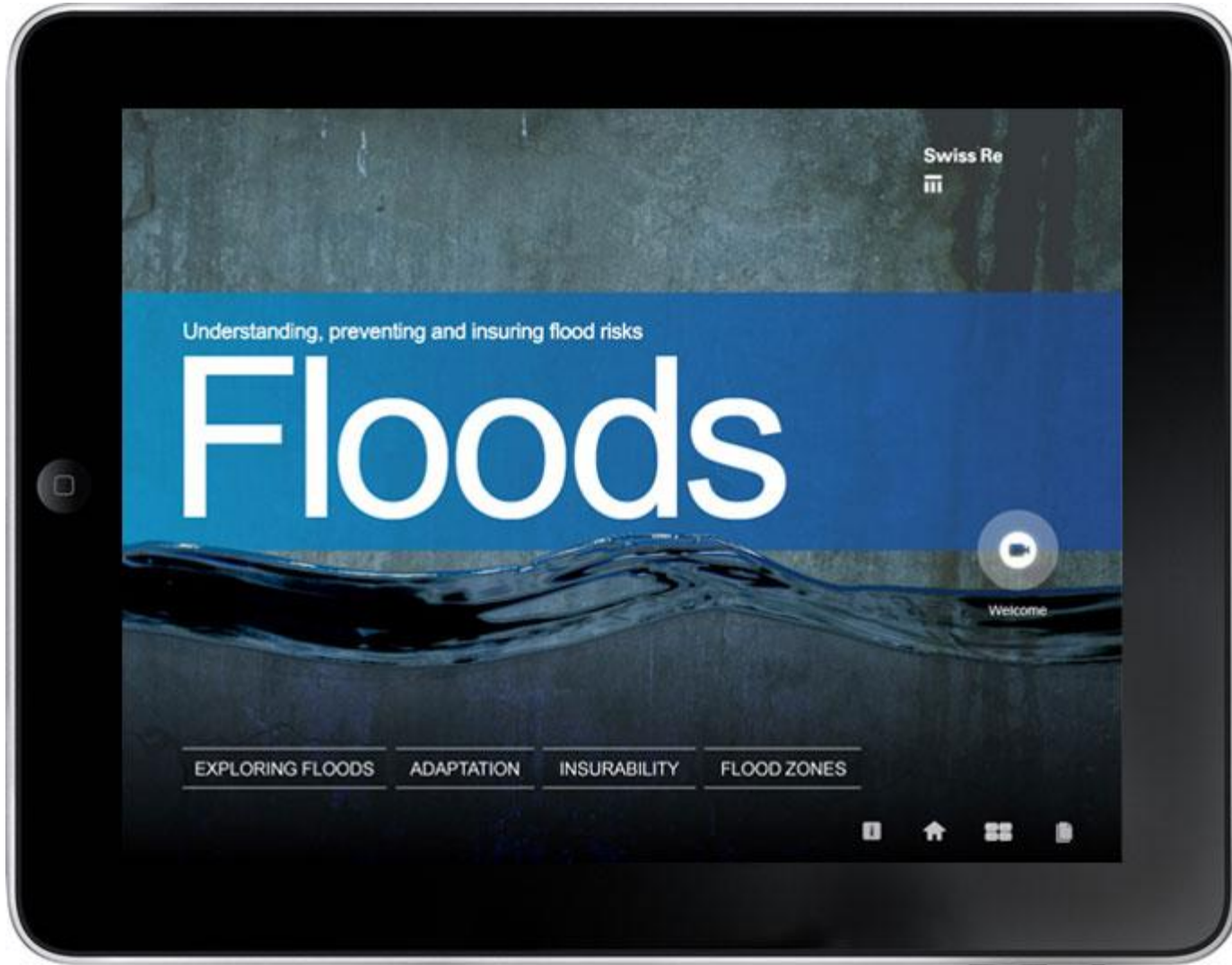


Shaping Climate Resilient Development A Framework for Decision-makers

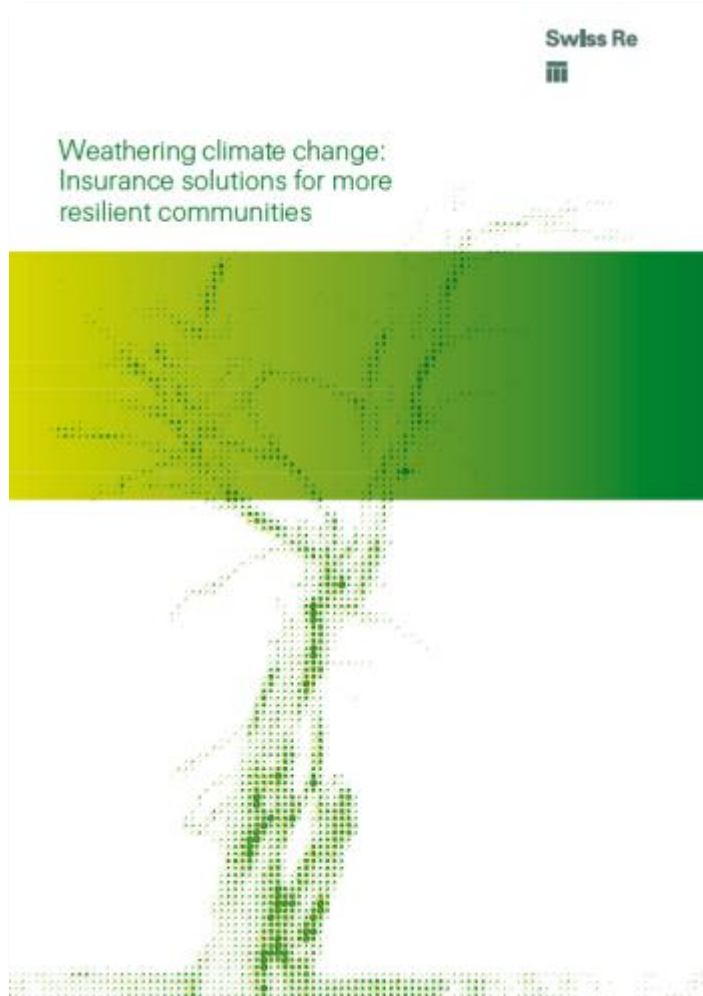
Dr. David Bresch, Head Sustainability, Swiss Re
david_bresch@swissre.com



