



# Disaster Risk Management

## Approaches and Experience




2<sup>nd</sup> India Disaster Risk Management Congress, Nov 4, 2009

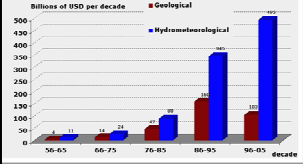


# Table of Contents

- Why is Disaster Risk Management relevant?
- What are the Building Blocks of modern Disaster Risk Management
- How can the World Bank assist

2

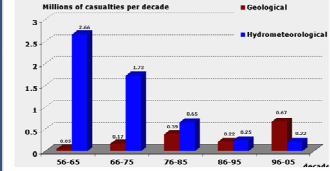
# Social and Economic Losses of Disasters



Decade	Geological	Hydrometeorological
56-65	11	11
66-75	34	23
76-85	47	88
86-95	100	350
96-05	100	450


Economic losses related to disasters are on the way up...

While casualties related to hydro-meteorological disasters are decreasing



Decade	Geological	Hydrometeorological
56-65	0.45	2.6
66-75	0.1	1.7
76-85	0.3	0.65
86-95	0.19	0.25
96-05	0.47	0.22

Source: CRED (2008)



# Development Impact of Disasters

**Macroeconomic Impact**

- Decline in overall and sector GDP
- Adverse impact on public finances
- Deterioration in the balance of payments
- Inflation and depreciation pressures

**Disaster impacts on competitiveness**

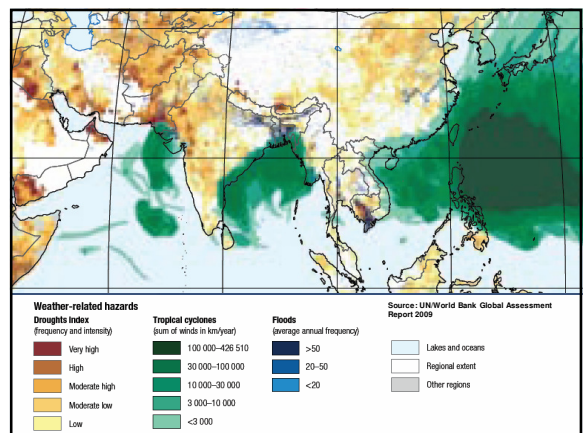
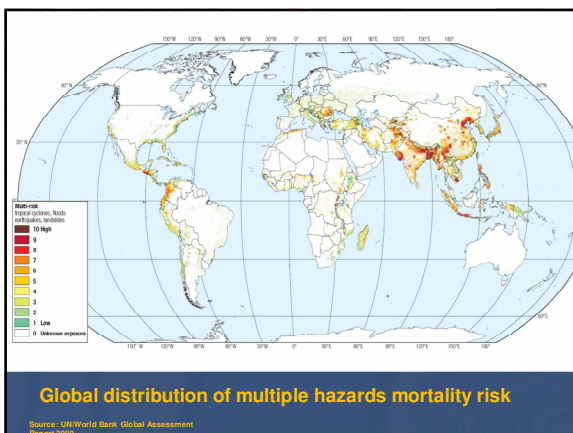
- Unstable Infrastructure
- Insecure investment climate


**Economic losses**

- Annual average over the past 8 years was US\$81 bln (CRED 2008)
- **20 times greater in developing countries** than in developed ones (as a % of GDP) (World Bank IEG 2008)

**Disaster risk reduction is critical to protect development gains and an integral part of the fight against poverty**

4





## Natural Hazards In India

- 60% of land mass prone to earthquakes ( 300 million hec with 555 million people)
- 40 million hectares (8%) of landmass prone to floods
- 8000 Km long coastline with two cyclone seasons
- Drought – low and medium rainfall region which constitute 68% of the total area vulnerable to drought
- Hilly regions vulnerable to avalanches/landslides/Hailstorms/cloudbursts
- Different types of manmade Hazards

