Housing Finance, Risk Mitigation And Post-disaster Reconstruction

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Framing the Issue

1. The world is increasingly urban >50% -- 60% by 2025
   - Collateral damage of natural disasters is much larger in urban areas
     - Damage to **housing stock 60 to 80% of total costs of disasters**
   - Reconstruction after disasters more complex -- tenure issues (renters, squatters, property rights); logistics; governance

2. Enter climate change -- increased frequency and severity of disasters
   - Floods, hurricanes affects densely populated urban coastal areas disproportionately – and therefore the **housing stock**
   - In both developed and developing nations
   - Droughts cause resettlement in fragile urban environments
Frequency of Natural Disasters in 2011

- Floods, 138
- Storms, 79
- Earthquakes, 30
- Mass movement wet, 18
- Droughts, 16
- Extreme temperatures, 11
- Volcanoes, 6
- Wild fires, 4

Source: EM-DAT
Framing the Issue

3. Low/middle income countries most severely impacted
   • Lag between increased urbanization and increase in GDP per capita
     ➔ Inequality in housing stock
     ➔ High risk location of low-income housing -- flood plains, steep slopes
     ➔ Small proportion of earthquake/flood, hurricane resistant buildings
     ➔ Low ex-ante institutional readiness
     ➔ Few public & private resources to apply post-disaster
Cost of Natural Catastrophes Increases—Small Proportion Covered by Insurance

Worldwide Data 1980-2010

Sources: Munich Re Geo Risks Research
Fatalities per Event and Direct Economic Losses as a Share of National Income Show Stress on Low-Income Countries: 1980 - 2004

Source: Linnerooth-Bayer et.a. Refocusing Disaster Aid, Science 309, 2005
Humanitarian Natural Disaster Funding Is Small Proportion of Cost of Disaster Damage

<table>
<thead>
<tr>
<th>Year</th>
<th>Humanitarian disaster funding/year ($ billions)</th>
<th>Estimated damage from natural disasters/year ($ billions)</th>
<th>Funding/damage %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>0.59</td>
<td>136.20</td>
<td>0.43</td>
</tr>
<tr>
<td>2005</td>
<td>7.62</td>
<td>214.20</td>
<td>3.56</td>
</tr>
<tr>
<td>2006</td>
<td>0.26</td>
<td>34.10</td>
<td>0.76</td>
</tr>
<tr>
<td>2007</td>
<td>0.82</td>
<td>74.40</td>
<td>1.10</td>
</tr>
<tr>
<td>2008</td>
<td>1.40</td>
<td>190.50</td>
<td>0.73</td>
</tr>
<tr>
<td>2009</td>
<td>0.31</td>
<td>41.30</td>
<td>0.75</td>
</tr>
<tr>
<td>2010</td>
<td>6.43</td>
<td>123.90</td>
<td>5.19</td>
</tr>
<tr>
<td>2011</td>
<td>1.45</td>
<td>366.00</td>
<td>0.40</td>
</tr>
<tr>
<td>Average</td>
<td>2.36</td>
<td>147.58</td>
<td>1.62</td>
</tr>
</tbody>
</table>

Disparity Between Pledging and Delivery of AID after Disasters

<table>
<thead>
<tr>
<th>Crisis</th>
<th>Amount pledged ($)</th>
<th>Amount delivered ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambodian war rehabilitation^{139}</td>
<td>880 m by June 1992</td>
<td>460 m by 1995</td>
</tr>
<tr>
<td>Rwandan genocide^{140}</td>
<td>707 m in January 1995</td>
<td>&lt;71 m by July 1995</td>
</tr>
<tr>
<td>Hurricane Mitch, Central America^{141}</td>
<td>9 bn in 1998</td>
<td>&lt;4.5 bn, December 2004</td>
</tr>
<tr>
<td>Bam earthquake, Iran*</td>
<td>1 bn in January 2004</td>
<td>116 m December 2004</td>
</tr>
<tr>
<td>Haiti earthquake^{142 **}</td>
<td>508 m in August 2010</td>
<td>134.2 m August 2010</td>
</tr>
</tbody>
</table>

Source: Brookings 2011

Consequence: It takes low- and middle income countries a long time to recover and build back!
Increased Stress on Resources Requires New Ex-Ante and Ex-Post Disaster Approaches

New Approaches to transfer risks and decrease dependency on donor funds:

