



Inter-American Development Bank

PRELIMINARY COMPANION PAPER
TO THE DRAFT
DISASTER RISK MANAGEMENT POLICY

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Contents

Executive Summary	iii
Glossary	iv
I. Introduction	2
II. Disaster Risk Management in a Development Perspective	3
2.1 Level of Risk in Latin America	3
2.2 Vulnerability	5
2.3 Disasters and Poverty	5
2.4 Disaster Impact on IDB's Mission	6
2.5 Investing in Vulnerability Reduction	8
III. Current Practices	8
3.1 Practices in Borrowing Countries	8
3.2 Bank Practices	12
3.3 Future Action Requirements	16
IV. Bank Action Under the New Policy	19
4.1 Objective	19
4.2 Scope	19
4.3 Relation to the IDB Environment and Safeguard Policy	20
4.4 Planning and Programming Action Areas	20
4.5 Post-Disaster Operations	24
4.6 Evaluating Policy Impact	26
V. Moving Forward	26
<u>Appendices</u>	
Appendix A: Recommended IDB Publications	27
Appendix B: Key Elements of Risk Management	29

EXECUTIVE SUMMARY

Rising natural and technological hazards continue to affect Latin America and the Caribbean. Disaster risk must be managed proactively to reduce vulnerability and prepare for reconstruction, as well as to bridge the gap between losses and available funds for post-disaster reconstruction.

Currently, disaster risk management in the region relies largely on an ex post strategy that, to a large extent, is based on the expectation of external assistance. There are some exceptions, but for the most part prevention to reduce risk and preparation for potential disaster losses have been inefficient.

Until recently, Bank activity has also tended to be ex post and consist chiefly in financing instruments made available after a disaster. While ex ante mechanisms exist and, in some cases, have been used quite effectively, on the whole disaster risk management has been incorporated only partially into the Bank's dialogue with the country and the programming cycle. As a result, opportunities to reduce risk and to protect the effectiveness of the Bank's development financing have been lost.

The proposed Operational Policy on Disaster Risk Management aims to provide clear directives for the Bank to ensure that its assistance supports proactive disaster risk management. It represents the Bank's continued commitment to protect and help generate economic and social development in the region. Once it is approved, the proposed policy will supersede the existing one, OP-704.

This companion paper provides background support and context for the new policy. It underscores the need for reducing vulnerability in Latin American and the Caribbean and establishes the merits of a shift to proactive disaster risk management embodied in the new policy.

Glossary¹

Disaster – A serious disruption of the functioning of a society, community or a project causing widespread or serious human, material, economic or environmental losses, which exceed the coping ability of the affected society, community or project using its own resources.

Disaster Management/Emergency Management – The organization and management of resources and responsibilities in order to deal with all aspects of response to disasters/emergencies including preparedness, contingency planning and rehabilitation.

Disaster Risk Management (DRM) – The systematic process that integrates risk identification, mitigation and transfer, as well as disaster preparedness, emergency response and rehabilitation/reconstruction to lessen the impacts of hazards.

Disaster Risk Management System – The formal and informal interaction between institutions, financial mechanisms, regulations and policies.

Financial Protection – The use of market-based financial instruments to secure *ex ante* funding to cover potential losses due to hazards and the costs of revitalizing the economy.

Humanitarian Assistance - The provision of commodities and materials required to prevent and alleviate human suffering during a disaster relief operation. Assistance in such circumstances is likely to consist of food, clothing, medicines and hospital equipment.

Loan Reformulation - Diverting loan resources already allocated to specific activities, in part or in full, in order to finance unplanned reconstruction.

Mitigation* – Structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation and technological hazards.

Natural Hazard - Natural processes or phenomena which have an impact on the biosphere and may constitute a damaging event. Such hazards include: earthquakes, windstorms, hurricanes, landslides, tidal waves, volcanic eruptions, floods, forest fires, and drought, or a combination thereof.

Preparedness* – Activities and measures taken in advance to ensure an effective response to the impact of hazards, including the issuance of timely and effective early warnings and the temporary evacuation of people and property from threatened locations.

Prevention – Activities to avoid the adverse impact of hazards and means to minimize related disasters.

¹ Definitions marked with (*) are from United Nations. 2004. Living with Risk. International Strategy for Disaster Reduction. Volume I. Geneva. pp. 16 – 17.

Proactive Disaster Risk Management - Addressing the development challenges that lead to the accumulation of human vulnerability in order to reduce the effects of natural hazards that generate disasters. An approach to disaster risk management that emphasizes *ex ante* over *ex post*.

Recovery – Decisions and actions taken after a disaster with a view to restoring or improving the pre-disaster living conditions of the stricken community, while encouraging and facilitating necessary adjustments to reduce disaster risk.

Risk* – The probability of harmful consequences or expected losses (deaths, injuries, property, livelihoods, economic activity disrupted or environment damaged) resulting from interactions between natural or human-induced hazards and vulnerable conditions.

Technological Hazard – Danger originating from technological or industrial accidents, dangerous procedures, infrastructure failures or certain human activities, which may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation. Examples include: structural collapse, explosion, pollution and contamination or some combination thereof.

Vulnerability* – The conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards.

I. Introduction

Disasters have a significant bearing on the development prospects of most countries in Latin America and the Caribbean. During the past thirty years disasters in the region have affected roughly 4 million people a year, causing some 5,000 deaths and US\$3.2 billion in physical losses.² Despite rising awareness and recent progress, several of the Bank's borrowing member countries face high risks of natural and technological hazards. Insufficient planning and adoption of mitigation measures exacerbate this risk. When vulnerability is high, these hazards may seriously jeopardize progress in reducing poverty, improving social equity and promoting sustainable economic growth.

The existing IDB Operational Policy on *Natural and Unexpected Disasters* (OP-704, 1998) takes an important step toward consolidating the risk management framework for Bank operations by addressing *ex ante* Bank actions as well as disaster response. In 2000, the Bank developed an action plan (*Facing the Challenges of Natural Disasters in Latin America and the Caribbean*) that sharpened its conceptual framework in this area, and in 2001 introduced a new loan instrument (the Disaster Prevention Sector Facility). However, in 2004, an evaluation of OP-704 showed that it does not go far enough and Bank operations continue to be predominantly focused on responding to emergencies.

The new operational policy that is currently being developed will enable the Bank to support proactive disaster risk management. A proactive stance to reduce the toll of disasters in the region requires a comprehensive approach where the emphasis is not on post disaster recovery but on actions that are taken before hazards result in disasters. The new policy will emphasize prevention through structural and nonstructural measures. This draft companion paper is aimed at providing context and justification for the underlying strategic vision of the new disaster risk management policy.

The paper is organized in five parts. Part II introduces disaster risk management into a development perspective that makes reducing vulnerability the central issue in the Bank's proposed shift to a more proactive disaster risk management policy. Part III discusses current disaster management risk practices and reviews lessons learned. Part IV examines Bank actions in accordance with the new policy. Part V outlines further opportunities for action as part of the implementation of the new policy.

² Inter-American Development Bank. 2004. "Evaluation of the Bank's Policy and Operational Practice Related to Natural and Unexpected Disasters". Office of Evaluation and Oversight. Document RE-292. Washington, D.C: Inter-American Development Bank.

II. Disaster Risk Management from a Development Perspective

Natural hazards present a challenge for attaining the social and economic development goals of the countries of Latin America and the Caribbean. A survey of Latin American policymakers commissioned as part of an evaluation of the IDB's current operational policy on natural and unexpected disasters, found that post-disaster borrowing to pay for the emergency response is perceived to cause other development priorities to be sacrificed.³ Thirty-four percent of respondents said they believed that emergency-related borrowing had a negative impact on efforts to reduce poverty. Forty percent said resources were not available for public health, education, and social goals because of post-disaster borrowing. Forty-three percent said they believed that post-disaster borrowing had a serious and negative impact on the economy, including slower economic growth, higher inflation and dampened investment. Research supports this finding: financial obligations to cover losses may create a serious drag on development, diverting resources from pro-poor investments and thereby indirectly contributing to increasing their vulnerability to future events.⁴

Disasters occur when vulnerable societies or communities are exposed to hazardous events, such as a hurricane in the Caribbean, an earthquake in the Andean region, drought in the Southern Cone or floods in Central America, and are unable to absorb or recover from their impact. While these events are often described as *natural* disasters, both vulnerability and hazard are a result of human activities. Natural hazard events destroy development gains, but development processes themselves play a role in driving disaster risk. Reducing the number and impacts of natural hazards means tackling the development challenges that lead to the accumulation of hazard and human vulnerability that generate disaster.

