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**International
Finance Corporation**
World Bank Group

Implications of Climate Change for Investors

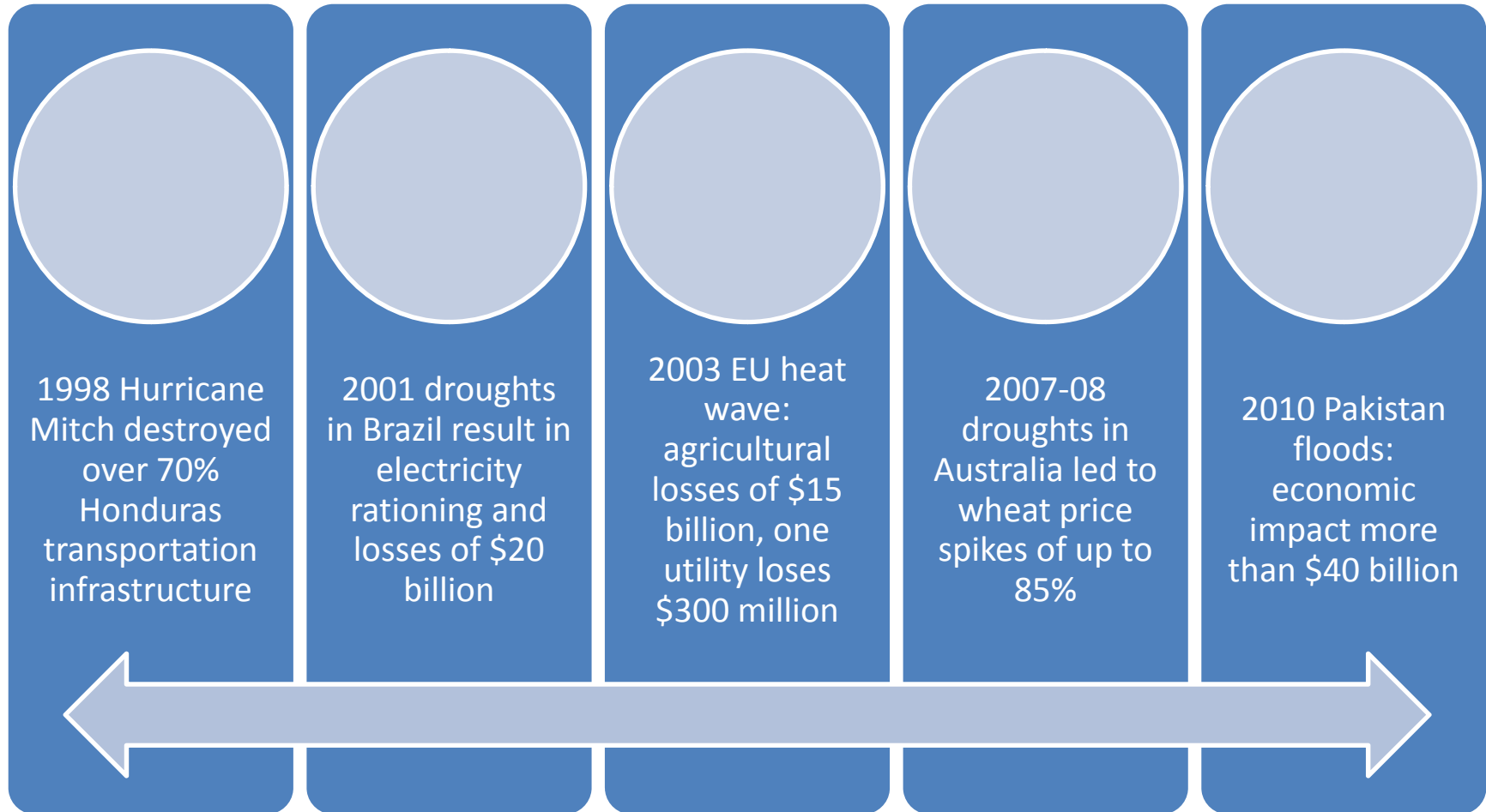
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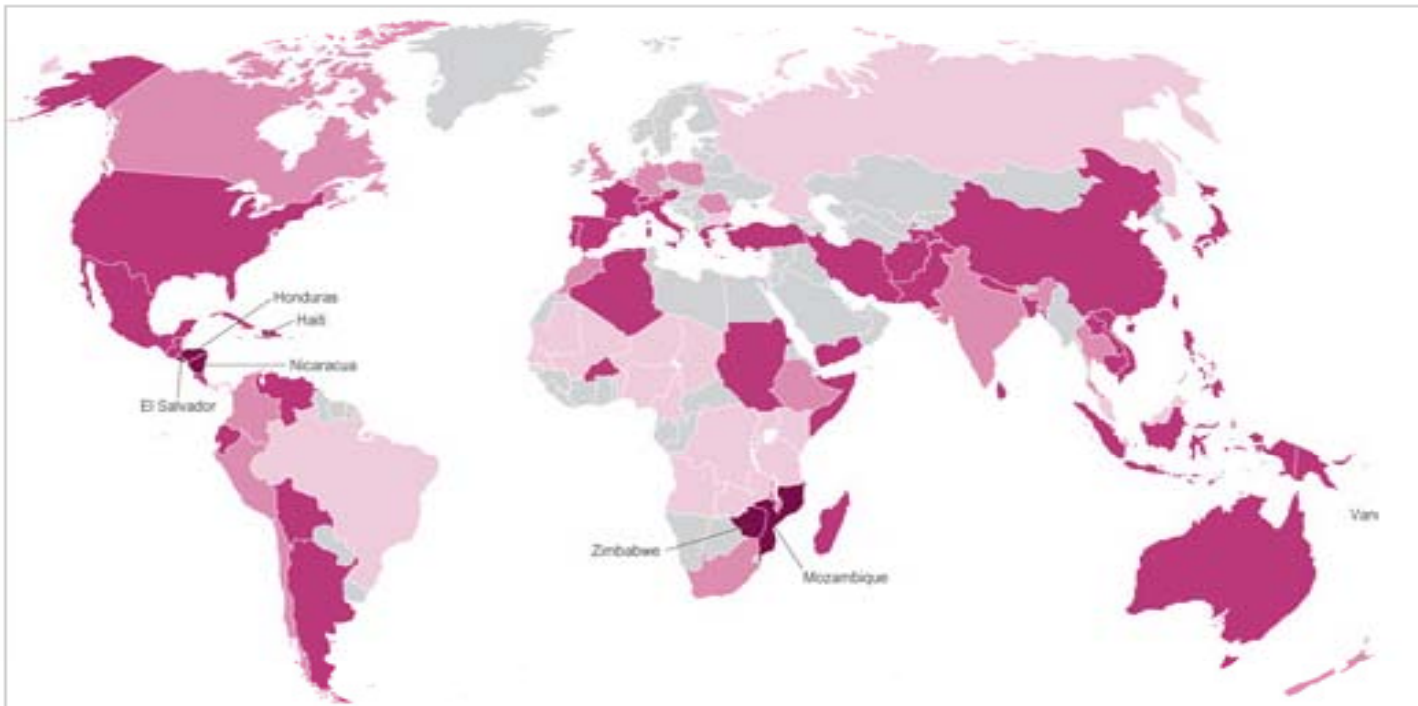
IFC Climate Business Group

