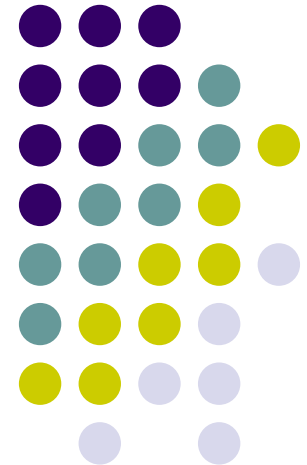


# Disasters and Climate Change: Hazards of Nature or Risks from Development

Ajay Chhibber  
Director, Independent Evaluation  
Group  
World Bank

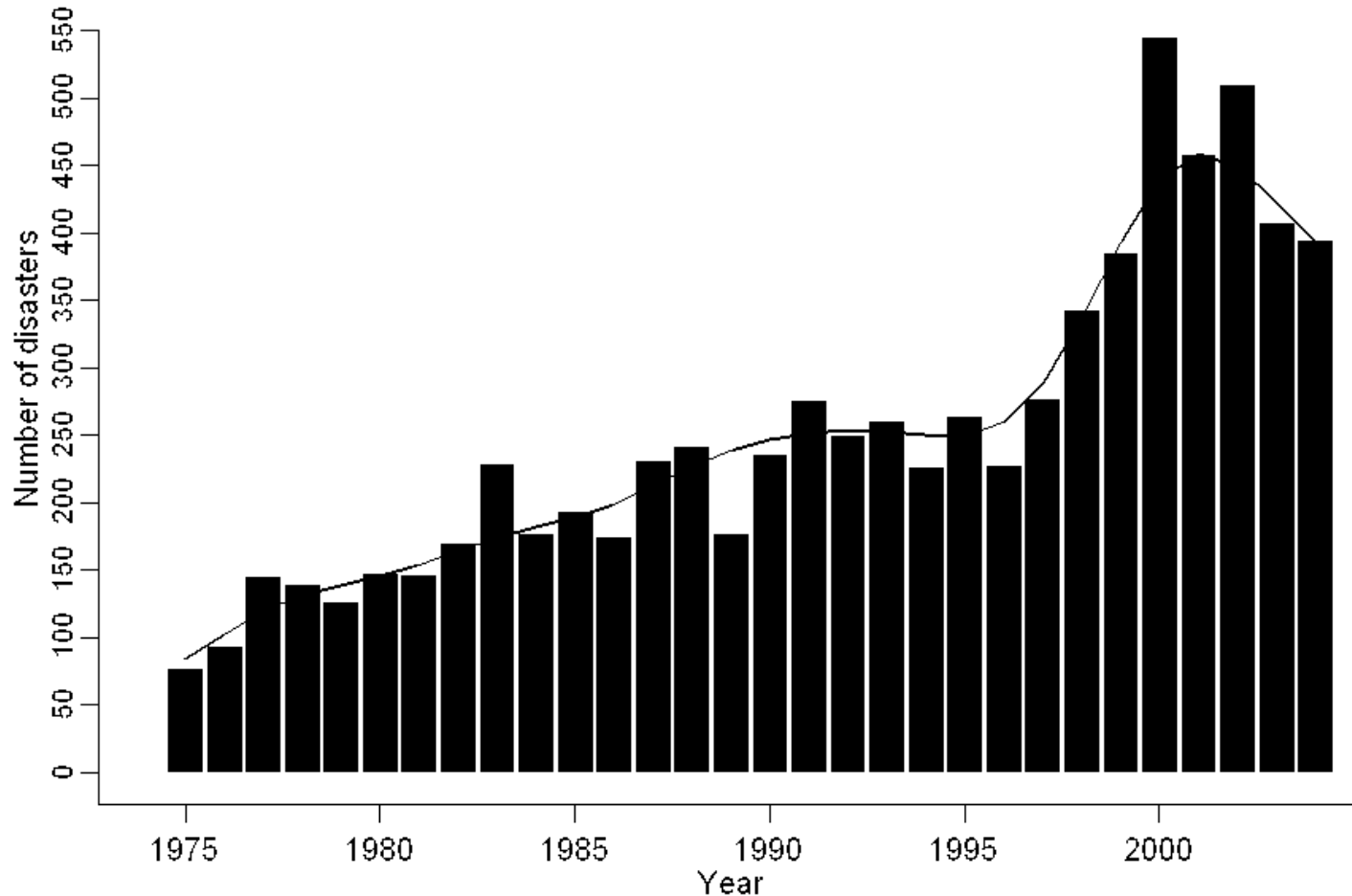


# Five Main Messages



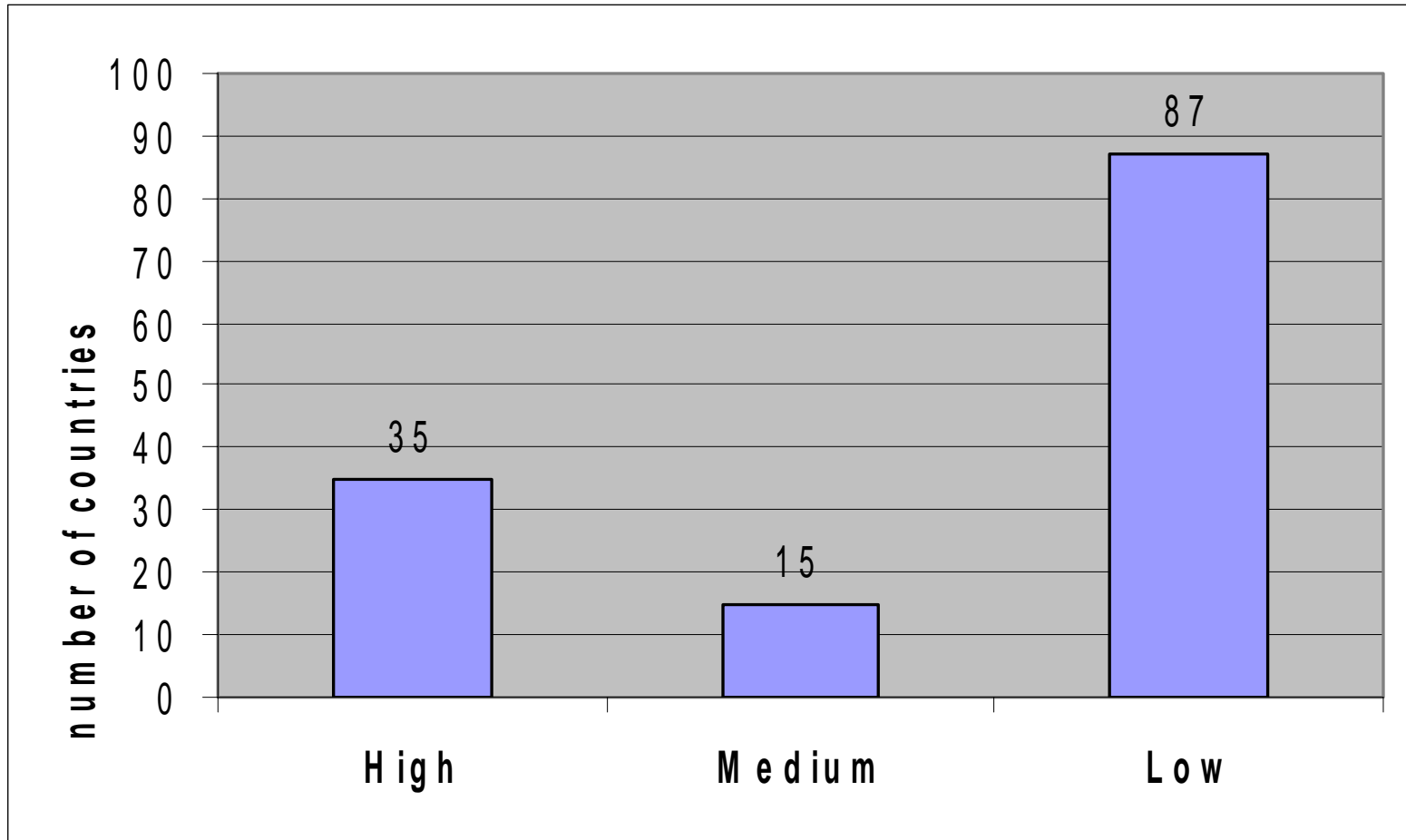
1. Hazards Are Created by Nature, Disasters Are Man-Made.
2. Be more Proactive: Reduce Vulnerability and Strengthen Response Capability.
3. Involve Local Communities for Lasting Recovery.
4. Develop better Global and Market-Based Financing Mechanisms.
5. Integrate Disaster Risk into Development Strategy.

