

The background image shows a dense urban skyline with various skyscrapers under a hazy sky. In the foreground, two children are walking across a vast, cracked, and parched expanse of earth, likely a dry beach or tidal flat. The contrast between the modern city and the environmental degradation is a central theme of the slide.

Swiss Re



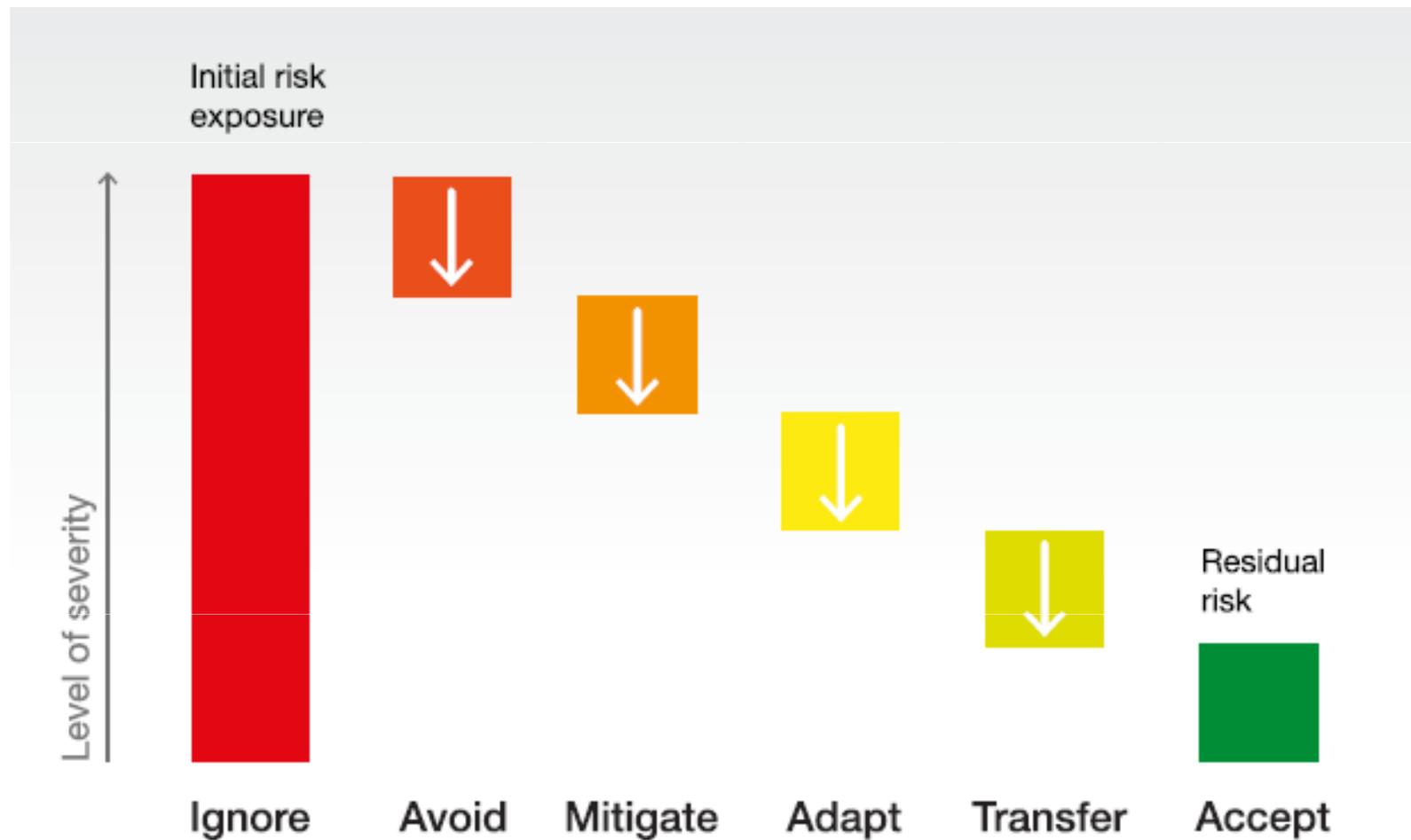
Assessing costs & benefits of adaptation options as a starting point for collaboration between authorities and the insurance sector

2nd Climate Change Summit for Asia's Insurance Industry,
30-31 January 2012, Singapore