**Presented to IAIA, “Climate
Change Impact Assessment
Conference, Washington,
D.C. , November 15, 2010**

Climate Events: a Financial and Development Concern



Natural Disasters Economic Losses Index 2010 - High Frequency



Legend	
Extreme risk	
High risk	
Medium risk	
Low risk	
No Data	

Rank	Country	Rating
1	Haiti	Extreme
2	Mozambique	Extreme
3	Honduras	Extreme
4	Vanuatu	Extreme
5	Zimbabwe	Extreme

Rank	Country	Rating
6	El Salvador	Extreme
7	Nicaragua	Extreme
8	Sri Lanka	High
9	Fiji	High
10	Tajikistan	High

Implications for Impact Assessment

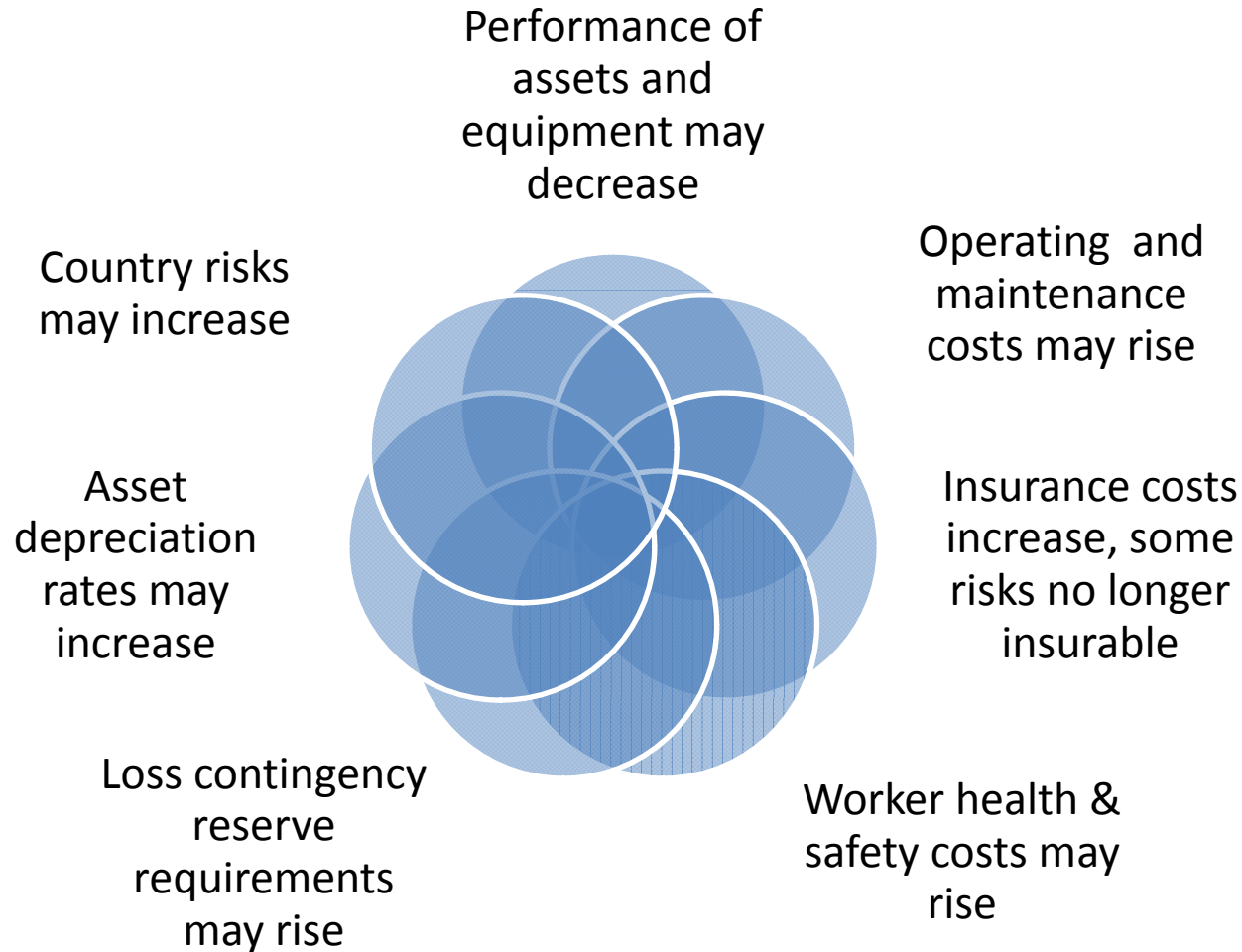
- Past is no longer prologue and may lead to erroneous assumptions – 1 in 1,000 year event now 1 in 100 or ???
- Need to allow for surprises – we don't know what we don't know!



