BOX 2.
RECENT EFFORTS OF THE OAS IN NATURAL HAZARD RISK MANAGEMENT

- Collaborating with Caribbean countries on natural hazard risk reduction and adaptation to climate change initiatives; assisting with hazard mapping, vulnerability assessments, and mitigation planning; establishing safer building practices; working with the insurance industry on risk reduction incentives; and implementing natural hazard-related components of development projects and supporting capacity building programs.
- Supporting the Caribbean Development Bank and the World Bank in developing policies and processes for mainstreaming natural hazard risk management in lending and other institutional activities. See <http://www.oas.org/cdmp/hazsites.htm>.
- Through the Inter-American Committee on Natural Disaster Reduction (IACNDR) and OAS Permanent Council's Committee on Hemispheric Security, monitoring and assisting OAS member states in understanding the structure, function, and significance of vulnerability and risk indexing initiatives *(see Box 3)*.
- Working with inter-American sector organizations (telecommunications, education, transportation) to reduce vulnerability of sector infrastructure to natural hazards. See <http://www.oas.org/nhp> for details and a more complete list of projects.
- Supporting the implementation of the Inter-American Strategic Plan for Policy on Vulnerability Reduction, Risk Management, and Disaster Response (IASP), which aims to assist OAS member states to reduce loss of human life and property, improve emergency preparedness and response, improve financial protection from hazards, and make economic and social infrastructure more resilient to the impacts of natural hazard events.

with Risk" publication for more information at http://www.oas.org/nhp.)
Wetlands provide environmental services including flood mitigation, shoreline stabilization, erosion control, and a measure of protection from storms and tidal surges. Forest cover greatly reduces the probability of landslides, soil erosion, floods, and avalanches. Barrier reefs, barrier islands, and mangroves mitigate hurricane damage and storm and tidal surges. Policies and practices to promote environmental management of watersheds, ecosystems, and urban areas have been proven to reduce and buffer against the effects of natural disasters.

Sector Mainstreaming. Transportation, tourism, agriculture, water, energy, health, education and other sectors comprise core areas in which disaster risk management needs to be internalized and mainstreamed. National development plans should include natural hazard risk management targets and measures to ensure regulatory oversight of sectors (especially in light of recent privatization trends). Dealing with disaster management as its own topic, divorced from the sectors that make development possible, does not lead to significant reductions in disaster risk. As is bring done in some OAS member states, the sectors need to assess and address their own vulnerability and be regulated by national policies that reinforce treatment of natural hazard risk management as an investment rather than a cost.

Funding, Accountability, and Incentives. Funding and assigning a responsible party (for project design, implementation, monitoring, evaluation, etc.) are nearly always essential to successful development activities. Natural hazard risk management is not an exception to this rule. The three main entities involved in disaster management, defined broadly – the emergency management community, the mitigation community, and the traditional development community – vie for financial support yet there are few examples of a systematic, sustainable process for managing natural hazard risk as a part of the development process. The lack of financing for pre-disaster measures, misaligned funding (that is not given or lent to those who have the jurisdiction to make meaningful changes or who have a stake in reducing infrastructure vulnerability), and scarce incentives and penalties (accompanying regulations and directed at responsible parties) for mitigation and risk management have further contributed to the disproportionate emphasis on post-disaster response in LAC. This situation can be addressed by national governments, lenders, and donors who:

- understand the dynamics of the communities vying for control of disaster-related funds;
- encourage pre-disaster vulnerability reduction and mitigation measures;
- promote and insist on sound land-use planning, environmental management, and construction standards in new development;
- help design and promote incentives (such as technical support, benchmarks, certification, publicity, and awards) for better practices and attention to natural hazard risks.

ROLE OF INTERNATIONAL INSTITUTIONS

Multilateral lending institutions such as the Caribbean Development Bank, Inter-American Development Bank, and the World Bank continue to review and update policies and approaches to post-disaster assistance; together with the insurance sector, they are also examining new approaches to financial risk management for borrowing countries. The Andean Development Corporation, United Nations agencies, and bilateral development assistance agencies continue to work with specialized emergency management organizations and local entities to address disaster management issues. The International Federation of the Red Cross and Red Crescent Societies and Pan-American Health Organization are increasing their efforts to focus on vulnerability reduction at the local level, while the Organization of American States continues efforts to assist LAC countries and sector organizations with vulnerability and risk reduction *(see Box 2)*. Regional organizations in the Caribbean, Central America, and the Andean Region[14] are taking on roles of promoting and coordinating efforts in defined phases of disaster management.

International institutions need to systematically expand their focus on how their projects reduce or increase natural hazard risk. They also must continue to disseminate lessons learned, best practices, and empirical information in order to assist borrowing countries with policy options, technologies, capacity building, and technical inputs.[15] A particular area of opportunity involves vulnerability assessments and their inclusion in the policies and project activities of international development lending institutions, bilateral aid agencies, and non-governmental organizations working on community development.

14. Caribbean Disaster Emergency Response Agency (CDERA), Coordination Center for Natural Disaster Prevention in Central America (CEPREDENAC), and the Andean Committee for Disaster Prevention and Assistance (CAPRADE).
15. See <http://www.disaster-info.net/socios_eng.htm> for some regional examples.