Ivo Menzinger
Managing Director
Global Partnerships

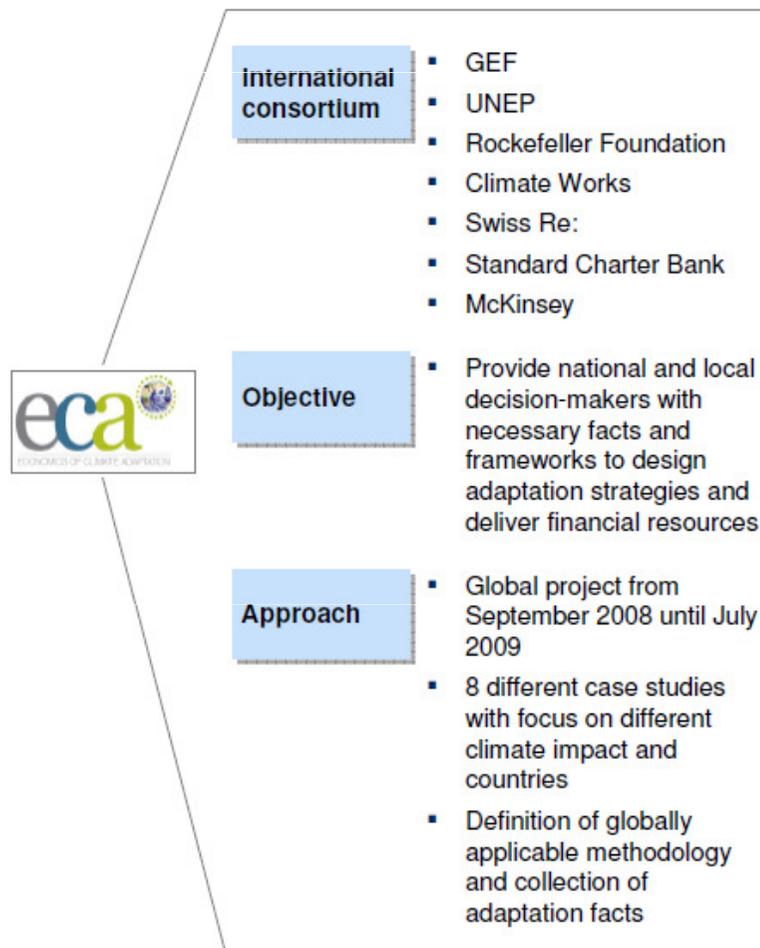


Climate change: a comprehensive risk response strategy is required

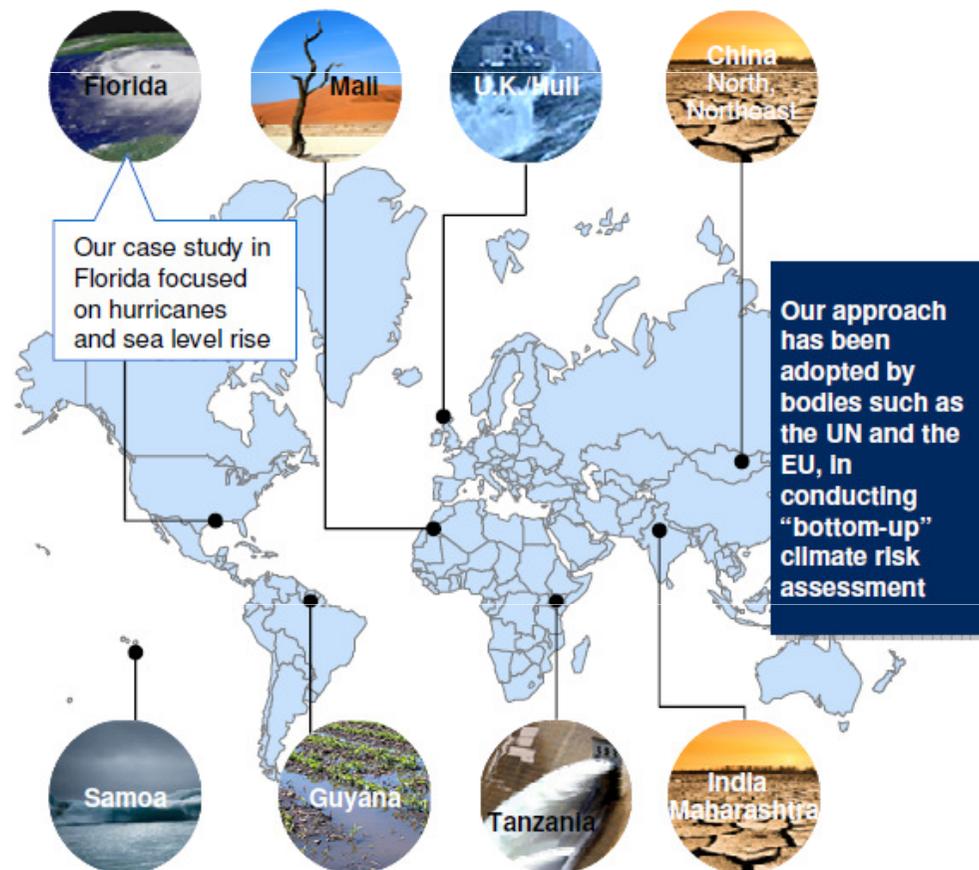


eca: an approach to quantify local climate risks and to devise an adaptation strategy