2.1 Level of Risk in Latin America

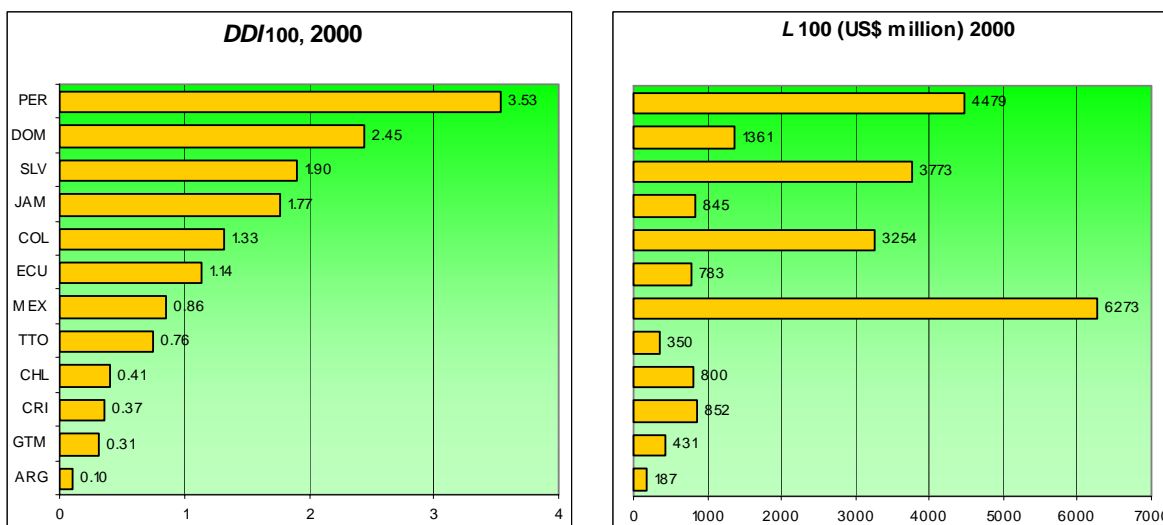
The region is faced with a large variety of natural hazards. Windstorms and flooding are the most common natural hazards in the Caribbean. Floods, landslides and earthquakes are the largest hazards in South America, while Central America regularly faces the full menu of disasters related to floods, windstorms, earthquakes and volcanic eruptions. Direct economic costs from disasters amount to more than US\$3.2 billion a year.

Research comparing possible economic losses due to disasters against a country's financial capacity has revealed that many Latin American countries are financially highly vulnerable to natural hazards. The study was based on two decades of data from 12 nations

³ Inter-American Development Bank. 2004. "Evaluation of the Bank's Policy and Operational Practice Related to Natural and Unexpected Disasters". Office of Evaluation and Oversight. Document RE-292. Washington, D.C: Inter-American Development Bank.

⁴ See for instance: Chavériat, C., 2000: "*Natural disasters in Latin America and the Caribbean: An overview of risk*", Inter- American Development Bank, Washington, DC.; ECLAC, 2003: "*Handbook for Estimating Socio-Economic and Environmental Effects of Disasters*", United Nations Economic Commission for Latin America and the Caribbean, Mexico City, Mexico.

Figure 1. Disaster Deficit Index (DDI) and loss (L) in 100 years



Source: Cardona 2005, p. 11.

in Latin America and the Caribbean.⁵ It highlights the budgetary implications of natural hazards and underscores the need to consider insuring public and private assets, establishing loss reserves, securing contingent credits and investing in prevention and mitigation.

Figure 1 illustrates the Disaster Deficit Index (*DDI*) for a 100-year event (10 percent probability that the event would take place within the next 10 years). The *DDI* shows a ratio of available supply of financial resources and estimated losses. The supply calculations take into account insurance, disaster reserve funds, aid and donations, new taxes, budgetary reallocations, external credit, and internal credit. When the *DDI* is greater than 1.0 the country has an estimated economic inability to cope with 100-year disasters even when indebtedness is carried to a maximum. The greater the *DDI*, the greater the gap.

Half of the countries studied would be unable to raise the funds needed for reconstruction following a 100-year event. The left side of Figure 1 shows these countries as those whose bar extends beyond the value of 1 (vertical line). As shown on the right side of Figure 1, while in absolute terms Peru, the Dominican Republic and El Salvador face the most critical situation, estimated losses (*L*) would be greatest for Mexico. The study also shows that only one country of the 12 (Costa Rica) would be able to finance reconstruction after a 500-year event (graphs not shown here). If these and other Latin American and Caribbean countries in similar situations do not undertake significant risk reduction investments and financial protection measures against potential losses, future major hazard events may severely diminish development prospects.

⁵ Cardona, Omar Dario. 2005. Indicators of Disaster Risk and Risk Management. Program for Latin America and the Caribbean. Inter-American Development Bank, Washington, DC.

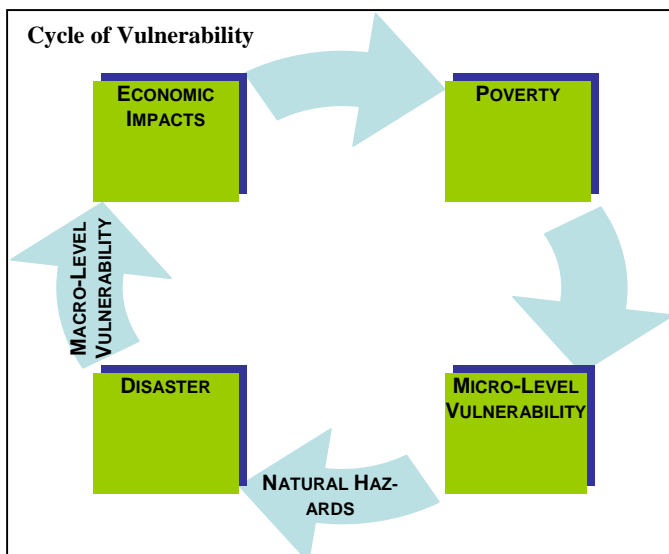
2.2 Vulnerability

The key link between natural hazard events, disasters and a country's economic and social development is vulnerability. Vulnerability is determined by factors such as poverty, social inequalities, the quality of critical infrastructure and institutions, and the extent of degradation of the natural environment. In other words, a natural hazard event is transformed into a disaster when it comes into contact with a vulnerable population. Furthermore, the impacts of a disaster can create conditions that breed still more vulnerability and thereby increase the risk that another natural event will result in a new disaster. This cycle can seriously hamper the development prospects of a country by directly affecting important development goals concerning poverty reduction, communicable diseases, education, environmental sustainability and improving the situation of women (see box 1).

2.3 Disasters and Poverty⁶

Poverty and unplanned developments triggers a series of conditions that contribute to the vulnerability of communities, households and individuals. Many lower income people live in substandard housing that is less able to withstand natural forces. Some live in high-density settlements near cities, built on steep slopes that are vulnerable to landslides and mudflows. Others live in low-lying areas and are at risk of flooding. In rural areas poverty drives deforestation and unsustainable agricultural practices. Poor people have less access to resources to help them recover from physical losses. They are less likely to have savings, insurance, or access to credit, which could help them finance reconstruction costs, thus potentially causing permanent setbacks in their efforts to climb out of poverty.

People living under these conditions are more vulnerable to the impacts of natural hazards.



The degree of economic impacts of a hazard event depends largely on various macro-level factors of vulnerability of the society or community. For instance, a severe drought that directly affect farmers, also cause a hardship for the poorest population in general, through resulting increase in food prices. When a natural hazard event affects an important economic sector there is often a significant loss in production that results in a loss of tax revenue, affecting the resources available for activities that

might contribute to social progress. In the Caribbean, for instance, this is particularly true for the tourism industry, which can suffer both nationally and regionally from one devastating hurricane. Additionally, disaster response creates significant new expenditure re-

⁶ Segments of this section are based on: Indu Abraham, 2005 "Vulnerability of the Most Vulnerable", The Inter-American Development Bank. Unpublished.

quirements. This may result in additional pressure for reducing government expenditures on the provision of social services.

The prevailing economic and institutional structure can increase vulnerability at both the micro and macro levels. Economic policy can create disincentives for the use of vulnerability reducing technologies and behaviors. This can occur through the use of tariffs, subsidies, or taxes that make activities that reduce vulnerability financially less attractive. For instance, land use policies hold implications for changes in population density and distribution. A poorly defined system of ownership and property rights may make land acquisition in safer areas more difficult. Lack of title may also provide a disincentive to investments in real estate that might mitigate risk. Improving property rights can strengthen prevention. Lack of official recognition of illegal settlements may make it difficult for those who do not have legal title to their land or homes to obtain post-disaster aid. Lawlessness and lack of personal security may increase the risk of loss of lives in emergency if it impedes evacuation. For example, people may be afraid of leaving their properties in areas that are at risk because they fear looting. This, in turn, can slow down emergency response.

2.4 The Impact of Disasters on the IDB's Mission

Natural hazards pose development challenges not only for IDB client countries, but the also for the IDB itself. A recent review by the Office of Evaluation and Oversight (OVE) has indicated that the adverse economic impact of disasters may threaten the Bank's mission:

“Natural hazards threaten both development prospects in LAC and the Bank's mission which (as set out in the Agreement Establishing the Bank) is to contribute to the acceleration of the process of economic and social development of the regional developing member countries. Natural hazards cause setbacks, at times very severe ones, and thus are at odds with the notion of acceleration of development.”⁷

Disasters can affect the Bank's core mission and retard progress across each of its five focus areas: social investment and urban development; modernization of the state; competitiveness; regional cooperation; and environment and natural resource management.

In order to provide effective development assistance the IDB needs to approach disaster risk management in the region as an investment in sustainable development.

⁷ Inter-American Development Bank. 2004. “Evaluation of the Bank's Policy and Operational Practice Related to Natural and Unexpected Disasters”. Office of Evaluation and Oversight. Document RE-292. Washington, D.C: Inter-American Development Bank. p. 5

BOX 1 THE MILLENNIUM DEVELOPMENT GOALS AND DISASTER RISK MANAGEMENT

1. Eradicating extreme poverty and hunger

Recent statistical analyses prove a long-held theoretical position that human vulnerability to natural hazards and income poverty are largely co-dependent. At the national level, reducing disaster risk is often contingent upon alleviating poverty and vice versa. Many lower income people live in substandard housing that is less able to withstand natural forces. Some live in high-density settlements near cities, built on steep slopes that are vulnerable to landslides. Others live in low-lying areas that are at risk of flooding. In rural areas poverty drives deforestation and unsustainable agricultural practices. In addition, poor people have less access to resources to help them recover from physical losses. They are less likely to have savings, insurance, or access to credit, which could help them finance reconstruction costs. This situation can cause permanent setbacks in the lowest income quintiles and thwarts their efforts at climbing out of poverty.