# Natural Disasters Are Growing In Number



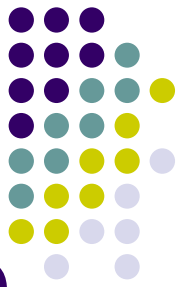
Source: EM-DAT: The OFDA/CRED International Disaster Database-[www.em-dat.net](http://www.em-dat.net)-Université Catholique de Louvain, Brussels.

# Risks Are Highly Concentrated

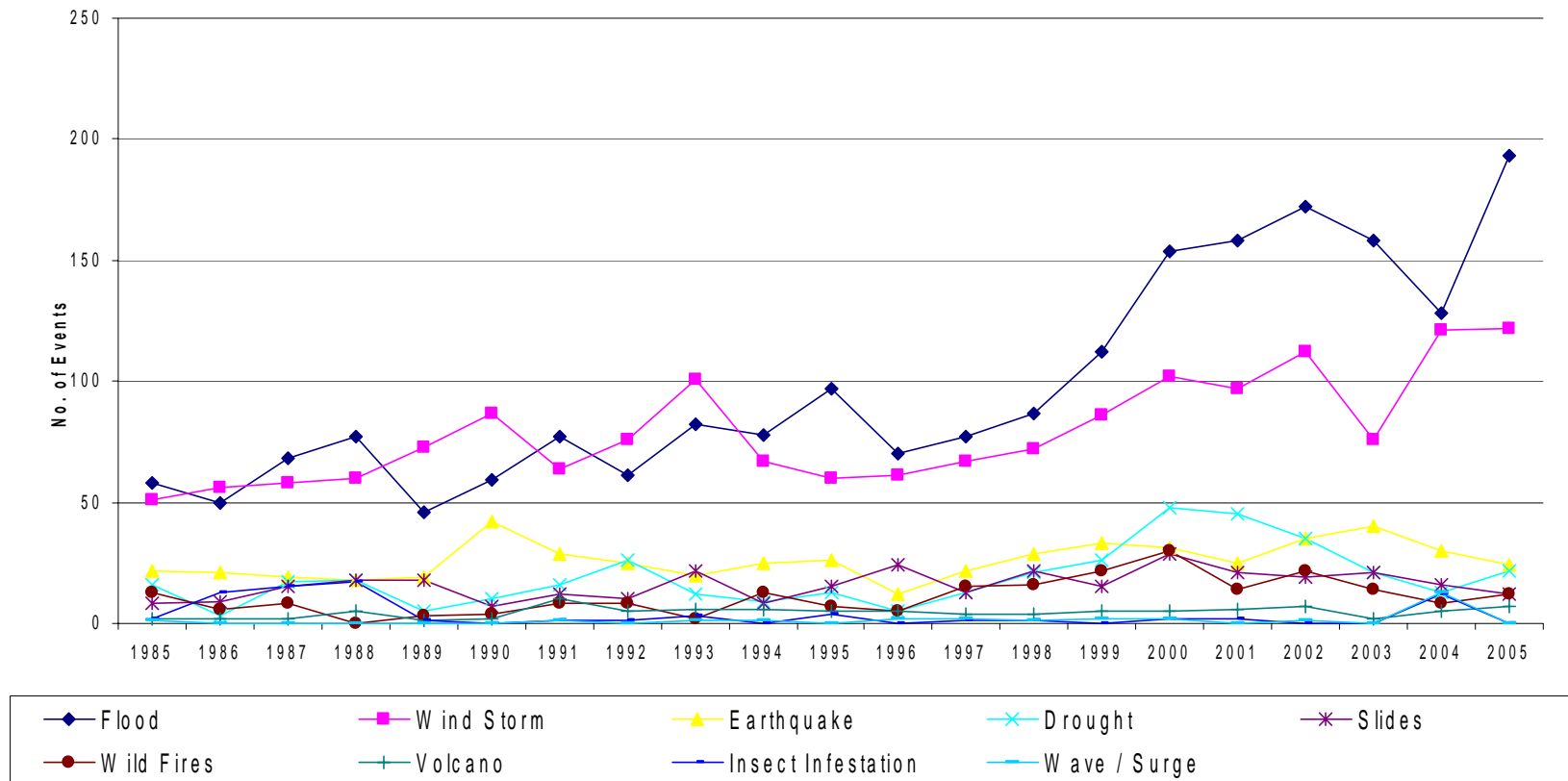


High = over 50% of GDP at risk; Medium = 30-50%; Low = <30%.

