World Conference on Disaster Reduction

World Bank Group

# Managing Catastrophe Risk at the Country Level: The Role of Risk Financing*

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*In this presentation, the term "risk financing" denotes all external ex-ante sources of market or quasi-market funding secured by a country to finance adverse economic consequences of natural disasters prior to occurrence of such events.

# Outline

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- I. Donor post-disaster funding vs. ex-ante risk financing.
- II. Role of ex-ante financing in catastrophe risk management at the country level.
- III. Risk financing instruments and programs.
- IV. National risk financing programs: key design considerations.
- V. How can international experience in risk financing apply in South Asia?
- VI. World Bank role in catastrophe risk financing.
- VII. Conclusions

# I. Donor Post-disaster Funding vs. Ex-ante Risk Financing

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- What is the most prevalent way of financing the risk of natural disasters today?
- Is the donor funding truly costless for the receiving nations?

# Provision of Emergency/Relief Funds

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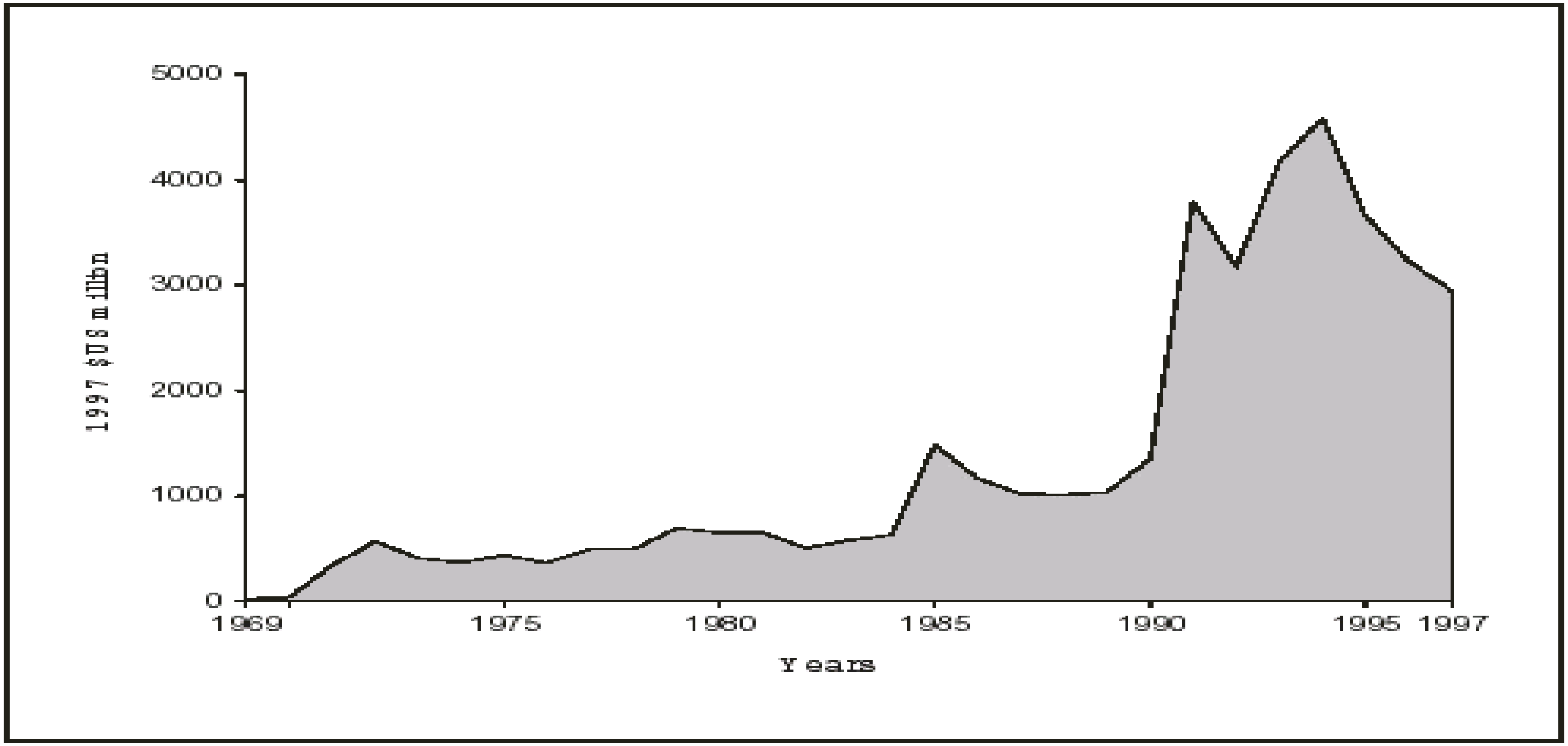