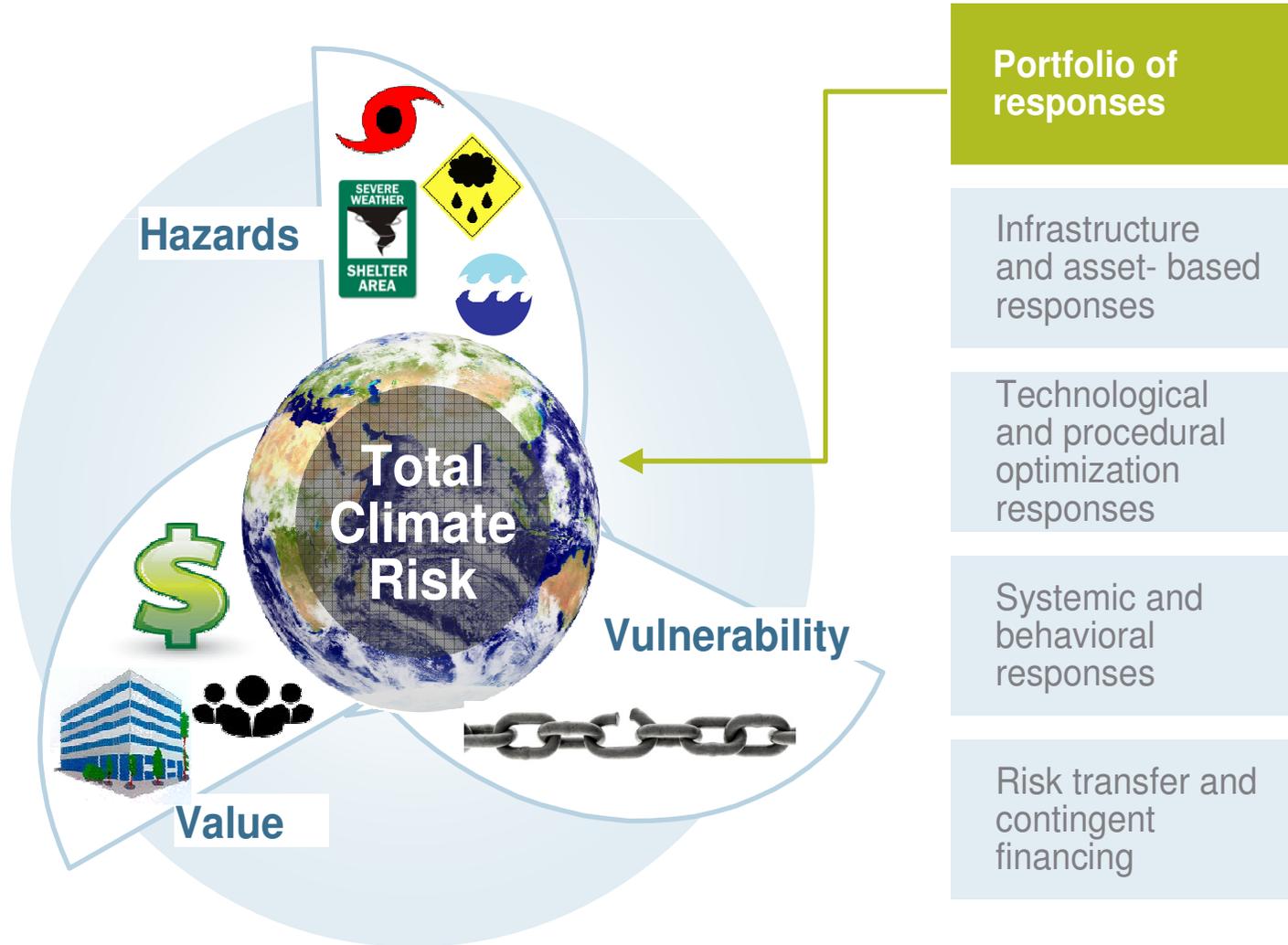
The Economics of Climate Adaptation work involved a consortia



This work involved an analysis of climate risks and adaptation measures across 8 countries



