Tropical cyclones: paying a high price for environmental destruction

*By Pascal Peduzzi **

Haiti did not need this. In 2004 alone floods claimed 2,665 victims in May, week-long rioting ousted President Aristide and Hurricane Jeanne killed 2,754 more. But to blame it all on bad luck or coincidence would be a mistake.

Tropical cyclones are certainly powerful atmospheric hazards causing heavy rain, high wind and sea surge, but the related disasters are not falling from the sky. Disasters are always the combination of a hazardous event and vulnerable population. There is no such thing as a "natural disaster". Otherwise how can we explain the range of casualties in various communities affected by the same event with comparable winds and rains? For instance the Dominican Republic and Haiti are located on the same island, but Jeanne claimed, respectively, less than twenty and over 2,700 victims. This was perhaps an exceptional event, but if we look at the statistics for 1980-2003 the death toll per inhabitant exposed to cyclones is on average 4.6 times higher in Haiti than in the Dominican Republic.

Does wealth explain such an enormous difference? The Dominican Republic is certainly 4.1 times richer than its neighbour. What about development? After all a higher level of development means better access to education, more resources to buy equipment and thus response capability, or build more robust homes. The United Nations Development Programme's Human Development Index (HDI) - based on literacy, life expectancy and gross domestic product - is closely and inversely correlated with the proportion of people killed by hurricanes (see graph 1). The higher the HDI, the fewer people are killed. Yet Cuba (with a 0.808 HDI value) has proportionately fewer casualties on average than the United States with (HDI of 0.937). The difference between Cuban preparations for cyclones and Florida's "hurricane parties" may provide a partial explanation, but another hypothesis is emerging.

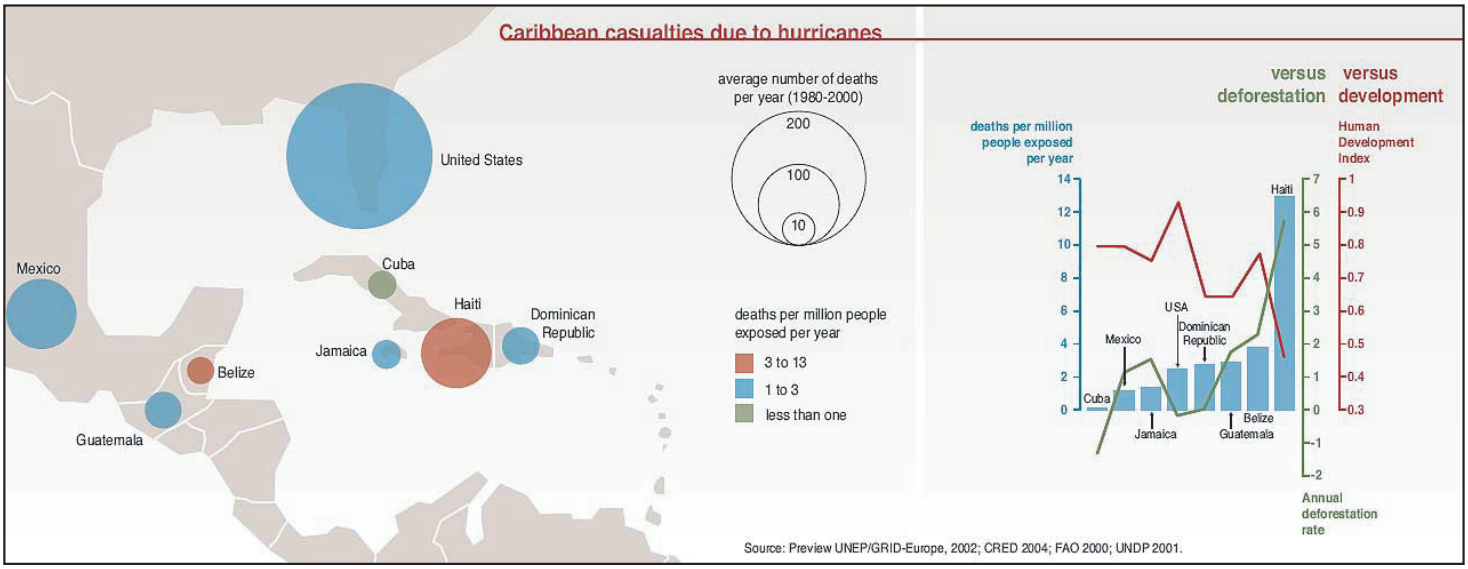
Research has revealed an 89% correlation between the extent of deforestation and incidence of victims per exposed. Both variables follow the same trend with a tight fi t, as shown in the graph. The Haitian part of the island of Hispaniola has low forest coverage (3.2% in 2000) with a high deforestation rate (5.7% of remaining forest). In comparison the Dominican Republic is much greener, with a high degree of forest coverage (28.4% in 2000) and no recorded deforestation. Vegetation protects from winds and helps to stabilise the soil. Haiti's bare soils offer much less resistance, which explains why landslides caused most of the casualties. Mangrove forests signifi cantly reduce the impact of wave surge (see article on Vietnam on page 14-15). There are no mangroves in Haiti, compared with 69,600 hectares in the Dominican Republic. Most of the media cited the poor quality of the Haitian environment as the main factor in the population's vulnerability. This postdisaster consensus sounds like an indictment of poor environmental practice, as if tropical cyclones were the ultimate penalty for environmental destruction. But this introduces a notion of guilt. Did Haitians really have the choice?

Firewood and charcoal represent 70% of Haiti's total energy supply. With an average monthly income of $30.5 people cannot afford to use gas stoves or other energy sources. Given the scant remaining forests, switching to other energy sources is a burning issue in every sense of the term, indeed a matter of life or death. The recent rioting may just be a foretaste of future violence

Haiti is not the only poor country on the verge of environmental collapse. Many countries in their predicament - notably Burundi, Colombia, El Salvador, Guatemala, Jamaica, Madagascar, Nepal, Nicaragua, Panama, Peru, Rwanda, Sri Lanka, Uganda and several West African countries - suffer from high rates of deforestation and political tension. The international community urgently needs to provide solid backing so they can achieve sustainable use of their environmental resources, replant their forests and develop alternative energy sources. Developed countries must also stop importing natural raw materials which deplete the environment of the poorest members of the community.

Vulnerability to disasters is not only linked to environmental quality. Climate change is also playing a part. Political and economical leaders must make environmental protection a bigger priority than at present. They must understand that by destroying our forests and environment we are sawing the branch on which we sit.

** Pascal Peduzzi is Head of the Early Warning Unit at UNEP/DEWA/GRID-Europe*
http://www.grid.unep.ch/



Published in Environment & Poverty Times N°3, p.3
Special Edition for the World Conference on Disaster Reduction January 18-22, 2005, Kobe, Japan
UNEP/GRID-Arendal http://www.environmenttimes.net/