Source: Development Assistance Committee, 1998.

The South Asia Tsunami disaster alone is likely to raise over $5 billion in post-disaster donor funding and private donations!

# IBRD Lending for Natural Disasters over 20 Years: $40 billion

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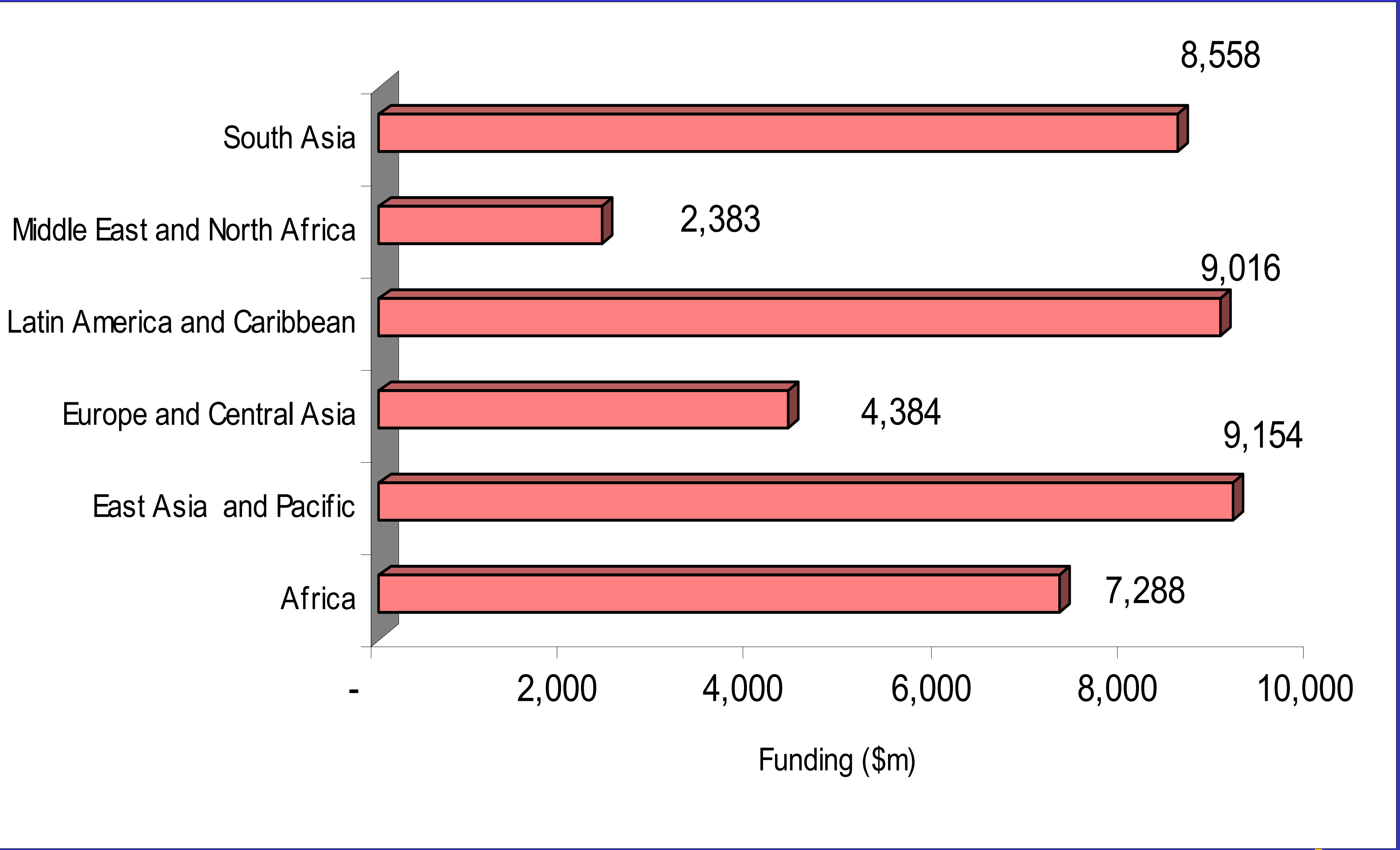