# Floods and Windstorms on the Rise: Link to Climate Change

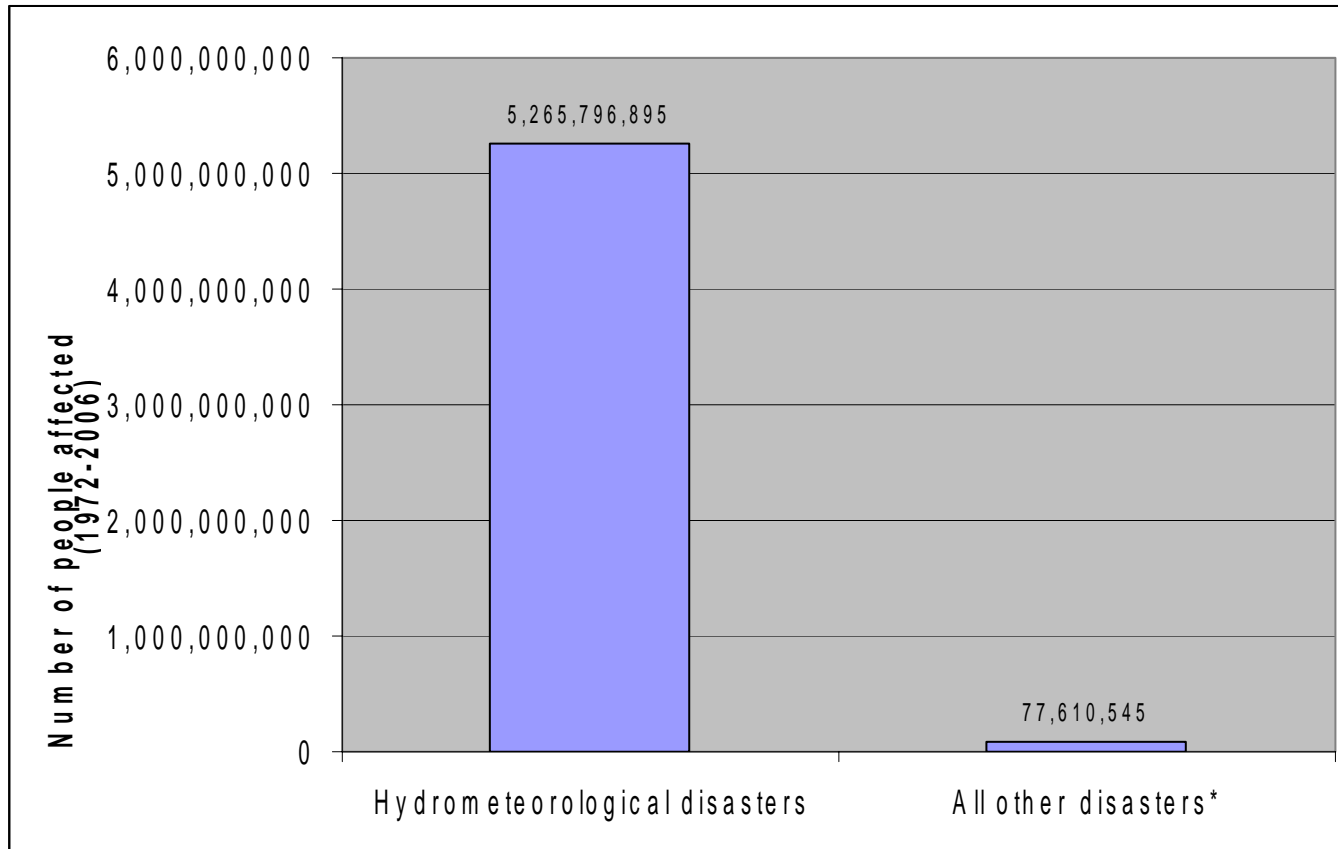


Disaster Occurrence by Type 1985-2005 - Global



Source: "EM-DAT: The OFDA/CRED International Disaster Database  
