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The American Dust Bowl Returns

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Consider the recent series of floods globally and in the United States--Pakistan in late July; in Tennessee, where "1,000-year flooding" occurred over hundreds of miles this May; in the U.K. last year; in Atlanta last September; across the northeastern seaboard last March. Taken together they are, some believe, the kind of weather disasters that are too improbable to be explained away as chance occurrences. They are part of the new "weirding of the water cycle," where changes in regional weather patterns have been linked to global warming.

Expect this type of rhetoric to heat up by 2020. The proponents of weather weirding may be correct, but science moves at its own steady, judicious pace and will be slow to make a clear, definitive causal link between a warming climate and all the recent headline-making torrential disasters or any disasters to come.

To someone like Jay Gulledge, a climate scientist who studies societal risk at the Pew Center on Climate Change, the debate about weather weirding and climate change is a red herring: "It's a distraction from what we really need to pay attention to," he says. Individual weather disasters mainly illustrate how vulnerable humankind is to such events, according to Gulledge, and policy decisions can more swiftly address that vulnerability. In short, whether Hurricane Katrina or any other weather disaster to come is caused by global warming is at best an academic question. "Before Katrina," he says,

"nobody knew that a major American city could be complete cut off from every form of outside emergency aid and assistance. Now we know."

More scientific study, Gulledge says, has been done on water scarcity, particularly in the West and Southwestern U.S., where the signal for a large-scale creeping environmental disaster is stronger, more clearly linked to climate change, and will likely emerge as a landmark development in the next 10 years. Possibly one of the most under-reported stories of the decade are water conflicts between large Western U.S. cities, counties, states and Native American tribes, which have their own sovereign water rights.

Computer models project drastic reductions in media water runoff by mid-century. Research published recently in the journal *Science* concluded that the Southwestern U.S. has already transitioned into permanent dust-bowl conditions. The storage capacity of the Colorado River system has been reduced by half between 1999 and 2007. The river supplies water to more than 30 million people, including residents of Los Angeles, Phoenix, Las Vegas and Denver. The most troubling fact: More people are moving to the Southwest than to any other part of the country. More people and no water to sustain them? That spells water wars by 2020.

About 90% of insured catastrophic losses worldwide are weather-related. In the U.S. weather disaster accounts for about $320 billion in insured losses between 1980 and 2005, as measured in 2005 dollars. The cost of these disasters is escalating. Swiss Re, the second largest reinsurance company in the world, expects natural catastrophic losses, including earthquakes and epidemics caused by disasters, to grow by roughly 10% annually.

So how does anybody manage this kind of risk--be it deluge or drought? Enter the parametric insurance instrument. It's called an alternative risk transfer mechanism, and it's nothing new--catastrophic bonds (Cat Bonds) have been in play for many years, as have derivative deals, reinsurance deals and even loan products. They all differ to some degree but have in common the fact that payouts are triggered by a prearranged parameter--sometimes

sustained wind speed over a period of time--sometimes, in the case of drought insurance, the number of days without rainfall.

"Historically, parametric insurance deals have been struck between reinsurance companies like Swiss Re and small developing nations that often have difficulty tapping into the insurance markets," explains Swiss Re's public sector vice president, Nikhil de Victoria Lobo. And that's what makes the recently announced deal between Swiss Re and the state of Alabama worth noting--it's the first time that such a deal has been made in an industrialized country. You can expect more of this by 2020. State governments along the Gulf Coast, in the Southwest, and in the prairie states (where drought conditions might trigger a parameterized payout) will likely follow because, as de Victoria Lobo explains, the escalating cost of weather disaster has outpaced the ability of both federal and state governments to cover their liabilities.

He points to Hurricane Ike as one of many recent examples where insured losses far exceeded the payouts from the federal government and the insurance industry, creating, in the case of Ike, a $16 billion shortfall. And that's the niche that Alabama's parameterized insurance deal will fill, according to de Victoria Lobo. One advantage of such deals is that payouts are swift. The government of Haiti had an $8 million parameterized policy that was triggered by the recent catastrophic quake; the money was received in 10 days. That's good news for Alabama, whose 15-year parameterized

policy covers the state against a hurricane of Category 2 or 3 wind speeds--and arrives just in time for this year's hurricane season.

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