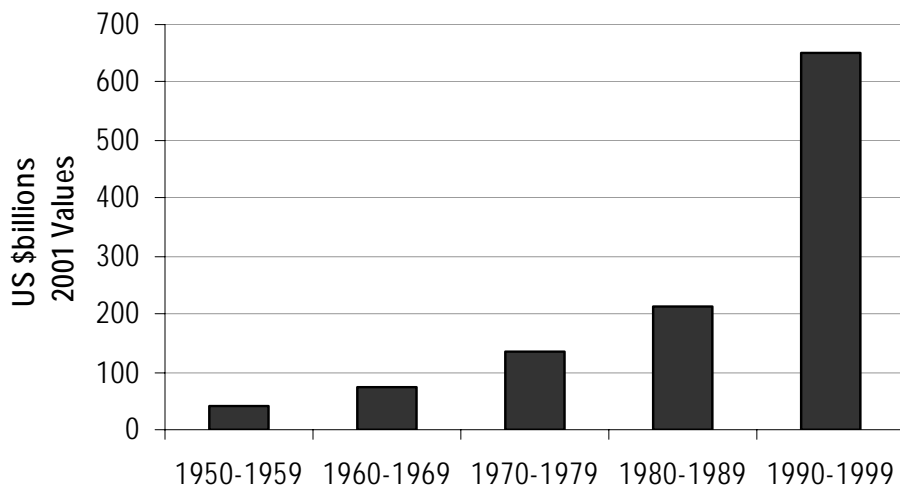


Facts & Figures On Natural Disasters

From the authors of *"Hazards of Nature, Risks to Development,"*
By the World Bank's Independent Evaluation Group

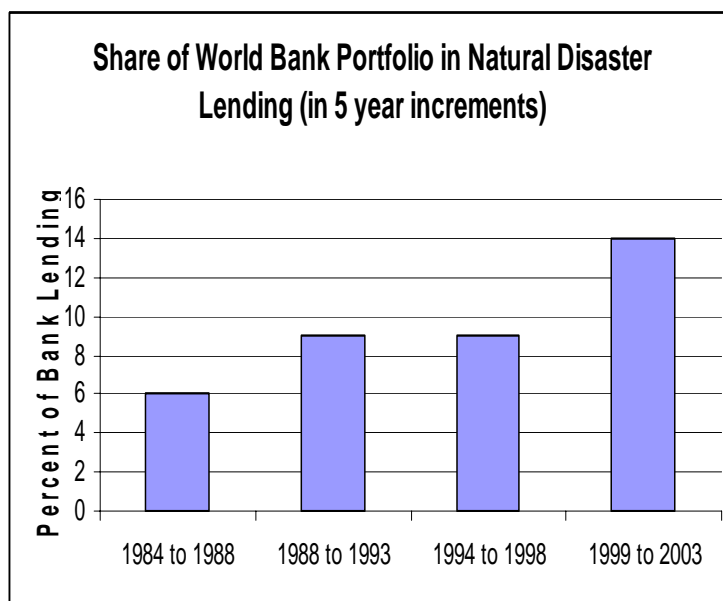
The Cost of Disaster Damage is Rising



Note: Data are for "great" disasters, in which the ability of the region to help itself is distinctly overtaxed, making interregional or international assistance necessary. Source: IMF 2003

- The costs are now 15 times higher than they were in the 1950s—\$652 billion in material losses in the 1990s, according to the IMF.
- Number of disasters has grown: fewer than 100 in 1975 to more than 400 in 2005.
- Approximately 2.6 billion people were affected by natural disasters over the past ten years, compared to 1.6 billion the previous decade.

World Bank Spending on Disasters has Grown



Source: World Bank data.

SOME RECENT DISASTERS

The **Pakistan/Northern India/ Afghanistan earthquake** of October 8, 2005 was 7.6 in magnitude and killed an estimated 87,000 people.

- *World Bank funding:* US \$470 million for housing reconstruction, livelihood support, import financing, and capacity building.