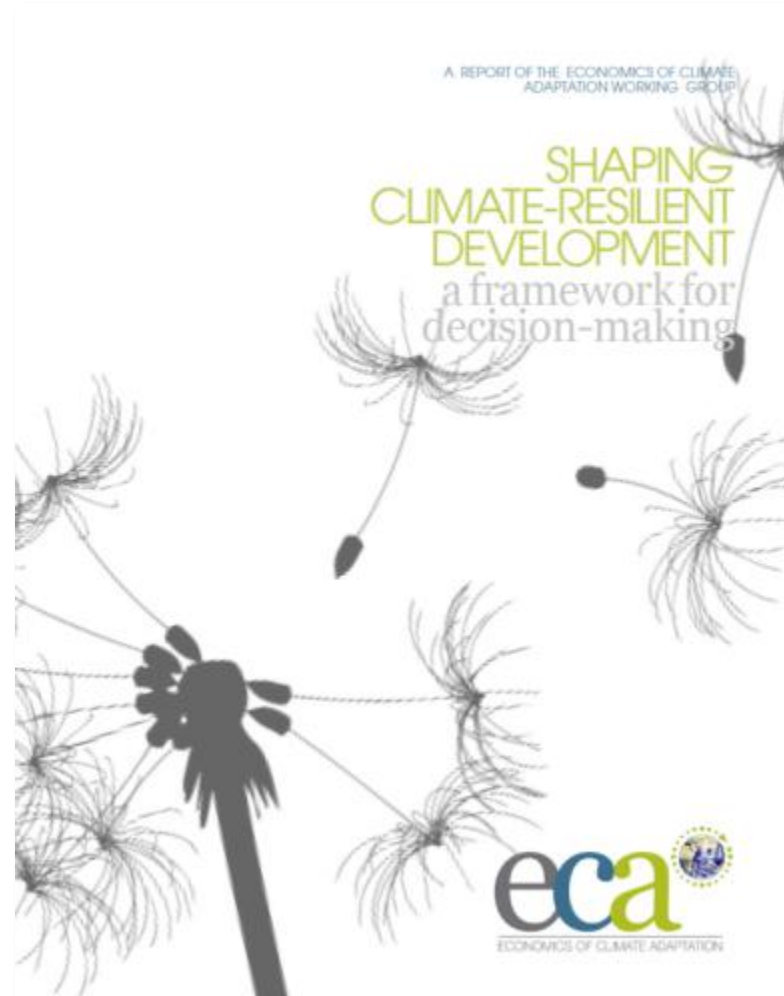
www.swissre.com/floodriskapp

No need to take notes ...

