FUNDING RECONSTRUCTION: ROLE OF FINANCE IN POST-DISASTER PERMANENT HOUSING RECONSTRUCTION AND RETROFITTING

Elizabeth Hausler Strand, Ph.D.
Founder and CEO

InterAction Forum
Shelter and Settlements: Post-Disaster Response in Urban Environments
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About Build Change

→ US 501(c)3 international non-profit social enterprise with programs in Indonesia, China and Haiti

→ Founded in 2004 by Elizabeth Hausler, bricklayer and Ph.D. earthquake engineer from University of California, Berkeley

→ Goals: Design earthquake resistant houses; train builders, homeowners, government officials and engineers to build them; change construction practice permanently

→ Mission: Greatly reduce deaths, injuries, economic losses from housing collapses due to earthquakes in developing countries

→ Impacts: 73,000 people living in houses improved by Build Change, over 12,000 people trained; no damage to minimum standard houses in 2009 earthquake; governments adopting Build Change model
HAITI

HOMEOWNER-DRIVEN RETROFITTING
Homeowner-Driven Retrofitting in HAITI

→ RETROFIT vs. REPAIR: Retrofit STRENGTHENS the building so it can withstand the next earthquake; repair simply fixes broken parts

→ RETROFIT EVALUATION PROCEDURE: Partnership with Degenkolb, ASCE-31 and 41, incorporated in MTPTC Retrofitting Guide

→ IMPACTS TO DATE: Partnerships with Cordaid and J/P HRO

  → SURVEYED: 1,510
  → DESIGNED: 1,284
  → COMPLETED: 135
  → UNDER CONSTRUCTION: 93

→ GOALS: Complete 1,500 retrofits by mid-2012, 1,500 every 6 months if funds available, train others
Advantages of Homeowner-Driven Retrofitting

→ HOMEOWNER CHOICE: Options to meet homeowners lifestyle

→ HOMEOWNER CONTRIBUTION: Homeowners contribute funds, materials to both structural and non-structural elements; we should *leverage this potential to contribute even more*

→ SUPPORT OF LOCAL ECONOMY: Homeowners usually hire local builders, buy local materials

→ VERSATILITY: Can apply to two-story, difficult buildings; both red and yellow tagged; will be extended to three-story

→ LARGE Bldgs MEAN RENTAL UNITS: Cost per sq m of large unit can be half that of small unit; more housing units available

→ LEVERAGED FINANCING: Given out in installments

→ COST:

www.buildchange.org
## COST (Materials and Labor)

<table>
<thead>
<tr>
<th>COST (US$)</th>
<th>Villa Rosa (Canape Vert)</th>
<th>Ti Sous (Carrefour)</th>
<th>Yellow House Repair /T-Shelter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg MTPTC Red Tag</td>
<td>$119/m²</td>
<td>$91/m²</td>
<td></td>
</tr>
<tr>
<td>Avg MTPTC Yellow Tag</td>
<td>$52/m²</td>
<td>$63/m²</td>
<td>Can Be Higher</td>
</tr>
<tr>
<td>Avg MTPTC Green Tag</td>
<td>$42/m²</td>
<td>$45/m²</td>
<td></td>
</tr>
<tr>
<td>Min Cost Per Bldg</td>
<td>$50</td>
<td>$376</td>
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</tr>
<tr>
<td>Avg Cost Per Bldg</td>
<td>$2,330</td>
<td>$2,858</td>
<td>Can Be Lower</td>
</tr>
<tr>
<td>Max Cost Per Bldg</td>
<td>$7,000</td>
<td>$6,826</td>
<td></td>
</tr>
<tr>
<td>Avg Size</td>
<td>40 m²</td>
<td>52 m²</td>
<td>Lower</td>
</tr>
<tr>
<td>No. Bldgs Surveyed</td>
<td>435</td>
<td>548</td>
<td></td>
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</tbody>
</table>
Benefits of On-the-Job Training

→ EXTENDS BEYOND an INTRODUCTION: Short courses provide good introduction; not enough time/experience for everyone to get hands dirty and perfect skills

→ TARGETED: Can target training to skills builders lack and skip the skills they already have

→ INSTANT, DOCUMENTABLE IMPACTS: Easy to track progress during implementation

→ COST: Cost per builder can be lower; materials provided,

→ SUSTAINABLE: All builders trained are actually builders
HAITI

HOMEOWNER-DRIVEN NEW
CONSTRUCTION
EXAMPLE PLAN FOR SINGLE STORY HOUSE

TOTAL AREA: 33 m² (27 m² INDOORS)
COST PER SQ M: US $450-460 APPROX
TOTAL COST: US $15,000 APPROX (HTG 597,000)
Stimulate Local Demand (Homeowners)

1. Why Houses Collapse, and Simple Ways to Prevent
2. How To Sign a Good Contract and Read a Drawing
3. How to Check Materials and Construction Quality
Homeowner-Driven Reconstruction

1. Decide Structure Type (Timber? Confined Masonry?)
2. Draw Layouts
3. Estimate Costs
4. Select a Good Builder and Sign a Fair Contract
5. Check Materials Quality and Supervise Construction
Overall Cost Per House is Less When Homeowners Lead

**West Sumatra: US$3,000 - $8,000**

Includes government grant, homeowners own funds, Build Change technical assistance. Homeowners → Use more recycled materials → Build only what they need, no waste and theft → Support local economy by buying local materials and hiring local builders

**Aceh: US$12,000 - >$20,000**

Includes donor-funded materials and labor, overheads, warehousing, construction management, quality control, retrofitting and rebuilding.

Homeowner-driven model stretches donor dollars further.

www.buildchange.org
Thank You - Contact Us

Elizabeth Hausler Strand, Founder + CEO
elizabeth@buildchange.org
US Mobile: 1.415.235.9930
Haiti Mobile: +509-3702-8251

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