[www.em-dat.net](http://www.em-dat.net) - Université Catholique de Louvain - Brussels - Belgium"

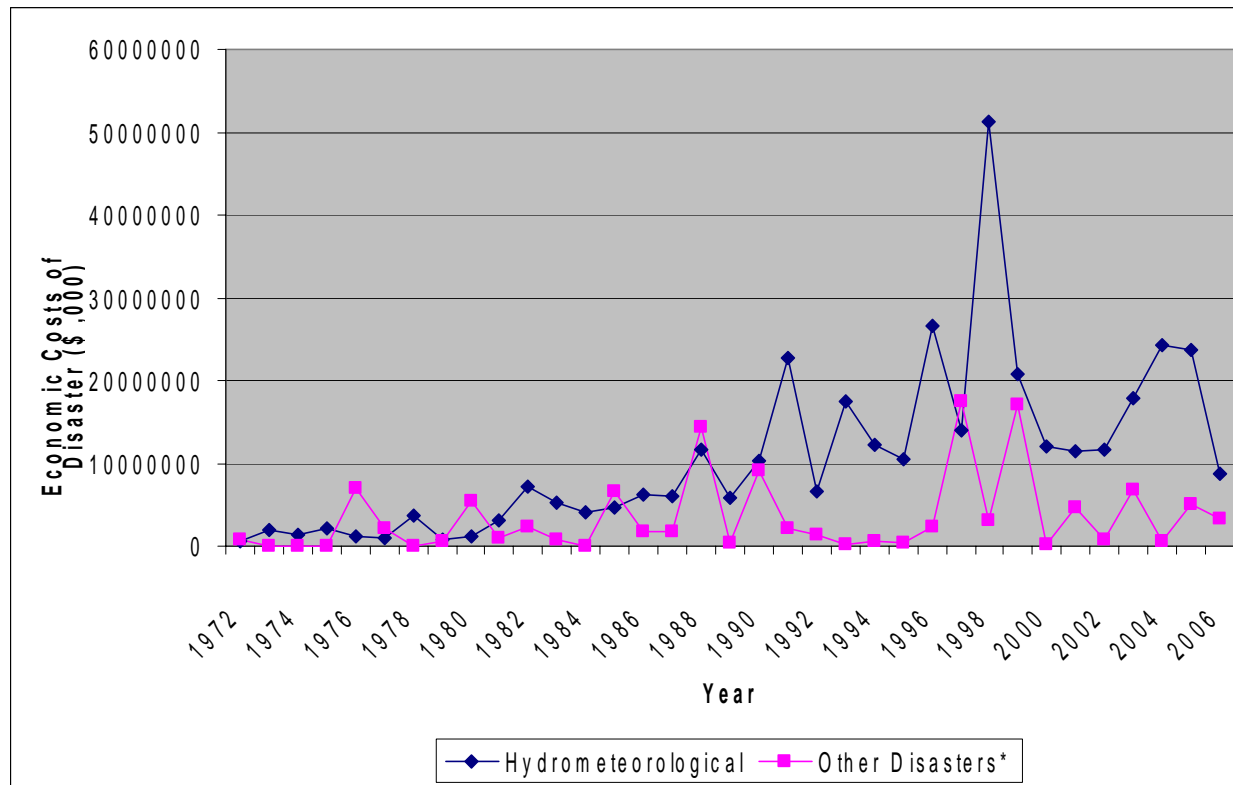
# Hydro-Meteorological Disasters Affect the Most People



