with all required quality standards met. Thus, political pressure may not result in a better outcome, but rather, hinder or delay the overall reconstruction process.

Another challenge regarding the housing reconstruction process is how to deal with the resettlement issue, a delicate issue, as earlier mentioned. For example, several communities had to be forced to resettle in Aceh, since the land where their homes had been previously built had become too hazardous, or did not exist anymore. However, in the case of Gujarat, a different approach was taken. Relocation was voluntary, whereby the local government provided land to resettle outside the old town, but still in the city, where people could move and rebuild new houses themselves, with the support from the government. This flexible process took quite some time, but after three years, most people were relocated and provided with new land.

Further Information

For more information on disaster risk management related to housing reconstruction, please visit the following links:

General:

- Resources for Reconstructing Housing and Communities after Natural Disasters:
<http://www.housingreconstruction.org>
- Handbook for Post-Disaster Housing and Community Reconstruction Workspace for comments:
<http://www.tcgillc.com/pdhh.html>
- International Recovery Platform, provides a lot of guidance and case study reports:
<http://irp.onlinesolutionsltd.net/>

Yogyakarta:

Oversight platforms

- Pnpm Mandiri Perkotaan (P2KP): <http://www.p2kp.org/> (only Indonesian)
- Rekompak: <http://www.rekompakjrf.org/index.php> (only Indonesian)

Hyogo, Kobe earthquake:

- The Great Hanshin-Awaji Earthquake Memorial Disaster Reduction and Human Renovation Institution, Hyogo Prefecture:
<http://www.dri.ne.jp/english/index.html>

Aceh:

- Asian Tsunami in Banda Aceh, Aceh-Nias Rehabilitation and Reconstruction Agency (BRR):
<http://www.e-aceh-nias.org/home/>