Energy and Environment • Perspective

Why it's time to stop calling these hurricane disasters 'natural'

By Kerry Emanuel September 19

As the United States struggles to recover from two back-to-back hurricanes, it would be wise to reflect on why we keep having such calamities and whether they are likely to get worse.

We must first recognize the phrase "natural disaster" for what it is: a sham we hide behind to avoid our own culpability. Hurricanes, floods, earthquakes and wildfires are part of nature, and the natural world has long ago adapted to them. Disasters occur when we move to risky places and build inadequate infrastructure.

In the United States, we have in place a range of policies that all but guarantees a worsening string of Katrinas, Sandys, Harveys and Irmas as far as we can see into the future. Climate change acts as a threat-multiplier to these policy-generated disasters, making them progressively worse than they would have been in a stable climate.

The U.S. hurricane policy disaster has its roots in the hijacking of politics by special interests. In a free market, risk is largely communicated through pricing. Smokers pay greater health insurance premiums to cover the added risk of their voluntary activity. In a rational world, premiums in hurricane-prone places would be sufficiently high to reflect the actual risk to the property.

But agitation by coastal property owners has resulted in a rigged system in which states place caps on property insurance premiums, or on the maximum difference between premiums charged to risky and less risky customers, forcing the latter to subsidize the former. Hurricane storm surges and freshwater flooding are covered by the National Flood Insurance Program, and here too agitation has resulted in rates that do not adequately reflect the risk. Congress revamped this program in 2012, only to retract many of those changes in 2014 in response to a backlash from flood-prone homeowners.

On top of this, federal disaster relief, as necessary as it may be, inadvertently subsidizes risk. As a consequence of these subsidies, coastal populations are rising much faster than the general population. Globally, the population exposed to

hurricane hazards has tripled since 1970, and the trend shows no signs of abating.

To make matters worse, climate change is increasing the probabilities of hurricane disasters in many places. Rising sea levels worsen storm surges, often the most deadly and destructive aspects of hurricanes. Sandy would probably not have flooded Lower Manhattan had it occurred 100 years earlier, when sea levels were about a foot lower in New York.

My own work demonstrates that the physical cap on hurricane wind speeds rises in a warming climate, permitting more intense storms like Irma to develop, and observations show that this cap is indeed rising. Basic physics tells us that hurricanes produce more rain in a warmer climate. Computer simulations confirm that the incidence of intense, destructive storms rises and that hurricane flooding from rain and storm surges gets worse in warmer climates, though the frequency of weaker storms may actually decline.

We are beginning to see trends in hurricane observations. Katrina's storm surge was the largest in U.S. history. Sandy achieved the largest diameter of any Atlantic hurricane on record. Western North Pacific typhoon Haiyan of 2013 achieved the highest wind speed of any tropical cyclone in global history, a record broken in 2015 by eastern North Pacific Hurricane Patricia. Harvey dumped more rain than any hurricane in the United States, and Irma maintained Category 5 status longer than any storm anywhere on the planet.

Naysayers point out that most trends in the noisy hurricane database do not rise to the high bar of 95 percent certainty that we scientists place on signal detection, implying that no action should be taken until that level of certainty is achieved. That's rather like saying that you will let your 8-year-old cross a busy highway unless it can be proven with 95 percent certainty that she will be run over. Being conservative in risk assessment is the opposite of being conservative in signal detection.

The confluence of rising sea levels and stronger and wetter hurricanes with increasing coastal population and unwise government interference in insurance markets portends ever increasing hurricane disasters. The hurricane policy disaster is a result of too much regulation; the failure to reduce greenhouse gas emissions arises from too little. Citizens of all political persuasions should demand that their representatives attack both these problems lest we condemn our children and their descendants to increasing incidence of the kind of misery now being experienced in Texas, Florida and the Virgin Islands.

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