Katrina hit Louisiana August 29, 2005, killing 1,422 people and causing \$75 billion in damages, making it the costliest hurricane in United States history.

Asian tsunami December 26, 2004, of 9.0 magnitude, killed 224,000 people and left 1.8 million homeless. It caused US\$7 billion overall economic losses.

- *World Bank funding for **India*** (10,881 killed; 5,792 missing; 2.7 million affected.): US\$528.5 million for housing, infrastructure, agriculture retrofitting and livelihoods.
- *World Bank funding for **Indonesia*** (129,775 killed; 192,055 internally displaced): US\$395 million total.
- *World Bank funding **Sri Lanka*** (35,322 killed; 21,441 injured; 516,150 displaced): US\$ 150 million for Task Force for Rebuilding the Nation, housing, livelihood support, roads and health

10 Countries with the Most Bank-Funded Disaster Projects

<i>Country</i>	<i>No. of disaster projects</i>	<i>Lending to projects with disaster activities (US\$ millions)</i>
1. India	43	8257
2. China	32	4902
3. Bangladesh	28	2880
4. Brazil	27	2349
5. Honduras	15	712
6. Turkey	13	3390
7. Yemen	13	306
8. Madagascar	13	327
9. Mexico	12	2145
10. Vietnam	12	1232
TOTAL	208	

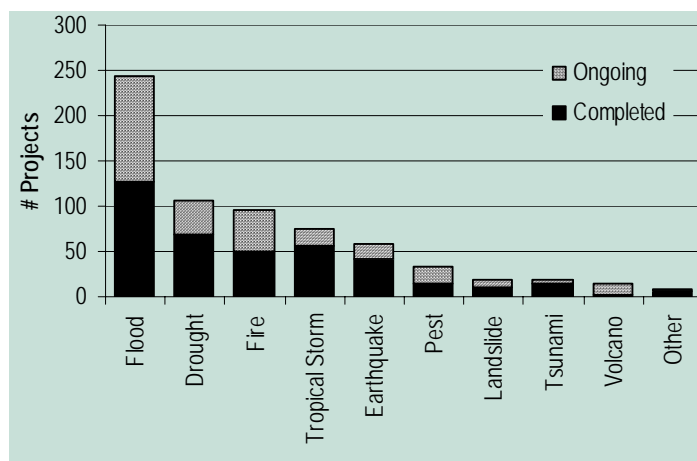
Source: World Bank data. Each reallocation counted as a separate project.

10 Largest Loans for Disasters

<i>Country</i>	<i>Original loan amt. (US\$ millions)</i>	<i>Project name and approval year</i>
1. Turkey	505	Marmara Earthquake Emergency Reconstruction, 2000
2. India	465	Emergency Tsunami Reconstruction, 2005
3. India	443	Gujarat Emergency Earthquake Reconstruction, 2002
4. Mexico	404	Mexico Natural Disaster Management Project, 2001
5. Turkey	400	Istanbul Seismic Risk Mitigation, 2005
6. Mexico	400	Earthquake Rehabilitation & Reconstruction, 1986
7. Turkey	369	Emergency Flood Recovery, 1999
8. India	350	Drought Assistance, 1988
9. Turkey	285	Earthquake Rehabilitation & Reconstruction, 1993
10. India	261	Maharashtra Emergency Earthquake Rehab. Project, 1994
TOTAL	3882	

Source: World Bank data.

10 Types of Disasters to which the Bank Responds Most Frequently



Fiscal 1985 through Fiscal 2005. Source: World Bank data.

THE BANK'S DISASTER PORFOLIO

- 528 projects in the past 20 years
- \$42,552 million in commitments
- \$26,281 million in activities
- 9.4 percent of all Bank loan commitments since 1984
- Over 80 percent of Bank disaster financing has addressed floods, earthquakes and fires.

