ORGANIZATION OF AMERICAN STATES

POLICY SERIES, NUMBER 4 — September 2004

UNIT FOR SUSTAINABLE DEVELOPMENT & ENVIRONMENT

Managing Natural Hazard Risk: Issues and Challenges[1]

NATURAL HAZARDS IN THE AMERICAS

Natural hazard events such as earthquakes, volcanic eruptions, hurricanes, landslides, floods, droughts, and wildfires are commonly known as natural disasters. Natural disasters refer specifically to those events in which impacts exceed local or national capacity to address them, thus requiring outside emergency assistance. The Americas are highly prone to natural hazards due to geography. The Sierra Madre neovolcanic axis, the Central American isthmus and Andean ridge are all subject to earthquakes and volcanic eruptions. The American tropics, located in the hurricane belt, experience seasonal storms and hurricanes brewed in the Atlantic, Pacific, and Gulf of Mexico. The Southern Cone is subject to extensive flooding, while nearly the entire Latin America and Caribbean Region (LAC) is affected by the recurring El Niño climate phenomenon, which can cause both flooding and drought. The frequency of natural hazard events, combined with widespread vulnerability spawned by under-development, is what makes the Americas second only to Asia in the average annual number of reported natural disasters. Between 1990 and 2000 in LAC, major natural disasters affected more than 40 million people, caused over $20 billion dollars in direct damages, and resulted in the deaths of more than 45 thousand people.[2]

Addressing the impact of floods on agriculture.

Since the 1960s, natural disasters worldwide have more than tripled and economic losses have increased more than eight-fold.[3] At the same time, the death toll has been cut in half owing to decades of international technical assistance giving priority attention to disaster rescue, relief, and more recently, preparedness. Factors that explain the dramatic increase in disaster events and economic losses include: rapid and poorly controlled urbanization (in LAC, the population is 76 percent urban[4]); widespread rural and urban poverty; ineffective public policy; increasing construction of municipal and production infrastructure in hazard-prone areas; a more active period of El Niño Southern Oscillation episodes; climate variations; and environmental degradation leading to loss of ecological services, such as those provided by forests, which buffer against natural hazard events.

Until the 1970s, the international community considered disasters to be exceptional circumstances, and the term disaster management typically referred to disaster response in that disasters were managed after they occurred. Disasters were almost the exclusive domain of civil defense institutions, the Red Cross and Red Crescent Societies, and private voluntary organizations. However, in the 1970s and 1980s, the need for preparedness and the relationship between development and disasters became more clearly defined. By the time the Declaration of Yokohama at the United Nations World Conference on Disaster Reduction was launched in 1994, it was widely recognized in the Americas that disaster impacts were due, in large part, to failed development approaches. The United Nations raised the profile of natural disasters by declaring the 1990s to be the International Decade of Natural Disaster Reduction. However, then as now, national policies for natural hazard risk mitigation were, for the most part, not in place and vulnerability reduction was limited. A number of catastrophic events in the region *(see Box 1)* – some affecting the same nations in quick succession – served as stark reminders of the urgency of addressing disaster risk. These events permanently changed the perception that emergency preparedness and post-disaster response (which address only effects, not causes) constituted an adequate approach.

Today risk management consists of both a post-disaster phase (emergency response, rehabilitation and reconstruction) and a proactive pre-event phase comprising: risk identification, risk reduction, risk transfer, and preparedness. Each step involves tools, including hazard, vulnerability, and risk assessments, which aid decision-makers in selecting suitable measures and solutions. Such measures include insurance and pooled risk arrangements, strengthening of early warning systems, and incorporating natural hazard risk management into: zoning and land-use planning; national and sector policies; and engineering standards and codes relating to prevalent natural hazards.

LAC countries continue to make the transition from three decades of emergency preparedness and disaster response to a more comprehensive approach that includes actively reducing natural hazard vulnerability in existing and new development. Some countries are modernizing national disaster institutions. Others are revising legal frameworks and organizing or joining regional institutions for coordination and prevention of disasters. Still others are beginning to address long-standing structural hurdles to improving risk management, including: the meager use of appropriate risk information by decision-makers; the private sector's minimal involvement in prevention and risk management; political paralysis to integrate prevention and mitigation; and the weak overall technical and operational capacity of disaster risk management institutions.[5] Efforts such as these are critical for protecting vulnerable populations, safeguarding infrastructure, bolstering national security, and shielding valuable economic assets from devastation. *(See Box 1 for examples.)*

1. By Paula J. Posas (usdecpr3@oas.org), Environmental Specialist, and Stephen O. Bender (sbender@oas.org), Division Chief, Natural Hazards, at the OAS Unit for Sustainable Development and Environment with inputs from interns Valery Bode and Juan Domenech-Clar. The photograph above, taken by Pedro Bastidas in 1999, shows members of a local community in El Salvador installing instruments for a flood early warning system as part of the OAS-led "Flood Vulnerability Reduction and Local Alert System in Small River Valleys Program in Central America."

2. Clarke, Caroline et al. 2000. Facing the Challenge of Natural Disasters in Latin America and the Caribbean: An IDB Action Plan. Washington, D.C.: Inter-American Development Bank.

3. Munich Re. 2000. Topics: Natural Disasters. Munich: Munich Reinsurance Company.

4. World Bank. 2003. Honduras At A Glance.

5. Clarke, Caroline et al. 2000. Facing the Challenge of Natural Disasters in Latin America and the Caribbean: An IDB Action Plan. Washington, D.C.: Inter-American Development Bank.