2. Achieving universal primary education

Educational attainment is a fundamental determinant of human vulnerability and marginalization. Broadening participation in development decision-making is a central tenet of disaster risk management. The destruction of schools is one very direct way in which disasters can inhibit educational attainment, but perhaps more important is the drain on household resources. Households frequently have to make difficult decisions on expending resources on survival and coping with poverty, or on investments (such as education and health care) to alleviate human vulnerability and enhance longer-term development prospects. If affected by a disaster, the poorest have little choice and devote their resources to survival; sending children to school falls lower in their list of priorities.

3. Promoting gender equality and empowering women

Facilitating the participation of women and girls in the development process, including efforts to reduce disaster risk, is a key priority. Women across the world play critical roles in the shaping of risks in development. In some contexts, women may be more exposed and vulnerable to hazards. For example, those with responsibilities in the household may be more exposed to risk due to unsafe buildings. At the same time, women are often more likely than men to participate in communal actions to reduce risk and enhance development. Orienting disaster risk policy so that it builds on the social capital represented by women can enable a more informed development policy. Such a model will not be easy, but best practice does exist to point the way. Barriers to women's participation at higher levels of decision-makings severely limits the skills and knowledge available for reducing risk. Overcoming disparities in access to education is a fundamental component of the disaster risk management agenda.

4. Reducing child mortality

Children under five years of age are particularly vulnerable to the impacts of hazards such as floods and drought through drowning and starvation as well as to environmental risks of inadequate sanitation and lack of drinkable water, which cause communicable diseases. In addition, health infrastructure is often damaged and made inoperable in a catastrophic event. The loss of caregivers and household income earners and the stress of displacement can have especially heavy tolls on the psychological and physical health of children under five years of age. Policies to support sustainable development by reducing child mortality need to build in strategies to limit or reduce disaster risk.

5. Improving maternal health

As environmental hazard stress or shock erodes the savings and capacities of households and families, marginal people within these social groups are most at risk. In many cases it is women and girls or the aged who have the least entitlement to household or family assets. Maternal health is a strategic indicator of intra- and inter-household equality. Reducing drains on household assets through risk reduction will contribute to enhancing maternal health. More direct measures through investment in education and health will similarly contribute to household resilience as maternal health indicators improve. Children have already been identified as a high-risk group and maternal health plays a part in shaping the care received by young children.

6. Combating HIV/AIDS, malaria and other diseases

The interactions between epidemiological status and human vulnerability to subsequent stresses and shocks are well documented. For example, rural populations affected by HIV/AIDS are less able to cope with the stress of drought because of a shortage of labor. Individuals living with chronic terminal diseases are more susceptible to the physiological stress of hunger. For diseases transmitted through vectors, there is a risk of epidemic following floods or drought, similarly the destruction of drinking water, sanitation and health care infrastructure in catastrophic events can increase the risk of disease.

7. Ensuring environmental sustainability

Environmental degradation increases the vulnerability to natural hazards and often transforms a hazard event into a disaster. Environmental degradation compounds the actual impacts of hazard events, limits an area's ability to absorb those impacts, and lowers the overall natural resilience to hazard impacts and disaster recovery. For example, deforestation may aggravate the effects heavy rainfall causing landslides and floods. Loss of mangrove forests reduce the natural protection of coastal communities against storm surges and tsunamis. Unplanned urbanization poses a challenge because it creates conditions that increase human vulnerability to disasters and at a high damage propensity. Informal settlement often takes place in highly dangerous locations, such as steep hillsides vulnerable to landslides, riverbeds prone to urban floods and near industrial installations subject to technological disasters. The target of achieving a significant improvement in the lives of at least 100 million slum dwellers by the year 2020 will be impossible without developing policies to confront their currently high risk from earthquake, hurricanes, flooding and drought. Natural hazards may also increase the risk of environmental degradation. For example, wildfires may result in deforestation and erosion, floods cause sedimentation and earthquakes may rupture gas pipelines or cause other types of industrial accidents with severe environmental impacts.

8. Developing a global partnership for development

Efforts to enhance sustainable development by reducing human vulnerability to natural hazards are challenged by competing priorities in national development agendas and by political incentive structures that favor disaster response over risk management. International and bilateral organizations must help generate a framework of incentives that encourage the private sector, academia and civil society to create partnerships with national and local governments to address disaster prevention as an integral part of development policies. Strong efforts are needed to build global partnerships for development that integrate the reduction of disaster risk.

Adapted from "Reducing Disaster Risk: A Challenge for Development", United Nations Development Program, 2004, p. 16.

2.5 Investing in Vulnerability Reduction

Natural hazard exposure is a core development concern for high-risk countries and regions. A situation of vulnerability to hazards may be addressed by national, regional and local governments and populations with the help of international agencies. Risk management is an investment in sustainable development that can reduce costs and generate income. The *natural* disasters are not exogenous and uncontrollable events, temporarily departing from normality. Disasters are foreseeable, most often cyclical events that can be reduced and in some cases prevented, by supporting people's ability to avoid and resist their impacts. In some cases vulnerabilities can be reduced by assisting people to develop sustainable land-use practices and create viable and safe alternatives for urban settlers. The vicious circle linking poverty and disasters can be addressed with a pro-poor development focus that integrates disaster risk management. When the important and clear links to development is recognized incentives opposing ex ante prevention and competing investment priorities can be overcome.

A growing body of evidence and experiences shows that there are often considerable economic and social gains in reducing risks rather than responding to disasters. Vulnerability and its reduction can be integrated as part of the focus for development programs and post disaster reconstruction. The IDB is committed to assisting countries to integrate disaster risk management into development policies and practices in the region by providing technical and financial assistance in collaboration with governments and donors as well as the private sector.

Development policies should reduce people's vulnerability to natural hazards in order to secure and sustain economic growth and social development.

III. Current Practices

3.1 Practices in Borrowing Countries

In Latin America and the Caribbean disaster impacts are exacerbated by a generalized underinvestment in mitigation and preventive measures and the lack of financial protection strategies. Furthermore, there is evidence that natural hazard losses are increasing. This trend is due to a confluence of factors. These include: (i) increased population growth and human activity in the proximity of geophysical activity such as earthquake fault lines, volcanoes, hurricane zones, etc.; (ii) a low penetration of mitigation and preventive measures; (iii) lack of financial protection; and (iv) environmental degradation resulting from unsustainable land use policies. Development and disaster related policies have largely focused on emergency response, leaving a serious underinvestment in mitigation of natural and technological hazards.

Institutions for Risk Management

Some countries in Latin America are beginning to broaden the scope of their national disaster systems to encompass preparedness, mitigation, relief and rehabilitation activities,

and, in a few cases, even pre- and post-disaster financing options.⁸ There have been three broad approaches. Most countries, like Chile, have increased the scope of disaster management by expanding the responsibilities of an existing institution such as civil defense. Other countries, like El Salvador, broadened the government's mandate for disaster risk management by creating a parallel institution responsible for risk evaluation and mitigation policy. Finally, a third approach, taken by Mexico, is to bring in, strengthen and reinforce a network of key institutions.⁹

The strengths and weaknesses of these organizational approaches depend on the larger context in which they operate. Whether centralized, loosely centralized, or networked, public programs should operate in a system with sufficient input, feedback and participation by the private sector, including actors in the marketplace and civil society. In those countries that have developed a national system for disaster/emergency management civil defense agencies are often the lead entities in disaster related matters. National planning or economic authorities have been involved only marginally.

Emphasis on Response

To recover from the impact of natural hazards the countries of Latin America and the Caribbean have implemented a range of financial and nonfinancial measures. These actions afford some protection against hazard losses, but (with some notable exceptions) they tend to be of an *ex post* nature emphasizing emergency response and reconstruction. A survey of decisionmakers in Latin America and the Caribbean carried out in connection with an evaluation of the IDB's existing disaster policy¹⁰ showed that 70 percent of respondents felt that emergency response was a high priority. Sixty percent rated reconstruction and rehabilitation as a high priority. A little over 40 percent placed high priority on disaster preparedness measures to ensure effective disaster response. In contrast, just 20 percent placed a high priority on prevention (disaster reduction activities) and mitigation (structural and nonstructural measures taken to limit the adverse impact of disasters). When asked about the ideal situation, 90 percent said prevention *should* have a high priority.

The survey also showed that between 71 and 80 percent of disaster-related resources came through post-disaster lending, budget transfers to the affected communities, and post-disaster grants and aid. Pre-disaster financing measures such as reserve funds or insurance were only used to pay for some 20 percent of disaster-related spending. This is in spite of the fact that the survey ranked post-disaster lending the most expensive finance measure. Pre-disaster investments, reserve funds and insurance were ranked as less costly

⁸ National disaster systems are defined as the formal and informal interaction between institutions, financial mechanisms, regulations and policies.

⁹ Freeman, Paul, et al. 2003. Disaster Risk Management: National Systems for Comprehensive Management of Disasters Risk and Financial Strategies for Natural Disaster Reconstruction. Inter-American Development Bank, Washington DC.

¹⁰ Swiss Federal Institute for Snow and Avalanche Research SLF, 2004. "Evaluation of the Bank's Policy and Operational Practice Related to Natural and Unexpected Disasters". Office of Evaluation and Oversight. Document RE-292. Washington, D.C: Inter-American Development Bank. A survey of Latin American Policy Makers was commissioned as part of the study.

measures and community solidarity (bearing disaster damage fully at the local level) was ranked as the least expensive.