→ www.swissre.com/climatechange

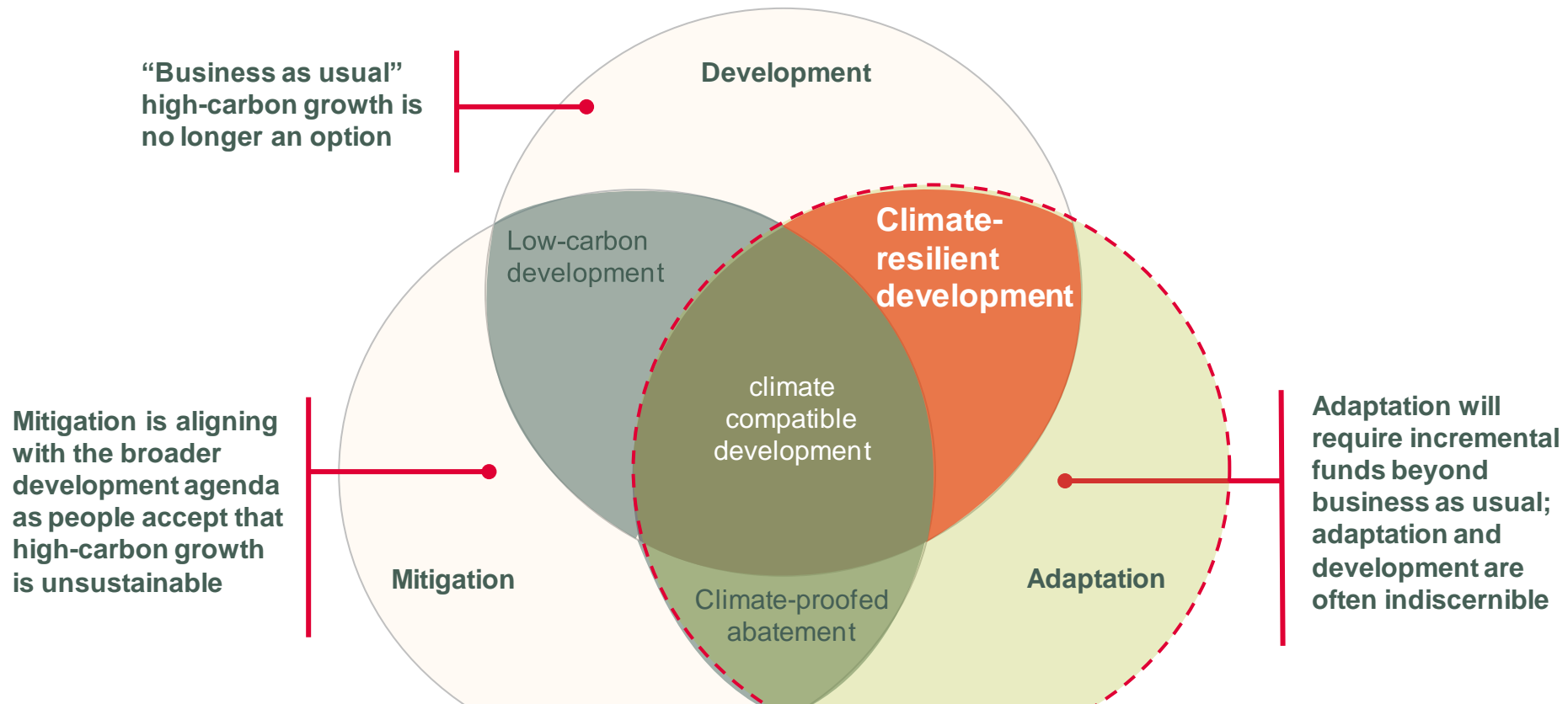


http://media.swissre.com/documents/pub_climate_adaption_en.pdf



http://media.swissre.com/documents/rethinking_shaping_climate_resilient_development_en.pdf

The need for climate-resilient development



→ Climate resilient development requires knowledge-building, planning and preparation, disaster management and risk transfer, and investments in climate-resilient infrastructure and technology

Climate-resilient development needs to assess and address total climate risk

Objectives:

- Provide decision makers with the facts and methods necessary to design and execute a climate adaptation strategy
- Supply insurers, financial institutions, and potential funders with the information required to unlock risk prevention funding and deepen global risk transfer markets

We developed and tested a methodology to:

- Follow a rigorous risk management approach to assess **local/total climate risk**, the sum of
 - **today's climate risk**,
 - the **economic development** paths that might put greater population and value at risk
 - the **additional risks presented by climate change**
- Propose and prioritize a basket of adaptation measures to address total climate risk on an economic basis

The team:

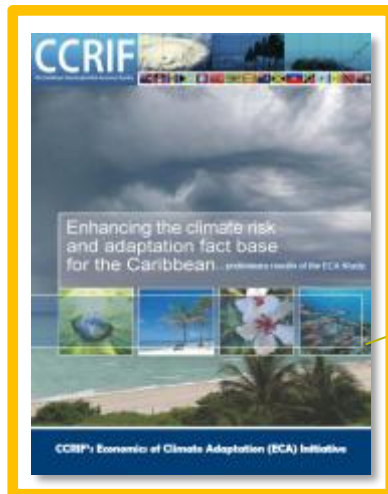
- Economics of Climate Adaptation (eca) Working Group, a partnership between the Global Environment Facility, McKinsey & Company, Swiss Re, the Rockefeller Foundation, ClimateWorks Foundation, the European Commission, and Standard Chartered Bank.

So far, economics of climate adaptation studies have been carried out for Maharashtra, India and North and North East China: focus on drought risk to agriculture; Mopti region, Mali: focus on risk to agriculture from climate zone shift; Georgetown, Guyana: focus on risk from flash floods; Samoa: focus on risks caused by sea level rise (storm surge and groundwater salination); Tanzania: focus on health and power risks caused by drought; Hull, UK: focus on risk from multiple hazards (wind, inland flood, storm surge); Miami and South Florida, USA: focus on risk from hurricanes; Caribbean: Multihazard and sector studies in Anguilla, Antigua and Barbuda, Cayman Islands, Bermuda, Barbados, Jamaica, St. Lucia and in Dominica; and a sector study along the US Gulf Coast (Alabama, Louisiana, Mississippi, Texas). See www.swissre.com/climatechange