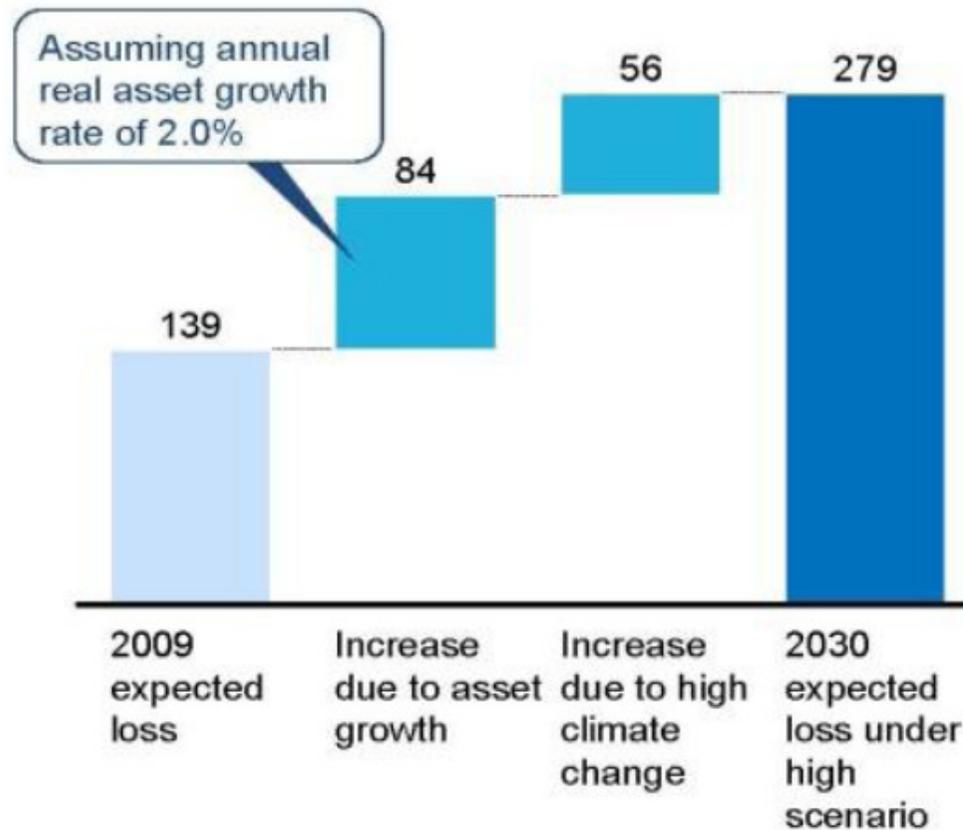
eca: the methodology



The economic value at risk – driven by economic growth and climate change

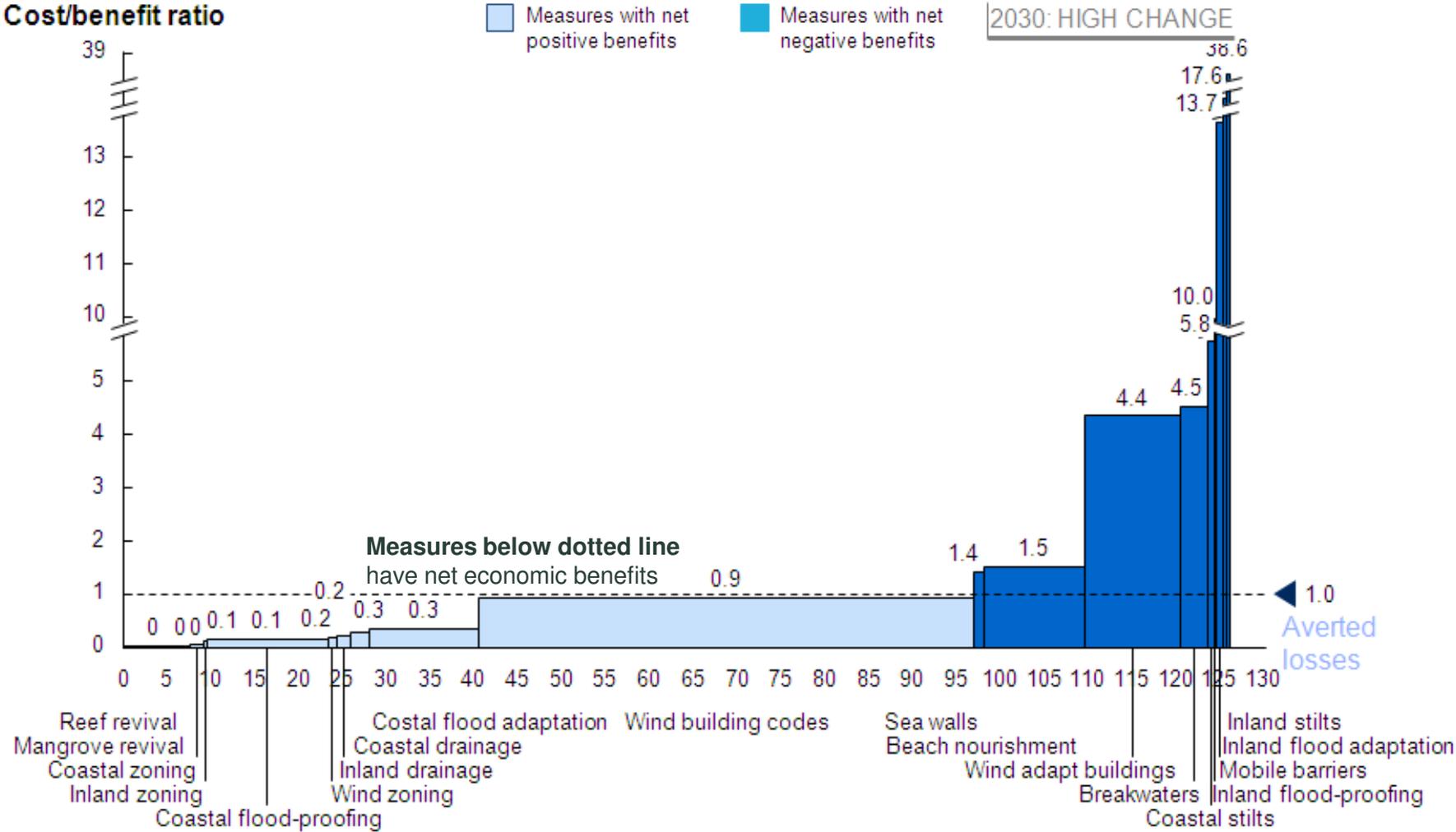
Contribution of climate change and economic growth in asset values to the increase in expected loss to 2030