The emphasis on response is favored by the political visibility of actions and international solidarity to obtain emergency resources. Also, it is less complicated to achieve political consensus on responding quickly and forcefully to an emergency than it is to agree on how to invest long term in disaster prevention. This, in turn, is often reflected in the creation of powerful ad hoc institutional setups for fast response.

Prevention and Mitigation

Despite a heavy reliance on *ex post* funding, some progress has been made in reducing vulnerability by using *ex ante* prevention and mitigation measures. In Nicaragua, for example, municipalities are using mapping technology to identify more precisely the degree and type of vulnerability their communities face. These measures can often be highly effective at channeling resources to reduce vulnerability and probable losses. Preventive measures start with risk identification and assessment and may include land use planning and building codes, which regulate human activity in hazard-prone areas in order to reduce risk. Other measures to reduce likely losses include public awareness campaigns that can change individual behavior and encourage reducing household risk, for example, and environmental management.

Structural mitigation measures may also be effective at reducing vulnerability.¹¹ An example of a project with adequate *ex ante* mitigation investment is the Sabaneta Dam in the Dominican Republic. In 1993, the IDB approved a loan to strengthen and recondition the dam. The work was completed prior to the hurricane season in 1998. Several months later Hurricane Georges struck the island, but the reconditioned dam was able to absorb and control 320mm of rain that fell in the San Juan river basin.

The Challenges to Financial Planning for the Countries of the Region

Probable losses due to natural hazard events need to be factored into the financial capacity of countries to finance reconstruction obligations after a disaster. When Hurricane Ivan hit Jamaica in August 2004 it created challenges for both revenue collection and expenditures for the remainder of the fiscal year. At the end of August 2004, prior to the hurricane, revenues were on target and expenditures were 0.7 percent below budget, primary goals for the Jamaican Government. Because of the hurricane, revenue collections for September fell below target as business activities ceased in many sectors and some revenue offices had to be close in the pre and post Ivan period. At the same time, expenditures for relief efforts and reconstruction grew. Financing was expected from budget reallocations, grants from external sources and donations from private sector partners. Due to the high level of indebtedness, the country was not in a position to borrow for reconstruction.

¹¹ See Appendix A for a more complete list of ex-ante measures.

When disasters occur, reconstruction is typically financed through budgetary transfers, the use of reserve funds, diversion of current loans or grant funds, new borrowing and occasionally, new taxes. The use of each one of these sources presents challenges for the countries. Budgetary transfers and diversion of loan or grant funds are painful because these actions reduce funding for programmed development projects. The use of reserve funds is coupled with the politically difficult task of keeping such funds at the needed levels to meet other government spending needs, and new borrowing increases indebtedness.

The establishment of a financial protection mechanism implies consideration of risk factors and is part of what can be described as an “*ex ante* risk management strategy”. This tool implies an understanding of probability and taking into consideration an unknown future. Setting up a reserve fund or buying insurance requires spending money today to make allowances for probable future disaster events. This is problematic, more so in developing countries where there are large immediate demands on government funds.

Despite a wide array of *ex ante* financing instruments, including some grant mechanisms, most disaster related financing is done *ex post*. Affected countries rely on international solidarity, knowing that international institutions cannot easily withhold post-disaster aid.¹² The expectation of grants is a clear disincentive for *ex ante* action. Reconstruction financing may also take the form of reformulating existing loans or, in some cases, debt relief. None of these potential *ex post* measures targets vulnerability or loss reduction.

The key obstacles to financial protection faced by several of the most vulnerable nations in Latin America and the Caribbean lie in institutional resistance to moving beyond emergency response. *Ex ante* planning would boost prevention in order to reduce risk, and establish sources of reconstruction financing before the disaster occurs. Defining the roles of civil society, private sector and financial market players would be important to disaster risk management.

Regional Collaboration

The countries of Latin America and the Caribbean have formed subregional organizations to address risk management and disaster response issues. These include the Caribbean Disaster Emergency Response Agency (CDERA), the Center for Coordination of Prevention of Natural Disasters in Central America (CEPRENAC), and the Andean Committee for Disaster Prevention and Care (CAPRADE). These subregional bodies can be centers for developing regional best practices and furthering the understanding of risk and vulnerability. However, their setup and focus partially reflect national systems. Therefore, their capacities to address disaster prevention and risk transfer issues has been limited.

¹² Auffret, Philippe. 2003. “Catastrophe Insurance Market in the Caribbean Region: Market Failures and Recommendations for Public Sector Interventions.” World Bank Policy Research Working Paper 2963. http://econ.worldbank.org/files/23420_wps2963.pdf p. 27.

3.2 Bank Practices

The Bank's practice is to respond to demands from its borrowing members. This demand also determines the Bank's activities in financing disaster prevention and response. The Bank is determined to help strengthen the incentives and capacities for risk management in the framework of the risk management cycle, and to help prepare the ground for efficient forms of risk transfer and financing. To execute this role the IDB has an array of financial and nonfinancial mechanisms at its disposal. These and other financing options are reviewed on a regular basis to make sure that the Bank offers its borrowing members an adequate array of financial instruments and incentives to comprehensively address disaster risk management.

Financial Services

From 1995 to 2002 the Bank has allocated approximately US\$3.8 billion to disaster related loans.¹³ These funds were distributed across specific instruments that support disaster related activities, as well as disaster-related loans. Outside of loan activity, the Bank also provides additional financial resources through technical cooperation (TC) grants and Emergency TCs, the Disaster Prevention Sector Facility, and the Immediate Response Facility (IRF). In addition, new Bank instruments such as the Regional Public Goods Initiative (RPG) may also be used to finance proactive disaster risk management through nonreimbursable funding.¹⁴ Finally, the Bank provides financing and facilitation for the Regional Disaster Policy Dialogue, a regional network of designated high-level country representatives. The Bank has supported this forum with subregional and yearly hemispheric meetings to discuss policy, financial and institutional issues, since 2001.

Box 2 summarizes the necessary actions and available instruments to prepare for and respond to disasters.

¹³ Inter-American Development Bank. 2004. "Evaluation of the Bank's Policy and Operational Practice Related to Natural and Unexpected Disasters". Office of Evaluation and Oversight. Document RE-292. Washington, D.C: Inter-American Development Bank. p. 24.

¹⁴ Under the Initiative for the Promotion of Regional Public Goods (RPGs) nonreimbursable resources of up to \$10 million per year would be available to finance projects that support the development of RPGs in Latin America and the Caribbean. The premise behind the Bank's support for RPGs is that many opportunities or problems shared by countries in the region can be dealt with more effectively at a regional level through international cooperation in the production of public goods. An RPG is any good, commodity, service, system of rules or policy regime that is public in nature and that generates shared benefits for the participating countries and whose production is a result of collective action by the participating countries.

Box 2: Bank Instruments for Disaster Preparation and Response

Phase	Actions	Instruments
Before	<ul style="list-style-type: none"> - Institutional development for prevention and mitigation - Risk and vulnerability analysis - Prevention, mitigation and preparedness investments - Financial protection design and support to risk transfer market development 	<ul style="list-style-type: none"> - Disaster Prevention Facility loans (GN-2085-5) - Sector investment loans with prevention and mitigation components - Technical cooperations for prevention and mitigation - Policy based lending - Special funds such as those available under the Regional Public Goods initiative
During	<ul style="list-style-type: none"> - Damage and needs assessment - Reestablishment of basic services and critical infrastructure - Clean-up and repair of the environment - Humanitarian assistance (limited to emergency technical cooperation) 	<ul style="list-style-type: none"> - Immediate Response Facility (GN-2038-12) - Portfolio restructuring and reallocation - Emergency technical cooperation (GN-1862-5)
After	<ul style="list-style-type: none"> - Rehabilitation and reconstruction investments - Adaptation of productive investments to future disaster risk 	<ul style="list-style-type: none"> - Portfolio restructuring and reallocation - Investment and sector loans and grants for reconstruction

Disaster Prevention Sector Facility (GN-2085-5)

The Bank makes available to its borrowing members the services of the Disaster Prevention Sector Facility (DPSF), which was approved in 2001 as specified in Bank document GN-2085-5. The resources of the DPSF are used to provide reimbursable financing of individual operations for an amount of up to the equivalent of US\$5 million when requested by borrowing member countries. The objective of the DPSF is to reduce the long-term risk from natural hazards to people, property and productive processes. The Facility addresses the importance of *ex ante* action through several components to evaluate risk identification and forecasting, mitigation, preparedness, support for risk transfer, and institution building for national risk reduction systems.

This sector facility can support increasing the access to and quality of scientific knowledge about natural hazards and human vulnerability, particularly in real time, through early warning systems. Investments to be financed could also include structural engineering works, such as retrofitting hospitals and schools to withstand earthquakes, as well as nonstructural ones such as public awareness campaigns.

Immediate Response Facility (GN-2038-12)

The Immediate Response Facility (IRF) is the Bank mechanism for providing urgent post-disaster funding.¹⁵ The IRF is designed to provide a swift pool of liquidity to address needs within the first three to six months following a disaster to restore basic services and help initiate reconstruction activities.

¹⁵ The IRF was modified in 2003 and supersedes the Emergency Reconstruction Facility (ERF), created in 1998.