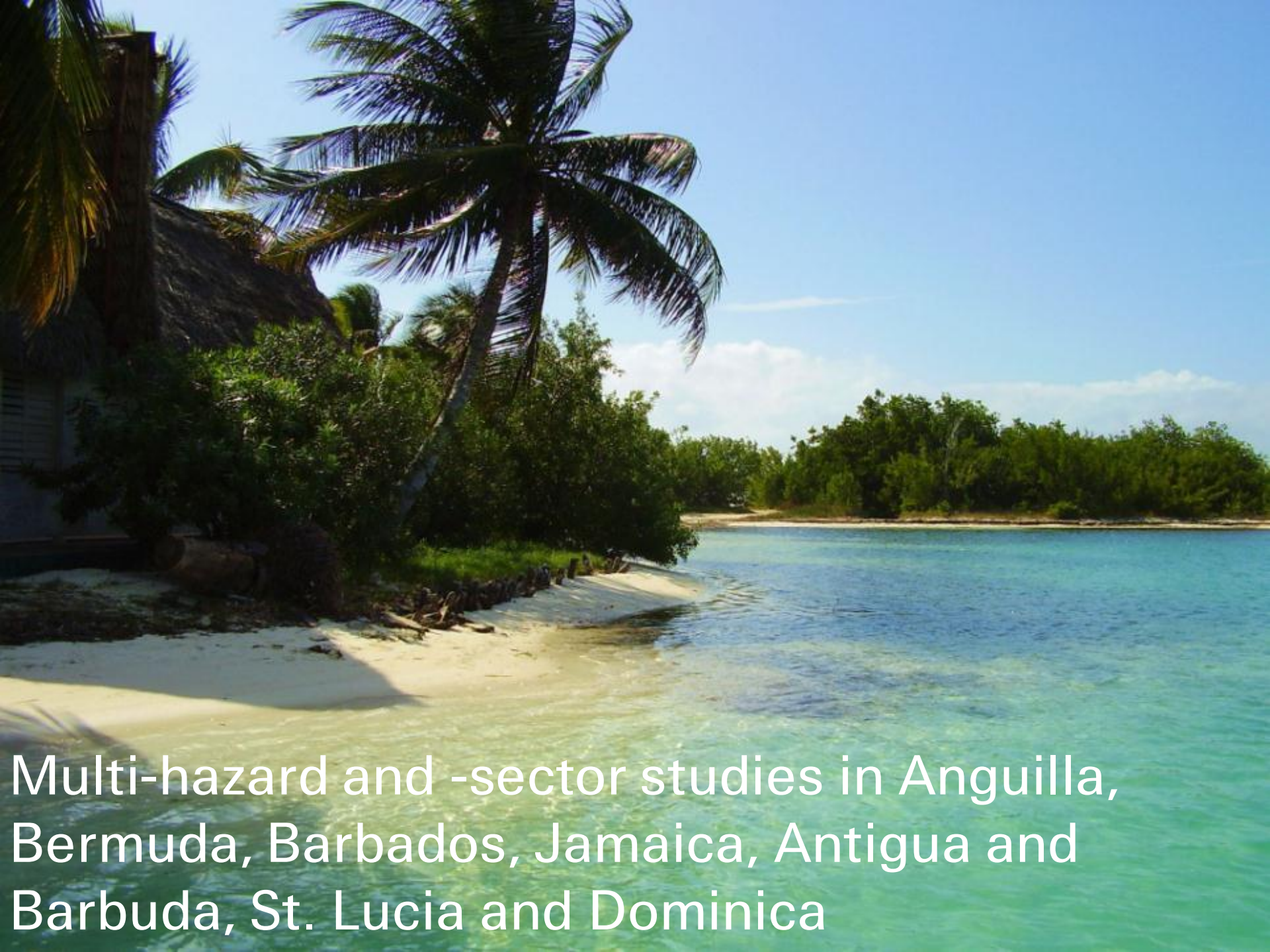
The working group studied seventeen regions with diverse climate hazards

today, focus on:

multi-hazard and
 -sector studies in Anguilla,
 Bermuda, Barbados ,
 Jamaica, Antigua and
 Barbuda, St. Lucia and
 Dominica





→ <http://media.swissre.com/documents/ECA+Brochure-Final.pdf> and www.swissre.com/climatechange



Multi-hazard and -sector studies in Anguilla,
Bermuda, Barbados, Jamaica, Antigua and
Barbuda, St. Lucia and Dominica

