Post-Disaster Recovery in India
Case studies from Assam and Odisha

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About Assam

• North-eastern state, strategic location
• Diversity: >250 ethnic groups
• Floodprone state: Brahmaputra & its tributaries
• 2012 floods - 48 breaches in embankments; 528 mm rainfall 28% increase; 5,43,088 displaced and 126 deaths and 19 missing (ASDMA, 2012)
• Followed by recurring floods and erosion in 2013
Sonitpur and Morigaon Districts of Assam, India

Figure 10: Flood Hazard Map (1998-2007)
Community response

• Loss of land and livelihood, houses, crops, farmlands to floods and erosion
• Access to basic facilities – schools, health posts, roads and markets limited in char areas
• Land ownership struggles for Muslim settlers - Shifting with chars for productive value
• History of floods and frequent displacement
• Sharing risk of investments in land for housing and farming
Housing patterns in Assam based on hazard characteristics

Houses on stilts in flood inundated areas, local materials in areas suffering from erosion that can be easily dismantled with minimum losses.
Shelter provision

• CGI Sheets, jute mats, bamboo poles, j-hooks
• Targeting: Women-headed households, disabled
• DRR Capacity Building: village masons as architect-engineer-constructor and labourers
• Integrated with CFW: households encouraged to lay mud for raining plinth levels through cash injections but WASH integration limited
• Boramari: Panchayat NOCs for land
• Shared homesteads as a risk-sharing mechanism
Cyclone Phailin and subsequent floods

- 234,000 houses were damaged and more than 870,000 people evacuated
- UK AID and ECHO funded 2 consortia
- OFDA and World Bank –led reconstruction
- This study included Puri and Balasore affected by cyclone, floods, and erosion
Cyclone Phailin and floods, 2013
# Participatory Change Analyses

<table>
<thead>
<tr>
<th>Aspects</th>
<th>Coastal villages</th>
<th>Island villages</th>
<th>Inland villages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water supply</td>
<td>Raised hand pump, regulated artesian wells</td>
<td>Raised hand pump, regulated artesian wells</td>
<td>Raised hand pumps</td>
</tr>
<tr>
<td>Water treatment</td>
<td>Communal and HH water filters</td>
<td>HH water filters, and cloth as filters</td>
<td>Water filters, chlorine tablets</td>
</tr>
<tr>
<td>Defecation</td>
<td>Open defecation</td>
<td>Open defecation, few HHs used disabled-friendly toilet</td>
<td>Shared toilets</td>
</tr>
<tr>
<td>Handwashing</td>
<td>Infrequently</td>
<td>Yes, with ash</td>
<td>Yes, with soap</td>
</tr>
<tr>
<td>Bathing</td>
<td>Wells, Ponds, near tubewells</td>
<td>Ponds</td>
<td>Ponds Bathing cubicles</td>
</tr>
<tr>
<td>Shelter</td>
<td>Temporary housing</td>
<td>Own houses repaired</td>
<td>Temporary or repaired houses</td>
</tr>
<tr>
<td>Out-migration</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Livelihoods</td>
<td>Fishing nets repaired, and business resumed, boats expensive</td>
<td>Fishing activities not resumed, farming disrupted due to salinization</td>
<td>Decrease in labour work opportunities, farmers lost cash crops and seed support</td>
</tr>
</tbody>
</table>
## Assam Community Recovery Priorities

<table>
<thead>
<tr>
<th>Priority issues</th>
<th>Solmari</th>
<th>Boramari</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Safe shelter</td>
<td>Water sources, buckets</td>
</tr>
<tr>
<td>2</td>
<td>Safe land for housing and agriculture</td>
<td>Food supply/ration</td>
</tr>
<tr>
<td>3</td>
<td>Latrines</td>
<td>Tarpaulin sheets for shelter</td>
</tr>
<tr>
<td>4</td>
<td>Adequate water sources</td>
<td>Latrines</td>
</tr>
<tr>
<td>5</td>
<td>Electricity, protection from river</td>
<td>Protection from river and erosion</td>
</tr>
</tbody>
</table>

## Odisha Community Recovery Priorities

<table>
<thead>
<tr>
<th>Priority #1</th>
<th>Coastal</th>
<th>Island</th>
<th>Inland</th>
<th>Chadanamkhana</th>
<th>Gombhoria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Food security</td>
<td>Repair boats and fishing nets</td>
<td>Livelihoods support</td>
<td>Shelter</td>
<td>Housing</td>
</tr>
<tr>
<td>Priority #2</td>
<td>Income generation – repair boats and fishing nets</td>
<td>Drinking water supply</td>
<td>Drinking water facilities</td>
<td>Livelihood support</td>
<td>Latrine facilities</td>
</tr>
<tr>
<td>Priority #3</td>
<td>Housing</td>
<td>Housing</td>
<td>Latrine facilities</td>
<td>Land</td>
<td>Drinking water</td>
</tr>
<tr>
<td>Priority #4</td>
<td>Drinking water supply</td>
<td>Health support – disability access</td>
<td>Menstrual health</td>
<td>Stone pitching to prevent erosion</td>
<td>Livelihood support</td>
</tr>
<tr>
<td>Priority #5</td>
<td>Latrine facilities</td>
<td>Latrine facilities</td>
<td>Latrine facilities</td>
<td>Health support</td>
<td></td>
</tr>
</tbody>
</table>
Key Findings – Assam 2013

• Displacement due to erosion, materials reused
• Use of bamboo instead of concrete pillars helped
• DRR structural features compromised and materials shared among household members
• Gendered recovery processes, failure of embankments
• Household: Cheaper to dismantle and rebuild for HHs with earlier support
• Government: Focus on populist flood protection measures, no compensation provided to affected HHs, no recovery support
Key Findings – Odisha 2014

• Prioritisation of disasters: Flood and erosion affected villages received no recovery support
• HHs in Chadanamkhana continued living in tarpaulin and plastic sheeting houses for 6 months
• Cannot link with pre-existing dysfunctional government schemes on housing, rural employment
• Village committees non-functional after project ended
• Government: OSDMA coordinated recovery packages, Bank-led Rehabilitation Programme
Interpretations

• If resilience is key ability to organise and learn from previous experiences, agencies to equip communities for self-organisation and through knowledge coproduction

• Different priorities and perspectives on recovery at household level, for communities, government and humanitarian NGOs

• Inequality exacerbated if resilience measures ignore CONTEXT – multi-hazard, local practices and historical response

• Emphasis not on providing physical buildings to withstand future disasters but on community deciding what they normally do

• In Linking relief, recovery and development – recovery is often missing in government action and humanitarian ‘exit’ strategies ineffective in the long-term
HOUSEHOLD TRAJECTORIES IN WaSH DURING RECOVERY

CONTRIBUTING FACTORS
- External support
- Nature of disasters

HOUSEHOLD CHARACTERISTICS
- Socio-economic conditions
- WaSH accessibility, availability
- Geographical location
- Cultural Attitudes, Motivation
- Technology

TRAJECTORY FEATURES
- Coping strategies
- Preparedness
- Learning
- Hygiene Behaviour changes
- Post-disaster access to WaSH