

Lessons from Cuba? Hurricane Michelle, November, 2001

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An Unfashionable Question

In 1978 I published a letter in the journal *Disasters* calling for a systematic comparison of socialist and non-socialist countries' success in mitigating the human impacts of extreme natural events. In that letter I contrasted the small loss of life from drowning or subsequent disease during very large floods in the Red River delta of Vietnam with the estimated huge loss of life calculated by U.S. military planners when they preparing to bomb the Red River levees and dikes. I suggested that researchers should look carefully at preparedness, mitigation, and recovery in socialist countries such as China, Cuba, the USSR, Somalia, and Mozambique.¹

Today three of these countries no longer claim to be socialist; indeed, Somalia is arguably still without a viable central government following years of civil war, and some consider Mozambique to be a ward of overseas donors as it recovers from a savage war of destabilization against its Marxist liberation front turned central government.

With no apology for my juvenilia, I still believe that the question I put in 1978 is relevant to disaster research and to risk reduction policy and practice.

In a muted way this discussion has continued. Best known is Amartya Sen's opinion that China's "great leap famine" in the late 1950s that may have cost 30 million lives would not have been possible in India, where a free press points out harvest failures and monitors government action or inaction. This picture is complicated by comparison of more recent experience.²

My point in this brief note is simply to say that the jury is still out, and that the recent experience of hurricane Michelle in Cuba should tells us that.

Hurricane Michelle

Hurricane Michelle was a dangerous category 3 storm (on the five point Saffir-Simpson scale). It made landfall at the Bay of Pigs on Cuba's southern coast (ironically, where the ill fated CIA backed invasion had failed years ago) with winds of 216 km/hr. The storm traveled North across the island, where it eventually caused heavy damage to homes (22,400 damaged; 2,800 destroyed), agriculture, industry,³ and infrastructure in five provinces that cover much of the western half of the island. Havana province and the City of Havana were among the areas affected. This was the worst hurricane to effect Cuba since 1944.

In all, however, only five deaths have so been reported: four from the collapse of structures and one drowning.

By contrast, a few days earlier, when Michelle traveled through Central America in a weaker form, ten people were killed and another 26 are listed as missing.⁴ One needs also to remember the

terrible loss of human life in Central America during hurricane Mitch, a disaster whose fatal effects it is now generally accepted could have been largely prevented.⁵

Lessons from Cuba

How did Cuba save lives?

The most important factor seems to be timely evacuation. Roughly 700,000 people were evacuated out of Cuba's 11 million population.⁶ This is quite a feat given Cuba's dilapidated fleet of vehicles, liquid fuel shortage, and poor road system. It was possible only because of the following:

- Advance preparations, training, and planning
- A cadre of local personnel
- Trust in warnings on the part of the population
- Cooperation with the Cuban Red Cross.

In addition, in Havana the electricity was turned off to avoid deaths or injuries from electrocution, and the tap water supply was turned off in anticipation of possible contamination. Reports say that Havana's population was advised to store water and food, and that they largely complied. The population at large in Havana also participated in clearing debris which could have become dangerous if airlifted by strong winds from streets, and tying down loose roofing.⁷ Cuban state television broadcasts included references to the 1932 hurricane that had killed more than 3,000 people.⁸

These preparations also point to:

- An effective risk communication system
- Historical memory of past disasters, actively encouraged by the authorities
- Neighborhood based organization capable of mobilizing labor⁹
- Trust on the part of the general population.

Havana is a large city of two million inhabitants. This city has a long history of deaths due to passing hurricanes. In 1844 some 500 lost their lives in Havana. In 1866 the death toll in the city was 600, and in 1944 there were 330 fatalities and 269 collapsed buildings.¹⁰

This is not the first time that preparations and emergency response have saved lives in Cuba. In 1996 some historic buildings were destroyed in Havana due to hurricane Lili, but no one died.¹¹

Is it Socialism?

This question is not ideological but practical. If further systematic comparative study shows that public expenditure on human needs (health care, education, public housing, utility subsidies for low income people, etc.) and infrastructure does save lives in extreme events, this is a policy relevant and important finding. I don't care whether it's called "socialism" or "good governance." I also don't think that the comparisons should necessarily be among so-called "communist" states (contemporary or historical studies) and so-called "capitalist" ones. Indeed, city by city comparisons might also be very revealing, so that the ideological orientation of the national government may, in the end, not be the most important factor.¹²

The systematic study I once suggested, and am again putting the case for, would require a careful and precise definition of the elements one is looking for – most likely including the golden dozen.¹³

- Social cohesion and solidarity (self help and citizen based social protection at the neighborhood level)
- Trust between the authorities (national or sub-national, e.g. municipal) and civil society (the population at large)
- Investments in economic development that explicitly takes into account potential consequences for disaster risk reduction or increase¹⁴
- Investment in human development (basic needs)
- Investment in social capital (e.g. training of neighborhood based activists)
- Investment in institutional capital (e.g. capable, accountable, and transparently operating government institutions for prevention and mitigation of disaster risk, not only for response and preparedness; also investment in scientific capacity in such institutions as Havana's Weather Institute, Cuba's public health service that is presently chlorinating water, etc.)
- Good coordination, information sharing, and cooperation among institutions involved in disaster risk reduction
- Attention to the most vulnerable groups of people
- Attention to life line infrastructure
- Laws, regulations, and directives adequate to support all of the above
- An effective risk communication system and institutionalized historical memory of disasters
- Political commitment to disaster risk reduction.

