Build Back Better in Urban Resilience

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Nepal Earthquake 2015

- Gorkha: 7.8-magnitude earthquake on April 25
- Sindhupalchowk: 7.3-magnitude earthquake on May 12
- Kathmandu
- Lalitpur
- Mt. Everest
Lalitpur Metropolitan City (LMC)

148,197 Sq. Km
27 m Population
70,256 Household
284,922 Population
138,998 Female
145,924 Male

Hazards
- Fire
- Earthquakes
- Road Accidents
- Flood
# Effects of Earthquakes in LMC

<table>
<thead>
<tr>
<th>Loss</th>
<th>LMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collapsed Buildings</td>
<td>4199</td>
</tr>
<tr>
<td>Non Functional Buildings</td>
<td>3274</td>
</tr>
<tr>
<td>Partially Damaged Functional</td>
<td>2818</td>
</tr>
<tr>
<td>Minor Damages</td>
<td>3788</td>
</tr>
<tr>
<td>Damage to Heritage Monuments</td>
<td>195</td>
</tr>
<tr>
<td>Casualties</td>
<td>66</td>
</tr>
<tr>
<td>Injuries</td>
<td>218</td>
</tr>
<tr>
<td>Directly Affected Population</td>
<td>75621</td>
</tr>
</tbody>
</table>
Effects of Earthquakes in LMC (cont.)

- 12 health facilities destroyed
- 149 schools completely destroyed
- Patan Durbar Square- (UNESCO world heritage site)-historical monuments destroyed/weakened
- Damage to intangible heritage i.e. culture, values and tradition
- Subsequent effect on tourism industry
Innovative approaches by learning from past experience and initiatives

- Post Disaster Needs Assessment by National Planning Commission (NPC) and subsequent Post Disaster Recovery Framework prepared
- 55 standards developed as building codes/guidelines by Nepal Reconstruction Authority (NRA, NSET)
Innovative Approaches (Contd.)

- Mason training in safer practices complying with government building codes, disaster and climate risk reduction, quality control
- Owner driven reconstruction approach (installment payment contingent with compliance to building standards)
- Increasing women’s role in engineering and construction
Innovative Approaches (Contd.)

• Reuse/salvage and recycling of debris
• Preservation of culture, tradition and architecture to continue promotion of tourism
• Retrofitting to make existing houses, cultural heritage buildings more earthquake resilient
• Strengthen household Disaster Risk Reduction (DRR) capacity and government response to DRR
Innovative Approaches (Contd.)

- Cash for work initiatives
- Providing businesses with the tools to develop earthquake preparedness plans—possibility to develop a national forum for engagement of different businesses and the Government
- Business continuity planning restoring livelihoods and market functions through collaborative approach—leveraging capability and capacity of stakeholders (government, private sector and civil society—PPP)
Lesson Learnt

• Working in close coordination with National Federation of the Disabled for Access audits and recommendations
• Joint monitoring of reconstruction work for Gender Equality & Social Inclusion (GESI) - chance to promote more equal power relations and attitudes
• School Disaster preparedness and Management capacity should be increased
• Documentation of good practices, lessons learnt
• Reconstruction as healing
DRR Plans

Immediate ongoing Activities:

- Disaster Management parks
- Awareness programs
- Emergency tools/equipment storage
- Retrofitting training
- Earthquake resistance ward offices
- Safety of construction workers
- Community Based Disaster Risk Reduction and management plan
DRR Plans

Mid Term Activities:

• Earthquake resistance ward offices
• Community Buildings
• Declaration of DM parks and/or open spaces for shelter in each ward
Future DRR Plans Cont.

Long Term DRR Plans:

• Retrofitting of buildings
• Metropolitan emergency operation center
• Modern Fire Brigade center
• Building permit bylaws/regulations strengthened
• Disaster waste treatment measures
• Promotion of land use restriction
• Support for the recovery and reconstruction of tourism
• Traffic/ transportation and lifeline management
Financial Assistance

- Kathmandu Valley Preservation Trust
- Department of Archaeology
- Nepali Business sector (over $3 million to the Disaster Relief Fund)
- German Embassy
- the Netherlands
- the British Embassy
- Government of Sri Lanka
- Government of India
- Government of China
- Asian Development Bank (ADB)
- Japanese International Cooperation Agency (JICA)
- The South Asia Institute of Heidelberg University
- And many more.....
Challenges

• Older, historical homes built before the Building Code existed
• Intricate historical designs difficult to copy and recreate
• Nepal construction materials industry: 35-40% market growth in the next 5 years but needs regulating
• Funding still required
Thank you