



**REDUCING DISASTER RISK IN CARIBBEAN SMALL ISLAND DEVELOPING STATES (SIDS)  
UNDP-BCPR DISASTER REDUCTION UNIT  
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The 2004 hurricane season with still two months left to go is proving to be one of the worst hurricane seasons in recent Caribbean history. In terms of the number of countries already impacted (12), deaths (over 2000) and damage and destruction to housing, infrastructure and economic livelihoods, this year's hurricane season is unprecedented. Hurricanes Charley, Francis, Ivan and Jeanne have devastated either entire countries as in the case of Grenada and the Cayman Islands, or large pockets of highly vulnerable populations in this Small Island Developing States region (SIDS). The effects of these disasters particularly in the case of SIDS is of increasing concern as these events clearly demonstrate that they can negatively affect the entire populations and economic base of these islands as was seen in Grenada after Hurricane Ivan where the situation was one of total devastation with 90% of the homes and structures damaged or destroyed and economic damage estimates standing at approximately \$800 million USD.

Natural disasters continue to pose a growing threat to the development strategies of Caribbean countries by destroying infrastructure and productive capacity, interrupting economic activity and creating sometimes-irreversible changes in the natural resource base. During the past two decades the Caribbean region has experienced a dramatic upsurge in the frequency of occurrence and consequent economic loss from natural disasters. The most recent devastation experienced in Grenada, Haiti, the Dominican Republic, Cuba, Jamaica, the Bahamas, and the Cayman Islands is a continuation of this all too common trend of repeated loss of lives and livelihoods and the erosion of hard earned development gains in this region. The level of losses from major disasters occurring in this region demonstrates the social and economic importance of reducing disaster risk. Hurricane Gilbert in 1989 incurred losses worth 65% of the GDP, Hurricane Hugo in 1989 caused Montserrat losses worth 200% of the GDP, flooding and landslides from Tropical storm Debbie in 1994 caused St. Lucia 18% of its GDP, Hurricanes Luis and Marilyn in 1995 incurred losses to Antigua and Barbuda worth 65% of its GDP. During the next few months after the assessments from Ivan and Jeanne have been completed, the region will be faced with yet another dramatic reality of severe erosion to its development gains and the daunting task of reconstruction.

UNDP has demonstrated in its very recent publication on *Reducing Disaster Risk: a Challenge for Development*, that increasing disaster occurrence and loss is indicative of flawed unsustainable development and rapidly accumulating disaster risks. When countries fail to factor hazard and vulnerability considerations into their development policies, strategies and plans, economic growth and social welfare becomes eroded by large-scale disaster loss, while increasing demands are made on national and international humanitarian assistance. Each natural disaster leaves in its wake an overwhelming volume of evidence of how planning and investment decisions contribute to vulnerability. Every, school, road, bridge hospital or housing settlement destroyed in Grenada by hurricane Ivan or washed away by the floods in Haiti from hurricane Jeanne, was once a development project. The location of a housing development, how it is constructed and how land use affects the natural environment are all factors that contribute significantly to the damage inflicted during a hazard event. Even though the concepts of

economic and financial risk are familiar to those responsible for economic analysis of development projects, risk introduced by the possibility of damage or destruction from a natural disaster is commonly overlooked.

In the context of the recent disaster loss to the Caribbean, the achievement of poverty alleviation, good governance and other sustainable development related goals becomes a mirage if rapidly accumulating disaster risk is not managed and reduced. In the absence of this development approach to reduce disaster risk in the Caribbean region, with increasing frequency, these small island states are therefore being faced with situations in which scarce resources earmarked for development projects have to be diverted to relief and reconstruction following devastation after disasters. During the recovery period a small window of opportunity usually exists for integrating risk reduction concerns into the redevelopment process. However in many post disaster periods this redevelopment occurs with such haste that many countries have reconstructed at pre disaster risk levels or even higher. The international community in its response to the devastation in the Caribbean needs to use this opportunity to include risk reduction in its reconstruction assistance to these devastated economies.

The advances made by the Caribbean Development Bank (CDB) in developing a Natural Hazard Impact Assessment tool is a step in the right direction to determine the extent to which potential development projects can configure disaster risk positively or negatively. Other contributions by UNDP in supporting the development of a Comprehensive Disaster Management Strategy for the Region and by USAID through the Caribbean Disaster Mitigation Project have served to raise some level of awareness amongst policy makers of the need for integrating disaster reduction issues in the regional development agenda. However the unprecedented magnitude of loss recently experience in Grenada only serves to remind us of the need for the international development community to strengthen its support to these highly vulnerable island states in developing appropriate policy, capacity and enabling mechanisms to facilitate this integration.