# Why Relying on Post Disaster Funding is no Longer a Solution?

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- Excessive reliance on ex-post disaster funding dampens countries' incentives for proactive risk management.
- Results in underinsurance, and as a result increases countries' vulnerabilities.
- Lack of liquidity in the aftermath of natural catastrophes, caused by underinsurance, severely retards economic recovery.
- Large catastrophe events may entail years of unsustainable fiscal deficits and thus can jeopardize the country's chances for economic growth.
- In the absence of insurance, personal savings, and effective mechanisms of targeted social assistance, the poorest segments are most vulnerable to natural disasters.

# Vulnerability Curves in Developed vs. Developing Countries

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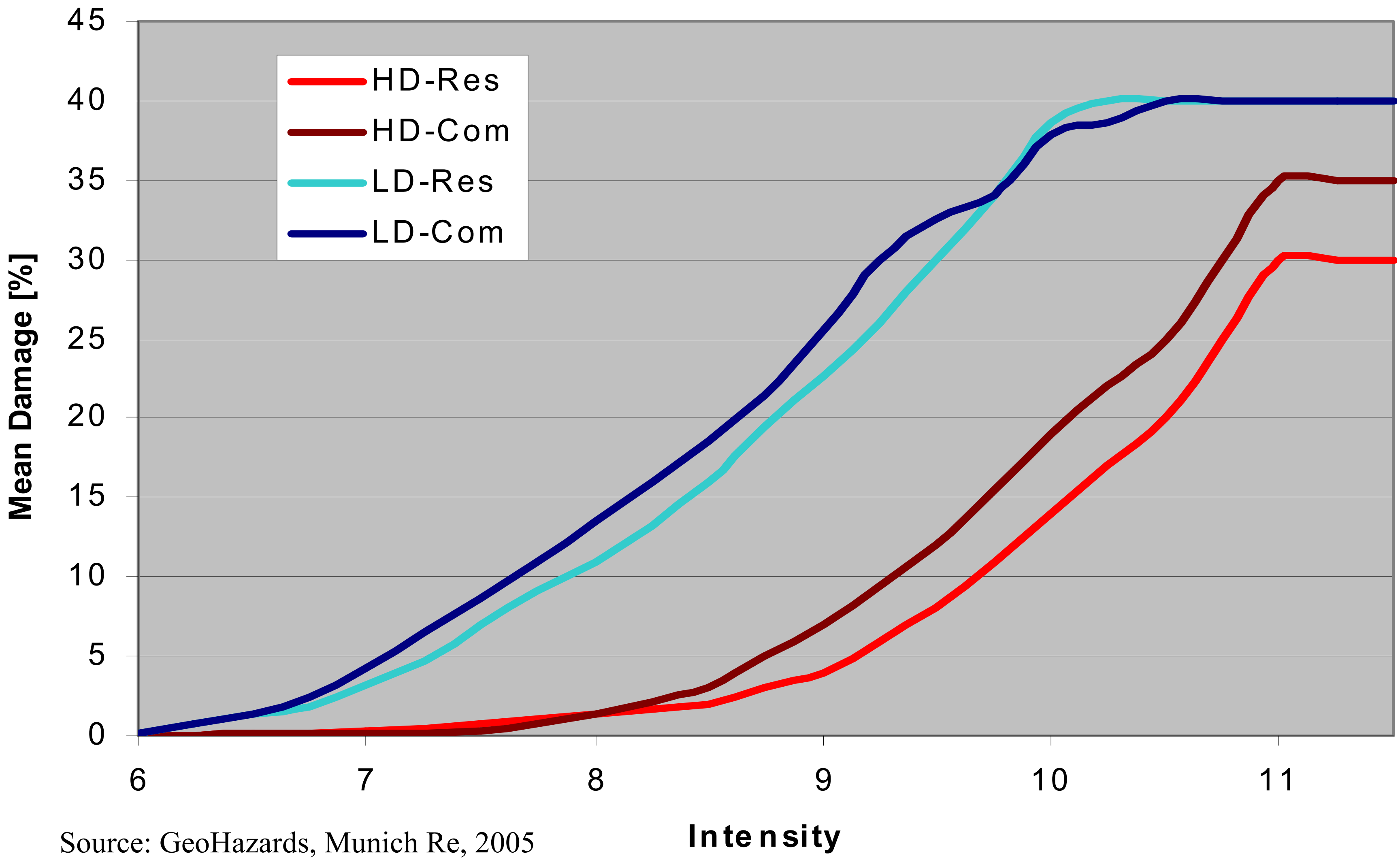


