The Costs of Extreme Weather

Climate *in*action is expensive—and inequitable.

BY HEIDI GARRETT-PELTIER

Two thousand eleven has already been a record-setting year. The number of weather disasters in the United States whose costs exceed $1 billion—ten—is the highest ever. August witnessed one of the ten most expensive catastrophes in U.S. history, Tropical Storm Irene. An initial estimate put the damages from Irene at between $7 billion and $13 billion. In this one storm alone, eight million businesses and homes lost power, roads collapsed, buildings flooded, and dozens of people lost their lives. Meanwhile, Texas is experiencing its hottest year in recorded history: millions of acres in the state have burned, over 1,550 homes have been lost to wildfires as of early September, and tens of thousands of people have had to evacuate their homes. The devastation caused by the storms and droughts has left individuals and businesses wondering how they'll recover, and has left cash-strapped towns wondering how they'll pay for road and infrastructure repairs.

Extreme weather events like these are expected to become more frequent and more intense over the next century. That's just one of the impacts of climate change, which, according to the consensus of scientists and research organizations from around the world, is occurring with both natural and human causes, but mainly from the burning of fossil fuels. According to NASA, since 1950 the number of record high-temperature days has been rising while the number of record low-temperature days has been falling. The number of intense rainfall events has also increased in the past six decades. At the same time, droughts and heat waves have also become more frequent, as warmer conditions in drier areas have led to faster evaporation. This is why in the same month we had wildfires in Texas (resulting from more rapid evaporation and drought) and flooding in the Northeast (since warmer air holds more moisture and results in more intense precipitation).

In response to these dramatic weather changes, the courses of action available to us are *mitigation*, *adaptation*, and *reparation*. *Mitigation* refers to efforts to prevent or reduce climate change, for example, cutting fossil fuel use by increasing energy efficiency and using more renewable energy. *Adaptation* refers to changing our behaviors, technologies, institutions, and infrastructure to cope with the damages that climate change creates—building levees near flood-prone areas or relocating homes further inland, for example. And as the term implies, *reparation* means repairing or rebuilding the roads, bridges, homes, and communities that are damaged by floods, winds, heat, and other weather-related events.

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Of these, mitigation is the one strategy whose costs and benefits can both be shared globally. Moving toward a more sustainable economy less reliant on the burning of fossil fuels for its energy would slow the rise in average global temperatures and make extreme weather events less likely. Mitigation will have the greatest impact with a shared worldwide commitment, but even without binding international agreements, countries can take steps to reduce their use of coal, oil, and natural gas.

According to the Intergovernmental Panel on Climate Change, even the most stringent mitigation efforts cannot prevent further impacts of climate change in the next few decades. We will still need to adapt and repair—all the more in the absence of such efforts. But the costs and burdens of adaptation and reparation are spread unevenly across different populations and in many cases the communities most affected by climate change will be those least able to afford to build retaining walls or relocate to new homes. Farmers who can afford to will change their planting and harvesting techniques and schedules, but others will have unusable land and will be unable to sustain themselves. Roads that are washed away will be more quickly rebuilt in richer towns, while poorer towns will take longer to rebuild if they can at all. The divide between rich and poor will only grow.

Given the high cost of damages we've already faced just this year, mitigation may very well be sound economic planning. But it is also the most humane and equitable approach to solving our climate problem. D&S

HEIDI GARRETT-PELTIER is an associate research professor at the Political Economy Research Institute at the University of Massachusetts, Amherst.

SOURCES: NOAA/NESDIS/NCDC, "Billion Dollar U.S. Weather/Climate Disasters 1980-August 2011"; Michael Cooper, "Hurricane Cost Seen as Ranking Among Top Ten," *New York Times*, August 30, 2011; "Hurricane Irene Damage: Storm Likely Cost $7 Billion to $13 Billion," *International Business Times*, August 29, 2011; Intergovernmental Panel on Climate Change, *Fourth Assessment Report: Climate Change 2007*, Working Group II ch. 19; NASA, "Global Climate Change: Vital Signs of the Planet—Evidence"; U.S. EPA, "Climate Change—Health and Environmental Effects, Extreme Events."