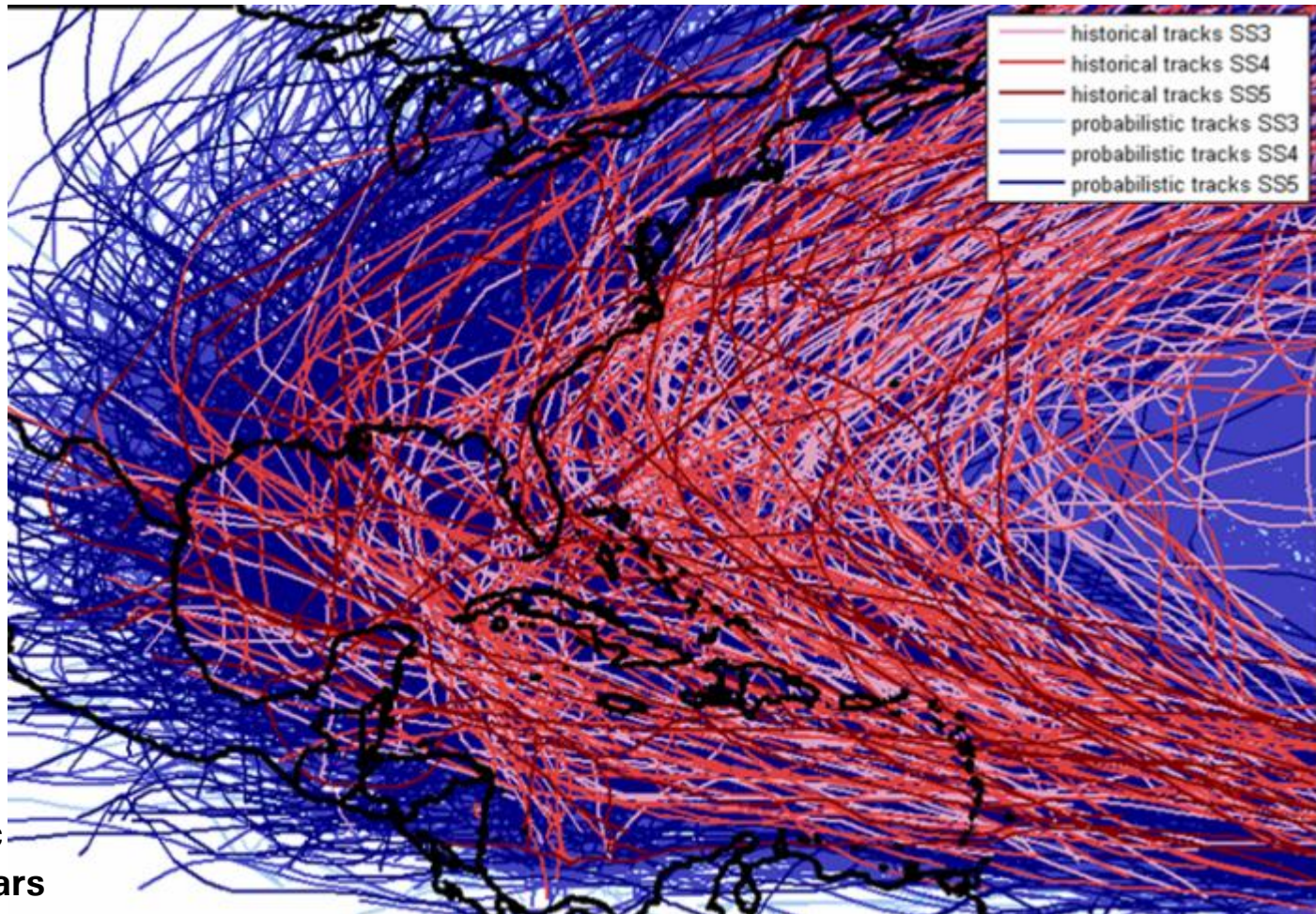
Selected countries/sectors cover 66% of regional GDP and labour workforce

Scope of analysis

 Detailed analysis
 Preliminary analysis

		Sector				
		Housing and infrastructure	Tourism	Service industry	Agriculture	Industry
Pilot countries	Anguilla	Detailed analysis	Detailed analysis	Detailed analysis	Preliminary analysis	Preliminary analysis
	Antigua and Barbuda	Detailed analysis	Detailed analysis	Detailed analysis	Preliminary analysis	Preliminary analysis
	Barbados	Detailed analysis	Detailed analysis	Detailed analysis	Preliminary analysis	Preliminary analysis
	Bermuda	Detailed analysis	Detailed analysis	Detailed analysis	Preliminary analysis	Preliminary analysis
	Cayman Islands	Detailed analysis	Detailed analysis	Detailed analysis	Preliminary analysis	Preliminary analysis
	Dominica	Detailed analysis	Detailed analysis	Detailed analysis	Preliminary analysis	Preliminary analysis
	Jamaica	Detailed analysis	Detailed analysis	Detailed analysis	Detailed analysis	Detailed analysis
	St. Lucia	Detailed analysis	Detailed analysis	Detailed analysis	Preliminary analysis	Preliminary analysis
Further countries	Belize	Preliminary analysis	Preliminary analysis	Preliminary analysis	Detailed analysis	Preliminary analysis
	Haiti	Preliminary analysis	Preliminary analysis	Preliminary analysis	Preliminary analysis	Preliminary analysis
	St. Kitts and Nevis	Preliminary analysis	Preliminary analysis	Preliminary analysis	Preliminary analysis	Preliminary analysis
	St. Vincent and the Grenadines	Preliminary analysis	Preliminary analysis	Preliminary analysis	Preliminary analysis	Preliminary analysis
		Preliminary analysis	Preliminary analysis	Preliminary analysis	Preliminary analysis	Preliminary analysis