Activities funded under the IRF may include clearing debris and the environmental clean-up of the disaster area; control and stabilization of buildings; reopening critical physical infrastructure such as bridges and roads; establishment of vital basic utilities such as power, water, healthcare and communications. In addition, upon approval of the Disaster Risk Management Policy, the Bank will conduct a review of the IRF to ensure consistency with the new policy and, in accordance with the Governors' Resolution AG-1/02, allow for IRF coverage of "non-natural, non-market unexpected disasters".¹⁶

Emergency Technical Cooperation (GN-1862-5 and AT-986)

Emergency Technical Cooperation grants serve a humanitarian function and are much smaller in scope than the IRF (they are capped at US\$200,000). In these TC activities, the IDB seeks cooperation with specialized entities that have a comparative advantage in this area.

Procurement

Special procurement procedures apply for 12 months after a declared disaster, as described in [GS-601](#).

Nonfinancial Services

The Bank provides nonfinancial support in the following manner:

- Technical advice and dissemination of "best practices";
- Environmental screening of Bank financed projects;
- Support for national and regional policy dialogues;
- Organization of national and international conferences;
- Inter- and extra-regional exchanges; and
- Resource mobilization and donor coordination.

The Bank may also provide training and advise on the creation of national systems for disaster risk management. The Bank's knowledge function can play a strong role in affording more *ex ante* management.

Bank Coordination with Regional Entities

Regional entities with which the Bank collaborates in disaster risk management issues include the Organization of American States, the Economic Commission for Latin America and the Caribbean and the Pan-American Health Organization. The Bank also cooperates also the subregional development banks: the Caribbean Development Bank, the Central American Bank for Economic Development and Integration and the Andean Development Corporation. In addition, the Bank works with the World Bank and the UN Development Programme on research concerning risk, vulnerability and impact assessments. The Bank is currently working with ECLAC on a Disaster Information Program to review methodologies and assess the impacts of natural hazards (ATN/JF-7096-RG). The

¹⁶ IDB document AG-1/02.

Bank also participates and collaborates with the ProVention group of bilateral donors, multilateral institutions and nongovernment entities working on reducing disaster risk.

Box 3. IDB Priorities and Areas for Action in Disaster Risk Management

IDB Priorities	Rationale	Strategic Areas of Bank Action for Disaster Risk Management
<p>Social Investment and Urban Development</p> <ul style="list-style-type: none"> • <i>Living conditions in cities</i> • <i>Social safety nets</i> • <i>Human capital formation</i> • <i>Risk Management through environmental management</i> 	<p>Social investments can directly or indirectly contribute to risk reduction by increasing the living standards of the poor and diminishing their vulnerability. Improved environmental management in urban areas will not only improve the daily life of inhabitants, particularly the poor, but can also help decrease the vulnerability of the poor to the effects of natural hazards.</p>	<p>Reducing the Vulnerability of the Poor Projects to reduce poverty and manage natural hazards attempt to respond to the risks and challenges that poor households and neighborhoods face. It is imperative that low-cost innovative and sustainable approaches be implemented to effectively reduce risks in low-income neighborhoods. Options include investing in building or retrofitting hazard-resistant infrastructure, for instance with financing from Social Investment Funds.</p> <p>Building a Culture of Prevention The Bank works to stimulate an effective demand for mitigation and safety. This can be done by empowering citizens and improving the allocation of resources for mitigation, making governments and others accountable for managing risk, and monitoring the progress and performance of policies.</p>
<p>Modernization of the State</p> <ul style="list-style-type: none"> • <i>Governance</i> • <i>Coordination between public institutions at different levels</i> • <i>Alliances between the State, civil society, and the private sector</i> • <i>Ethics and transparency</i> 	<p>Better governance through citizen participation in decision-making processes, strengthened transparency, holding elected officials accountable for their actions, and improved cooperation between public institutions and the private sector improve the ability of civil society to demand better disaster prevention and response policies.</p> <p>To the extent that microfinance institutions are “healthy,” meaning that they comply with reasonable criteria for accountability and are well informed of their client base, they are better situated to support most local production in developing countries due to their proximity to local businesses, which assures better knowledge of their needs and capacities and, therefore, faster and more efficient financing to resolve short-term liquidity needs in the wake of a disaster.</p>	<p>Building National Risk Management Systems Adding to the existing elements of emergency management, Bank actions support comprehensive national approaches that build on inter-institutional agreements between agencies responsible for forecasting, prevention, mitigation and response, including securing a sustainable financing strategy for the institutional set-up and actions. A comprehensive approach should include alliances between different levels of the State, civil society and the private sector.</p> <p>Risk Information and Indicators for Decision-Making The Bank works to ascertain projections of the occurrence of natural hazards and estimates of their impact. This can be used to establish a priority ranking of mitigation needs in a specific country, region or sector. It is important to increase the access to and quality of scientific knowledge about natural hazards and human vulnerability, particularly in real time. Information and communication technology and early warning systems can be useful and important tools to this end.</p> <p>The Bank supports the development of indicators to identify highly vulnerable countries. These indicators define: (i) resource gaps to fund potential maximum disaster losses, (ii) social and environmental hazards and vulnerability emanating from frequent small events, and (iii) institutional capacity for risk management.</p>
<p>Competitiveness</p> <ul style="list-style-type: none"> • <i>Infrastructure</i> • <i>Private sector development</i> 	<p>Improving the resistance to hazards of key infrastructure in trade corridors reduces the risks of delays in the delivery of goods and services. Helping countries to develop efficient insurance, retention, transfer and bond markets, in addition to improving competitiveness, can also stimulate better assessments of risk associated with natural hazards. By adequately pricing risk, insurance companies are in a position to provide powerful incentives for private investment in prevention, which would also reduce the implicit liability of the public sector.</p> <p>The private sector can effectively reduce technological and industrial hazards, such as significant water, soil and air contamination through structure failures, oil spills, etc. They may bring even more serious losses when occurring in combination with natural hazards.</p>	<p>Involving the Private Sector The Bank works with governments to find ways to encourage the private sector to adopt mitigation strategies that will transfer some risk currently carried by the public sector. The Bank can assist governments to address underlying constraints that hinder the private sector from adopting risk reduction actions by, for instance, removing market barriers to entry, land use planning, property valuation and titling, building codes and risk assessments. In private sector projects, risk mitigation investments can be planned on a commercially reasonable basis. Environmental safeguards such as pollution prevention, contingency and emergency response plans can be put in place to facilitate sustainable production in case of disasters. These safeguards may, in turn, enhance competitiveness by showing corporate social responsibility and improving the image of the businesses involved.</p>
<p>Regional Cooperation <i>Trade and integration</i> <i>Cooperation and coordination</i></p>	<p>Natural processes do not respect political boundaries. Many disasters in the region are the result of mismanagement of shared natural resources such as forests, soils and watersheds, whose administration requires cross-border collaboration. Therefore, regional cooperation on standards and regulations for competitiveness is an indispensable component of an effective risk-reduction strategy.</p>	<p>Fostering Leadership and Cooperation in the Region The Bank helps facilitate consensus among countries that leads to regional cooperation such as the coordinated management of watersheds and the interconnected networks of electric systems and highways. The Bank could assist in the creation of schemes to pool resources for risk retention. The Bank also works in partnerships with regional institutions. These can be developed to facilitate cooperation in risk reduction and provide a forum for intraregional and inter-institutional dialogue.</p>
<p>Environment and Natural Resource Management</p>	<p>Proper natural resource use and environmental protection can substantially reduce the potential impacts of hazards, such as flash floods, landslides,</p>	<p>Safeguarding Natural Resources The Bank supports land use planning, watershed protection and pollution control that reduce the vulnerability of human settlements. It can also assist in physical</p>

<i>Natural resource management</i> <i>Urban environment and pollution control</i>	earthquakes and major contaminations.	and structural mitigation works to safeguard vital utilities such as dams and energy networks and potential pollution sources such as sewage systems and chemical plants. Reforesting watersheds and coastal zones, controlling soil erosion, proper waste management, and improving urban planning are all activities that can help reduce vulnerability.
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3.3 Future Action Requirements

The rising trend in disaster damages coupled with limited international resources for response, leaves a reduction in vulnerability as the only sustainable solution to reducing disaster losses. This approach calls for a disaster risk management strategy to encompass all stages of the disaster planning cycle.

Core areas that require attention from the borrowing members of the Bank are *risk analysis* to identify the kinds of risks faced by people and development investments as well as their magnitude; *prevention and mitigation* to address the structural sources of vulnerability; *financial protection and risk transfer* to spread financial risks over time and among different actors; *emergency preparedness and response* to enhance a country’s readiness to cope quickly and effectively with an emergency; and *post-disaster rehabilitation and reconstruction* to support effective recovery and to safeguard against future disasters (see Appendix A for an illustration of the key elements in risk management).

Appropriate disaster risk management standards at the country level will provide a foundation for the formation of a culture of prevention. Countries adopting good disaster risk management practices will enhance the effectiveness of their development investments and make them more sustainable. Since potential disasters affect development operations in different fields of activity, a cross-sectoral approach is necessary to effectively coordinate the use of resources for prevention in order to reduce potential losses. After implementing prevention and mitigation measures, countries still need to cover their remaining probable losses and should evaluate how *ex ante* financial protection strategies can play a role. These mechanisms allow for risk transfer that can shift risk to private sector partners through insurance and the capital markets.

Toward this end, the new IDB policy for disaster risk management will facilitate assistance to its borrowing members in all aspects of disaster risk management, with particular attention to vulnerability and loss reduction. It will seek to mainstream disaster risk management into Bank activities and support the institutional strengthening of national and local organizations especially with regards to disaster prevention.