Source: GeoHazards, Munich Re, 2005

# Fiscal and Economic Effects of Disasters can be Significant

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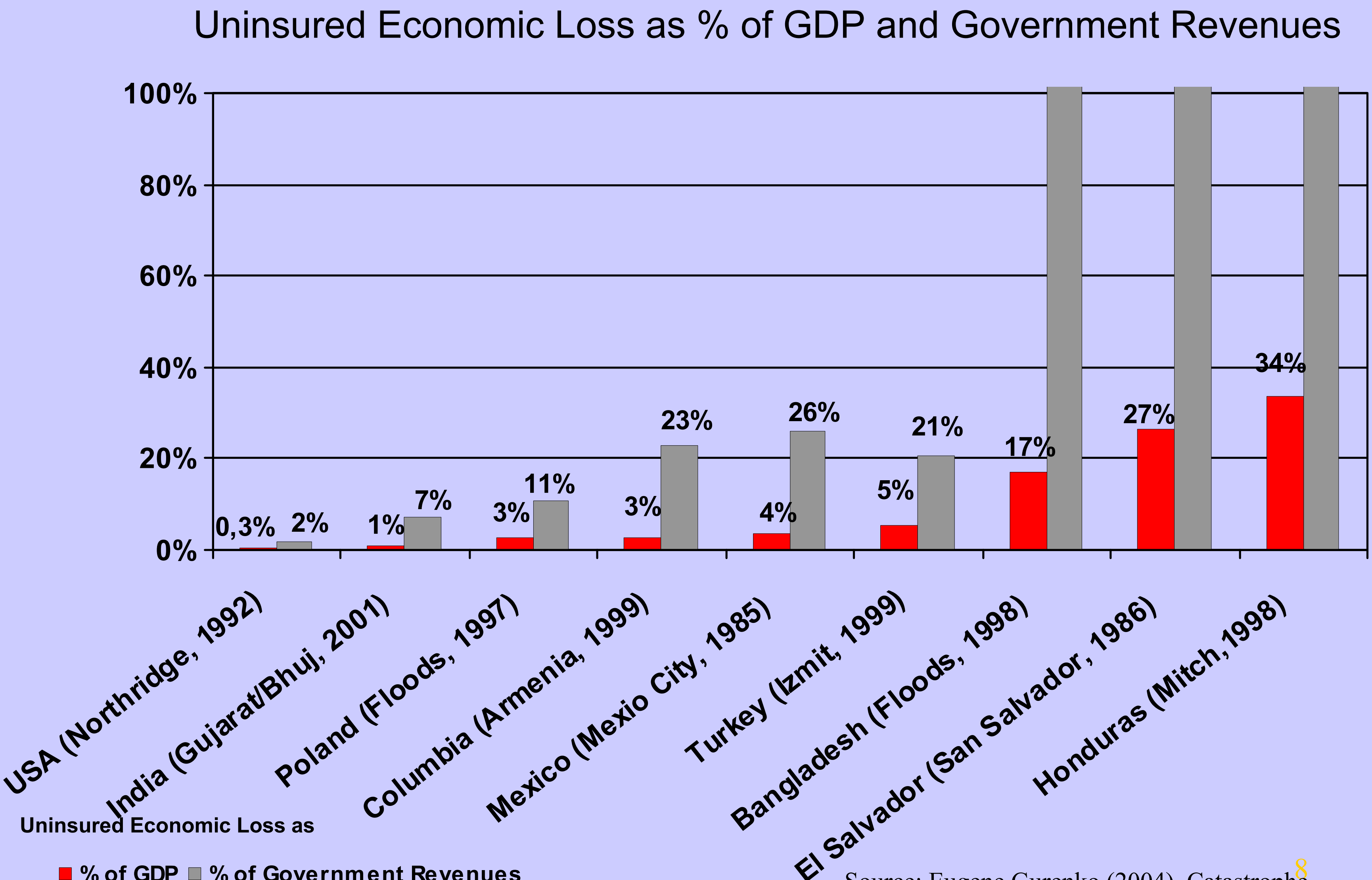