Climate Risk Perspectives: a Function of Position

	Time Frame	Geographic scale	Scientific Resources
Governments	Long-term	Country boundaries	Meteorological services
Enterprise owners	Varies by sector, often short-term	Defined by facility or business	Defined by what is publicly available
Banks/Lenders	Typically several years	Linked to investees	Typically very limited
Long-term asset managers	Varies depending on investment strategy	Predominantly still focused within the industrialized markets	Typically very limited
Insurers/Reinsurers	Varies but typically short	Defined by sectors and markets	Varies from none to extensive (especially some reinsurers)

Climate Links to Financial Performance: Direct and Indirect



Developing the Tools

- Downscaling models
- Increased focus on decadal time-frames
- Making sense of conflicting model results
- Understanding linkages between climate impacts & financial consequences
- Reducing vulnerabilities
- Increasing adaptive capacity



The Analytical Challenge: Are We Looking Under the Lamp Post?

- The largest costs may be the most difficult to predict, e.g.:
- Collapse of ecosystems
- Chaotic responses (Katrina?)
- Military conflict
- BUT to assume NO risk may be even riskier!



Initial IFC Pilot Studies of Climate Risks in Portfolio Investments

- Nepal 60 MW Hydro project
- Pakistan pulp and paper packaging company
- Ghana palm oil plantations and processing

Source: IFC, “Climate Risk and Business Practical Methods for Assessing Risk” (2010)

TABLE 1: RISK AREAS ANALYZED FOR THE THREE PILOT STUDIES		
HPL Khimti 1 hydropower scheme	Packages Ltd. Bulleh Shah Paper Mill	GOPDC Ltd.
Power generation from hydropower scheme during dry and wet seasons	Wheat yields	Oil palm yield
Extreme flood event on Khimti Khola and Tami Koshi rivers	Power production from steam turbine and boiler	Oil palm pests and diseases
Landslide blocking Khimti Khola River and access road to site	Groundwater resources	Ecosystem services
Glacial lake outburst flood	Wastewater treatment plant	Refinery/fractionation plant
Increase in irrigation demand for agriculture	Pulp and paper industry generally	Power production
Local community livelihoods	Community and social issues	Groundwater resources
		Wastewater treatment
		Malaria affecting GOPDC workforce
		Community and social issues

Climate Change Asset Allocation Study

- Organized by Mercer supported by IFC, Carbon Trust, 14 institutional asset owners
- Scenario based study by Grantham Research Institute /Vivid Economics
- Evaluating impact by sector, region, and financial instrument to 2030 and 2050
- Final Report early 2011



Uncertainty as a Risk Management Issue – Not a Unique Problem

“The data on climate change is at least as good if not better than most medium-term military strategy, like what’s the military intention of China in 2040.”

Rear Admiral Neil Morisetti, UK climate and energy security envoy

Climate Risk Management by International Financial Institutions

- Performance Standards (now under review at IFC)
- Risk assessment/management
- Pilot studies with clients
- Insurance requirements and products
 - E.g., weather derivatives
- Advisory services
 - E.g., salt resistant seed promotion in Bangladesh
- Public/private adaptation projects
 - E.g., private sector component in PPCR projects

Recent IFC Publications

(www.ifc.org/climatechange)

- [Climate Risk and Business: Practical Methods for Assessing Risk \(November 2010\)](#)
- IFC reports on studies with clients in developing countries which aim to better understand gaps and barriers to climate risk analysis, test and develop risk evaluation methodologies, and identify possible adaptation responses and needs.
- [Climate Risk and Financial Institutions: Challenges and Opportunities \(October 2010\)](#)
- This publication discusses climate-related risks material to financial institutions, including commercial banks, institutional investors, and international financial institutions.