10 Most Common World Bank Disaster Activities

Activity	Number of projects
1. Provision of supplies and equipment	88
2. Rehabilitation of road infrastructure	77
3. Rehabilitation of flood control infrastructure	53
4. Studies and research on disaster management	43
5. Institutional development for disaster management	43
6. Fire prevention activities	43
7. Early warning and public awareness campaigns	39
8. (Re)Development of education facilities	38
9. Planning for disaster management	37
10. Rehabilitation of irrigation and drainage	37

Source: IEG data.

10 Main Points from the IEG Disaster Evaluation

1. The Bank has responded flexibly with a wide variety of activities.
2. Without advance preparation, doing things in order of priority can be difficult.
3. When activities are done, and how long they take to complete, are at least as important as what activities are done.
4. A quick reaction may not lead to the most relevant response.
5. Many important activities require long implementation times.
6. Most activities financed by the Bank take more than three years to complete.
7. Of 59 completed Emergency Recovery Loans (ERLs), only 10 have had “follow-on” projects.
8. Existing lending mechanisms do not significantly accelerate project processing and usually do not expedite the disbursement of funds.
9. More recent projects are, on average, slower than those of a few years ago.
10. Three-quarters of disaster assessments have led to an ERL.

RATING WORLD BANK NATURAL DISASTER PROJECTS

- **Outcome:** 80 percent satisfactory (Bank average: 72)
- **Sustainability:** 63 percent likely (Bank average: 56)

10 Mitigation Components Implemented in Bank Disaster Projects

<i>Component</i>	<i>Times Implemented</i>
1. Maintenance	124
2. Construction to higher design standards and/or to protect from future hazards	123
3. Research, studies, policy changes including building codes	109
4. Training	89
5. Institution building for disaster and hazard management	73
6. Community participation in mitigation activities and disaster preparedness	67
7. Water supply / watershed management	61
8. Relocation and resettlement	44
9. Quality assurance and monitoring in construction	44
10. Early warning, forecasting, and seismic monitoring systems	41

Source: IEG project database.

10 Lessons Not Yet Learned from Bank Disaster Projects

<i>Categories</i>	<i>Times in database</i>
1. Disaster management, preparedness and mitigation need to be addressed	49
2. Simple and flexible procurement is fundamental to expeditious implementation	40
3. Lessons regarding Project Coordination Units (PCU) and/or working with existing agencies (pros and cons)	31
4. Maintenance is critical for sustainability	25
5. Simple project design more important when activities to be implemented are urgent	25
6. Community participation produces several identifiable benefits	25
7. Trade-off between careful project preparation and quick action	21
8. Emergency projects need experienced staff during project preparation	19
9. Assure borrower ownership by involving the highest levels of government	17
10. Donor coordination: co-financing should be preferred over parallel financing	16

Source: IEG project database.

- In the 40 countries that have had four or more World Bank disaster projects, one third of the World Bank's Country Assistance Strategies (CASs) did not mention disasters.
- Of the 59 PRSPs prepared to date, only 9 have incorporated aspects of hazard risk management.

10 Most Frequent Positive Outcomes of Bank Disaster Projects

<i>Outcome</i>	<i>Number of Projects</i>
1. Successful restoration of physical assets	115
2. Successful mitigation activities	86
3. Successful institutional development / institutional objectives were met	48
4. Successful poverty alleviation	41
5. Research program was implemented	18
6. Beneficiary contribution had positive impact	16
7. Involvement of local community in mitigation activity	12
8. Successful distribution of project-financed inputs	12
9. Successful restoration of social assets	9
10. Training had positive results	9

Source: IEG project database.

10 Most Frequent Negative Outcomes of Bank Disaster Projects

<i>Outcome</i>	<i>Number of Projects</i>
1. Subsequent disaster lessened the project's impact	73
2. Unsuccessful mitigation activities	32
3. Infrastructure reconstruction was not completed / not successful	28
4. Problems with procurement had a negative impact	27
5. Lack of maintenance lessened the project's impact	22
6. Shortfall in counterpart funding	22
7. Conceptual failure during design	19
8. Objectives not attained due to reallocation	18
9. Research component not undertaken / not implemented	17
10. Problems with distribution of resources, goods, or services	13

Source: IEG project database.