Risk Financing

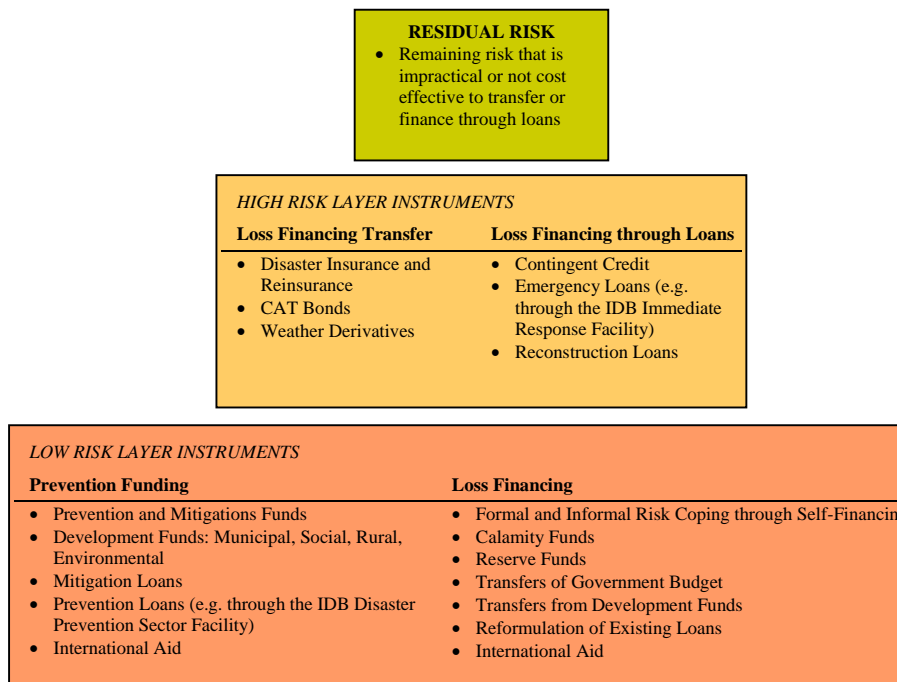
The Bank may also support the evaluation, design and promotion of financial protection and transfer arrangements to spread financial risks over time and among different actors. The Bank can help countries remove impediments to the development of insurance markets by improving risk information and making it available to its borrowers, and by strengthening markets for insurance and other hedging instruments.

The risk bearers in the event of a disaster may be the government, the private sector,¹⁷ or international entities such as the IDB. Identifying risk bearers allows the development of an appropriate risk management framework, which defines the roles and responsibilities of each actor. Disaster risk management strategies include risk reduction by increasing investment in mitigation and prevention. They also allow the use of a series of alternative instruments for loss financing.

Figure 2 identifies risk layers, loss financing options, and available risk transfer instruments. Higher risk layers are commensurate with higher potential losses.¹⁸ In the case of a low risk layer, items on the left-hand side are measures to reduce risk and increase disaster preparedness. The right-hand side indicates mechanisms available to finance low layer losses. At this layer there is room for governments, the private sector, the IDB and the individual to reduce potential losses either by engaging in activities that reduce risk or by using existing formal or informal risk coping mechanisms. These response measures can be effective, but do not transfer risk. In the case of greater losses, financing capacity at the lower layer may not be sufficient.

Insurance and other risk transfer mechanisms appear only as “high layer instruments”

Figure 2: Financial Instruments for Risk Management and Risk Transfer



shown in the middle, left side of figure 2. In developed countries, transferring risks by means of insurance is common among lower layer instruments. However, insurance markets are poorly developed in Latin America, with some notable exceptions. Finally, there

¹⁷ “Private sector” refers to domestic private sector activity that is vulnerable to disaster risk, exclusive of domestic private sector insurance providers.

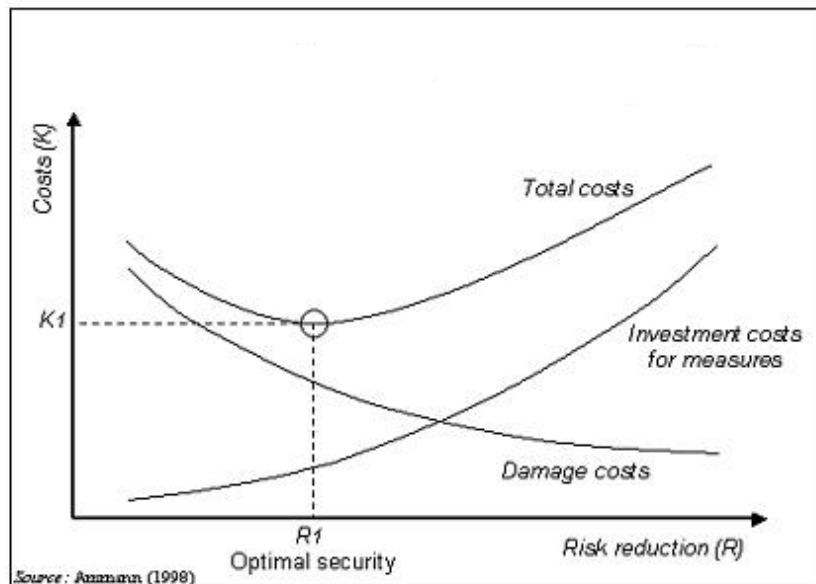
¹⁸ This section is from Miller and Keipi (2005).

is always a residual risk, depicted on top of the figure, the financing or transfer of which may be impractical or not cost effective.

Figure 3 demonstrates the theoretical relationship of a balanced approach to risk management. On the *ex ante* side, increased mitigation and preventive measures will reduce future damages up to a certain point. In most cases, there will be a residual risk (i.e., it is not cost effective to prevent or mitigate all the risk).

On the *ex post* side, financing mechanisms can be used to cover the costs incurred by residual risk. Financing mechanisms also play an important role by allowing governments to transfer risk; however, it is important to stress that although the government may transfer risk, it does not transfer the responsibility of providing post-disaster aid. A balanced *ex ante* and *ex post* strategy can effectively optimize security and costs since it does not rely exclusively on *ex ante* or *ex post* financing, but draws on each.

Figure 3: The Optimal Level of Security at the Minimum of the Sum of Investments in Prevention Measures and Damage Costs



IV. Bank Action Under the New Policy

4.1 Objective

The purpose of the Disaster Risk Management Policy is to guide the Bank's efforts to assist its borrowers in reducing risks emanating from natural hazards and in managing disasters in order to support the attainment of their social and economic development goals.

There are two inter-related specific objectives of this policy:

- i) To strengthen the Bank's effectiveness in supporting its borrowers efforts to manage risks related to natural hazards by reducing vulnerability, and by preventing and mitigating related disasters before they occur; and
- ii) To facilitate rapid and adequate assistance by the Bank to its borrowing member countries in response to disasters in order to efficiently revitalize their development efforts.

4.2 Scope

The new policy has two sets of guidelines: general directives related to programming and proactive project work, and post disaster operations related to the Bank's response to an emergency or disaster. Activities and instruments subject to the policy include the development of country strategies, financial and nonfinancial products, public and private sector operations and financial intermediation, as well as aspects of the Bank's project procurement practices. The Bank also has several other instruments in place to contribute to the implementation of the new policy. The Sector Facility for Disaster Prevention (GN-2085-5) relates to proactive project work for pre-disaster operations.

Bank instruments for post disaster operations cover both natural hazard events and physical damage caused by technological or human driven disasters, such as structural collapse and explosion.¹⁹ These instruments include the Immediate Response Facility (GN-2038-14), the Emergency Technical Cooperation (GN-1862-5 and AT-986), and the Special Procurement Procedures for Emergency Situations (GS-601).

Technological disasters refer to technological or industrial accidents, infrastructure failures or human activities, which cause loss of life or injury, property damage, social and economic disruption or severe environmental degradation. The prevention of these types of disasters is best addressed in the technical design and evaluation of the viability of

¹⁹ The prevention of technological disasters will be managed as part of the Bank's regular project design and implementation process in accordance with applicable sector policies, and through the Environment and Safeguards Compliance Policy (2005, draft). Epidemics and pandemics such as HIV/AIDS are also outside the policy scope. These are covered by the Bank's Public Health Policy (OP-742).

each project. The Environment and Safeguards Compliance Policy (in preparation, 2005) pays particular attention to the treatment of pollution hazards.

The prevention of disasters caused by social and political violence (also referred to as conflict-driven disasters) will be treated separately from this policy since the planning and implementation of policies, strategies and measures that identify, reduce and help manage these events are very different than those necessary to manage natural hazards. For example, natural and technological hazards require technical prevention and mitigation measures, and usually result in social cohesion, while conflict-driven disasters require political prevention, and typically produce social fragmentation and erode social cohesion. See the recommendations of the IDB seminar “Human-Driven Disasters: Violent Conflict, Terrorism and Technology” held in June 2003 (Coletta, 2004).

4.3 Relation to the IDB Environment and Safeguard Policy

There are clear links between environmental degradation and an increase in vulnerabilities to natural hazards. For example, deforestation can aggravate the risk of landslides and floods. Loss of mangrove forests reduces the natural protection against storm surges and tsunamis. Natural hazards may also increase the risk of environmental degradation. For example, wildfires may result in deforestation and erosion, floods cause sedimentation and earthquakes may rupture gas pipelines or cause other types of industrial accidents with severe environmental impacts.

The Bank is aware of these linkages and is striving to address them in a comprehensive fashion with the development of a number of new safeguard policies of which the Disaster Risk Management Policy is one. The Environment and Safeguards Compliance Policy (2005, in preparation, GN-2088-9) provides safeguards to ensure that all Bank operations and activities are environmentally sustainable, and do not cause environmental degradation that may be an underlying driver for increased vulnerability to hazards. It supports the principles of integrated resource planning and seeks to assist the borrowing member countries to implement sound natural resource management. It also covers the impact to the environment and human health and safety occurring from the production, procurement and use of hazardous material, including organic and inorganic toxic substances, pesticides and persistent organic pollutants. The Environment and Safeguards Compliance Policy defines criteria and procedures for requiring Bank projects to be submitted for Environmental Impact Assessment.