Source: Eugene Gurenko (2004). Catastrophe Risk and Reinsurance

# Catastrophe Insurance Penetration in Developing Countries

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- India – under 0.5%
- the Philippines – under 0.3%
- Sri Lanka – under 0.4%
- Iran – under 0.05%
- Romania – under 5%
- Bulgaria – under 3%
- China – under 0.5%
- Turkey – 16%

# II. Role of Ex-Ante Risk Financing

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- **Why do we need an alternative to the current mode of risk financing today?**

# Role of Ex-Ante Risk Financing



- Brings an economic perspective on risk through price discovery and thus introduces strong incentives for physical risk management (mitigation).
- Greatly reduces government fiscal exposure to adverse consequences of natural disasters thus ensuring stable economic growth and fiscal management.
- Makes much needed liquidity readily available to governments and households immediately following a natural disaster thus greatly facilitating economic recovery and addressing social inequities.

# III. Risk Transfer Instruments and Programs

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- **What are the key risk financing and risk transfer instruments available to countries today?**

# Risk Transfer Instruments and Programs

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**Turkish Catastrophe Insurance Pool - TCIP**

**Florida Hurricane Cat Fund - FHCF**

**Indonesian Earthquake Reinsurance Pool - IERP**

**EQ Council - EQC New Zealand**

**California Earthquake Authority - CEA**

**Risk Carriers**
- Insurers/reinsurers
- Insurance Pools
- Self insurance / captives

**Solutions**
- Reinsurance
- Contingent Capital
- Insurance-Linked Securities
- Weather Derivatives
- Finite Risk Reinsurance

# III. Risk Financing Instruments and Programs: Key Definitions

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- Reinsurance – an exchange of premium for a risk transfer contract
- Contingent Debt - Contractual commitment to provide capital in the form of debt after an adverse event
- ILS (cat bonds) – a way of transferring catastrophe risk to the capital markets via a bond issue. Capital received is transferred to a special purpose vehicle SPV who then acts much like a traditional (although a fully collaterized) reinsurer.

# III. Risk Financing Instruments and Programs: Are They Affordable?

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- **Reinsurance – 4.2% ROL for TCIP (and will decrease further with accumulation of surplus)**
- **Contingent Debt – 0.3% ROL for TCIP**
  - Weighted Average Cost – 3.5% per $1 billion in claims paying capacity (TCIP, 2004);
  - Overall cost of TCIP’s coverage in Turkey is well under 0.5% of average household income (without government subsidies!).
- **ILS (cat bonds) – 3-5% over Libor (but for only top layers of risk).**

# IV. National Risk Financing Programs: Major Design Considerations

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- **How can one put together a national risk financing program that would be:**
  - Financially efficient;
  - Create strong incentives for risk management;
  - Address social equity concerns???