• Risk-transfer CAT-insurance pool or bond systems in some middle income high risk countries, e.g. Mexico, Turkey
  • MX focused on government risks and costs and linked to government risk reduction measures
  • Turkey individual property owners’ insurance supported by WB, but not connected to programs to retrofit buildings

• OECD countries focus on disaster related property insurance

• Prop insurance not yet feasible at scale in developing countries/micro-credit insurance proven somewhat successful

Missing! Financing mechanisms to extend housing reconstruction and risk reduction programs other than donor funds
Access to Housing Finance Increases Resilience to Disasters – Ex-Ante

• **Preparedness/Adaptation:** having the right policies in place *ex ante*—**DRR works but costly!**
  - Reducing exposure (land-use planning/resettlement *ex-ante*)
  - Reducing vulnerability (retrofitting high risk buildings)—
    - Using Benefit/Cost ratios to target improvements with highest pay-offs
    - Providing incentives to implement high B/C ratio improvements (vouchers, serviced land in safe locations)
  - Creating institutions to improve response
  - Enabling insurance for residual risk; limited in poor countries

• **Requires** *savings and credit systems* -mortgage, micro, *construction*—to complement DRR subsidies/incentives

• But few governments think probabilistically/ long-term= myopic, after major disaster has occurred
Access to Housing Finance Increases Resilience to Disasters – Ex-Poste 1

Housing finance responses differ during different stages

- Relief and on site recovery
- Reconstruction, new permanent housing development

1. Short-term relief and recovery:

- temporary housing and host family grants (Indonesia)
- cash grants + self help/management + material supply for repairs
  => requires supervision on standards
  => most appropriate in rural, semi rural areas where such aid can lead to sustainable settlements in the right location
- rental grants (but put pressure on rents in the market)
- loans are mostly unfeasible during this early stage
- often multiple approaches by donors in absence of strong govt. guidance
2. Reconstruction phase requires DRR rethink

• Focus shifts to long term planning and housing market development — “built back better”
• But donor funding decreases
• Need to leverage owner contributions — labor, savings and credit (mortgage or micro) / leverage investment by rental housing owners
• Requires a coordinated “smart” finance linked subsidy approach that loops into long term adaptation strategies

**Reality:** government/donors continue to develop a multitude of subsidy systems, including free “transitional” & permanent houses

• Little systematic leverage of own contributions/credit that lead to a continuing investment in housing
• Reach an unnecessary small percentage of deserving households
• Disaster not used as a DRR opportunity!
Why Resistance to Use Housing Finance in Post-Disaster Situations

- Belief that majority of affected households cannot handle credit
- Belief that lenders will not make loans to affected population
- Lack of credit infrastructure/institutions
- A multitude of legal and institutional issues (titles)
- Lack of time; donors need to show results/leave

All legitimate issues; But what are the facts and what can be done?

Collect real facts early by specialized financial professionals:
- Data on potential beneficiary groups according to:
  - location and house condition
  - ability to pay and potential to access credit, contribute labor
  - appropriateness and preference to rent
- Understand lender constraints and discuss incentives needed to increase lending
- Find rental investors – private, employer—discuss needed incentives
- Explore whether community organizations can intermediate credit programs
### Income/Finance Affordability in Haiti

**Household Income quintiles extrapolated from 2001 (CPI), assuming same income distribution/total pop**

<table>
<thead>
<tr>
<th><em>Income Quintiles</em></th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Q5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean monthly household income per quintile $USD 2010</strong></td>
<td>$73.38</td>
<td>$236.87</td>
<td>$461.28</td>
<td>$868.26</td>
<td>$3,589.48</td>
</tr>
<tr>
<td>Borrowing capacity</td>
<td>10%</td>
<td>10%</td>
<td>15%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Monthly pmt.capacity</td>
<td>7</td>
<td>24</td>
<td>69</td>
<td>174</td>
<td>718</td>
</tr>
<tr>
<td>Commission/guarantee fees</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Loan repayment capacity</td>
<td>7</td>
<td>23</td>
<td>66</td>
<td>165</td>
<td>682</td>
</tr>
<tr>
<td>Loan term</td>
<td>3</td>
<td>5</td>
<td>7</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Nominal interest rate</td>
<td>36%</td>
<td>36%</td>
<td>18%</td>
<td>12.0%</td>
<td>9.5%</td>
</tr>
<tr>
<td>Affordable loan</td>
<td>152</td>
<td>623</td>
<td>3,127</td>
<td>11,498</td>
<td>73,166</td>
</tr>
<tr>
<td>Down-payment/sweat equity (Upfront subsidy)</td>
<td>10%</td>
<td>10%</td>
<td>15%</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>Afford with loan alone</td>
<td>152</td>
<td>623</td>
<td>3,127</td>
<td>11,498</td>
<td>73,166</td>
</tr>
<tr>
<td>Afford with down-pmt</td>
<td>169</td>
<td>692</td>
<td>3,679</td>
<td>14,373</td>
<td>91,457</td>
</tr>
<tr>
<td>Afford with down pmt &amp; subsidy</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

