Socio-economic resilience to natural disasters
A tool for risk-informed development planning
applied to Mumbai

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Asset losses due to flood are increasing. What can we do to reduce resulting welfare losses?

Economic growth, urbanization, subsidence and climate change can dramatically increase losses in coastal cities.

Welfare losses will depend on local socio-economic capacity.

Poor people are often **more exposed** to natural disasters such as urban floods.

Poor people have access to **less** support to cope.

<table>
<thead>
<tr>
<th>Saved at a financial institution (%)</th>
<th>Poor</th>
<th>Non-poor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8%</td>
<td>21%</td>
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<tr>
<th>Average transfer from social protection and remittances ($/day)</th>
<th>Poor</th>
<th>Non-poor</th>
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<tbody>
<tr>
<td></td>
<td>$0.5/day</td>
<td>$2/day</td>
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Data for Indonesia from FINDEX and ASPIRE

Poor people are **more vulnerable** – they lose more when they are affected.

Shock Waves report
The **socio-economic resilience tool** combines information on risk and socio-economic factors.

- **Hazard**
- **Exposure**
- **Vulnerability**
- **Coping capacity**

**Asset losses**
The socio-economic resilience tool combines information on risk and socio-economic factors.
Application to the 2005 floods in Mumbai

Total asset losses: Rs. 35 bn

- Poor people were disproportionately affected (39% vs 18%)
- Poor people lost relatively more (13% of income versus 9% of income)
- Ex-post support was limited to about 10% of losses

⇒ Estimated welfare losses are much higher: Rs. 60 bn
What can we do to reduce welfare losses in Mumbai?

Welfare losses can be reduced by reducing asset losses.
Facilitating recovery can reduce welfare losses from *unchanged asset losses*.

**What can we do to reduce welfare losses in Mumbai?**
What can we do to reduce welfare losses in Mumbai?

More asset losses does not necessarily mean more welfare losses: what drives asset losses matters.