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Prepare yourself, natural disasters will only get worse

By Erwann Michel-Kerjan

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The world has entered a new era of catastrophes. Economic losses from hurricanes, earthquakes and resulting tsunamis, floods, wildfires and other natural disasters increased from \$528 billion (1981-1990) to more than \$1.2 trillion over the period 2001-2010. The 9.0 earthquake and massive tsunami in Japan this past spring caused hundreds of billions of dollars of direct and indirect costs. It has affected the Japanese macroeconomic forecast and resulted in the departure of the then-prime minister. And before this, massive earthquakes in Haiti, Chile and New Zealand inflicted record human and financial losses as well.

Despite being the richest country in the world, America is still highly vulnerable to natural disasters. Two principal socioeconomic factors directly influence the level of economic losses due to catastrophic events: exposed population and value at risk. Florida, for example, has seen its population grow from 2.8 million inhabitants in 1950 to 18.8 million in 2010 (+570%). Increased population and development means an increased likelihood of severe economic and insured losses in Florida and other hurricane-prone regions unless cost-effective mitigation measures are implemented and the risk properly hedged.

So, when an unexpected earthquake was felt on the East Coast, followed by Hurricane Irene, those of us who have been tracking extreme events for years knew what would likely happen.

First, the Administration in Washington would have learned the lessons from the 2005 Hurricane Katrina debacle. Evacuation would have to be required and enforced. The president, the heads of FEMA and DHS, along with local, state and federal officials in charge of disaster management would have to be on the front line very early. The presence of true professionals would matter a great deal. Furthermore, this effort and a well-articulated crisis management strategy would have to be relayed and clearly explained by leading media outlets.

That is the way it happened.

Following these steps has saved numerous lives. However, the fact that Hurricane Irene eventually weakened and hit the Northeast during a weekend helped tremendously. This could have been much worse. Evacuating part of New York City on a Wednesday and Thursday with everybody at work, for instance, would have been much more complicated.

Second, after the rescue effort, the time would soon come to evaluate the losses and ask the hard question: Who will pay for this? While Irene caused significant wind losses in the Carolinas, a majority of the losses in the Northeast have been flood-related.

A political debate started as to whether victims should receive federal disaster aid, how much, and how to make this unbudgeted spending fiscally neutral. Based on past experience, and given that emotions run high, it will be very hard for elected officials to deny their fellow citizens relief. As a matter of fact, my colleague Howard Kunreuther and I showed that over the period 1950-2010, two-thirds of all presidential disaster declarations had been flood-related. So you can count on disaster relief going to flood victims this time too.

But the debate about federal relief misses an important fact. While it has been hard, practically, to restrict construction in hazard-prone areas along the coast, flood risk can be insured. Typical homeowners' insurance covers wind damage, but it excludes flood losses. Still, homeowners can obtain flood coverage from the federally run National Flood Insurance Program (NFIP), up to \$350,000 (building and contents) and with a deductible as low as \$500. Many large insurers (yours too, most likely) sell NFIP policies on behalf of the federal government and assess flood claims in exchange for government fees.

This program has grown significantly in recent years and provides insurance to 5.3 million policyholders, rich and poor, across the country today. The program now covers more than \$1.2 trillion in assets (a 250% increase since 1990, when corrected for inflation). This is not a small program. Because public insurance is offered by the Federal government, which does not face additional expenses (cost of capital, return to shareholders, taxes) that private insurance companies would, its cost is relatively low — on average \$50 per month.

Still, many people don't buy flood insurance, and many of those who purchase it don't keep it for long. In the Louisiana parishes affected by Hurricane Katrina in 2005, the percentage of homeowners with flood insurance ranged from 57.7 percent in St. Bernard Parish to 7.3 percent in Tangipahoa when the hurricane hit. Only 40 percent of the residents in Orleans Parish had flood insurance.

I hope Irene will show a different picture, but I would not bet on it. We also recently did the first ever study of flood insurance tenure — the number of years that people keep their flood insurance policy before letting it lapse. Our analysis of the entire NFIP portfolio over the period 2001-2009 reveals that, on average, this tenure is only three years. Many people buy

flood insurance when they buy a new house because the bank requires flood insurance proof to authorize a federally backed mortgage if the residence is in a flood plain. But they cancel it fairly soon after. Then, they suffer a flood and regret not having kept that coverage longer. And don't think this behavior is specific to flood. Ninety-one percent of Californians do not have earthquake insurance today. The state is virtually bankrupted, so I forecast that all of us as taxpayers will pay when the Big One hits California. Consider yourself warned.

What is the solution? Several prime ministers, presidents and rulers around the world have now put this question of management and financing extreme events on their agenda. Many more executive boards are doing it too, trying to figure out how best to act strategically, protect their firms' assets and create new products to hedge catastrophe risk. It's almost impossible to argue against this being a matter of national interest — to say nothing of good governance and competitiveness.

We must limit the amount of new construction in high-risk areas and make sure people and firms already in those areas have proper financial coverage to assure they can get back on their feet quickly after the next catastrophe. This will cut down on taxpayer expense. Unless we start to get serious about making the country more resilient to natural disasters, we won't be prepared for what the 21st century has in store for us.

Without quite realizing it yet, America is at war against the weather. Irene and the wildfires in Texas are just the latest battles. More is soon and sure to follow.

Erwann Michel-Kerjan is an authority on managing and financing extreme events. He teaches Value Creation in the Wharton School MBA program and is the Managing Director of the Wharton Risk Management Center. He is the author of several acclaimed books, including [At War with the Weather](#) (with Howard C. Kunreuther).