Cuba may not have all of these. In addition, it may not be “socialism” that has provided Cuba with the ability to save lives in hurricanes. It may turn out to be more complicated than that. Cuba's performance in this and other recent hurricanes seems to depend largely on political rather than strictly economic resources. Cuba has a command state and a highly educated and disciplined professional class. It is therefore not surprising that large evacuations can be organized and that actions can be coordinated among water, power, gas, health, and other sectors. This, together with Cuba's neighborhood organization seems to explain a lot.

Cuba is not rich. This nation seems to do a great deal with few economic resources.¹⁵ However, that is not to say that economic, or more correctly, political economic factors are irrelevant. Economic priorities, no matter what the quantity of the investment, are important in providing risk reduction.

For example, I would hypothesize that more people die of hypothermia each year in Scotland than in Finland as rate of population in an age group. This is not because Finland is “a socialist country”, but because of the kinds of public expenditure priorities in Finland more closely associated with European social-democracy vs. the minimalist welfare apparatus left in the British Isles since the assault on the Welfare State began with Margaret Thatcher in the early 1980s.¹⁶

Conclusion

Whatever the reasons for Cuba's relative successful management of hurricane risk, this island state of 11 million people has lessons for the rest of the Caribbean and the hemisphere. It is a great shame that Cuba is officially excluded from the Organization of American States, and will therefore not be represented at the up coming, and very important, Hemispheric Disaster Risk Reduction Conference.¹⁷ Cuba could also benefit from exchange of experience in disaster risk reduction with other countries in the hemisphere, and, indeed, the world.

Endnotes

¹ “Letter to the Editor,” *Disasters* 2,1 (1978), pp. 80-82.

²Comparisons of China and India are not always as easy as that. In October 1999 at least 10,000 people died in Orissa when a cyclone made landfall. There followed a large controversy concerning the timeliness and adequacy of central and state government aid, and also social unrest that included looting of aid convoys (Pratap Chakravarty, "Millions suffer a month after cyclone kills 10,000 in India" *Agence France-Press*, 28 November 1999 [accessed on ReliefWeb: <http://www.reliefweb.int/>] Beginning in May 2001, heavy rains brought floods again to Orissa that affected 8.7 million people with at least 98 deaths. Many cases of cholera and other diarrhoeal diseases appeared among the displaced survivors (World Health Organization (WHO), "Disease Outbreaks Reported: Cholera in India, *WHO*, 14 August 2001 [accessed on ReliefWeb]).

In China, there were large floods in five of the nine years from 1991-99 affecting from 100 million to over 200 million people each time. Despite evacuation and public health measures the death rate among those affected was often higher than in Orissa in 2001. During the most recent episode, in 1999, 725 people died among the 101 million affected (a death rate 0.71 per 100,000 affected), while in the 2001 Orissa flooding the death rate was about the same (1.13 per 100,000 affected). One would also have to ask why so many people were exposed to flooding in so many years and why the death rate was even higher for some of these other Chinese floods in the 1990s (e.g. in 1998 in China 15 per 100,000 affected died in floods, and 10 per 100,000 in 1995 – death rates calculated from China's disaster history files on the website of the Centre for Research on the Epidemiology of Disasters (CRED): <http://www.cred.be/> .

If Sen had considered this recent flood and cyclone experience and not famine in the late 1950s and early 1960s, one wonders if he would have criticized BOTH India and China. Such comparative study is, I conclude, very difficult.

³ Cuban Civil Defense authorities reported "about 30 factories, 45 livestock and agricultural installations" destroyed and "over 80 hospitals and clinics" damaged, according to the Deutsche Presse Agentur [accessed on ReliefWeb]. On the positive side, more than three-quarters of a million animals were herded to higher ground (Report from the UN Office for the Coordination of Humanitarian Affairs (OCHA), 6 Nov. 2001 ("Caribbean – Hurricane Michelle OCHA Situation Report No. 7"), p. 1 [accessed on ReliefWeb].

⁴ Andrew Cawthorne, "Hurricane Michelle Pounds Cuba, Heads for Bahamas," *Reuters*, 5 November 2001, p. 2 [accessed on ReliefWeb].