*Income quintile distribution data obtained from Ministere de la Planification et de la Cooperation Externe, Inegalites et Pauvrete en Haiti (March 2006), p.15; based on 2001 data

**CPI Index figures were used to extrapolate 2001 income distribution data to 2010, by quintile
The change in CPI from 2001-2010 (69%) was applied to the mean monthly household income in 2001 to determine 2010 figures.*
Experience?

Households can and will take on credit if available (El Salvador, Indonesia, see also UNOCHA 1982 rather than more recent study)

- Appropriate savings and credit products and procedures

Micro/Mortgage Lenders will come in with right incentives:

- Guarantees and default insurance; insurance on property
- Access to funds for micro-lenders (but lending at market rate)
- Appropriate credit-linked subsidy systems; e.g., upfront subsidies rather than interest rate subsidies
- Use inter-lender Management Unit to facilitate fast track titling, credit checking of informal hh, and help create pipeline of projects
- But government/donor finance entities often crowd out private sector (Indonesia?)
Experience?

- **Communities** can be mobilized:
  - Use of *flexible community funds* and community allocation systems
  - Will leverage *community labor* and other contributions and *local government* contributions
  - Require authentic community leadership

When done correctly improved access to finance forms a **virtuous loop** with long-term impact on Disaster Risk Reduction and improvement of the housing market
Home-owner Support and Self Mobilization Including Finance

Rental Housing the Missing Component in Post Disaster Housing Strategies

- How to locate multi-unit rental landlords?
- What are constraints for them to (re)build?
  - Costly removal of rubble?
  - No access to finance for rental housing?
  - Strict tenant regulations/rent control?
  - New building guidelines/permits/density?
  - Expense of property insurance?
- Can employers construct rental housing?
- Can room-rental be made part of new housing programs?

What incentives do different types of rental investors need to "build back better"?

See next presentation
Conclusion

• Ex-ante development of financial and insurance systems that give households resources to improve their house, are also critical for quickly providing access to funds after a disaster hits.

• Improvement of Donor /Government coordination on post-disaster housing subsidies and housing finance in the reconstruction phase is paramount going forward --

• Given the size of housing sector damage in natural disaster events, should there be an Inter-Agency Standing Committee “cluster” on Housing Finance and Housing Support in situations of Natural Disaster to facilitate coordination?

• Money needs to be set aside for Monitoring and Evaluation of Housing Finance Programs/ Lack of detailed case studies
Reconstruction After Disasters: Ten Lessons (Learnt The Hard Way)

Abhas K. Jha,
Lead Urban Specialist and Program Leader,
Disaster Risk Management,
East Asia and the Pacific,
The World Bank.
1. It’s Important.

Up to 80 percent or more of damage to infrastructure after major disasters can be housing.
2. It Takes Time.

Be Prepared for the Long-Haul!
3. Land Titles Often Are the Biggest Bottleneck

...but also an opportunity to resolve long standing issues related to:

- Extralegal or Informal Tenure
- Poor Land Governance
- Inferior Land Rights for Women
- Highly Unequal Land Distribution
4. Two Factors Determine the Success or Failure of the Program

1. The Damage Assessment

2. The Reconstruction Policy
5. Owner Driven Reconstruction Works the Best.

The most empowering and dignified approach BUT requires

- Training and TA
- Updating codes [?]
- Mechanisms to regulate prices
- Financial assistance in installments linked to technical quality
6. Resettlement Rarely Works.

- Resettlement is usually unsuccessful
  - Livelihoods
  - Socially and culturally inappropriate

- Sometimes unavoidable
  - Environmentally vulnerable

- Successful resettlement
  - Takes into account livelihoods
  - Partners with the community
  - Fully serviced plots
  - Socially and culturally appropriate
7. Training Makes a Vital Difference

- Detailed damage assessment
- Data collection and information management
- Technical advisors and supervisors
- Owners and builders in the field

- Formalize relationship
- Establish oversight mechanisms
- Manage expectations

Constituency, capacity, outreach and skills

Overall Program/Government objectives
9. Reconstruction Can Be Used to Mainstream Disaster Risk Reduction.