Annual expected loss in 2009 and 2030
 USD millions



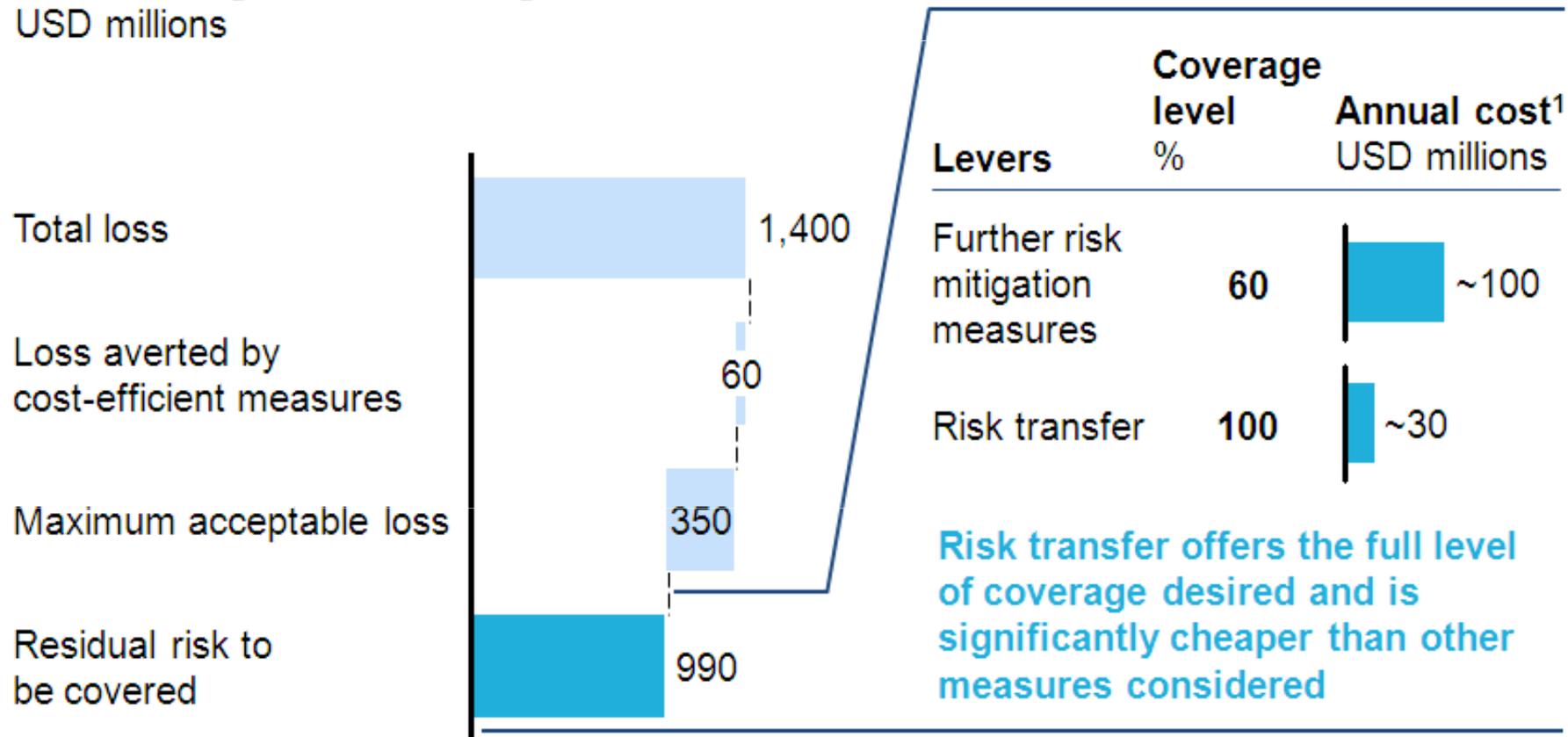
Barbados case study

Case study Barbados: 75% of adaptation measures have net economic benefit



Rare high severity events: insurance more effective than further risk mitigation measures

Loss in a 100-year event
St. Lucia, high climate change scenario 2030
 USD millions

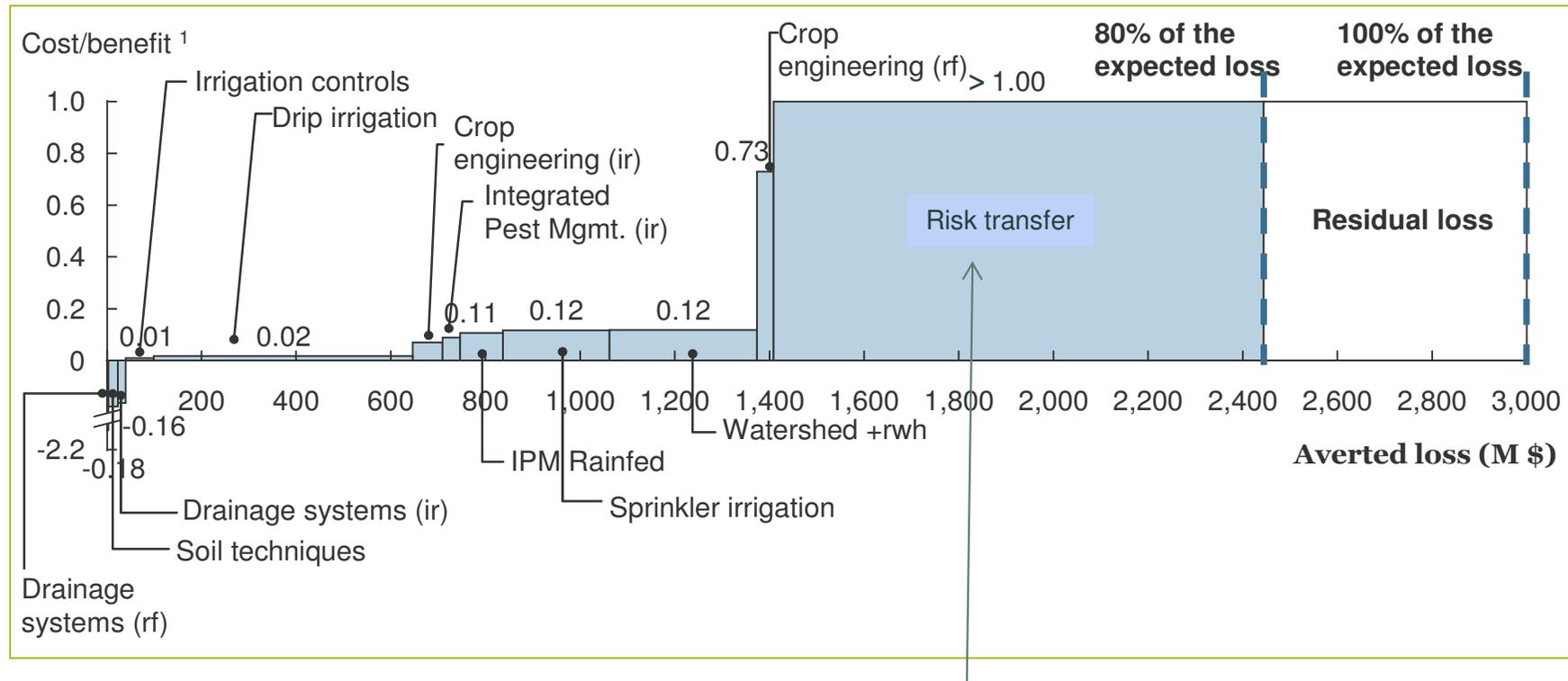


¹ Calculation of cost of risk transfer based on Swiss Re's 'rule of thumb' and CCRIF experience