# National Risk Financing Programs: Major Design Considerations

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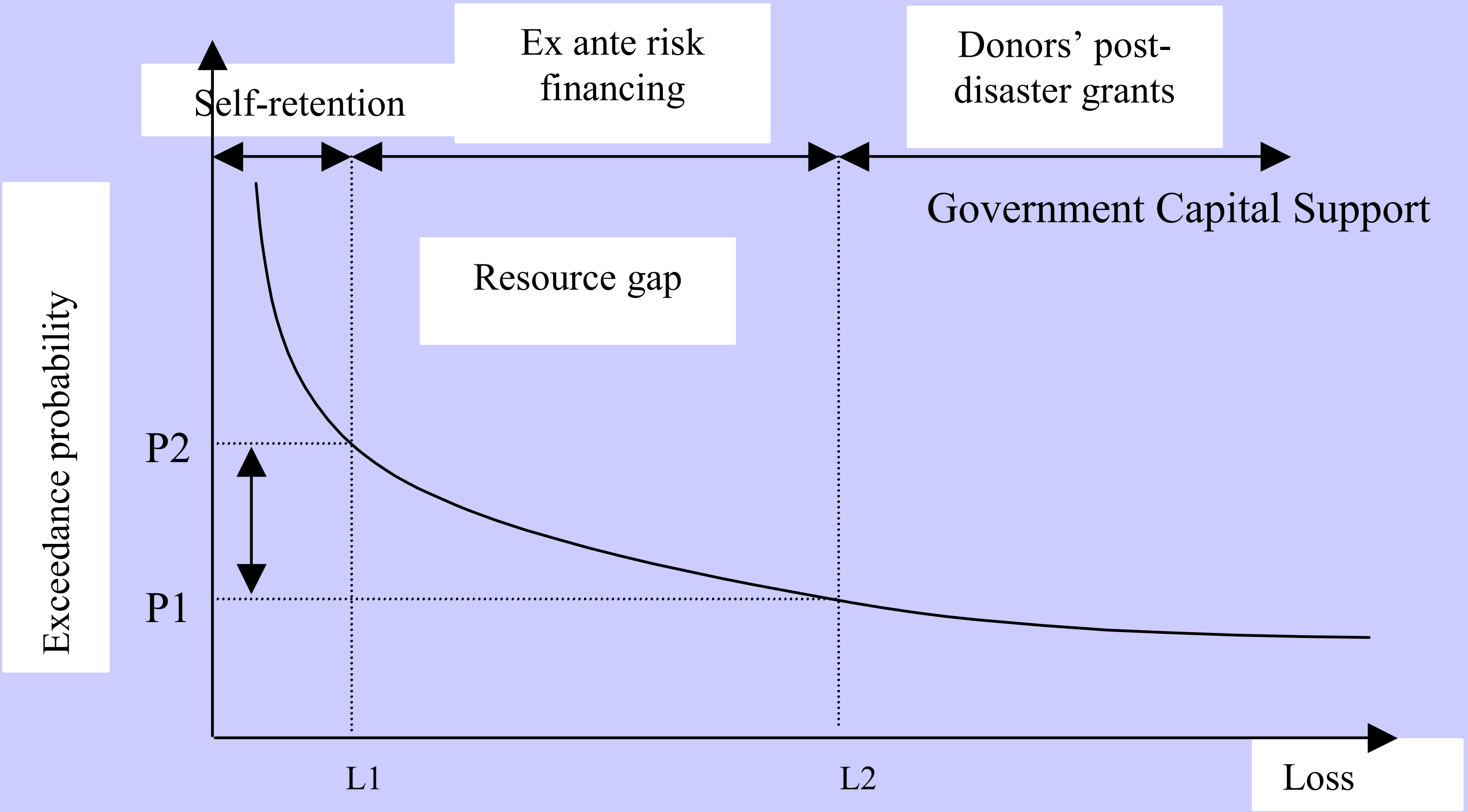