10 Countries Most Exposed to Multiple Hazards

<i>Country</i>	<i>Percent of Total Area Exposed</i>	<i>Percent of Population Exposed</i>	<i>Maximum Number of Hazards</i>
1. Taiwan, China	73.1	73.1	4
2. Costa Rica	36.8	41.1	4
3. Vanuatu	28.8	20.5	3
4. Philippines	22.3	36.4	5
5. Guatemala	21.3	40.8	5
6. Ecuador	13.9	23.9	5
7. Chile	12.9	54.0	4
8. Japan	10.5	15.3	4
9. Vietnam	8.2	5.1	3
10. Solomon Islands	7.0	4.9	3

Note: Three or more hazards (top 10 based on land area). *Source:* World Bank, 2005.

10 Countries with Highest Vulnerability Based on Economic Risk to GDP from Two or More Hazards

<i>Country</i>	<i>Percent of Total Area at Risk</i>	<i>Percent of Population in Areas at Risk</i>	<i>Percent of GDP in Areas at Risk</i>
1. El Salvador	88.7	95.4	96.4
2. Jamaica	94.9	96.3	96.3
3. Dominican Rep.	87.2	94.7	95.6
4. Guatemala	52.7	92.1	92.2
5. Vietnam	33.2	75.7	89.4
6. Albania	86.4	88.6	88.5
7. Costa Rica	51.9	84.8	86.6
8. Colombia	21.2	84.7	86.6
9. Bangladesh	71.4	83.6	86.5
10. Philippines	50.3	81.3	85.2

Note: Non-borrowing countries have been omitted from this list. *Source:* World Bank, 2005.

10 Useful Responses to Recent Disasters

1. Develop **emergency plans**. Make sure that early warnings reach and are understood by the most vulnerable people; they need to know what to do, where to go, and how to protect themselves.
2. Provide poor communities with **emergency material** such as water purification tablets, jerry cans, stretchers, chain saws, lanterns, plastic sheeting, first aid supplies and generators.
3. **Dedicate vacated areas for specific uses** (such as parks or football fields) when moving people out of flood plains.
4. Build houses and infrastructure to **withstand future disasters** (for example, provide roofs with straps to protect against hurricanes, use steel reinforcements at the corners of a house to make it earthquake-resistant).
5. **Make hospitals disaster-resistant**, including road, water, and electricity access.
6. **Preserve social networks** when relocating people away from hazardous areas.
7. Provide **livelihoods** opportunities, and where possible, help people to take charge of their own reconstruction.
8. Provide disaster victims with **cash support** to purchase their own supplies, shelter, etc. rather than receive items in kind which might not be appropriate.
9. Ensure that **structures are properly maintained**.
10. **Consider gender differences** when designing the response, as disasters often affect men and women differently.

10 Disastrous Responses to Disasters

1. **Ignoring local leadership**, and not involve beneficiaries in the planning process of their houses.
2. **Ignoring parts of the population** when distributing relief goods, reconstruction material, or other benefits; especially those which address the needs of the poor, women, children, and the elderly.
3. Rushing with reconstruction **without recycling useful materials** from the disaster site, bulldozing over what could be valuable building materials.
4. Rushing in quickly to **implement poorly thought out plans** that might wash away in the next event in a year. For example, establishing new institutions in short time frames, or developing complex and inflexible project designs.
5. **Diverting funds** from successful health and education projects to the disaster site.
6. Using an **unfamiliar accountability system** with the local officials. Rather, use local procurement procedures with strong oversight.
7. **Relocating people away** from their jobs and social contacts.
8. **Missing the planting season** when distributing seeds in drought-stricken areas.
9. **Imposing grief counseling** where it is inappropriate for many family-based cultures.
10. **Reacting instead of planning ahead**, especially where we know disasters will surely happen; e.g. not considering disasters as one of the risks evaluated in the risk assessment process.

Source: Independent Evaluation Group