Example Maharashtra, India

The potential role of risk transfer

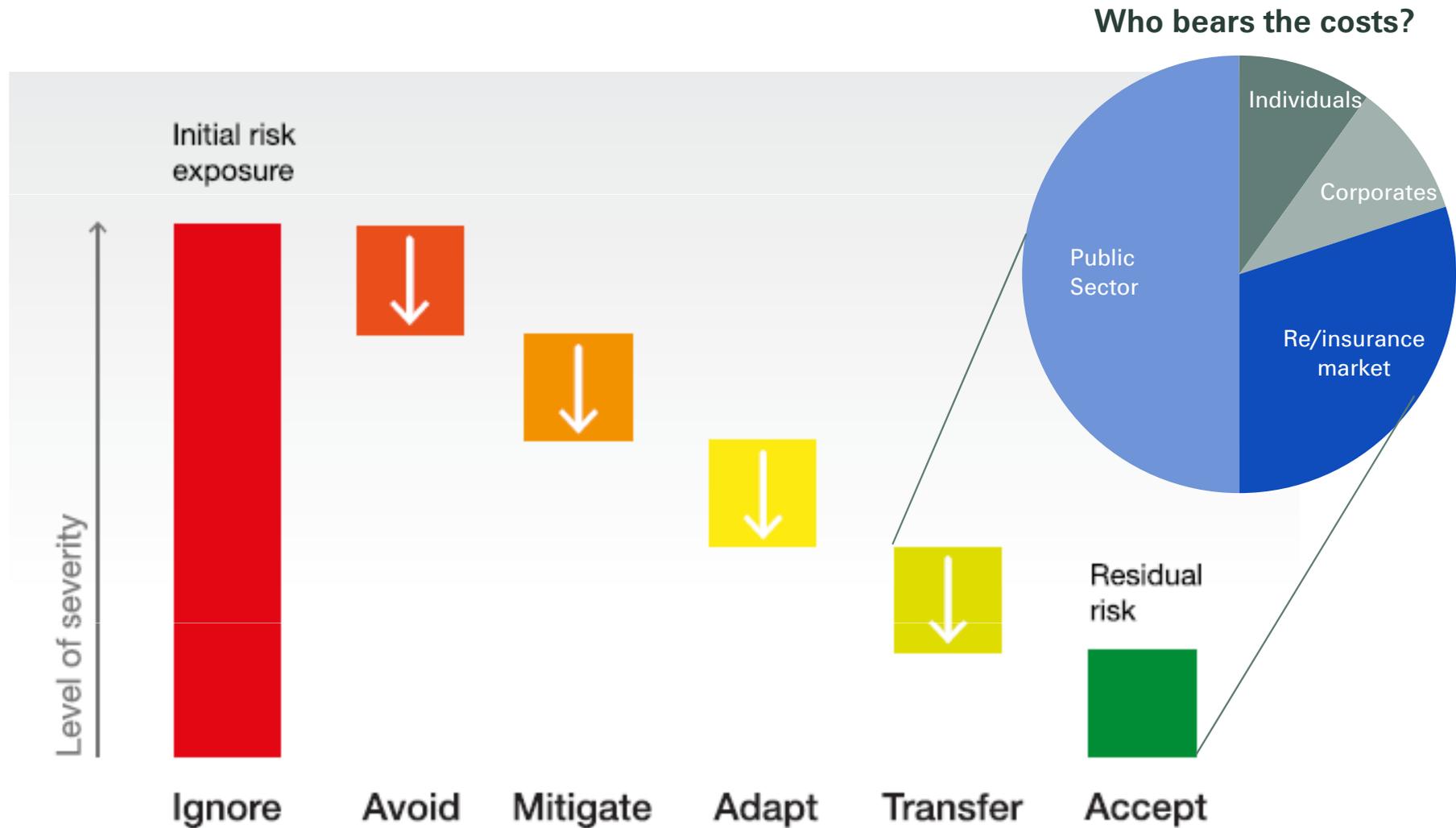
State of Maharashtra:



