Climate Resilience of Financial Institutions: An Academic Perspective

Jen Burney*, Craig McIntosh, Krislert Samphantharak, Alexandre Gori Maia, Rodrigo Lanna

A development “bind”

(1) Development is credit-constrained, particularly for those who are already climate-exposed (e.g., smallholder farmers)

(2) Financial Institutions internally insure themselves by diversifying portfolios away from climate exposure
Defining climate resilience

<table>
<thead>
<tr>
<th>Shock</th>
<th>Depth of Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time to Recovery</td>
</tr>
<tr>
<td></td>
<td>Recovery Level</td>
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</tbody>
</table>

Three levels of risk

**Individual**: Relationship between climate and individual loan performance.

**Portfolio**: Spatial and temporal correlation of individual risk across a portfolio.

**Sector**: Spatial and temporal correlation across portfolios / Financial Institutions
Spatiotemporal correlations


Mapping past to future climate

## Measuring resilience

<table>
<thead>
<tr>
<th>Digital Globe: 0.3m</th>
<th>Landsat 8: 30m</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Digital Globe: 0.3m" /></td>
<td><img src="image2" alt="Landsat 8: 30m" /></td>
</tr>
</tbody>
</table>

**LS8**  **DG** (Shrubs)

**LS8**  **DG** (Trees)

## Does resilience aggregate?

Do certain investments change income, assets, relationships with climate, delinquency risk? How much? With what distribution?