**Build back smarter!**

- Disaster resilience
- Cultural heritage preservation
- Land tenure/Land-use planning
- Anti-corruption/Financial Tracking
- Institutions
10. Institutions Matter (a Lot!)

- Authority
- Autonomy
- Political Support
- Mandate, Policy and Plan
- Effective Relationships
  - Military
  - Local authorities
  - NGOs
  - Donors
Safer Homes, Stronger Communities
A Handbook for Reconstructing after Natural Disasters

All the information to carry out housing and community reconstruction projects that empower communities and reduce vulnerability to future disasters.

Abhas K. Jha
主编
Jennifer Duyme Barenstein
Priscilla M. Phelps
Daniel Pittet
Stephen Sena

The World Bank
GFDRR

To order the Handbook, participate in discussions, and share resources on reconstruction, visit:
www.housingreconstruction.org

www.housingreconstruction.org
ajha(at)worldbank.org
Housing Finance in Emerging Markets: Providing Shelter, Creating Jobs, Fueling Growth
Session 7-2: Post Disaster Housing and Reconstruction

Case study from Japan after March 11, 2011

Masahiro Kobayashi,
Chief Economist, Global Market,
Incorporated Administrative Agency
Japan Housing Finance Agency (JHF)
What happened on March 11, 2011

• On March 11, 2011, a massive earthquake with a magnitude of 9.0 struck Northeast of Japan (Tohoku region), which is the largest on record in Japanese history.

• The Great East Japan Earthquake was indeed an unprecedented national crisis; it was also a compound disaster of earthquakes, tsunami and a nuclear accident and had a broad impact all over the nation.

(Map from Japan Meteorological Agency)
Human damage

- The number of dead is 15,858, and the number of missing is 3,067 (as of May 1, 2012). There were massive destructions in public infrastructures, including electricity, gas and water supply. Immediately after the Earthquake, nearly a half million people were evacuated.

(Photo by JHF staff at Tohoku-regional office)
Damages on housing stock

• There were significant damages on housing stock as well. 129,520 units are identified to be totally destroyed and another 256,420 units be heavily damaged as of May 1, 2012.

(Photo by JHF staff at Tohoku-regional office)
Emergency shelters

- The Government of Japan has been mobilizing all its efforts towards recovery from the Earthquake.
- 52,858 units of emergency shelters are completed as of May 1, 2012 and many evacuation centers are already closed.

(Photo from Ministry of Land, Infrastructure, Transport and Tourism http://www.mlit.go.jp/common/000170074.pdf)
Financial assistance for Homeowners

- For new borrowers
  JHF has been providing special concessional mortgages with subsidies for those who will purchase or construct a house.
- For existing borrowers
  JHF has been extending borrower outreach program to modify outstanding mortgage terms as well.

Mortgage Rate as of May 23, 2012
Deploying Human Resources to consulting to borrowers

(Photo by JHF staff at Tohoku-regional office)
## Comparison of damages between Haiti and Japan

<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Magnitude</strong></td>
<td>7.0</td>
<td>9.0</td>
</tr>
<tr>
<td><strong>Destroyed houses</strong></td>
<td>105,000</td>
<td>129,520</td>
</tr>
<tr>
<td><strong>Dead and Missing</strong></td>
<td>316,000</td>
<td>18,915</td>
</tr>
</tbody>
</table>

(Source) Cabinet Office, Government of Japan, Ministry of Foreign Affairs
Challenges

• There remain major challenges as well.
• Most of the houses totally destroyed were located along seaside.
• Many of those houses stood immediately after the earthquake, but wiped away by tsunami.
• Considering the recurrence of tsunami, it is recommended that houses should be reconstructed on higher hillside rather than on original seaside which may suffer another inundation.
• However, relocation of this scale is unprecedented and there are constraint regarding availability of housing sites in these regions as well as cost to develop such sites.
• Fishermen lived along seaside because of accessibility to ports.
• Restoration of livelihood is an integral part of reconstruction along with places to live in the affected region.
Image of relocation to higher site

Owner occupied houses

Public rental houses

Cost of development
Access to fishing port
(Place to work)

Risk of another inundation

Medium and high rise building
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