- Through providing a price signal to risk, insurance reduces total risk



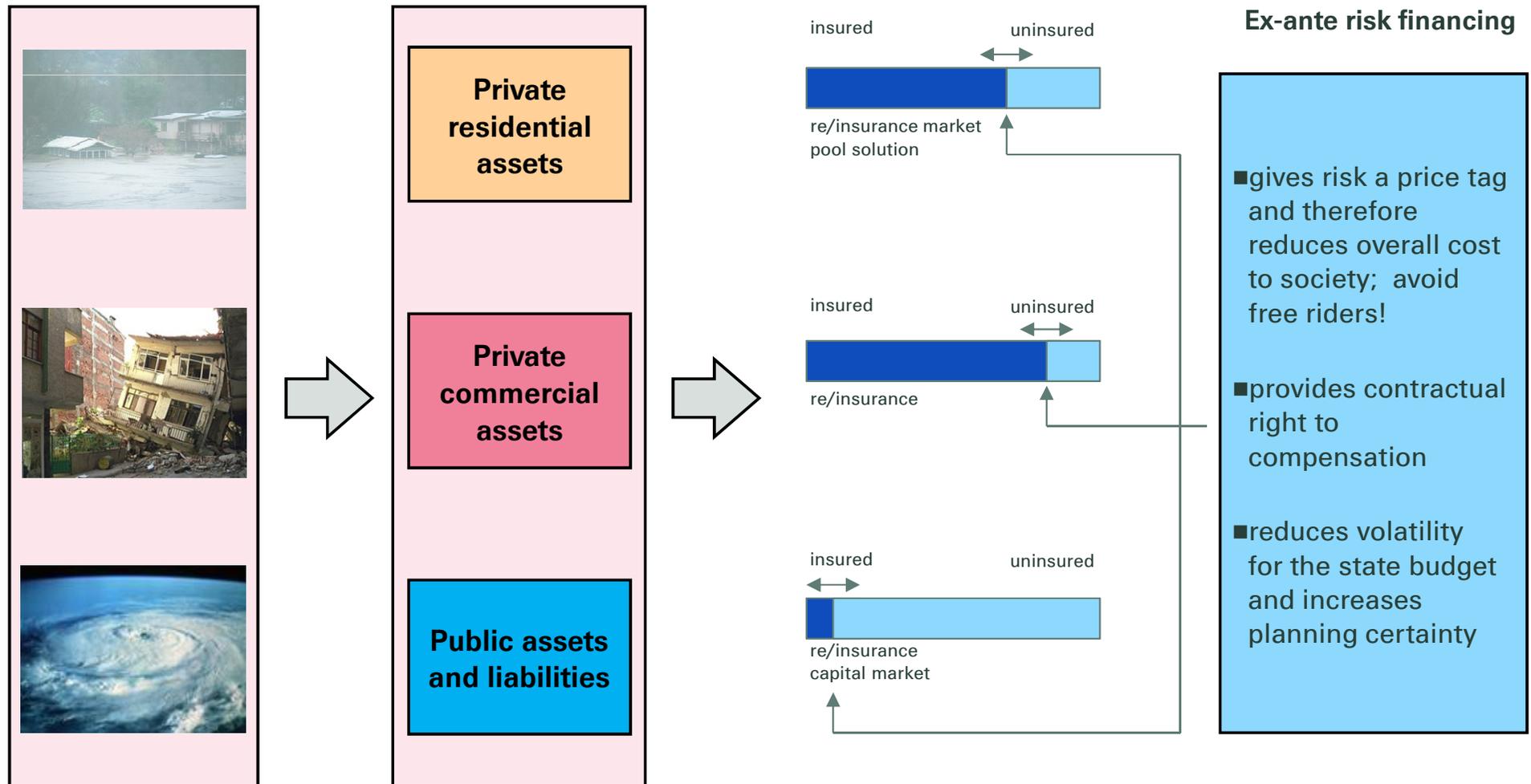
Risk Financing as part of a comprehensive risk response strategy





Closing the financial gap from two sides Bottom-up (micro) and top-down (macro)

Reducing contingent liabilities: government / tax payers will pick up the remaining bill