4.4 Planning and Programming Action Areas

The sections that follow provide the context and justification for the directives proposed in the draft Disaster Risk Management Policy. To motivate a shift toward proactive disaster risk management, the new policy will address areas of programming dialogue and project preparation and implementation issues with the borrowers (directives IV-A of the draft policy). Explanations on post-disaster policy elements are described in the subsequent section (directives IV-B of the draft policy).

Dialogue with Borrowers on Proactive Disaster Risk Management

Joint IDB-Borrower Assessment of Disaster Risk Management

In the context of the Bank's country strategy and programming, the evaluation of disaster risk and its review with country authorities is the most important tool the Bank has to enhance awareness of this threat to development and to encourage countries to allocate scarce resources to improve their risk management. It is also a critical step for improving the effectiveness of the Bank's development assistance, especially in high-risk countries. Incorporating appropriate risk management into country programming and portfolio management is the cornerstone of the Bank's proposed shift.

Currently, disaster risk information is not routinely collected during the preparation of country strategies and programming exercises, even for those countries that regularly suffer losses from disasters.²⁰ Estimates of probable losses that will have an impact on the country's macroeconomic outlook and the Bank's portfolio are not readily available. A country-level picture showing the geographical areas and sectors at high risk and the institutional capacities to manage risk is missing.

The economic, social and human impact of natural hazard events both in aggregated numbers and for each of the Bank's strategic focus areas individually, merits the collection of more detailed information on risk and vulnerability. This will help make disaster risk and vulnerability more transparent, thus providing a basis for more efficient decisions to resolve the development challenges of member countries.

Under the new policy, the Bank will identify countries according to their level of exposure to natural hazards. This information should be integrated in the section identifying major development challenges in the issues paper prepared prior to the first stakeholder consultation. For countries that are identified as highly exposed the Bank will propose that disaster risk be assessed on a national basis. Risk assessment will facilitate the incorporation of disaster planning into country strategy and programming exercises. In partnership with member countries, the Bank will support technical work, tailored to the needs of country programming, in order to evaluate: (i) the country's disaster risk and the risk management priorities that will support the country's development objectives; (ii) the performance of current risk management measures and the governments' capacity to manage disaster risk in the context of their development priorities; and (iii) the exposure of the Bank's portfolio to natural hazards and potential implications. The reports will provide specific and well justified recommendations concerning: (iv) the opportunities for the Bank to manage the risk that disasters pose to the effectiveness of the country's development efforts and to the Bank's development assistance in particular; and (v) loan

²⁰ A recent IDB Office of Evaluation and Oversight analysis showed that between 1995-2002 the country strategies for only two countries (Belize and the Dominican Republic) included elements of disaster risk management, although many more countries were subject to disasters due to natural hazards. However, many individual Bank operations (such as, housing, water, energy, and road programs) already incorporate analysis of natural hazards, in order to, for example, to locate investments in low-risk areas and to adopt adequate design standards (Document RE-292).

financing and technical assistance that the country needs for strengthening risk management in the context of its development priorities.

For these countries, country strategies and programming memoranda will include a section that quantifies the disaster risk (probable losses) and the potential impact on the country's macroeconomic performance and the Bank's portfolio. The country strategy and programming documents should include a discussion of how the Bank proposes to manage the risk that disasters pose to the effectiveness of the Bank's development assistance. This includes the contribution of the lending, technical cooperation and nonfinancial products portfolio, as well as donor coordination.

Institutional Strengthening

Institutional capacity in member countries plays an important role in implementing risk reduction measures. The Bank is committed to providing necessary support for institutional strengthening both at the national and local levels. Disaster risk management will require a cross-sectoral approach to facilitate broad cooperation among stakeholders.

In the elaboration of the risk assessments and the country strategies, special attention should be given to the institutional capacity to manage risk; the vulnerability of lifelines and critical infrastructure; the adequacy of financial protection against disaster risk; and opportunities for regional cooperation to address shared hazards. If it follows from these assessments that there is a need for improvements, the Bank will support the appropriate policy adjustments and institutional strengthening, at the request of the country.

An appropriate institutional capacity to manage risk should consider the following components: (i) policies for disaster risk management; (ii) elements of a national system for disaster risk management with basic legal and financial provisions for a coordinating body and cross-sectoral cooperation including local levels of government and participation of private sector and civil society to improve prevention, preparedness and readiness to respond rapidly and effectively to disasters; and (iii) relevant disaster risk management standards (land use regulations, building codes, etc.), and effective mechanisms for their implementation.

Financing Projects to Withstand Potential Hazards

In order to safeguard the viability of projects financed through loans, it is also necessary to evaluate the vulnerability of the projects themselves. If hazard risk threatens the project objectives, sufficient mitigation checks need to be enacted. This may include strengthening institutions, as well as structural or nonstructural mitigation measures. The level of risk should be identified on the basis of the intensity of the potential hazards and the vulnerability of the project activities to their impacts. The project teams should identify the level of risk in the project cycle and analyze it as part of the Bank's internal review process. In the absence of any other norms, projects should specify sufficient quality criteria for design and investment taking into account the impact of hazard events estimated to occur within the lifetime of the project. The Bank should create sufficient

safeguards to avoid rebuilding vulnerability particularly in infrastructure projects in high-risk areas.

Mitigation checks that could be enacted include, but are not limited to, strengthening early warning and communication systems; the preparation of contingency plans by communities, utility companies and other providers of basic services; equipping and training emergency responders; preparing and testing evacuation plans; and enhancing critical facilities, such as hospitals, clinics, and local shelters as part of a national emergency response system. In addition, insurance options should be considered for financing potential losses in private sector projects. International building standards, other available norms and experiences and good practices in the region should be followed in the Bank's project preparation and taken into account in its review process.

In the case of loans to protect infrastructure and strengthen emergency response measures, the Bank and the borrower should seek expert guidance in order to improve the viability of projects and reduce vulnerability. Project teams will consider risk posed by natural and technological hazards, based on the best available information. The Bank is in the process of finalizing a Disaster Risk Management Checklist (Sustainable Development Department Best Practices Papers Series No. ENV-144), a tool that will assist project teams to identify technical and institutional needs for integrating disaster risk management principles into the design and execution of sector loans where it is warranted.

For projects in high risk areas, the sections of the Project Performance Monitoring Reports (PPMRs) related to the achievement of development objectives, sustainability issues, and the implications for the overall performance of the project should explicitly analyze the impact of disaster events, and the mitigation measures carried out by the project.

Eliminating Potentially Negative Project Effects

An additional concern is that the loan-financed projects themselves do not cause or contribute to unreasonably high risk levels. This is particularly important in the case of projects that may lead to technological hazard risk. Many forms of investments can increase risk. Expert opinion should be sought to provide risk management guidance to the borrower and the Bank, as needed. It is important to assess the risk on a project basis and when high sufficient safety measures and risk reduction precautions are incorporated. Appropriate mitigation measures can include the preparation and implementation of detailed plans focusing on risk reduction measures, periodic safety evaluations during construction and appropriate maintenance.

To support work in this area, IDB teams may draw upon the Environmental Safeguards Handbook that is being developed to support the Bank's Environment and Safeguard Compliance Policy. It contains guidelines, best practices and definitions to assist project sponsors, project teams, executing agencies and other interested parties. The Handbook is Web based and will be updated periodically to reflect evolving good international practices in the field. The Handbook and the Disaster Risk Management Checklist provide key questions to help Bank and country project teams to identify possible sources of con-

cern in the applicable projects to be used as part of the Bank's internal social and environmental review process.

Financial Incentives for Risk Reduction

Local communities, municipal governments, sectoral ministries and the private sector (the consumers of risk prevention services) need to understand the risks they face and should be empowered to protect themselves and their assets. Information sharing is essential to this end. It includes demonstrating the positive results of prevention and mitigation measures and providing readily accessible information about the hazards that communities face. An analysis of what makes them vulnerable, as well as their standing relative to other communities, can help make prevention a community priority. Financial incentives are valuable tools to signal the importance of prevention and mitigation to stimulate investment in new areas. These incentives can include subsidies for the construction of low-income housing in areas that are less prone to disasters, insurance schemes and grants for conducting studies of the feasibility of mitigation investment projects. The Bank can also help countries remove impediments to the development of insurance markets including by improving and making available information and through the design and establishment of appropriate market mechanisms for insurance and other hedging instruments

Investments in disaster prevention sometimes have relatively low private profitability but offer externality benefits for society as a whole. The Bank can play a pivotal role by offering incentives that increase the national rate of return on these investments. In other instances the Bank can provide the needed incentive by helping countries reduce the risks and uncertainty that arise from investments with long return periods or by establishing a critical mass to secure economies of scale. Bank financed projects that provide financial support to risk reduction should be: (i) targeted and effective (recipients shall be offered only enough resources to cover their marginal cost of adoption); (ii) temporary (the payments shall be made during a well defined period to prevent any relationship of permanent dependency); (iii) efficient (funds will be applied to recipients who offer highest marginal reduction of vulnerability); and (iv) cost-effective (the most inexpensive method to achieve the desired objectives shall be used).