\*This category includes earthquake, insect infestation, volcanoes, and wildfires. Hydro-meteorological disasters include drought, extreme temperatures, floods, slides, wave/surges, and windstorms.

Data source: EM-DAT: The OFDA/CRED International Disaster Database, [www.em-dat.net](http://www.em-dat.net) - Université Catholique de Louvain - Brussels - Belgium

# Economic cost of hydro-meteorological disasters higher than that of all other disaster types combined



Source: EM-DAT: The OFDA/CRED International Disaster Database, [www.em-dat.net](http://www.em-dat.net) - Université Catholique de Louvain - Brussels – Belgium

# Greater danger largely due to human activities that intensify the effects of climate change and hazards



Global warming and other human actions:

- Deforestation
- Desertification
- Unsustainable agriculture practices
- Lack of proper water management
- Unplanned urbanization
- Government risk subsidization

# Debate among scientists on how to analyze climate data



- Climate scientists
  - Look at broad shifts in climate
  - Identify underlying causes of climate change
- Hurricane forecasters
  - Focus on the complex nature of individual storms
  - Predict their paths and intensity

# Experts agree on the link between environmental change and disasters



- **The International Decade of Natural Disaster Reduction (IDNDR) 2002**
- **Berlin 2002 Declaration for the World Summit on Sustainable Development in Johannesburg**

# Finding #1:



Hazards Are Created by  
Nature,  
Disasters Are Man-Made.

# Impact on Developing Countries Large



- 98 percent of the 211 million people affected by natural disasters each year from 1991 to 2000 were from developing nations (IFRC 2001).
- Damages represent a large portion of GDP in some countries.
- The poor are often the hardest hit.

# Same Size Disaster, Different Effect



- Events *can* have disastrous effects on buildings and infrastructure that are:
  - Poorly located,
  - Inadequately designed, and
  - Badly constructed
- Northridge vs. Armenia
- France vs. Venezuela
- India 1977 vs. 1990
- Bangladesh 1970 vs. 1997

## Finding #2:



Be more Proactive:  
Reduce Vulnerability and  
Strengthen Response  
Capability.

# Reactivity Means...



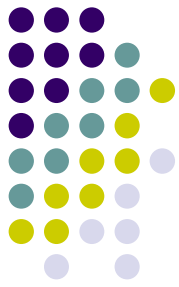
- Countries repeatedly borrow for disasters.
- Project objectives provide for short-term fixes and rarely address the root causes of disaster.
- Without careful early planning, implementation gets delayed.
- Reconstruction projects build infrastructure that is not disaster resilient.
- Social issues are given too little importance.

# Proactivity Means...



- Response teams and lessons are identified in advance.
- Risk assessment and mitigation receive adequate attention.
- Financing mechanisms are in place to avoid disruption of long-term development.
- Ways to increase disaster resiliency have been identified for sectors likely to be affected.

# Some Critical Elements in Building Resilience



- Enforcement of building codes and land use plans critical.
- Maintenance of essential infrastructure is key to protection from future catastrophes.
- Temporary shelter, if needed, should be built solidly enough to withstand subsequent disasters.

## Finding #3:



Involve Local Communities for  
Lasting Recovery.

