NATURAL HAZARDS

UN
NATURAL DISASTERS

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www.worldbank.org/preventingdisasters
hazards
resilience
institutions
Large disasters raise budget deficit in developing countries between 0.23% and 1.1%

large disasters have severe FISCAL effects
Mali GDP
$1 billion

1% of GDP
$10 million

2 million malaria nets
5 year effects on growth (severe disasters)
GDP $\neq$ WELFARE
less productive adults

- lower body mass
- lower cognitive skills

Philippines: reading / math scores

0.75 SD lower for stunted children
“The freedom to achieve the actual livings that one can have a reason to value...”

- Amartya Sen
The benefits of resilience include avoiding disasters’ adverse effects.
St Lucia hurricane
Jakarta flood
Istanbul earthquake
India (Rohini basin) flood

+ 1.5
+ 3.7
+ 4.6
+ 5.7

high benefit-cost ratios
information
Increasing accuracy of weather forecasts

- **Day 3**
- **Day 5**
- **Day 7**
- **Day 10**
huge potential benefits

- China: b-c ratio 35 to 40
- Europe & Asia: b-c ratio 2 to 14
Some countries benefit… but many do not
make existing information accessible
incentives
“...rent control...among best-understood issues in all of economics...one of the least controversial”

- Paul Krugman
In Peru, land titling associated with 68% increase in housing renovation within 4 years.
infrastructure
“safe prisons for all”?
Kuala Lumpur’s SMART tunnel, an example of critical infrastructure tailored to a specific hazard
only as useful as the last mile

Early warning systems
institutions

- incentives
- information
- infrastructure