Conclusions

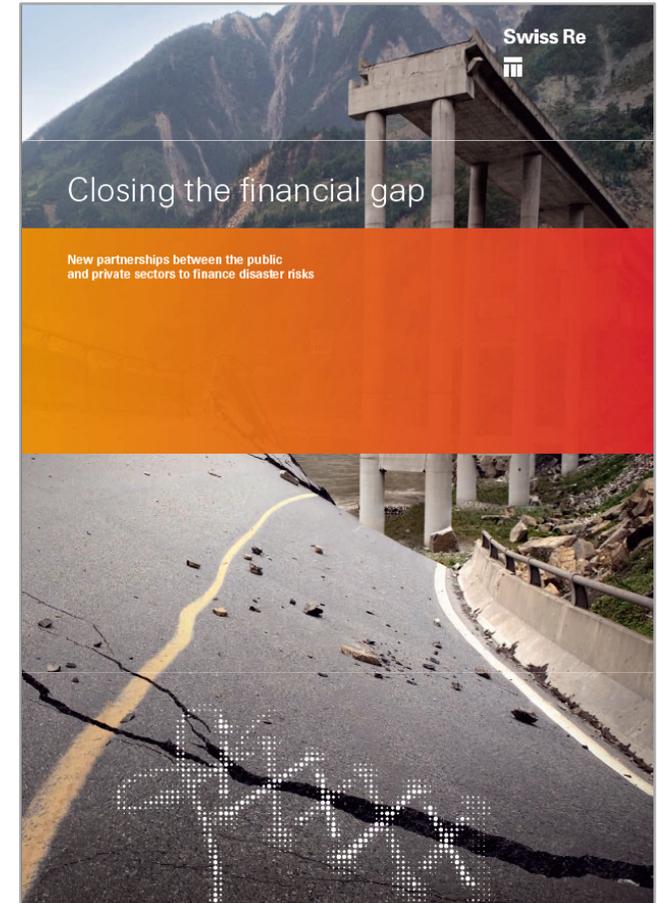
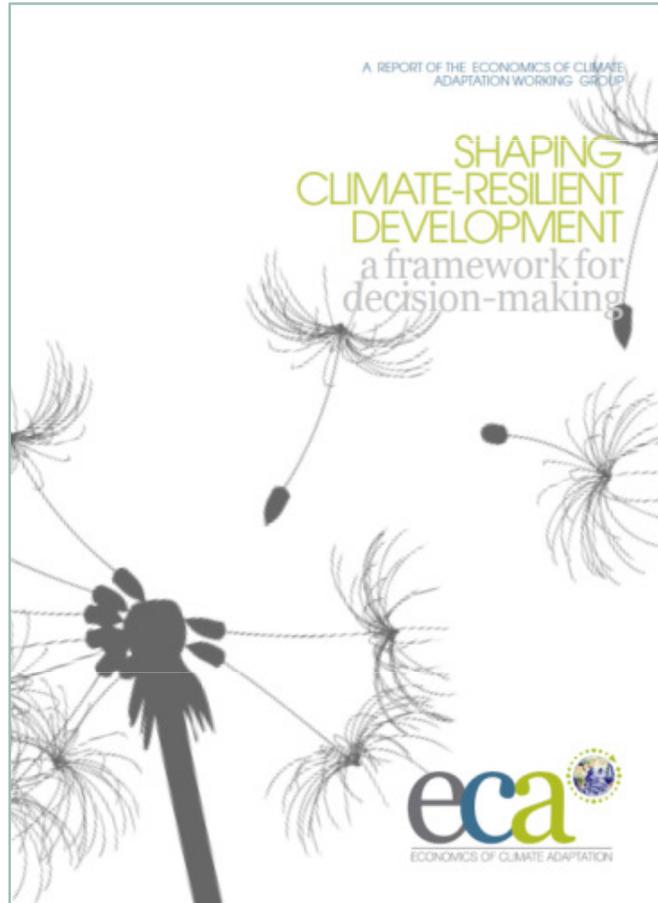
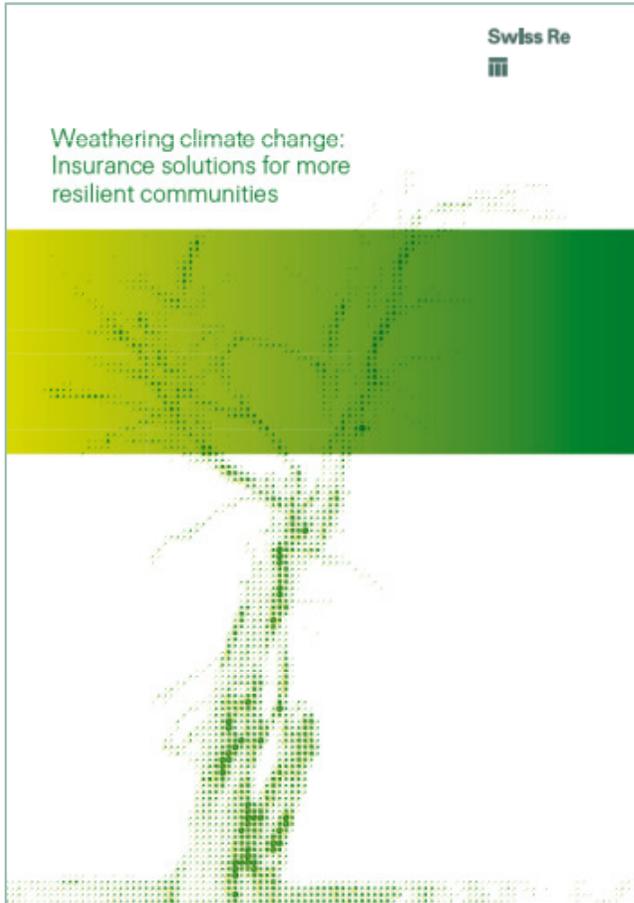
- A comprehensive risk response strategy comprises mitigation, adaptation, and transfer of risk.
- Adaptation options include behavioural, technological, infrastructure, and financial responses.
- A systematic cost-benefit analysis of available adaptation options provides a sound basis for authorities how to cost effectively manage total climate risk.
- A systematic cost-benefit analysis is an important basis for the insurance sector to provide capacity against climate risks.

Swiss Re

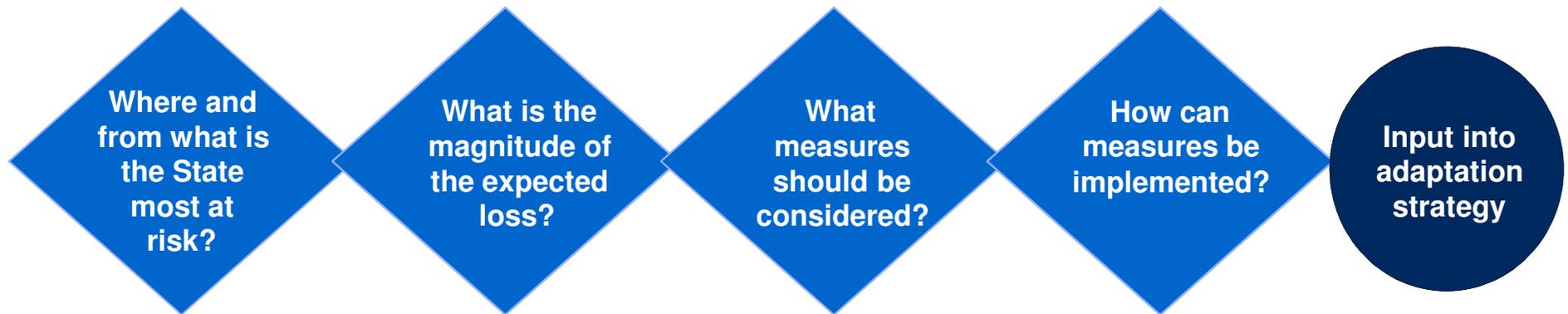


Thank you

Further reading



Case study methodology



Map of areas at risk

- Identify most relevant hazard(s) in case location
- Identify areas that are most at-risk, by overlaying hazard(s) on:
 - Population
 - Economic value (GDP)

Estimate of potential loss

- **Hazard:** Develop frequency and severity scenarios
- **Value:** Quantify assets and income value in area at risk
- **Vulnerability:** Determine vulnerability of assets and incomes to the hazard

Set of adaptation measures

- Identify potential adaptation measures
- Determine societal costs and benefits and basic feasibility
 - Interviews with experts
 - Economic analysis

Implementation assessment

- Assess current progress against the measures
- Understand requirements to implementation
- Determine actions required to implement measures



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