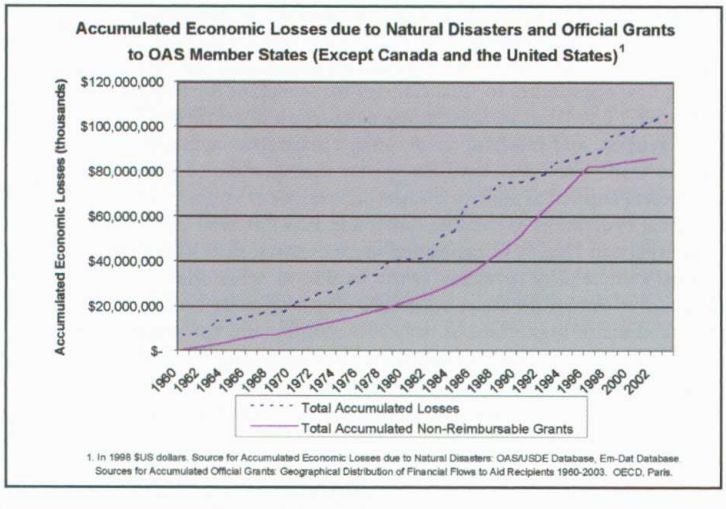
LESSONS LEARNED

Since 1983, the Organization of American States has supported work of member states in identifying, designing, and implementing policies and programs that reduce vulnerability. Lessons learned include:

- Disasters resulting from natural hazard events are often described as development failing to take into account vulnerability to natural hazards. This points to the need for more systematic attention to natural hazard risk identification and risk and vulnerability assessments.
- Natural hazard risk management efforts tend to be particularly effective when explicitly addressed at national, sub-national, community, project, sector, and sector policy levels.
- Recovery is seen as or assumed to be the "window of opportunity" to introduce disaster mitigation measures. Yet, as learned with reconstruction after Hurricane Mitch in Central America, countries must include risk management in project loan cost and not as a stand-alone component dependent on grants.
- Public and private sector owners and operators of infrastructure should be held accountable for the levels of risk (of failure under natural hazard conditions) in the projects they design, build, and maintain.
- Economic cost-benefit evaluations may not always justify risk reduction directed at the poor, other vulnerable groups, and the social sectors (water, health, education), but addressing the needs of these groups is in the broader national interest and is an essential part of any sustainable development strategy.

For further information, please contact Stephen Bender (sbender@oas.org) in the Unit for Sustainable Development and Environment of the General Secretariat of the Organization of the American States (OAS/USDE). *This USDE Policy Brief Series provides a forum for discussion on issues pertaining to sustainable development to help transfer good practices and lessons learned from project design and implementation. This is the fourth in a series that includes topics on:*

— Biodiversity Conservation
— Water Resources Management
— Transboundary Aquifers
— Environmental Assessments of Trade
— Renewable Energy



For Latin America and Caribbean countries taken as a whole, the accumulated economic losses due to natural disasters exceed the accumulated non-reimbursable development assistance. This is especially important if one considers that countries borrow money to develop infrastructure, and destruction of such assets accounts for most of the declared economic losses. Non-reimbursable grants are often made available to cover the cost of infrastructure replacement, but they never cover all social, economic, and secondary costs. Meanwhile the countries continue repaying the loans originally used to develop the infrastructure.

BOX 3.
NATURAL HAZARD RISK INDEXING INITIATIVES PERTINENT TO OAS MEMBER STATES

International financial institutions, international humanitarian assistance organizations, bilateral development lenders and donors, and the private sector are actively developing and using vulnerability and risk indexing schemes to evaluate investment, development assistance, and potential humanitarian aid needs in OAS member states.

Disaster Risk Index (DRI)
United Nations Development Program
http://www.undp.org/bcpr/disred/red/rdr.htm
Relies on disaster fatalities as a measure of vulnerability to project future loss.

Environmental Sustainability Index (ESI)
World Economic Forum
http://www.ciesin.columbia.edu/indicators/ESI
Provides annual cross-national comparisons and rankings of environmental performance according to 20 environmental sustainability indicators in five categories.

Global Unique Identifier Number (GLIDE)
Asian Disaster Reduction Center
http://www.glidenumber.net
Standardized referencing system (coding) for disasters to aid searching process through national and global databases.

Global Disaster Risk Hotspots (Hotspots)
World Bank, ProVention
Based on "hotspots" or areas with combined high natural hazard risk, exposure, and high vulnerability, it calculates risk with respect to both human and economic loss regardless of state boundaries.

Indicators for Disaster Risk Management (IDRM)
Inter-American Development Bank
Made specifically for LAC, it considers macroeconomic and financial risk, social and environmental risk from small and frequent natural hazard events, risk management capacity, and socioeconomic fragility/resilience.

Vulnerability and Capacity Assessment (VCA)
International Federation of Red Cross and Red Crescent
http://www.ifrc.org/what/disasters/dp/planning/vca
National and sub-national level vulnerability and capacity assessment toolkit not only for major disaster risk but "every day" factors that create vulnerability.

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