



## DISASTER *city case studies*

### Cuba: Lessons in risk reduction

Cuba sits squarely in the path of hurricanes blowing up from the Caribbean into the Gulf of Mexico. According to the Cuban National Information Agency, Cuba faced 48 hydro-meteorological disasters between 1985 and 2000. A major hurricane hits the country every few years, as a result of which homes are destroyed, coastal areas flooded and agricultural production damaged; but very few people die.

Between 1996 and 2002, six hurricanes hit Cuba killing 16 people out of the total 665 deaths they collectively caused in the affected countries. Despite being a small poor country with few resources, Cuba has successfully curtailed the number of deaths from frequent and violent hurricanes. What is Cuba doing right?

Cuba's integrated system of disaster risk management has succeeded in saving many lives and has built resilience beyond the level that might be expected from the country's economic status. Central to Cuba's successful risk reduction is the government's stated priority that its fundamental commitment during a hurricane is to save lives.

Since 75 per cent of Cuba's 11 million people are urban, the country's disaster preparedness plan has a strong focus on being operational in urban areas. Cuba's model also owes a lot to its unique system of government and its socio-economic model, which has consistently addressed risk reduction through policies of social and economic equity and poverty reduction. These policies have produced "multiplier effects" that enhance risk reduction in many ways. The entire adult population is literate and therefore can access educational materials about disasters. Disaster preparedness, prevention and response are part of all school curricula. This is supported by the Cuban Red Cross, which provides teaching material, and is reinforced by training courses and disaster drills for parents in the workplace, as well as by radio and television broadcasts.

There is an adequate road system in the country that facilitates speedy evacuation and building codes are enforced, which reduce the element of highly vulnerable substandard construction. Approximately 95 per cent of the households in the country have electricity and therefore can access information about disasters through radio and television.

Finally, the intricate web of social, professional and political organizations in the country provides structures that can be quickly mobilized in disaster. Surprisingly, the economic crisis triggered by the collapse of the Soviet Union has not affected Cuba's success in protecting the lives of its population from hurricanes.



The Cuban government is unique in that it has paid an equal amount of attention to the structural and physical aspects of disaster preparedness, but also created a “culture of safety” through successful education and awareness campaigns. It has also demonstrated the central importance of management capacity and political will in successful risk reduction. This holds out real possibility and hope for other countries, rich and poor alike, facing the growing dangers of natural hazards.

## **Dhaka: Rapid urbanization and environmental hazards**

Dhaka has a population of 11.6 million, and it is growing fast. The city is built on alluvial terraces and is exposed to flooding from rivers, direct rainfall, coastal flooding and earthquakes. With so many sources of natural hazard, one might ask how a city came to thrive in such a location. Besides, with 60 per cent of national GDP produced within the city, Dhaka is a city whose risk has national consequences.

The city’s growth has been tied to its political importance. The city was established as the capital of Bengal in 1610. In 1905, Dhaka became the capital of East Bengal and in 1947 it was designated the capital of East Pakistan, with the greatest growth after independence when Dhaka became the capital of Bangladesh. In 1971, there were between 1 million and 2 million residents. Throughout the modern period, expansion has seen the conversion of marshes and farmland into urban land use. High-rise commercial and residential buildings have become increasingly used to cater for growth and are predominantly located in the higher areas of the city.

Despite its long history, 90 per cent of population growth and associated urban expansion into areas at risk has occurred since 1971. Initial expansion to the north of the city captured higher ground above flood levels or on earth-filled lower-lying sites.

More recent expansion has continued northwards over low-lying land. Inequality is extreme in the city, with the richest 2 per cent of the residents occupying 20 per cent of the city’s land. Some 30 per cent of the city’s population fall below the poverty line and live in increasingly marginalized and hazardous slums and squatter settlements.

The multiple relationships between urbanization and hazard are well exemplified in Dhaka. Rapid population growth is partly fuelled by rural migrants who have been made homeless by flooding, cyclones or shifting river beds in rural districts. The precariousness of their livelihoods has been compounded by the absence of family support. The neglect of small towns also increases the pull of Dhaka as a place of economic opportunities. The capital’s urban expansion is swallowing adjacent agricultural land, reducing opportunities for sustainable local food production.

Industrial risk has increased as industrial zones that were originally on the outskirts of the city are surrounded by sprawling residential areas. These residential zones fall outside of land-use planning and regulations. Fire is a problem in these areas and in the densely populated slum districts.