The picture gets grimmer for the future since the current risk situation is being seriously aggravated by climate change that is likely to make matters worse. Even though global climate change is subjected to a great deal of uncertainty, the Intergovernmental Panel on Climate Change (IPCC) concluded that human intervention has a discernable effect on global climate. Global mean surface air temperature has increased between 0.3 and 0.6 degrees since the 19<sup>th</sup> century and is projected to rise about 2 degrees C more by 2100. Global sea level has risen by between 10 and 25 cm over the past 100 years and is projected to rise about 50 cm more by 2100. What does this mean for the Caribbean? Small islands and low-lying coastal areas are especially vulnerable to sea level rise. Higher rates of coastal erosion, permanent inundation and flooding may occur. This is particularly dangerous in a region where population, economic activity and infrastructure are concentrated on coastal areas. Extreme weather events may occur more frequently (1995,2004 hurricane seasons), sea level rise would magnify the impact of storm surge and waves on coastal areas, while protective ecosystems like coral reefs and mangroves already under threat of destruction from economic development activities, will be further weakened by increased sea surface temperatures and changes in salinity. There is also a close link between environmental degradation and poverty, with low-income populations and communities being disproportionately affected by natural hazards. Unsustainable natural hazard resource use associated with poverty especially in countries like Haiti; only serve to exacerbate existing vulnerabilities

Haiti, which has suffered severe loss from the recent floods, is one of the poorest and most disaster prone countries of the world. For the past 10 years it has endured almost 20 internationally recognized disasters events that have caused thousands of deaths. Hurricane Ivan is responsible for over 2, 000 deaths in Haiti alone. This does not include the small and medium sized disasters that frequently go unrecognized by the international media. In Haiti, a combination of environmental fragility, weak institutions, and a total absence of adequate policies and regulations is likely to continue to have tragic consequences if the situation is not reversed. The continuous degradation of highly sensitive ecosystems upstream have led to the increased

occurrence and magnitude of landslides and floods downstream with major physical, economic and social consequences. Although the precipitation that fell over Fonds Verettes and Mapou and more recently in Gonaives, were not abnormally high, massive flash floods were able to build up in a few hours because the catchment areas upstream are so denuded as a result of intensive deforestation and environmentally inappropriate agricultural practices. Disasters in May 2004 in Fonds Verettes and Mapou (over 2,000 deaths) and more recently in Gonaives, illustrates these development pressures.

The UNDP Global Report Reducing Disaster Risk: a Challenge for Development contained a Disaster Risk Index that compared the relative vulnerability of different countries (in terms of mortality) with respect to different natural hazards including hurricanes. In the light of the events unfolding in the Caribbean over the last two weeks it is worth revisiting the Report. The Relative Vulnerability Indicator for some of the countries recently affected shows: Haiti 12.96, Dominican Republic 2.79, United States of America 2.49, Jamaica 1.45, Cuba 0.16

This shows the relative levels of mortality for each million of population exposed to a hurricane. In other words, assuming the same number of hurricanes affecting the same number of people one could expect more than 80 times more people to die in Haiti than in Cuba and 15 times more people to die in the USA than in Cuba.

The current round of hurricanes in the region has affected different number of exposed population and therefore the number of deaths does not correlate exactly with our Disaster Risk Index (DRI). However, in general terms the DRI speaks for itself. The contrast between the over 1000 deaths in Haiti this week, the 27 deaths in the USA last week and the 0 deaths in Cuba is brutal but effectively validates the DRI. If we wanted a clearer and more vivid example of how development (and lack of it) is configuring disaster risk we would not find a better one.

UNDP has provided an exemplary response to the present disasters through the combined efforts of its Country Offices, BCPR and RBLAC. The decided action of the Country Offices, the rapid provision of TRAC 3 emergency grants and the deployment of four Advisors from the BCPR Disaster Reduction Unit to the affected countries (Grenada, Cuba, Jamaica and Haiti) has enabled UNDP to be ahead of the curve in developing recovery programming that will address the countries needs and contribute to the reduction of future risks.

But it does raise the question of how much we are doing on a permanent basis, and as part of our mainstream development portfolios, to reduce disaster risk, not only in the Caribbean but in the rest of the high disaster risk countries where we work. And whether our efforts and resources are really commensurate with the needs.

While large scale disasters such as Hurricane Ivan, the Bam earthquake require a major international response from the UN system most disasters are medium and small scale and responsibility for managing the risks falls squarely with the national governments and local authorities. In the context of the forthcoming World Conference on Disaster Reduction to be held in Japan in January 2005 and in the light of the ongoing study to optimize UN system roles and responsibilities to address disaster risk it is critical that UNDP advocates for greater attention and resources be given to building national capacities for disaster risk management.

Current UN system efforts are still heavily skewed to response and UNDP needs to clearly articulate the case and mobilize donor commitment to strengthen the capacities of our programme countries to manage and reduce risks before disaster losses start to outweigh development gains. We have the tools and mechanisms such as the Disaster Management Training Programme (DMTP) that we can realign and deploy and in our existing Country Programmes we have a wealth of experience to bring to bear. But we still need to make a leap forward in terms of up-scaling our interventions to meet the challenge. Perhaps we should take advantage of the lessons from the Caribbean to do just that.