4.5 Post-Disaster Operations

Loan Reformulation

IDB loans may only be reformulated for disaster response purposes if the client country officially declares a disaster. The Bank will accept loan reformulation if the impact of the loan reformulations to long-term development goals have been evaluated, taking into consideration the consequences for the original intended use and objectives, and the proposed new use for the funds, thereby creating conditions for more informed decisions on the part of the approving authorities and relevant stakeholders. Adequate transparency of the reformulation must be assured and an adequate mechanism for monitoring and audit-

ing the execution of resource transfers should be in place, while taking into account the specific needs of timeliness given the nature of the situation. Reformulated loans must be monitored and audited through the Bank's monitoring/supervision system in a timely manner to assure the funds fulfill the new objectives.

As an additional requirement a share of the redirected funds should be earmarked to improve preventive disaster risk management and avoid rebuilding vulnerability. Some countries' laws and regulations specify this amount requiring, for instance, that a minimum of 10 percent of the redirected funds go to prevention and mitigation in order to avoid later repairs in infrastructure investments, as well as to developing new policies, training, increasing public awareness of disaster risk management, etc. Information from the OAS and PAHO indicates that in these types of projects investments in prevention and mitigation on the order of 5 to 7 percent of the total cost of new construction substantially reduce the probability of future losses. Retrofitting is much more expensive. According to an evaluation of 13 IDB reconstruction projects between 1995 and 2002 (RE-292), the average estimated investment in prevention and mitigation was only 4.5 percent.

Avoid Rebuilding Vulnerability

When the Bank makes new loans following a disaster it is important to account for the vulnerability of future Bank-financed projects. The post-disaster period presents an opportunity to engage in project-design and take into account lessons learned from the most recent disaster. This requires taking into account the environmental, social and economic changes in the afflicted area. It cannot be assumed that pre-disaster conditions persist in whole or in part. The reconstruction effort should be designed to assist the affected population in the reestablishment of adequately designed infrastructure to provide essential services and safety.

In designing reconstruction projects, the Bank emphasizes not rebuilding vulnerability. This is particularly important in the case of projects such as housing where lives are immediately at risk. Following the precautions outlined above, project risk evaluations should provide the necessary safeguard against rebuilding or contributing to vulnerability.

Humanitarian Assistance

Safeguarding human capital and protecting lives are essential in reaching economic and social development goals in Latin America and the Caribbean. Therefore, the new policy allows the Bank to fund humanitarian assistance when it is merited through emergency technical cooperations (GN-1862-5 and AT-986). The funds made available by the Bank should be administered through specialized nongovernment and international entities with specific expertise in this field. However, providing humanitarian relief is not part of the Bank's core mission since the Bank does not possess a comparative advantage in this field. The mission of the Bank is to contribute to the acceleration of the process of economic and social development, whereas the objective of humanitarian assistance is to provide temporary relief. Furthermore, humanitarian assistance is normally financed with

grant resources and not loans, which is the Bank's core business. Finally, the Bank does not have adequately trained staff or sufficient capacity on the ground to be able to provide quick and accurate humanitarian assistance.

4.6 Evaluating Policy Impact

In order to assess the progress in the implementation of this policy, the Bank will have an independent evaluation carried out five years after it enters into effect. The evaluation will cover all the directives but with a particular focus on the integration of disaster risk management in the programming process (A-1) and in the project cycle (A-2).

In order to improve the oversight and evaluation of the implementation of the policy the Bank will develop baseline and target indicators for monitoring results of integrating disaster risk management into country strategies and programming. In addition performance indicators for disaster risk management in the project cycle will be prepared in connection with the elaboration of the corresponding guidelines. In ex-post lending the evaluations will focus on the fulfillment of eligibility criteria for loan transfers and the inclusion of sufficient resources to avoid rebuilding vulnerability. In reconstruction, attention would be given also to adjustments in policies and institutional deficiencies in order to reduce vulnerability to future disasters.

V. Moving Forward

The new Disaster Risk Management Policy embodies and supports a definitive shift from a reactive to a proactive disaster risk management.

The policy creates opportunity for action. These include the following:

- Support of cross-sectoral structures for proactive risk management through national disaster risk management systems with the participation of public and private entities;
- Assistance for the creation and application of disaster risk management standards;
- Support to country level hazard and vulnerability assessments, and risk monitoring;
- Financing of mitigation investments and of incentives to support prevention; and
- Generation of financial protection strategies, including risk transfer, to encourage risk reduction and to fund remaining reconstruction.

While the proposed policy represents a step forward in addressing natural and technological hazard risk by the Bank, progress will depend on the level of successful implementation of proactive disaster risk management by the borrowing member countries. Collaboration among all parties across the public and private sectors in the region is needed in order to successfully achieve proactive disaster risk management for the benefit of the people of Latin America and the Caribbean.

Recommended IDB Publications

Available from: http://www.iadb.org/sds/env/publication_2530_e.htm

IDB Disaster Risk Management Focus

Inter-American Development Bank, 2000. *[Facing the Challenge of Natural Disasters in Latin America and the Caribbean: An IDB Action Plan](#)*. Inter-American Development Bank, Sustainable Development Department, Washington, DC.

Keipi, Kari; Pedro Bastidas; Sergio Mora Castro, 2005. *[Gestión de riesgo de amenazas naturales en proyectos de desarrollo: Lista de preguntas de verificación \(Checklist\)](#)*. Inter-American Development Bank, Sustainable Development Department, Washington, DC.

Disaster Risk in Latin America and the Caribbean

Cardona, Omar Darío. 2005. *[Indicators of Disaster Risk and Risk Management. Program for Latin America and the Caribbean](#)*. Inter-American Development Bank, Sustainable Development Department, Washington, DC.

CEPAL/IDB 2000. *[A Matter of Development: How to Reduce Vulnerability in the Face of Natural Disasters](#)*. CEPAL, Mexico DF.

Chavériat, C., 2000. *[Natural Disasters in Latin America and the Caribbean: An Overview of Risk](#)*, Inter- American Development Bank, Research Department, Washington, DC.

Institutions for Disaster Risk Management

Bollin, Christina; Camilo Cárdenas, Herwig Hahn, Krishna S. Vatsa. 2004. *[Disaster Risk Management by Communities and Local Governments](#)*, Inter- American Development Bank, Sustainable Development Department/Integration and Regional Programs Department, Regional Policy Dialogue, Washington, DC.

Freeman, Paul; Linneroot-Bayer, Leslie A. Martin, Reinhard Mechler, Georg Pflug, Koko Warner. 2003. *[Disaster Risk Management: National Systems for Comprehensive Management of Disasters Risk and Financial Strategies for Natural Disaster Reconstruction](#)*. Inter-American Development Bank, Sustainable Development Department/Integration and Regional Programs Department, Regional Policy Dialogue, Washington, DC.

Challenges of Risk Financing

Andersen, Torben J. 2005. *Applications of Risk Financing Techniques to Manage Economic Exposures to Natural Hazards*, Inter- American Development Bank, Sustainable Development Department, Washington, DC.

Miller, Stuart; Kari Keipi 2005. *Strategies and Financial Instruments for Disaster Risk Management in Latin America and the Caribbean*, Inter-American Development Bank, Sustainable Development Department, Washington, DC.

Pettersen, Ivar; John Magne Skjelvik, Nils Atle Krokeide. 2005. *Exploiting international financial markets to manage natural hazard risks in Latin America*, Inter-American Development Bank, Sustainable Development Department, Washington DC.

Technological and Conflict Driven Disasters

Coletta, Nat J. 2004. *Human-Driven Disasters: Violent Conflict, Terrorism and Technology*, Inter-American Development Bank, Sustainable Development Department, Washington, DC.

Humanitarian Assistance (non-IDB sources)

<http://www.reliefweb.int/rw/lib.nsf/doc205?OpenForm>

<http://www.odihpn.org/publist.asp>

APPENDIX B

KEY ELEMENTS OF RISK MANAGEMENT					
Planning and Preparation				Response and Reconstruction	
Risk Identification	Mitigation	Risk Transfer	Preparedness	Emergency Response	Rehabilitation and Reconstruction
Hazard assessment (frequency, magnitude and location)	Physical/structural mitigation works	Insurance/reinsurance of public infrastructure and private assets	Early warning systems. Communication systems	Humanitarian assistance	Rehabilitation/ reconstruction of damaged critical infrastructure
Vulnerability assessment (population and assets exposed)	Land-use planning and building codes	Financial market instruments (catastrophe bonds, weather-indexed hedge funds)	Contingency planning (utility companies/ public services)	Clean-up, temporary repairs and restoration of services	Macroeconomic and budget management (stabilization, protection of social expenditures)
Risk assessment (a function of hazard and vulnerability)	Economic incentives for pro-mitigation behavior	Privatization of public services with safety regulation (energy, water, transportation, etc.)	Networks of emergency responders (local/national)	Damage assessment	Revitalization for affected sectors (exports, tourism, agriculture, etc.)
Hazard monitoring and forecasting (GIS, mapping, and scenario building)	Education, training and awareness about risks and prevention	Calamity Funds (national or local level)	Shelter facilities Evacuation plans	Mobilization of recovery resources (public/multilateral/insurance)	Incorporation of disaster mitigation components in reconstruction activities
<p>Building and Strengthening National Systems for Disaster Prevention and Response: These systems are an integrated, cross-sectoral network of institutions addressing all the above phases of risk reduction and disaster recovery. Activities that need support are policy and planning, reform of legal and regulatory frameworks, coordination mechanisms, strengthening of participating institutions, national action plans for mitigation policies and institutional development.</p> <p>Source: IDB 2000. Facing the Challenge of Natural Disasters in Latin América and the Caribbean: An IDB Action Plan. Washington, D.C.</p>					