⁵ Louise Comfort et al., "Reframing Disaster Policy: The Global Evolution of Vulnerable Communities." *Environmental Hazards* 1, 1, (1999), pp. 39-44; Ben Wisner, "From 'Acts of God' to 'Water Wars': The Urgent Analytical and Policy Role of Political Ecology in Mitigating Losses from Flood: A View of South Africa from Central America." In: D. Parker, ed., *Floods*, Vol. 1, pp. 89-99. London: Routledge, 2000. Between 1960-1989, hurricanes were responsible for an astounding 28,000 fatalities. Cuba's relative success in hurricane risk mitigation must be seen in this light (Roger Pulwarty and William Riebsame, "The Political Ecology of Vulnerability to Hurricane-Related Hazards," in: Henry Diaz and Roger Pulwarty, eds., *Hurricanes: Climate and Socioeconomic Impacts*, p. 194. Berlin: Springer Vela, 1997).

⁶ Another report mentions "nearly a million" evacuees (Deutsche Presse Agentur *op. cit.*, p. 1).

⁷ OCHA Situation Report No. 7, *op. cit.*. and Reuters (Andrew Cawthorne, *op. cit.*, pp. 2-3 [accessed on ReliefWeb].

⁸ Andrew Cawthorne, *op. cit.*, . 2.

⁹ Paul Susman, Bucknell University, has argued in an unpublished study that the Committees for the Defense of the Revolution have played an important role in reducing dengue fever outbreaks because of the way they have been able to mobilize labor for highly localized, house by house monitoring and control of mosquito breeding sites. As a result of this as well as prompt case finding and treatment, Cuba has the lowest prevalence of dengue in the Caribbean and Central America [personal communication; susman@bucknell.edu].

¹⁰ David Longshore, *Encyclopedia of Hurricanes, Typhoons, and Cyclones*. New York: Checkmark/ Facts on File, 2000, pp. 79-81. In Havana 1,550 buildings are report to have been damaged, 26 schools and 10 day care centers (OCHO Situation Report No. 7, *op. cit.*, p. 1).

¹¹ David Longshore, *op. cit.*, p. 81.

¹² Ward by ward, borough by borough differences were noted in a United Nations University study I coordinated (1996-2001) of the mitigation of social vulnerability to urban disasters in six megacities including Los Angeles, Tokyo, Johannesburg, Manila, Mumbai, and Mexico City. Even in the United States there have been municipalities that have attempted to take a "socialist" or "social-democratic" approach (e.g. Santa Monica and Berkeley in California,

Burlington Vermont, etc.; see Paul Claval, *The Socialist City*; one also thinks of such cities as Curitiba and Porto Alegre, in Brazil and the areas controlled by the Zapatistas in Mexico).

¹³ See chapters 9 & 10 in Piers Blaikie, Terry Cannon, Ian Davis, and Ben Wisner, *At Risk: Natural Hazards, People's Vulnerability, and Disasters*. London: Routledge, 1994. I am also grateful for discussions (in person and via email) on the question of measuring national vulnerability and resilience with Ian Davis (Cranfield University and International Strategy for Disaster Reduction (ISDR), Philip Buckle (State Emergency Recovery Unit, Department of Human Services, Victoria, Australia), Christina Bollin (UNDP), and many others.

¹⁴ For some time this has been the approach to comprehensive planning, of "mainstreaming" disaster risk reduction as a part of sustainable development, advocated by the Organization of American States (OAS); see, for example, OAS, *Disasters, Planning, and Development: Managing Natural Hazards to Reduce Loss*. Washington, D.C.: Department of Regional Development and Environment, OAS, 1990. This has also recently become the official position of the Inter American Development Bank; see, for example, Economic Commission for Latin America and the Caribbean (ECLAC) and Inter American Development Bank (IADB), *A Matter of Development: How to Reduce Vulnerability in the Face of Natural Disasters*. Mexico City: ECLA and IADB, 2000.

¹⁵ Cuba's turn to organic farming during its "special economic period" since exports to and imports from the former COMECON countries have been profoundly restructured, is a good example, as are the urban gardens of Havana and Cuba's entire health system. The result is that Cuba has been able to achieve the best health and education statistics in Latin America, on a par with Eastern Europe, and not far off those of Ireland and Greece. At 158th rank in UNICEF's tables, Cuba is tied with the United States for under 5 mortality rates. Cuba also has the same percentage of children born with a low birth weight as the U.S. See: UNICEF, *The State of the World's Children 2001*. New York: UNICEF, pp. 78-81, 82-85, and 90-93.

¹⁶ Likewise a report issued by Britain's Institute of Civil Engineers on 8 November 2001 urged a doubling of state investment in reduction of flood risk and highlighted the Britain's failure to address the "human costs" of flood.

¹⁷ December 4-6, 2001 in San Jose, Costa Rica; see <http://www.ofdalac.org/summit/htm> .