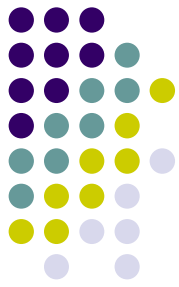
# Community Participation Is Critical to Success



- Enhances sustainability and ownership
- Without it, solutions often fail to solve stakeholder problems

Example: 1993 Argentina Flood Rehabilitation Project,

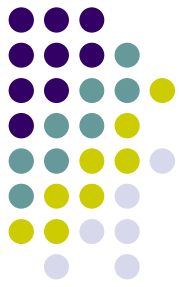
- Beneficiaries involved in all stages of the project
- Interaction between beneficiaries and the local authorities resulted in:
  - Timely availability of construction materials
  - The accommodation of local customs in the architectural design of new houses
  - Ownership among beneficiaries
  - Increased maintenance.



# What Has Worked?

- Ensuring beneficiary views are heard
- Cash support
- Providing livelihoods opportunities.
- Working at the finer-textured, smaller-scale level

# Fostering Stable Urban Communities: Selected Housing Lessons



- Preserve pre-disaster social networks, proximity to jobs
- Promote in-situ reconstruction
- Integrate the new settlements into the urban fabric
- Include renters where possible
- Include beneficiaries in the design process
- Issue the title in the female's name

## **Finding #4:**

**Develop Better Global  
and Market-Based  
Financing Mechanisms.**

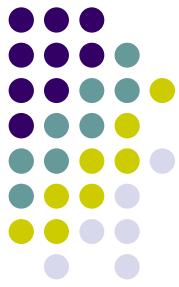


# Global and Regional Initiatives



- Caribbean Catastrophe Risk Insurance Facility
- UN Central Emergency Relief Fund (CERF)
- CERF Expanded: The UN Central Emergency Revolving Fund
- The Special Emergency Assistance Fund for Drought and Famine in Africa (SEAF)
- Global Disaster Facility

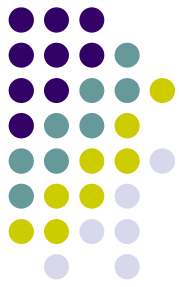
# Explore New Mechanisms to Help Lay off Risk



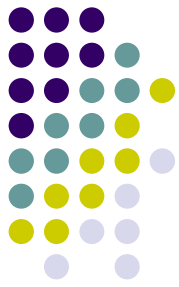
- Contingency lines of credit
- Catastrophe insurance pool
- Insurance for public buildings
- Drought insurance
- Micro insurance
- Index-based insurance
- Catastrophe models to facilitate coverage

## **Finding #5:**

**Integrate Disaster Risk into  
Development Strategy.**



# Risk Mitigation and Risk Transfer Critical, Given that Natural Events Are Sure to Happen



- Natural hazard risks are highly concentrated
- Special attention needed for countries at highest risk:
  - Planning ahead
  - Reducing long-term vulnerability

# But Country Programs that Should Discuss Natural Disasters Do Not



<i>Number of disaster projects in a country</i>	<i>No. of countries with this count</i>	<i>Number of their Country Programs with no discussion of disasters</i>	<i>(%)</i>
More than 8 disaster projects	16	5	31%
4 to 7 disaster projects	24	8	33%
2 to 3 disaster projects	33	15	45%
1 disaster project	24	15	62%
<b>Total</b>	<b>97</b>	<b>43</b>	<b>44%</b>

*Source:* IEG data.

# Five Main Messages



1. Hazards Are Created by Nature, Disasters Are Man-Made.
2. Be more Proactive: Reduce Vulnerability and Strengthen Response Capability.
3. Involving Local Communities Is Vital for Lasting Recovery.
4. Better Global and Market-Based Financing Mechanisms Are Needed.
5. Integrate Disaster Risk into Development Strategy.



Conference on

# Effectiveness of Assistance for Natural Disasters

Sponsored by the Independent Evaluation Group

Report website:

<http://www.worldbank.org/ieg/naturaldisasters/?intcmp=5254248>