Hazard: Tropical cyclones in the North Atlantic



historic
~100 years

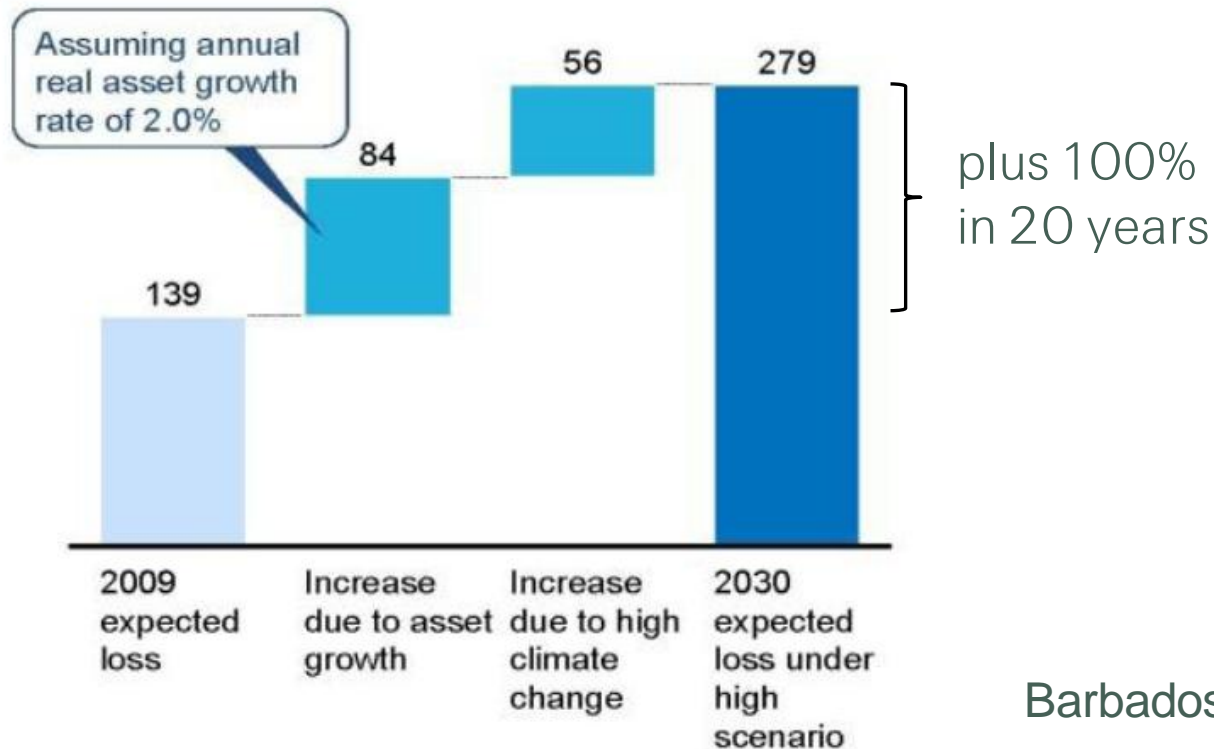


probabilistic
~10'000 years

Total climate risk =
 Risk today + Economic growth + Climate change

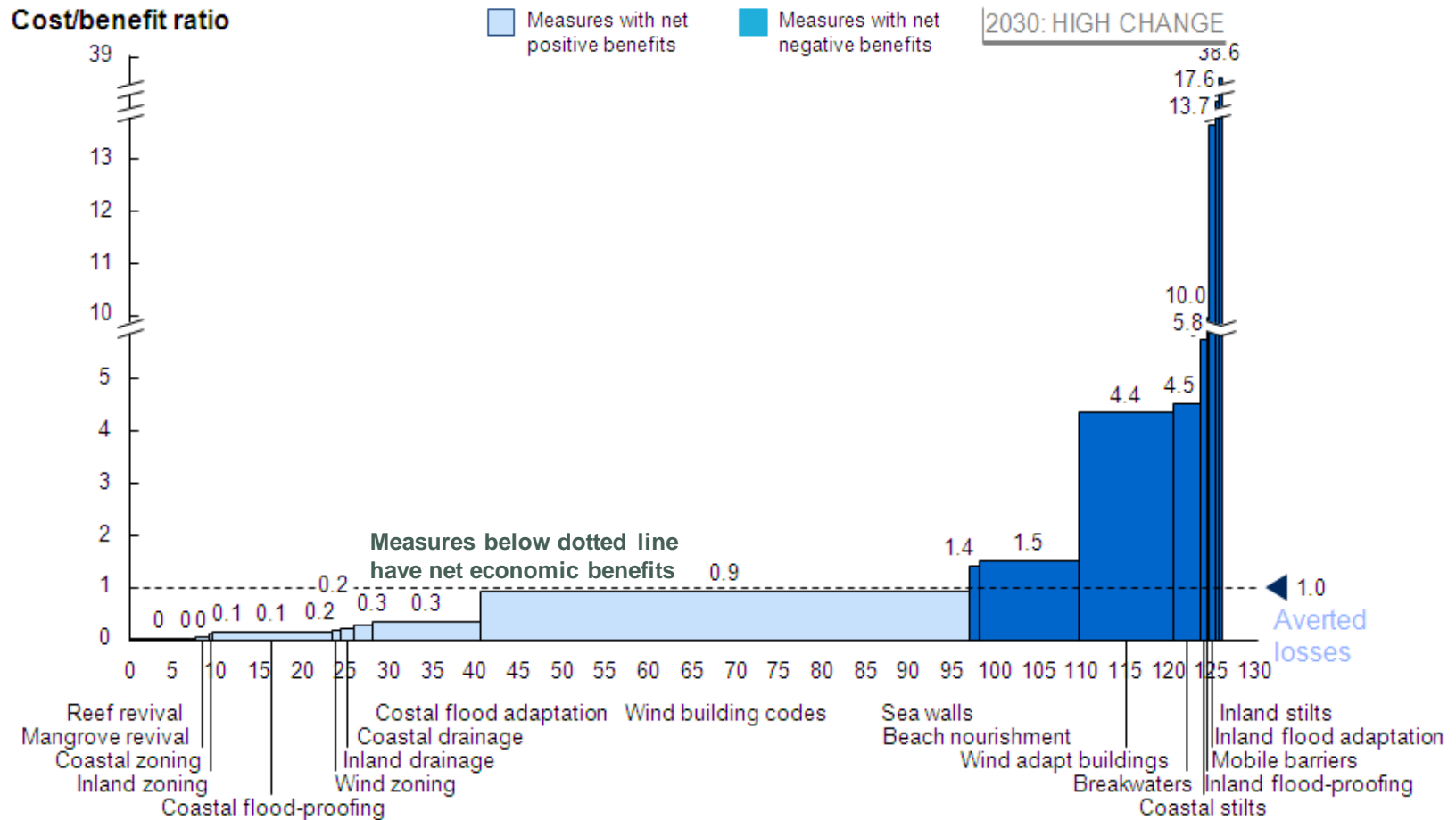
Contribution of climate change and economic growth in asset values to the increase in expected loss to 2030