Source: Eugene Gurenko and Olivier Mahul, 2004

# National Risk Financing Programs: Major Design Considerations

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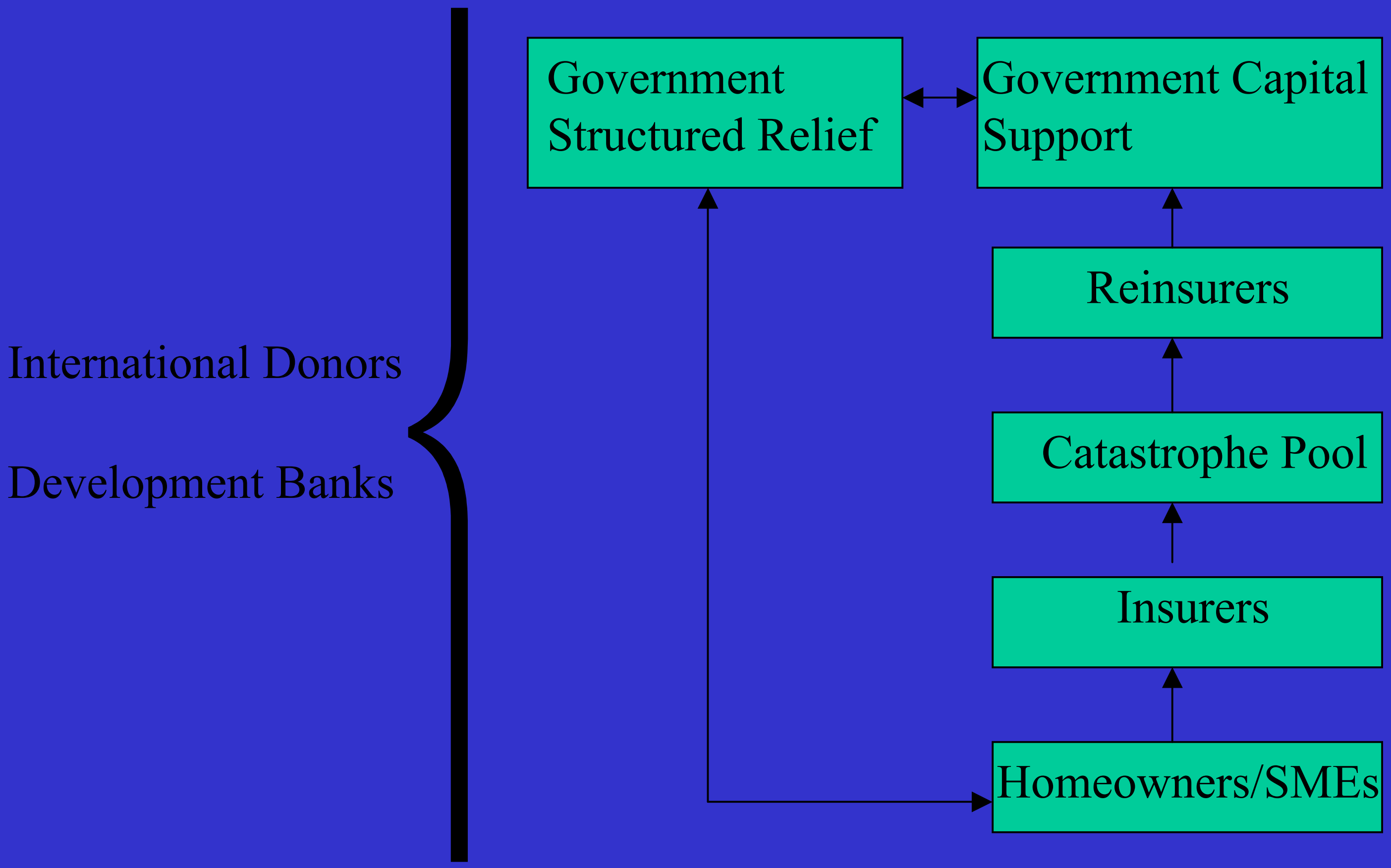


## An Integrated Risk Financing Approach

# National Risk Financing Programs: Major Design Considerations

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- **Risk Prevention Plans ("PPR")** : mapping of the risk is used to develop durable urban planning (land use and construction codes)
  - 13,000 towns have a PPR