**1 million houses damaged annually + human, economic, social, other losses**

Source: MoHA

## The Building Blocks of Disaster Risk Reduction

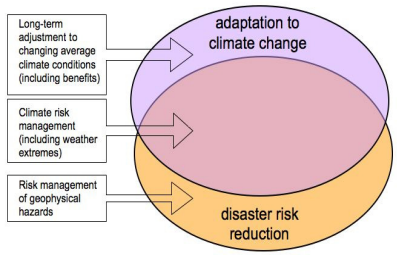
<b>Knowledge and Capacity</b>	<ul style="list-style-type: none"> <li>• Develop culture of prevention and resilience</li> <li>• Risk and vulnerability assessments</li> <li>• Weather data collection and forecasts (for farmers, insurers, etc.)</li> </ul>
<b>Technology</b>	<ul style="list-style-type: none"> <li>• Hydro-meteorological services</li> <li>• Early Warning Systems</li> <li>• Building Codes, Design, and Construction Standards</li> </ul>
<b>Infrastructure</b>	<ul style="list-style-type: none"> <li>• Reduces underlying risk factors</li> <li>• Flood and Storm Proof Construction</li> <li>• Dikes, sea walls</li> <li>• Improved drainage</li> </ul>

## The Building Blocks of Disaster Risk Reduction (continued)

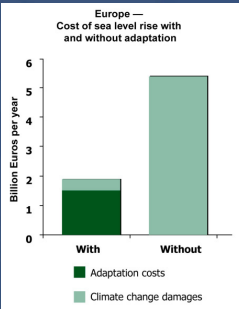
<b>Policies</b>	<ul style="list-style-type: none"> <li>• Making Disaster Risk Reduction a Priority in national strategies</li> <li>• National Laws and Plans for Disaster Risk Management</li> <li>• Climate-resilient urban development</li> <li>• Risk transfer and financing strategies (Insurance)</li> <li>• Incentive framework for private sector action</li> <li>• Improve integrated river-basin and ecosystems-based planning</li> </ul>
<b>Institutions</b>	<ul style="list-style-type: none"> <li>• Strengthen emergency preparedness</li> <li>• Safety nets for disaster-hit households</li> <li>• Land-use planning and zoning</li> <li>• Strengthen key institutions in various sectors (e.g. water, agriculture, infrastructure)</li> </ul>

## Disaster Risk Reduction and Climate Change Adaptation

- Disaster risk reduction and climate change adaptation should largely be managed as one integrated agenda



## Good Disaster Risk Reduction is Cost-Effective



Source: European Environment Agency.

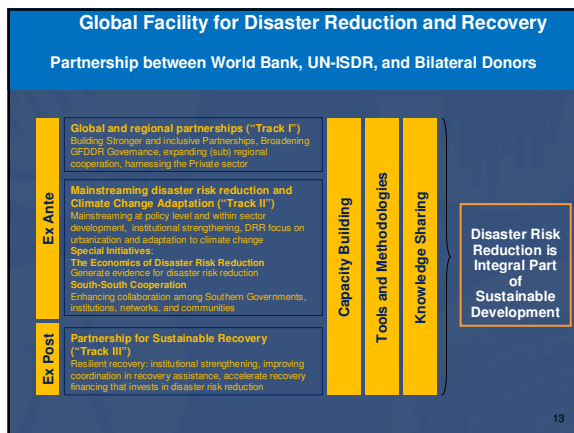
### Investment in physical infrastructure

- Sea level rise likely to carry high costs
- Adaptation (dark green) buys a large reduction in climate change costs (light green)

## World Bank's Operational Experience

- **Experience in Disaster Response** (1984-2005)
  - 684 disaster-related projects by World Bank
  - Disaster related portfolio: US\$ 26 billion
  - Response to more than 60 Earthquakes, 250 Floods, and 80 Storms
  - More than 60 damage and loss assessments
- **Total Lending Amount 1984-2005**
  - Non-meteorological disasters (earthquakes, volcanoes): \$ 8.1 billion
  - Meteorological disasters (floods, storms, others): \$ 8.9 billion
- **Types of Assistance**
  - Damage and loss assessments
  - Reconstruction and recovery
  - Risk Financing
  - Analytical and Advisory Activities
  - Capacity building
  - Disaster Risk Reduction






## INDIA

1. Tsunami Emergency Reconstruction Project
2. Vulnerability Reduction of Coastal Communities in Tamil Nadu
3. India Cyclone Risk Mitigation Project (under preparation)
4. Agriculture Risk Insurance Study
5. WBI – NIDM online Training Courses