Annual expected loss in 2009 and 2030
 USD millions



Barbados case study

Barbados: 75% of adaptation measures have net economic benefit



St. Lucia: Only 16% of adaptation measures have net economic benefit

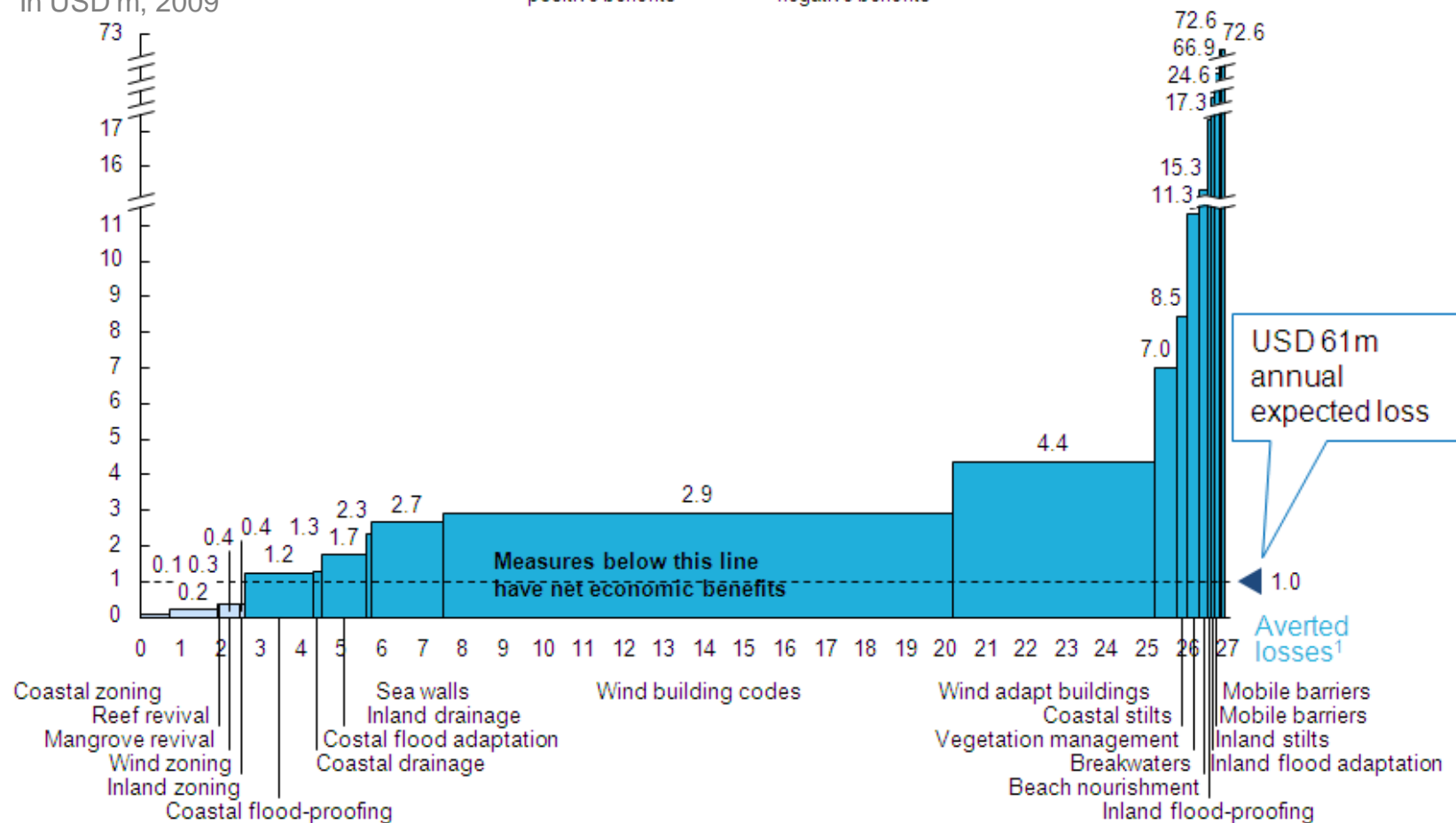
Cost/benefit ratio for measures

In USD m, 2009

Measures with net positive benefits

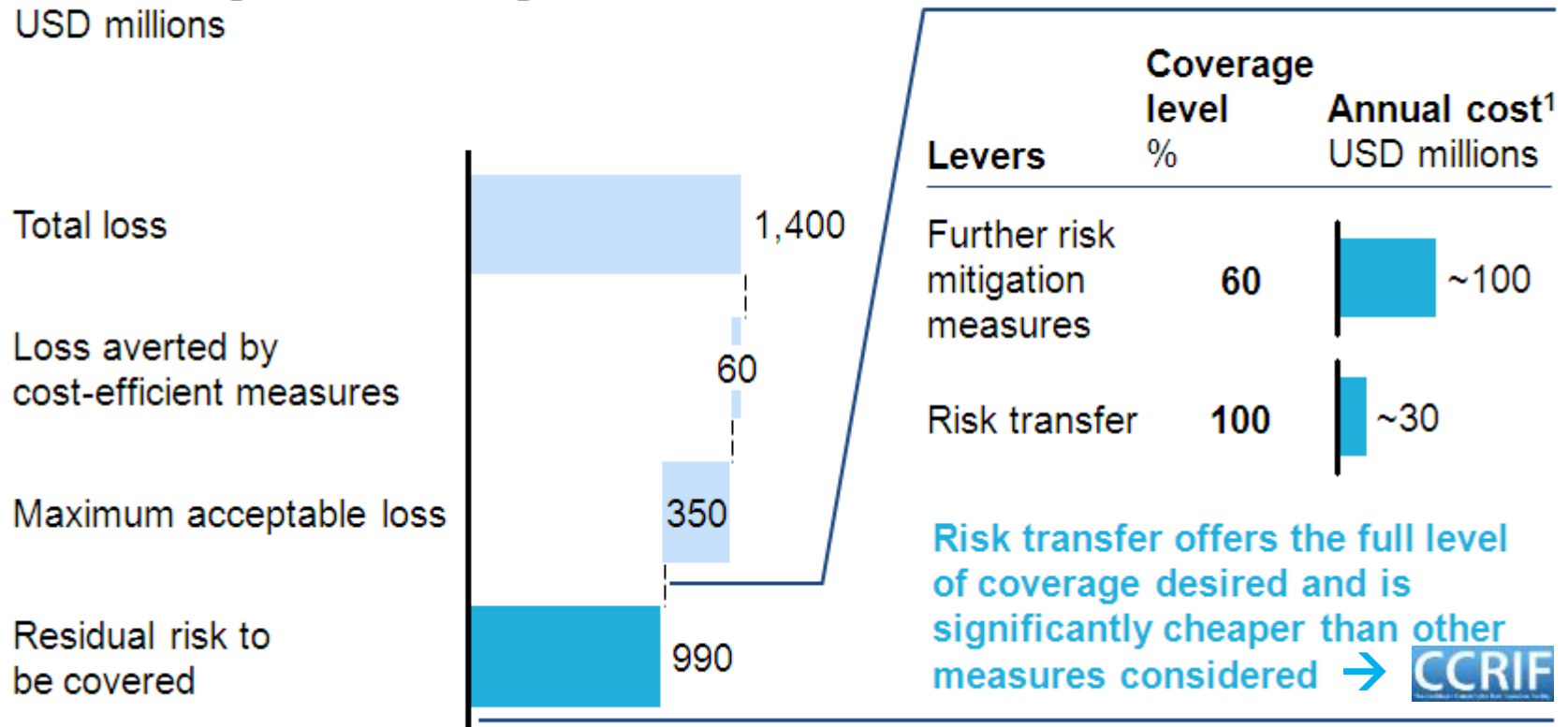
Measures with net negative benefits

2030: HIGH CHANGE



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

Caribbean Cat Risk Insurance Facility – CCRIF



The CCRIF offers parametric hurricane and earthquake insurance policies to 16 CARICOM governments. The policies provide immediate liquidity to participating governments. Member governments choose how much coverage they need up to an aggregate limit of USD 100 million

The mechanism will be triggered by the intensity of the event (e.g. winds exceeding a certain speed). The facility responded to events and made payments (USD 33 Mio to date):

- Dominica & St. Lucia after earthquake (2007)
- Turks & Caicos after Hurricane Ike (2008)
- Haiti (2010)

Swiss Re and other overseas reinsurers, program placed by Aon Benfield Ltd. derivative placed by World Bank Treasury

→ <http://media.swissre.com/documents/ECA+Brochure-Final.pdf> and www.swissre.com/climatechange

Swiss Re



The R4 Rural Resilience Initiative

Protecting livelihoods in a changing climate

in collaboration with:



USAID
FROM THE AMERICAN PEOPLE

www.swissre.com/rethinking/crm/The_R4_Rural_Resilience_Initiative.html



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