- **Deductibles : multiplicative factor applied to towns without a PPR where events are frequent :**
  - 1 or 2 decrees — basic deductible
  - 3 decrees — doubled deductible
  - 4 decrees — tripled deductible
  - 5 or more decrees — quadrupled deductible

**French CATNAT's Approach: Insurance and Risk Reduction:**

# Turkish Catastrophe Insurance Pool: Major Highlights

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| | 2000/1 | 2002 | 2003 | 2004 | 2010 forecast |
|---|---|---|---|---|---|
| Claims Paying Capacity | $ 600 mm | $ 900 mm | $ 800 mm | $ 750 mm | $ 1.3 bb |
| Policy # (% of TH) | 0.6 mm | 2.48 mm | 1.9 mm | 2 mm | 3.5 mm |
| Surplus | $ 0 mm | $ 2 mm | $ 10 mm | $ 70 mm | $ 150 mm |
| Premium Rate (average) | $ 13 | $ 15 | $ 25 | $ 40 | $ 50 |

# TCIP’s Risk Financing Program 2004

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| | |
|---|---|
| Risk Retention | |
| $200 MM R/I | |
| $178 MM R/I | $22 MM WB |
| $120 MM R/I | $80 MM WB |
| $42 MM R/I | $28 MM WB |
| $60 MM – Reserves | |
| $20 MM WB | |

Government will provide additional capital support in excess of $1 billion in TCIP’s claims paying capacity in case of a very large disaster

# V. How Can International Experience in Risk Financing Apply in South Asia?

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- Combine risk reduction and risk transfer experience of CATNAT and TCIP!
- Utilize donors' post-disaster support
- Ensure targeted and efficient delivery of aid to the most vulnerable segments of population in the next disaster.

# A Catastrophe Risk Financing Strategy for South Asian Countries

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Promotes active risk management;
Reduces vulnerability of the poor;
Limits government fiscal exposure

| Insured Risks | Links to Risk Reduction | Distribution | Risk Financing | Claims Settlement |
|---|---|---|---|---|
| ▪ Loss of breadwinner;<br>▪ Loss of shelter and contents;<br>▪ Post disaster morbidity;<br>▪ Loss of crops | ▪ Provides insurance to disaster prone communities which participate in risk reduction programs | ▪ Communities<br>▪ NGOs<br>▪ Microfinance institutions<br>▪ Insurers/banks<br>▪ Post office | ▪ IDA/World Bank<br>▪ Donors<br>▪ Reinsurers<br>▪ Government<br>▪ Households | ▪ Communities<br>▪ Insurers<br>▪ NGOs<br>▪ Microfinance institutions |

Policy Trigger: Occurrence of a Large Natural Calamity

# VI. World Bank Role in Catastrophe Risk Financing

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- **Is there a role for the World Bank in international ex-ante risk financing?**

# World Bank Role in Risk Financing: Key Objectives

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- (i) increase insurance penetration for natural hazards in the client countries;
- (ii) reduce government catastrophe risk exposures;
- (iii) make catastrophe insurance management an integral part of overall government risk management practices;
- (iv) kick start the development of private insurance markets by assisting governments with regulatory infrastructure and institutional arrangements.

# World Bank Role in Risk Financing: Risk Management Products

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- (i) contingent capital facilities in support of national catastrophe reinsurance programs;
- (ii) loans to finance reinsurance premium;
- (iii) ex-ante (pre-disaster) liquidity facilities in support of government recovery efforts (still work in progress);
- (iv) technical assistance loans to finance risk management feasibility studies;
- (v) sectoral risk management studies (at no cost to the borrower), if included in the CAS;
- (vi) catastrophe risk management services to governments on a stand-alone basis separate from lending.

# VII. Conclusions

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- **Donor emergency funding must find ways to build in incentives for ex-ante risk management in disaster prone countries.**
- **Ex-ante catastrophe risk financing is an important integral element of national catastrophe risk management.**
- **If properly utilized, capacity of international reinsurance and capital markets can be an important and affordable source of risk financing for governments.**